



Staff Report

PLANNING DIVISION
COMMUNITY & NEIGHBORHOOD DEVELOPMENT

To: Salt Lake City Planning Commission
From: Salt Lake City Planning Division
Date: October 22, 2020 (for Oct 28 hearing)
Re: PLNPCM2020-00351 Billboard Ordinance Text Amendments

ZONING TEXT AMENDMENT

REQUEST: The City Council is requesting amendments to the zoning ordinance regarding billboards. The proposed amendments would modify City Code to continue precluding new billboards and terminate the billboard bank that currently allows for relocation or construction of replacement billboards using a billboard credit system. The proposed amendments affect Chapter 21A.46 of the zoning ordinance. Related provisions of Title 21A-Zoning may be amended as part of this petition. The changes would apply Citywide.

RECOMMENDATION: Planning staff recommends that the Planning Commission forward a favorable recommendation to the City Council for the proposed text amendment.

ATTACHMENTS:

- A. [Proposed Code Text](#)
- B. [Existing Code Text](#)
- C. [Analysis of Standards](#)
- D. [Public Process and Comments](#)

PETITION DESCRIPTION

The City Council initiated a petition to amend the billboard regulations of the zoning ordinance in May of this year, 2020. The changes were initiated to address the significant expansion in State law regulations governing relocation of billboards within municipal boundaries over the past several years. The proposed amendments remove the City's Billboard Bank, a now outdated and complicated method of regulating the relocation of billboards within municipal limits, and replaces it with a clear prohibition on relocating a billboard within municipal limits, unless a provision of State law applies and overrides the City's prohibition.

To provide some background, in or around 1993 the City initiated an ordinance enacting 21A.46.160, which prohibits the construction of new billboards in Salt Lake City and creates a billboard banking system to regulate the relocation of a billboard from one location in the City to another location. Specifically, the ordinance provides that when a billboard owner demolishes a billboard, the owner may collect credits from the City. The credits may be used within a specified period of time after the demolition to build a replacement billboard in certain designated areas of the City, notwithstanding the ordinance's general prohibition on the construction of new billboards.

In the twenty-five years since enactment of 21A.46.160 and the creation of this billboard banking system, numerous provisions of State law have been enacted that provide for the relocation of existing billboards within municipal limits. These provisions apply and supersede any contrary provision of municipal code. This significant expansion of State law provisions that provide for the relocation of billboards within municipal limits has resulted in most incidences of relocation being performed using state law, and not the City's billboard bank. It has also severely limited the original purpose and effectiveness of the billboard bank, which was to create a system

that would encourage voluntary relocation of billboards away from residential neighborhoods and historic districts. In short, State law now provides adequate provisions for relocation of billboards and the continued existence of a system allowing for relocation of billboards through a billboard bank is unnecessary, creates confusion, and has given rise to protracted litigation. The amendments primarily do the following:

- Terminate the operation of a “billboard bank” system;
- Clarify that relocation of a billboard is not permitted under City Code;
- Enact City ordinance requirements for size, height, spacing, and landscaping for billboards relocated under a provision of State law, which apply when the provision of State law relied on does not provide size, height, spacing or landscaping requirements.

The key changes are discussed in more detail in the [Key Code Changes](#) section below. Other minor miscellaneous clarifications are included in the code changes for consistency and enforceability.

Applicable Review Process and Standards

Review Processes: Zoning Text Amendment

Zoning text amendments are reviewed against four considerations, pertaining to whether proposed code is consistent with adopted City planning documents, furthers the purposes of the zoning ordinance, are consistent with other overlay zoning codes, and the extent they implement best professional practices. Those considerations are addressed in [Attachment C](#).

City Code amendments are ultimately up to the discretion of the City Council and are not controlled by any one standard.

Community Input

Notification of this proposal was sent out in July to all registered community councils to get community input and an online open house website was posted with the proposed draft and an overview of the proposal to get wider input. One community council (Sugar House) responded with comments and a general statement against the proposed amendments. A mix of individuals and organizations also responded with comments, many questioning the elimination of designated “gateway” streets and raising concern that the removal of this definition “opens up” those gateways and allows for billboards to be constructed on those streets in circumstances that are not currently allowed. This concern is misplaced. The proposed amendments do not expand the ability to relocate a billboard under City Code or allow construction of a billboard in a “gateway” street where it is not currently allowed. To the contrary, the amendments remove a currently existing exception to the general prohibition on construction of a new billboard anywhere in the City. Namely, the ability to construct a replacement billboard with billboard credits. Notably, the City’s current billboard credit system allows for construction of a replacement billboard in streets that are designated as “gateways” in certain circumstances. This option is removed with the proposed amendments.

The proposed changes have no effect, either widening or narrowing, on the ability of a billboard owner to relocate a billboard under State law.

All public comments are included with [Attachment D](#).

KEY CODE CHANGES:

The below sections go over the primary code changes proposed with this amendment.

1. [Terminate use of the “billboard bank”](#)
2. [City requirements for billboard size, height, spacing and landscaping, when not regulated by State law that was used to relocate](#)
3. [Purpose statement updated](#)
4. [Miscellaneous Changes](#)

1. Terminate use of the “billboard bank”

Proposed Change:

- Terminate the “billboard bank” and the issue of billboard credits when a billboard is demolished. This would also remove the “gateway” designation of certain streets in the city since that designation was tied entirely to the rules governing the use of billboard credits.

The amendments propose to terminate the City’s billboard banking system, and with that, the designation of certain streets as “gateways” since that designation is tied to the billboard bank and the use of billboard credits. Under the current ordinance, if a billboard owner demolishes a billboard, the owner can collect “billboard credits” from the City. These “billboard credits” allow the billboard owner to construct a new billboard (of the same size) to replace the billboard the owner demolished. A billboard owner has three years to use the credits. Where the new billboard may be constructed in the City depends on where the demolished billboard was located. Notably, if the demolished billboard was in a gateway, the replacement billboard may be constructed in the same gateway, provided other requirements are also met.

The ordinance is being amended to remove this system of issuing billboard credits and allowing construction of new/replacement billboards with the use of billboard credits. Going forward, if a billboard is demolished, no credits will be issued and no new/replacement billboard may be constructed under City ordinance. Stated another way, no billboard could be constructed, per City ordinance, in a street that is currently designated a “gateway”, or any other street for that matter.

If a billboard is “relocated” under an applicable provision of state law, the City’s amended ordinance would set forth size, height, spacing and landscaping requirements that would apply to the extent they are not contrary to an applicable provision of state law. These aspects are discussed in further detail in the next section.

The changes are shown starting on line 18 of the redline draft in [Attachment A](#).

2. City requirements for billboard size, height, spacing and landscaping, when not regulated by State law that was used to relocate

Proposed Change:

- Specify size, height, spacing and landscaping requirements if a billboard is relocated under State law and those aspects are not regulated by State law.

With the termination of the billboard bank, construction of a replacement billboard or the relocation of an existing billboard are no longer permitted. However, provisions of State law continue to provide for relocation of billboards within municipal boundaries in certain circumstances, notwithstanding municipal code provisions to the contrary.

If a billboard is “relocated” under one of these provisions of state law, the City’s amended ordinance sets forth size, height, spacing and landscaping requirements that will apply to the extent the State law relocation provision relied on does not set forth size, height, spacing or landscaping requirements that supersede City code.

The related changes are shown starting on line 183 of the redline draft in [Attachment A](#).

3. “Purpose” statement updated

Proposed Change:

The “purpose” provision described the purpose of the City’s billboard bank and the system of issuing billboard credits. Since the amendments to the ordinance terminate the billboard bank, that purpose provision is outdated.

Based on and in response to public comment, the City has updated the purpose provision in the proposed amendments.

The changes to the purpose statement start on line 7 of the redline draft in [Attachment A](#).

4. Miscellaneous Changes

Proposed Changes:

- Update the definitions used in the ordinance to reflect the changes proposed.

The proposed amendments include changes to definitions and specific dates for clarification that are key in administering the ordinance. The definitions are updated to reflect the proposed changes.

The changes to definitions start on line 10 of the redline draft in [Attachment A](#).

DISCUSSION:

The proposed billboard ordinance amendments have been reviewed against the Zoning Amendment consideration criteria in [Attachment C](#). The proposed amendments implement best practices by ensuring the code is up to date, does not conflict with other applicable State or City Code, and complies with the City's zoning purposes by ensuring that City ordinances can be legally administered and enforced.

Due to these considerations, staff is recommending that the Commission forward a favorable recommendation on this request to the City Council.

NEXT STEPS:

The Planning Commission can provide a positive or negative recommendation for the proposed text amendments. The recommendation will be sent to the City Council, who will hold a briefing and additional public hearing on the proposed amendments. The City Council may make modifications to the proposal and approve or decline to approve the proposed amendments.

If the text amendments are approved by the City Council, appeals would be subject to the new City ordinance standards.

ATTACHMENT A: PROPOSED CODE

[This attachment includes TWO versions:

1. a “clean” version of the code with no strikethroughs and underlines that show deleted and new text, and
2. a “draft” version that identifies such deletions and new text with strikethroughs and underlines.]

CLEAN VERSION (PROPOSED) FOLLOWS:

SECTION 1. Amending the Text of Salt Lake City Code Subsection 21A.46.160. That Subsection 21A.46.160 Billboards of the Salt Lake City Code shall be and hereby is amended to read as follows:

21A.46.160: BILLBOARDS:

A. Purpose Statement: To promote the enhancement of the City's gateways, views, vistas and related urban design elements of the city's master plans, this section prohibits the construction of any new billboard within Salt Lake City and terminates the City's billboard banking system. The City no longer issues billboard credits for the construction of a new or replacement billboard, if an existing billboard is demolished.

B. Definitions: The definitions in this section apply in addition to those in section 21A.46.020 of this chapter.

BILLBOARD: A form of an off-premises sign. A freestanding ground sign located on industrial, commercial or residential property if the sign is designed or intended to direct attention to a business, product or service that is not sold, offered or existing on the property where the sign is located.

BILLBOARD BANK: An accounting system established by prior versions of this ordinance that tracked the number and square footage of nonconforming billboards removed by a billboard owner.

BILLBOARD CREDIT: An entry into a billboard owner's billboard bank account that shows the number and square footage of demolished nonconforming billboards.

BILLBOARD OWNER: The owner of a billboard in Salt Lake City.

DWELL TIME: The length of time that elapses between text, images, or graphics on an electronic billboard or electronic sign.

ELECTRONIC BILLBOARD: Any off-premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic billboards include, but are not limited to, billboards that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

ELECTRONIC SIGN: Any on premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic signs

include, but are not limited to, signs that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

EXISTING BILLBOARD: A billboard that was constructed, maintained and in use as of [insert date of publication of this ordinance].

FOOT-CANDLE: The English unit of measurement for luminance, which is equal to one lumen, incident upon an area of one square foot.

ILLUMINANCE: The intensity of light falling on a subsurface at a defined distance from the source.

MODIFIED BILLBOARD: A billboard that is modified or repaired pursuant to a provision of Utah State Code.

MOTION: The depiction of movement or change of position of text, images, or graphics. Motion shall include, but not be limited to, visual effects such as dissolving and fading text and images, running sequential text, graphic bursts, lighting that resembles zooming, twinkling, or sparkling, changes in light or color, transitory bursts of light intensity, moving patterns or bands of light, expanding or contracting shapes, and similar actions.

PRIOR ORDINANCE: The version of Salt Lake City Code Section 21A.46.160 in effect from February 4, 2012 until [insert the date of publication of this ordinance].

RELOCATED BILLBOARD: A billboard that is moved from one location to another location pursuant to a provision of Utah State Code.

TEMPORARY EMBELLISHMENT: An extension of the billboard resulting in increased square footage as part of an artistic design to convey a specific message or advertisement.

TWIRL TIME: The time it takes for static text, images, and graphics on an electronic billboard or electronic sign to change to a different text, images, or graphics on a subsequent sign face.

C. Billboards Prohibited: No billboard may be constructed anywhere in Salt Lake City, except as provided for under section E.3 or a provision of Utah State Code. Billboards that exist as of [insert the date of publication this ordinance], are a permitted non-conforming use.

D. Relocation of Existing Billboards Prohibited: No existing billboard may be relocated from one location in Salt Lake City to another location in Salt Lake City, except as provided for under a provision of Utah State Code.

E. Termination of Billboard Bank and Billboard Credits:

1. The billboard bank and system of tracking billboard credits set forth in the prior ordinance is hereby terminated;
2. From [insert the date of publication of this ordinance] onwards, a billboard owner will not receive billboard credits for the demolition of any billboard;
3. A billboard owner may use billboard credits that exist as of [insert the date of publication of this ordinance] to construct a billboard as permitted by the prior ordinance.
4. Any existing billboard credits must be used within the time permitted by the prior ordinance.

E. Size, Height and Spacing Requirements:

1. Billboards constructed pursuant to section E.3 above are subject to the size, height and spacing requirements set forth in the prior ordinance.
2. Relocated billboards and modified billboards must comply with the size, height, and spacing requirements applicable to the provision of Utah Code relied on by the billboard owner to permit the relocation or modification.
 - a. Size: If the provision of Utah Code relied on by the billboard owner to permit the relocated or modified billboard does not identify a maximum size for the relocated or modified billboard, the billboard shall not exceed fifteen feet (15') in height and fifty feet (50') in width.
 - b. Height: If the provisions of Utah Code relied on by the billboard owner to permit the relocated or modified billboard does not identify the maximum height for the relocated or modified billboard the billboard excluding temporary embellishments shall not be more than:
 - i. Forty-five feet (45') above the existing grade, measured from the highest point of the billboard to the grade of the land directly beneath the highest point of the billboard; or
 - ii. Twenty-five feet (25') above the pavement elevation of a street, measured from the highest point of the billboard to the grade of the street directly perpendicular to the billboard, if a street within one hundred linear feet (100') of the billboard, measured from the street at the point at which the billboard is perpendicular to the street to a point on the billboard closest to that street, is on a different grade than the billboard;
 - iii. If the provisions of subsection 3.b.ii of this section, or its successor subsection, apply to more than one street, the new billboard may be the higher of the two (2) heights.
 - c. Spacing: If the provision of Utah Code relied on by the billboard owner to permit the relocated or modified billboard does not identify minimum spacing requirements, the following provisions apply:
 - i. Small Signs: Billboards with an advertising face three hundred (300) square feet or less in size shall not be located closer than three hundred (300) linear feet from any other small billboard or eight hundred feet (800') from any other large billboard, except a billboard on the opposite side of the same street.

- 125 ii. Large Signs: Billboards with an advertising face greater than three hundred (300)
126 square feet in size shall not be located closer than eight hundred (800) linear foot
127 from any other billboard, except a billboard on the opposite side of the same
128 street.
- 129 iii. Electronic Billboards: Electronic billboards shall not be located closer than one
130 thousand six hundred (1,600) linear feet from any other electronic billboard and
131 must comply with all other billboard spacing requirements.

132
133 F. Setback Requirements: All relocated billboards, billboards constructed pursuant to
134 section E.3, or existing billboards that are substantially rebuilt or entirely replaced shall meet the
135 following setback requirements:

- 136 1. Billboards shall be subject to pole sign setback requirements listed for the district in
137 which the billboard is located;
- 138 2. In the absence of setback standards for a particular district, billboards shall maintain a
139 setback of not less than five feet (5') from the front or corner side lot line. This setback
140 requirement shall be applied to all parts of the billboard, not just the sign support
141 structure.

142
143 G. Landscaping Requirements: Existing billboards are subject to the landscaping
144 requirements of the prior ordinance. All relocated billboards, billboards constructed pursuant to
145 section E.3, or existing billboards that are substantially rebuilt or entirely replaced are subject to
146 the following landscaping requirements.

- 147 1. Landscaping In Residential, Small Neighborhood Business, And Commercial CN And
148 CB Zoning Districts: Properties in any residential zone, small neighborhood business
149 zone, and commercial CN or CB zones on which a billboard is the only structure shall be
150 landscaped from all property lines adjacent to a street into the property a distance equal to
151 the required front yard setback and:
 - 152 a. when the billboard is generally situated perpendicular to the nearest adjacent street,
153 spanning 25 feet either side of the billboard or to the nearest property line, whichever
154 occurs first, and;
 - 155 b. when the billboard is generally situated parallel to the nearest adjacent street,
156 spanning the length of the billboard.
- 157 No portion of such property shall be hard or gravel surfaced;
- 158 2. Landscaping In Other Zoning Districts: Property in all districts other than as specified in
159 subsection G.1 of this section, or its successor subsection, upon which a billboard is the
160 only structure, shall be landscaped from the front of the property to the deepest interior
161 point of the billboard for fifty (50) linear feet along the street frontage distributed, to the
162 maximum extent possible, evenly on each side of the billboard. For properties with less
163 than fifty (50) linear feet along the frontage street, the property shall be landscaped for all
164 linear feet on the frontage street.

165
166 H. Temporary Embellishments: Temporary embellishments shall not do one or more of the
167 following:

1. Exceed ten percent (10%) of the advertising face of any billboard;
2. Exceed five feet (5') in height above the billboard structure;
3. Exist on a billboard for more than twelve (12) months.

I. Permits: A billboard owner must obtain a permit, as provided for in Salt Lake City Code 18.20.010 or its successor, before erecting, constructing, enlarging, altering, repairing, moving, improving, removing, converting or demolishing a billboard.

J. Electronic Billboards:

1. Prohibitions: Except as provided in subsection J.2 of this section, after February 4, 2012:
 - a. No electronic billboard shall be constructed or reconstructed for any reason, and
 - b. The conversion, remodeling, or rehabilitation of any existing billboard to an electronic format is prohibited.
2. Standards When Construction/Conversion Required By Law: If after February 4, 2012 the city is required by Utah Code or other applicable law to allow construction of a new electronic billboard, or to allow conversion of an existing billboard to an electronic format, any such electronic billboard shall be operated pursuant to the following standards:
 - a. Any motion of any kind is prohibited on an electronic sign face. Electronic billboards shall have only static text, images, and graphics.
 - (1) The dwell time of any text, image, or display on an electronic billboard may not exceed more than once every eight (8) seconds. Twirl time between subsequent text, images, or display shall not exceed one-fourth (0.25) second.
 - (2) The illuminance of any electronic billboard shall not increase the ambient lighting level more than three-tenths (0.3) foot-candle when measured by a foot-candle meter perpendicular to the electronic billboard face at:
 - (A) One hundred fifty feet (150') for an electronic billboard with a surface area of not more than two hundred forty-two (242) square feet;
 - (B) Two hundred feet (200') for an electronic billboard with a surface area greater than two hundred forty-two (242) square feet but not more than three hundred seventy-eight (378) square feet;
 - (C) Two hundred fifty feet (250') for an electronic billboard with a surface area greater than three hundred seventy-eight (378) square feet but not more than six hundred seventy-two (672) square feet; and
 - (D) Three hundred fifty feet (350') for an electronic billboard with a surface area greater than six hundred seventy-two (672) square feet.
 - b. Electronic billboards may not be illuminated or lit between the hours of twelve o'clock (12:00) midnight and six o'clock (6:00) A.M. if they are located in, or within six hundred feet (600') of a residential, mixed use, downtown, Sugar House business district, gateway, neighborhood commercial, community business, or community shopping center zoning district.
 - c. Controls shall be provided as follows:

- 210 (1) All electronic billboards shall be equipped with an automatic dimmer control or
211 other mechanism that automatically controls the sign's brightness and display
212 period as provided above.
- 213 (2) Prior to approval of any permit to operate an electronic billboard, the applicant
214 shall certify that the sign has been tested and complies with the motion, dwell
215 time, brightness, and other requirements herein.
- 216 (3) The owner and/or operator of an electronic billboard shall submit an annual report
217 to the city certifying that the sign complies with the motion, dwell time,
218 brightness, and other requirements herein.
219
- 220 K. Compliance With Ordinances Regulating Trees: Any construction, demolition,
221 maintenance, or repair of billboards shall comply with the provisions of the Salt Lake City Code
222 that regulate the preservation, maintenance, disturbance, or damage to trees.

REDLINE VERSION (PROPOSED) FOLLOWS:

SECTION 1. Amending the Text of Salt Lake City Code Subsection 21A.46.160. That Subsection 21A.46.160 Billboards of the Salt Lake City Code shall be and hereby is amended to read as follows:

21A.46.160: BILLBOARDS:

A. Purpose Statement: To promote the enhancement of the City's gateways, views, vistas and related urban design elements of the city's master plans, this section prohibits the construction of any new billboard within Salt Lake City and terminates the City's billboard banking system. The City no longer issues billboard credits for the construction of a new or replacement billboard, if an existing billboard is demolished. ~~Purpose Statement: This section is intended to limit the maximum number of billboards in Salt Lake City to no greater than the current number. This chapter further provides reasonable processes and methods for the replacement or relocation of existing nonconforming billboards to areas of the city where they will have less negative impact on the goals and policies of the city which promote the enhancement of the city's gateways, views, vistas and related urban design elements of the city's master plans.~~

B. Definitions: The definitions in this section apply in addition to those in section 21A.46.020 of this chapter.

BILLBOARD: A form of an ~~off-premises~~off-premises sign. A freestanding ground sign located on industrial, commercial or residential property if the sign is designed or intended to direct attention to a business, product or service that is not sold, offered or existing on the property where the sign is located.

BILLBOARD BANK: An accounting system established by prior versions of this ordinance that the city to keep~~tracked~~ed of the number and square footage of nonconforming billboards removed by a billboard owner.~~pursuant to this chapter.~~

BILLBOARD CREDIT: An entry into a billboard owner's billboard bank account that shows the number and square footage of demolished nonconforming billboards.

BILLBOARD OWNER: The owner of a billboard in Salt Lake City.

DWELL TIME: The length of time that elapses between text, images, or graphics on an electronic billboard or electronic sign.

ELECTRONIC BILLBOARD: Any ~~off-premises~~off-premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic billboards include, but are not limited to, billboards that use light

emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

ELECTRONIC SIGN: Any on premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic signs include, but are not limited to, signs that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

EXISTING BILLBOARD: A billboard ~~that which~~ was constructed, maintained and in use ~~or for which a permit for construction was issued~~ as of [insert date of publication of this ordinance]. ~~July 13, 1993.~~

FOOT-CANDLE: The English unit of measurement for luminance, which is equal to one lumen, incident upon an area of one square foot.

~~GATEWAY: The following streets or highways within Salt Lake City:~~

- ~~1. Interstate 80;~~
- ~~2. Interstate 215;~~
- ~~3. Interstate 15;~~
- ~~4. 4000 West;~~
- ~~5. 5600 West;~~
- ~~6. 2100 South Street from Interstate 15 to 1300 East;~~
- ~~7. The 2100 South Expressway from I-15 west to the city limit;~~
- ~~8. Foothill Drive from Guardsman Way to Interstate 80;~~
- ~~9. 400 South from Interstate 15 to 800 East;~~
- ~~10. 500 South from Interstate 15 to 700 East;~~
- ~~11. 600 South from Interstate 15 to 700 East;~~
- ~~12. 300 West from 900 North to 900 South;~~
- ~~13. North Temple from Main Street to Interstate 80;~~
- ~~14. Main Street from North Temple to 2100 South Street;~~
- ~~15. State Street from South Temple to 2100 South; and~~
- ~~16. 600 North from 800 West to 300 West.~~

ILLUMINANCE: The intensity of light falling on a subsurface at a defined distance from the source.

MODIFIED BILLBOARD: A billboard that is modified or repaired pursuant to a provision of Utah State Code.

MOTION: The depiction of movement or change of position of text, images, or graphics. Motion shall include, but not be limited to, visual effects such as dissolving and fading text and images, running sequential text, graphic bursts, lighting that resembles zooming, twinkling, or sparkling, changes in light or color, transitory bursts of light intensity, moving patterns or bands of light, expanding or contracting shapes, and similar actions.

~~NEW BILLBOARD: A billboard for which a permit to construct is issued after December 31, 19~~
~~NONCONFORMING BILLBOARD: An existing billboard which is located in a zoning district or otherwise situated in a way which would not be permitted by the provisions of this chapter.~~

PRIOR ORDINANCE: The version of Salt Lake City Code Section 21A.46.160 in effect from February 4, 2012 until [insert the date of publication of this ordinance].

RELOCATED BILLBOARD: A billboard that is moved from one location to another location pursuant to a provision of Utah State Code.

~~SPECIAL GATEWAY: The following streets or highways within Salt Lake City:~~

- ~~1. North Temple between 600 West and 2200 West;~~
- ~~2. 400 South between 200 East and 800 East;~~
- ~~3. State Street between 600 South and 2100 South; and~~
- ~~4. Main Street between 600 South and 2100 South.~~

TEMPORARY EMBELLISHMENT: An extension of the billboard resulting in increased square footage as part of an artistic design to convey a specific message or advertisement.

TWIRL TIME: The time it takes for static text, images, and graphics on an electronic billboard or electronic sign to change to a different text, images, or graphics on a subsequent sign face. ~~C.~~

~~Limit On The Total Number Of Billboards: No greater number of billboards shall be allowed in Salt Lake City than the number of existing billboards.~~

~~D. Permit Required For Removal Of Nonconforming Billboards:~~

- ~~1. Permit: Nonconforming billboards may be removed by the billboard owner only after obtaining a permit for the demolition of the nonconforming billboard.~~
- ~~2. Application: Application for demolition shall be on a form provided by the zoning administrator.~~
- ~~3. Fee: The fee for demolishing a nonconforming billboard shall be as shown on the Salt Lake City consolidated fee schedule.~~

~~E. Credits For Nonconforming Billboard Removal: After a nonconforming billboard is demolished pursuant to a permit issued under subsection D1 of this section, or its successor, the city shall create a billboard bank account for the billboard owner. The account shall show the date of the removal and the zoning district of the demolished nonconforming billboard. The account shall reflect billboard credits for the billboard and its square footage. Demolition of a conforming billboard shall not result in any billboard credit.~~

~~F. Priority For Removal Of Nonconforming Billboards: Nonconforming billboards shall be removed subject to the following priority schedule:~~

- ~~1. Billboards in districts zoned residential, historic, residential R-MU or downtown D-1, D-3 and D-4 shall be removed first;~~

- 128 2. ~~Billboards in districts zoned commercial CN or CB, or gateway or on gateways shall be~~
129 ~~removed second;~~
- 130 3. ~~Billboards which are nonconforming for any other reason shall be removed last; and~~
- 131 4. ~~A billboard owner may demolish nonconforming billboards of a lower priority before~~
132 ~~removing billboards in a higher priority; however, the billboard credits for removing the~~
133 ~~lower priority billboard shall not become effective for use in constructing a new billboard~~
134 ~~until two (2) billboards specified in subsection F1 of this section, or its successor, with a~~
135 ~~total square footage equal to or greater than the lower priority billboard, are credited in~~
136 ~~the billboard owner's billboard bank account. If a billboard owner has no subsection F1 of~~
137 ~~this section, or its successor, nonconforming billboards, two (2) subsection F2 of this~~
138 ~~section, or its successor, priority billboards may be credited in the billboard owner's~~
139 ~~billboard bank account to effectuate the billboard credits of a subsection F3 of this~~
140 ~~section, or its successor, billboard to allow the construction of a new billboard. For the~~
141 ~~purposes of this section, the two (2) higher priority billboards credited in the billboard~~
142 ~~bank account can be used only once to effectuate the billboard credits for a lower priority~~
143 ~~billboard.~~

144

145 G. ~~Life Of Billboard Credits: Any billboard credits not used within thirty six (36) months of~~
146 ~~their creation shall expire and be of no further value or use except that lower priority credits~~
147 ~~effectuated pursuant to subsection F4 of this section, or its successor, shall expire and be of no~~
148 ~~further value or use within sixty (60) months of their initial creation.~~

149

150 H. ~~Billboard Credits Transferable: A billboard owner may sell or otherwise transfer a~~
151 ~~billboard and/or billboard credits. Transferred billboard credits which are not effective because~~
152 ~~of the priority provisions of subsection F of this section, or its successor, shall not become~~
153 ~~effective for their new owner until they would have become effective for the original owner. The~~
154 ~~transfer of any billboard credits do not extend their thirty six (36) month life provided in~~
155 ~~subsection G of this section, or its successor.~~

156

157 I. ~~Double Faced Billboards: Demolition of a nonconforming billboard that has two (2)~~
158 ~~advertising faces shall receive billboard credits for the square footage on each face, but only as~~
159 ~~one billboard.~~

160

161 J. ~~New Billboard Construction: It is unlawful to construct a new billboard other than~~
162 ~~pursuant to the terms of this chapter. In the event of a conflict between this chapter and any other~~
163 ~~provision in this code, the provisions of this chapter shall prevail.~~

164

165 C. Billboards Prohibited: No billboard may be constructed anywhere in Salt Lake City,
166 except as provided for under section E.3 or a provision of Utah State Code. Billboards that exist
167 as of [insert the date of publication this ordinance], are a permitted non-conforming use.
168

169 D. Relocation of Existing Billboards Prohibited: No existing billboard may be relocated
170 from one location in Salt Lake City to another location in Salt Lake City, except as provided for
171 under a provision of Utah State Code.

172
173 E. Termination of Billboard Bank and Billboard Credits:

- 174 1. The billboard bank and system of tracking billboard credits set forth in the prior
175 ordinance is hereby terminated;
- 176 2. From [insert the date of publication of this ordinance] onwards, a billboard owner will
177 not receive billboard credits for the demolition of any billboard;
- 178 3. A billboard owner may use billboard credits that exist as of [insert the date of publication
179 of this ordinance] to construct a billboard as permitted by the prior ordinance.
- 180 4. Any existing billboard credits must be used within the time permitted by the prior
181 ordinance.

182
183 E. Size, Height and Spacing Requirements:

- 184 1. Billboards constructed pursuant to section E.3 above are subject to the size, height and
185 spacing requirements set forth in the prior ordinance.
- 186 2. Relocated billboards and modified billboards must comply with the size, height, and
187 spacing requirements applicable to the provision of Utah Code relied on by the billboard
188 owner to permit the relocation or modification.
 - 189 a. Size: If the provision of Utah Code relied on by the billboard owner to permit the
190 relocated or modified billboard does not identify a maximum size for the relocated or
191 modified billboard, the billboard shall not exceed fifteen feet (15') in height and fifty
192 feet (50') in width.
 - 193 b. Height: If the provisions of Utah Code relied on by the billboard owner to permit the
194 relocated or modified billboard does not identify the maximum height for the
195 relocated or modified billboard the billboard excluding temporary embellishments
196 shall not be more than:
 - 197 i. Forty-five feet (45') above the existing grade, measured from the highest point of
198 the billboard to the grade of the land directly beneath the highest point of the
199 billboard; or
 - 200 ii. Twenty-five feet (25') above the pavement elevation of a street, measured from
201 the highest point of the billboard to the grade of the street directly perpendicular
202 to the billboard, if a street within one hundred linear feet (100') of the billboard,
203 measured from the street at the point at which the billboard is perpendicular to the
204 street to a point on the billboard closest to that street, is on a different grade than
205 the billboard;
 - 206 iii. If the provisions of subsection 3.b.ii of this section, or its successor subsection,
207 apply to more than one street, the new billboard may be the higher of the two (2)
208 heights.
 - 209 c. Spacing: If the provision of Utah Code relied on by the billboard owner to permit the
210 relocated or modified billboard does not identify minimum spacing requirements, the
211 following provisions apply:

- 212 i. Small Signs: Billboards with an advertising face three hundred (300) square feet
213 or less in size shall not be located closer than three hundred (300) linear feet from
214 any other small billboard or eight hundred feet (800') from any other large
215 billboard, except a billboard on the opposite side of the same street.
216 ii. Large Signs: Billboards with an advertising face greater than three hundred (300)
217 square feet in size shall not be located closer than eight hundred (800) linear foot
218 from any other billboard, except a billboard on the opposite side of the same
219 street.
220 iii. Electronic Billboards: Electronic billboards shall not be located closer than one
221 thousand six hundred (1,600) linear feet from any other electronic billboard and
222 must comply with all other billboard spacing requirements.

223
224 ~~K. Permitted Zoning Districts: New billboards may be constructed only in the area identified~~
225 ~~on the official billboard map.~~

226
227 ~~L. New Billboard Permits:~~

- 228 1. ~~Application: Anyone desiring to construct a new billboard shall file an application on a~~
229 ~~form provided by the zoning administrator.~~
230 2. ~~Fees: The fees for a new billboard construction permit shall be:~~
231 a. ~~Building permit and plan review fees required by the uniform building code as adopted~~
232 ~~by the city; and~~
233 b. ~~Inspection tag fees as shown on the Salt Lake City consolidated fee schedule.~~

234
235 ~~M. Use Of Billboard Credits:~~

- 236 1. ~~A new billboard permit shall only be issued if the applicant has billboard credits of a~~
237 ~~sufficient number of square feet and billboards to allow construction of the new billboard.~~
238 2. ~~When the permit for the construction of a new billboard is issued, the zoning~~
239 ~~administrator shall deduct from the billboard owner's billboard bank account:~~
240 a. ~~The square footage of the new billboard; and~~
241 b. ~~The number of billboards whose square footage was used to allow the new billboard~~
242 ~~construction.~~
243 3. ~~If the new billboard uses less than the entire available billboard credits considering both~~
244 ~~the number of billboards and square footage, any remaining square footage shall remain~~
245 ~~in the billboard bank.~~

246
247 ~~N. New Billboards Prohibited On Gateways: Except as provided in subsection O of this~~
248 ~~section, or its successor, no new billboard may be constructed within six hundred feet (600') of~~
249 ~~the right of way of any gateway.~~

250
251 ~~O. Special Gateway Provisions:~~

- 252 1. ~~If a nonconforming billboard is demolished within a special gateway, the billboard owner~~
253 ~~may construct a new billboard along the same special gateway in a zoning district equal~~
254 ~~to or less restrictive than that from which the nonconforming billboard was removed and~~

subject to subsections P, Q, R and S of this section, provided that the size of the new billboard does not exceed the amount of billboard credits in the special gateway billboard bank.

2. ~~The demolition of a nonconforming billboard pursuant to this section shall not accrue billboard credits within the general billboard bank. Credits for a billboard demolished or constructed within a special gateway shall be tracked within a separate bank account for each special gateway. A permit for the construction of a new billboard pursuant to this section must be taken out within thirty six (36) months of the demolition of the nonconforming billboard.~~

~~P. — Maximum Size: The maximum size of the advertising area of any new billboard shall not exceed fifteen feet (15') in height and fifty feet (50') in width.~~

F. Setback Requirements: All relocated billboards, billboards constructed pursuant to section E.3, or existing billboards that are substantially rebuilt or entirely replaced shall meet the following setback requirements:

1. Billboards shall be subject to pole sign setback requirements listed for the district in which the billboard is located;
2. In the absence of setback standards for a particular district, billboards shall maintain a setback of not less than five feet (5') from the front or corner side lot line. This setback requirement shall be applied to all parts of the billboard, not just the sign support structure.

G. Landscaping Requirements: Existing billboards are subject to the landscaping requirements of the prior ordinance. All relocated billboards, billboards constructed pursuant to section E.3, or existing billboards that are substantially rebuilt or entirely replaced are subject to the following landscaping requirements.

1. Landscaping In Residential, Small Neighborhood Business, And Commercial CN And CB Zoning Districts: Properties in any residential zone, small neighborhood business zone, and commercial CN or CB zones on which a billboard is the only structure shall be landscaped from all property lines adjacent to a street into the property a distance equal to the required front yard setback and:
 - a. when the billboard is generally situated perpendicular to the nearest adjacent street, spanning 25 feet either side of the billboard or to the nearest property line, whichever occurs first, and:-
 - b. when the billboard is generally situated parallel to the nearest adjacent street, spanning the length of the billboard.

No portion of such property shall be hard or gravel surfaced;

2. Landscaping In Other Zoning Districts: Property in all districts other than as specified in subsection G.1 of this section, or its successor subsection, upon which a billboard is the only structure, shall be landscaped from the front of the property to the deepest interior point of the billboard for fifty (50) linear feet along the street frontage distributed, to the maximum extent possible, evenly on each side of the billboard. For properties with less

than fifty (50) linear feet along the frontage street, the property shall be landscaped for all linear feet on the frontage street.

Q.H. Temporary Embellishments: Temporary embellishments shall not do one or more of the following:

1. ~~Temporary embellishments shall not e~~Exceed ten percent (10%) of the advertising face of any billboard.;
2. ~~and shall not e~~Exceed five feet (5') in height above the billboard structure.;
23. ~~No temporary embellishment shall be maintained~~Exist on a billboard for more than twelve (12) months.

R. ~~Height: The highest point of any new billboard, excluding temporary embellishments shall not be more than:~~

1. ~~Forty five feet (45') above the existing grade; or~~
2. ~~If a street within one hundred feet (100') of the billboard, measured from the street at the point at which the billboard is perpendicular to the street, is on a different grade than the new billboard, twenty five feet (25') above the pavement elevation of the street.~~
3. ~~If the provisions of subsection R2 of this section, or its successor subsection, apply to more than one street, the new billboard may be the higher of the two (2) heights.~~

S. ~~Minimum Setback Requirements: All freestanding billboards shall be subject to pole sign setback requirements listed for the district in which the billboard is located. In the absence of setback standards for a particular district, freestanding billboards shall maintain a setback of not less than five feet (5') from the front or corner side lot line. This setback requirement shall be applied to all parts of the billboard, not just the sign support structure.~~

T. ~~Spacing:~~

1. ~~Small Signs: Billboards with an advertising face three hundred (300) square feet or less in size shall not be located closer than three hundred (300) linear feet from any other small billboard or eight hundred feet (800') from a large billboard on the same side of the street;~~
2. ~~Large Signs: Billboards with an advertising face greater than three hundred (300) square feet in size shall not be located closer than eight hundred (800) linear feet from any other billboard, small or large, on the same side of the street.~~
3. ~~Electronic Billboards: Electronic billboards shall not be located closer than one thousand six hundred (1,600) linear feet from any other electronic billboard on the same or opposite side of the street.~~

I. Permits: A billboard owner must obtain a permit, as provided for in Salt Lake City Code 18.20.010 or its successor, before erecting, constructing, enlarging, altering, repairing, moving, improving, removing, converting or demolishing a billboard.

U.J. Electronic Billboards:

1. Prohibitions: Except as provided in subsection ~~U2~~ J.2 of this section, after February 4, 2012; ~~the effective date of this subsection U:~~
 - a. No electronic billboard shall be constructed or reconstructed for any reason, and

- 341 b. The conversion, remodeling, or rehabilitation of any existing billboard to an
342 electronic format is prohibited.
- 343 2. Standards When Construction/Conversion Required By Law: If after ~~the effective date of~~
344 ~~this subsection~~ February 4, 2012 the city is required by Utah Code or other applicable
345 law to allow construction of a new electronic billboard, or to allow conversion of an
346 existing billboard to an electronic format, any such electronic billboard shall be operated
347 pursuant to the following standards:
- 348 a. Any motion of any kind is prohibited on an electronic sign face. Electronic billboards
349 shall have only static text, images, and graphics.
- 350 (1) The dwell time of any text, image, or display on an electronic billboard may not
351 exceed more than once every eight (8) seconds. Twirl time between subsequent
352 text, images, or display shall not exceed one-fourth (0.25) second.
- 353 (2) The illuminan~~ce~~tion of any electronic billboard shall not increase the ambient
354 lighting level more than three-tenths (0.3) foot-candle when measured by a foot-
355 candle meter perpendicular to the electronic billboard face at:
- 356 (A) One hundred fifty feet (150') for an electronic billboard with a surface area
357 of not more than two hundred ~~forty-two~~forty-two (242) square feet;
- 358 (B) Two hundred feet (200') for an electronic billboard with a surface area
359 greater than two hundred ~~forty-two~~forty-two (242) square feet but not more
360 than three hundred ~~seventy-eight~~seventy-eight (378) square feet;
- 361 (C) Two hundred fifty feet (250') for an electronic billboard with a surface area
362 greater than three hundred ~~seventy-eight~~seventy-eight (378) square feet but
363 not more than six hundred ~~seventy-two~~seventy-two (672) square feet; and
- 364 (D) Three hundred fifty feet (350') for an electronic billboard with a surface area
365 greater than six hundred ~~seventy-two~~seventy-two (672) square feet.
- 366 b. Electronic billboards may not be illuminated or lit between the hours of twelve
367 o'clock (12:00) midnight and six o'clock (6:00) A.M. if they are located in, or within
368 six hundred feet (600') of a residential, mixed use, downtown, Sugar House business
369 district, gateway, neighborhood commercial, community business, or community
370 shopping center zoning district.
- 371 c. Controls shall be provided as follows:
- 372 (1) All electronic billboards shall be equipped with an automatic dimmer control or
373 other mechanism that automatically controls the sign's brightness and display
374 period as provided above.
- 375 (2) Prior to approval of any permit to operate an electronic billboard, the applicant
376 shall certify that the sign has been tested and complies with the motion, dwell
377 time, brightness, and other requirements herein.
- 378 (3) The owner and/or operator of an electronic billboard shall submit an annual report
379 to the city certifying that the sign complies with the motion, dwell time,
380 brightness, and other requirements herein.

381
382 ~~V. — Landscaping In Residential And Commercial CN And CB Zoning Districts: Properties in~~
383 ~~any residential zone and commercial CN or CB zones on which a billboard is the only structure~~

shall be landscaped as required by sections 21A.26.020 and 21A.26.030 and chapter 21A.48 of this title, or its successor chapter. No portion of such property shall be hard or gravel surfaced.

~~W. — Landscaping In Other Zoning Districts: Property in all districts other than as specified in subsection V of this section, or its successor subsection, upon which a billboard is the only structure, shall be landscaped from the front of the property to the deepest interior point of the billboard for fifty (50) linear feet along the street frontage distributed, to the maximum extent possible, evenly on each side of the billboard.~~

~~X. — Xeriscape Alternative: If all the properties adjacent to and across any street from the property for which billboard landscaping is required pursuant to subsection W of this section, or its successor subsection, are not developed or, if a water line for irrigation does not exist on the property or in the street right of way adjacent to such property, the zoning administrator may authorize xeriscaping as an alternative for the required landscaping.~~

~~Y. — Existing Billboard Landscaping: Existing billboards shall comply with the landscaping provisions of this section on or before January 1, 1996.~~

~~ZK. Compliance With Ordinances Regulating Trees: Stewardship Ordinance: Any Construction construction, demolition, or maintenance, or repair of billboards shall comply with the provisions of the Salt Lake City Code that regulate the preservation, maintenance, disturbance, or damage to trees, stewardship ordinance.~~

~~AA. — Subdivision Registration: To the extent that the lease or other acquisition of land for the site of a new billboard may be determined to be a subdivision pursuant to state statute no subdivision plat shall be required and the zoning administrator is authorized to approve, make minor subsequent amendments to, and record as necessary, such subdivision.~~

~~BB. — Special Provisions:~~

- ~~1. Applicability: The provisions of this section shall apply to specified billboards located:
 - ~~a. Four (4) existing billboards between 1500 North and 1800 North adjacent to the west side of Interstate 15; and~~
 - ~~b. One existing billboard on the east side of Victory Road at approximately 1100 North.~~~~
- ~~2. General Applicability: Except as modified by this section, all other provisions of this chapter shall apply to the five (5) specified billboards.~~
- ~~3. Special Priority: The five (5) specified billboards shall be considered as gateway billboards for the purposes of the priority provisions of subsection F of this section, or its successor subsection.~~
- ~~4. Landscaping: The five (5) specified billboards shall be landscaped pursuant to the provisions of subsection W of this section, or its successor subsection.~~

~~CC. — State Mandated Relocation Of Billboards: Except as otherwise authorized herein, existing billboards may not be relocated except as mandated by the requirements of Utah state law.~~

427 SECTION 2. Amending the Text of Salt Lake City Code Subsection 21A.60.020. That
428 Subsection 21A.60.020 List of Defined Terms of the Salt Lake City Code shall be and hereby is
429 amended to read as follows:

430 21A.60.020: **LIST OF DEFINED TERMS:**

431 ~~Gateway. See subsection 21A.46.160B of this title.~~
432 ~~New billboard. See subsection 21A.46.160B of this title.~~
433 ~~Nonconforming billboard. See subsection 21A.46.160B of this title.~~
434 ~~Special gateway. See subsection 21A.46.160B of this title~~

435
436 SECTION 3. Effective Date. This Ordinance shall become effective on the date of its first
437 publication.

ATTACHMENT B: EXISTING CODE

21A.46.160: BILLBOARDS:

A. Purpose Statement: This section is intended to limit the maximum number of billboards in Salt Lake City to no greater than the current number. This chapter further provides reasonable processes and methods for the replacement or relocation of existing nonconforming billboards to areas of the city where they will have less negative impact on the goals and policies of the city which promote the enhancement of the city's gateways, views, vistas and related urban design elements of the city's master plans.

B. Definitions: The definitions in this section apply in addition to those in section 21A.46.020 of this chapter.

BILLBOARD: A form of an off premises sign. A freestanding ground sign located on industrial, commercial or residential property if the sign is designed or intended to direct attention to a business, product or service that is not sold, offered or existing on the property where the sign is located.

BILLBOARD BANK: An accounting system established by the city to keep track of the number and square footage of nonconforming billboards removed pursuant to this chapter.

BILLBOARD CREDIT: An entry into a billboard owner's billboard bank account that shows the number and square footage of demolished nonconforming billboards.

BILLBOARD OWNER: The owner of a billboard in Salt Lake City.

DWELL TIME: The length of time that elapses between text, images, or graphics on an electronic billboard or electronic sign.

ELECTRONIC BILLBOARD: Any off premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic billboards include, but are not limited to, billboards that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

ELECTRONIC SIGN: Any on premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic signs include, but are not limited to, signs that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

EXISTING BILLBOARD: A billboard which was constructed, maintained and in use or for which a permit for construction was issued as of July 13, 1993.

FOOT-CANDLE: The English unit of measurement for luminance, which is equal to one lumen, incident upon an area of one square foot.

GATEWAY: The following streets or highways within Salt Lake City:

1. Interstate 80;
2. Interstate 215;
3. Interstate 15;
4. 4000 West;
5. 5600 West;
6. 2100 South Street from Interstate 15 to 1300 East;
7. The 2100 South Expressway from I-15 west to the city limit;
8. Foothill Drive from Guardsman Way to Interstate 80;
9. 400 South from Interstate 15 to 800 East;
10. 500 South from Interstate 15 to 700 East;
11. 600 South from Interstate 15 to 700 East;
12. 300 West from 900 North to 900 South;
13. North Temple from Main Street to Interstate 80;
14. Main Street from North Temple to 2100 South Street;
15. State Street from South Temple to 2100 South; and
16. 600 North from 800 West to 300 West.

ILLUMINANCE: The intensity of light falling on a subsurface at a defined distance from the source.

MOTION: The depiction of movement or change of position of text, images, or graphics. Motion shall include, but not be limited to, visual effects such as dissolving and fading text and images, running sequential text, graphic bursts, lighting that resembles zooming, twinkling, or sparkling, changes in light or color, transitory bursts of light intensity, moving patterns or bands of light, expanding or contracting shapes, and similar actions.

NEW BILLBOARD: A billboard for which a permit to construct is issued after December 31, 1993.

NONCONFORMING BILLBOARD: An existing billboard which is located in a zoning district or otherwise situated in a way which would not be permitted by the provisions of this chapter.

SPECIAL GATEWAY: The following streets or highways within Salt Lake City:

1. North Temple between 600 West and 2200 West;
2. 400 South between 200 East and 800 East;
3. State Street between 600 South and 2100 South; and
4. Main Street between 600 South and 2100 South.

TEMPORARY EMBELLISHMENT: An extension of the billboard resulting in increased square footage as part of an artistic design to convey a specific message or advertisement.

TWIRL TIME: The time it takes for static text, images, and graphics on an electronic billboard or electronic sign to change to a different text, images, or graphics on a subsequent sign face.

C. Limit On The Total Number Of Billboards: No greater number of billboards shall be allowed in Salt Lake City than the number of existing billboards.

D. Permit Required For Removal Of Nonconforming Billboards:

1. Permit: Nonconforming billboards may be removed by the billboard owner only after obtaining a permit for the demolition of the nonconforming billboard.
2. Application: Application for demolition shall be on a form provided by the zoning administrator.
3. Fee: The fee for demolishing a nonconforming billboard shall be as shown on the Salt Lake City consolidated fee schedule.

E. Credits For Nonconforming Billboard Removal: After a nonconforming billboard is demolished pursuant to a permit issued under subsection D1 of this section, or its successor, the city shall create a billboard bank account for the billboard owner. The account shall show the date of the removal and the zoning district of the demolished nonconforming billboard. The account shall reflect billboard credits for the billboard and its square footage. Demolition of a conforming billboard shall not result in any billboard credit.

F. Priority For Removal Of Nonconforming Billboards: Nonconforming billboards shall be removed subject to the following priority schedule:

1. Billboards in districts zoned residential, historic, residential R-MU or downtown D-1, D-3 and D-4 shall be removed first;
2. Billboards in districts zoned commercial CN or CB, or gateway or on gateways shall be removed second;
3. Billboards which are nonconforming for any other reason shall be removed last; and
4. A billboard owner may demolish nonconforming billboards of a lower priority before removing billboards in a higher priority; however, the billboard credits for removing the lower priority billboard shall not become effective for use in constructing a new billboard until two (2) billboards specified in subsection F1 of this section, or its successor, with a total square footage equal to or greater than the lower priority billboard, are credited in the billboard owner's billboard bank account. If a billboard owner has no subsection F1 of this section, or its successor, nonconforming billboards, two (2) subsection F2 of this section, or its successor, priority billboards may be credited in the billboard owner's billboard bank account to effectuate the billboard credits of a subsection F3 of this section, or its successor, billboard to allow the construction of a new billboard. For the purposes of this section, the two (2) higher priority billboards credited in the billboard

bank account can be used only once to effectuate the billboard credits for a lower priority billboard.

G. Life Of Billboard Credits: Any billboard credits not used within thirty six (36) months of their creation shall expire and be of no further value or use except that lower priority credits effectuated pursuant to subsection F4 of this section, or its successor, shall expire and be of no further value or use within sixty (60) months of their initial creation.

H. Billboard Credits Transferable: A billboard owner may sell or otherwise transfer a billboard and/or billboard credits. Transferred billboard credits which are not effective because of the priority provisions of subsection F of this section, or its successor, shall not become effective for their new owner until they would have become effective for the original owner. The transfer of any billboard credits do not extend their thirty six (36) month life provided in subsection G of this section, or its successor.

I. Double Faced Billboards: Demolition of a nonconforming billboard that has two (2) advertising faces shall receive billboard credits for the square footage on each face, but only as one billboard.

J. New Billboard Construction: It is unlawful to construct a new billboard other than pursuant to the terms of this chapter. In the event of a conflict between this chapter and any other provision in this code, the provisions of this chapter shall prevail.

K. Permitted Zoning Districts: New billboards may be constructed only in the area identified on the official billboard map.

L. New Billboard Permits:

1. Application: Anyone desiring to construct a new billboard shall file an application on a form provided by the zoning administrator.
2. Fees: The fees for a new billboard construction permit shall be:
 - a. Building permit and plan review fees required by the uniform building code as adopted by the city; and
 - b. Inspection tag fees as shown on the Salt Lake City consolidated fee schedule.

M. Use Of Billboard Credits:

1. A new billboard permit shall only be issued if the applicant has billboard credits of a sufficient number of square feet and billboards to allow construction of the new billboard.
2. When the permit for the construction of a new billboard is issued, the zoning administrator shall deduct from the billboard owner's billboard bank account:
 - a. The square footage of the new billboard; and
 - b. The number of billboards whose square footage was used to allow the new billboard construction.

3. If the new billboard uses less than the entire available billboard credits considering both the number of billboards and square footage, any remaining square footage shall remain in the billboard bank.

N. New Billboards Prohibited On Gateways: Except as provided in subsection O of this section, or its successor, no new billboard may be constructed within six hundred feet (600') of the right of way of any gateway.

O. Special Gateway Provisions:

1. If a nonconforming billboard is demolished within a special gateway, the billboard owner may construct a new billboard along the same special gateway in a zoning district equal to or less restrictive than that from which the nonconforming billboard was removed and subject to subsections P, Q, R and S of this section, provided that the size of the new billboard does not exceed the amount of billboard credits in the special gateway billboard bank.
2. The demolition of a nonconforming billboard pursuant to this section shall not accrue billboard credits within the general billboard bank. Credits for a billboard demolished or constructed within a special gateway shall be tracked within a separate bank account for each special gateway. A permit for the construction of a new billboard pursuant to this section must be taken out within thirty six (36) months of the demolition of the nonconforming billboard.

P. Maximum Size: The maximum size of the advertising area of any new billboard shall not exceed fifteen feet (15') in height and fifty feet (50') in width.

Q. Temporary Embellishments:

1. Temporary embellishments shall not exceed ten percent (10%) of the advertising face of any billboard, and shall not exceed five feet (5') in height above the billboard structure.
2. No temporary embellishment shall be maintained on a billboard more than twelve (12) months.

R. Height: The highest point of any new billboard, excluding temporary embellishments shall not be more than:

1. Forty five feet (45') above the existing grade; or
2. If a street within one hundred feet (100') of the billboard, measured from the street at the point at which the billboard is perpendicular to the street, is on a different grade than the new billboard, twenty five feet (25') above the pavement elevation of the street.
3. If the provisions of subsection R2 of this section, or its successor subsection, apply to more than one street, the new billboard may be the higher of the two (2) heights.

S. Minimum Setback Requirements: All freestanding billboards shall be subject to pole sign setback requirements listed for the district in which the billboard is located. In the absence of setback standards for a particular district, freestanding billboards shall maintain a setback of not

less than five feet (5') from the front or corner side lot line. This setback requirement shall be applied to all parts of the billboard, not just the sign support structure.

T. Spacing:

1. Small Signs: Billboards with an advertising face three hundred (300) square feet or less in size shall not be located closer than three hundred (300) linear feet from any other small billboard or eight hundred feet (800') from a large billboard on the same side of the street;
2. Large Signs: Billboards with an advertising face greater than three hundred (300) square feet in size shall not be located closer than eight hundred (800) linear feet from any other billboard, small or large, on the same side of the street.
3. Electronic Billboards: Electronic billboards shall not be located closer than one thousand six hundred (1,600) linear feet from any other electronic billboard on the same or opposite side of the street.

U. Electronic Billboards:

1. Prohibitions: Except as provided in subsection U2 of this section, after the effective date of this subsection U:
 - a. No electronic billboard shall be constructed or reconstructed for any reason, and
 - b. The conversion, remodeling, or rehabilitation of any existing billboard to an electronic format is prohibited.
2. Standards When Construction/Conversion Required By Law: If after the effective date of this subsection U the city is required by law to allow construction of a new electronic billboard, or to allow conversion of an existing billboard to an electronic format, any such electronic billboard shall be operated pursuant to the following standards:
 - a. Any motion of any kind is prohibited on an electronic sign face. Electronic billboards shall have only static text, images, and graphics.
 - (1) The dwell time of any text, image, or display on an electronic billboard may not exceed more than once every eight (8) seconds. Twirl time between subsequent text, images, or display shall not exceed one-fourth (0.25) second.
 - (2) The illumination of any electronic billboard shall not increase the ambient lighting level more than three-tenths (0.3) foot-candle when measured by a foot-candle meter perpendicular to the electronic billboard face at:
 - (A) One hundred fifty feet (150') for an electronic billboard with a surface area of not more than two hundred forty two (242) square feet;
 - (B) Two hundred feet (200') for an electronic billboard with a surface area greater than two hundred forty two (242) square feet but not more than three hundred seventy eight (378) square feet;
 - (C) Two hundred fifty feet (250') for an electronic billboard with a surface area greater than three hundred seventy eight (378) square feet but not more than six hundred seventy two (672) square feet; and
 - (D) Three hundred fifty feet (350') for an electronic billboard with a surface area greater than six hundred seventy two (672) square feet.

- b. Electronic billboards may not be illuminated or lit between the hours of twelve o'clock (12:00) midnight and six o'clock (6:00) A.M. if they are located in, or within six hundred feet (600') of a residential, mixed use, downtown, Sugar House business district, gateway, neighborhood commercial, community business, or community shopping center zoning district.
- c. Controls shall be provided as follows:
 - (1) All electronic billboards shall be equipped with an automatic dimmer control or other mechanism that automatically controls the sign's brightness and display period as provided above.
 - (2) Prior to approval of any permit to operate an electronic billboard, the applicant shall certify that the sign has been tested and complies with the motion, dwell time, brightness, and other requirements herein.
 - (3) The owner and/or operator of an electronic billboard shall submit an annual report to the city certifying that the sign complies with the motion, dwell time, brightness, and other requirements herein.

V. Landscaping In Residential And Commercial CN And CB Zoning Districts: Properties in any residential zone and commercial CN or CB zones on which a billboard is the only structure shall be landscaped as required by sections 21A.26.020 and 21A.26.030 and chapter 21A.48 of this title, or its successor chapter. No portion of such property shall be hard or gravel surfaced.

W. Landscaping In Other Zoning Districts: Property in all districts other than as specified in subsection V of this section, or its successor subsection, upon which a billboard is the only structure, shall be landscaped from the front of the property to the deepest interior point of the billboard for fifty (50) linear feet along the street frontage distributed, to the maximum extent possible, evenly on each side of the billboard.

X. Xeriscape Alternative: If all the properties adjacent to and across any street from the property for which billboard landscaping is required pursuant to subsection W of this section, or its successor subsection, are not developed or, if a water line for irrigation does not exist on the property or in the street right of way adjacent to such property, the zoning administrator may authorize xeriscaping as an alternative for the required landscaping.

Y. Existing Billboard Landscaping: Existing billboards shall comply with the landscaping provisions of this section on or before January 1, 1996.

Z. Compliance With Tree Stewardship Ordinance: Construction, demolition or maintenance of billboards shall comply with the provisions of the Salt Lake City tree stewardship ordinance.

AA. Subdivision Registration: To the extent that the lease or other acquisition of land for the site of a new billboard may be determined to be a subdivision pursuant to state statute no subdivision plat shall be required and the zoning administrator is authorized to approve, make minor subsequent amendments to, and record as necessary, such subdivision.

BB. Special Provisions:

1. Applicability: The provisions of this section shall apply to specified billboards located:
 - a. Four (4) existing billboards between 1500 North and 1800 North adjacent to the west side of Interstate 15; and
 - b. One existing billboard on the east side of Victory Road at approximately 1100 North.
2. General Applicability: Except as modified by this section, all other provisions of this chapter shall apply to the five (5) specified billboards.
3. Special Priority: The five (5) specified billboards shall be considered as gateway billboards for the purposes of the priority provisions of subsection F of this section, or its successor subsection.
4. Landscaping: The five (5) specified billboards shall be landscaped pursuant to the provisions of subsection W of this section, or its successor subsection.

CC. State Mandated Relocation Of Billboards: Except as otherwise authorized herein, existing billboards may not be relocated except as mandated by the requirements of Utah state law.

ATTACHMENT C: ANALYSIS OF STANDARDS

As per Section 21A.50.050 a decision to amend the text or zoning map of the Zoning title by general amendment is a matter committed to the legislative discretion of the city council and is not controlled by any one standard. In making a decision concerning a proposed text amendment, the Planning Commission and City Council should consider the following:

Factor	Finding	Rationale
Whether a proposed text amendment is consistent with the purposes, goals, objectives, and policies of the city as stated through its various adopted planning documents;	The proposed amendments are generally consistent with the goals and policies of the City's plans.	The proposed amendments continue City policies to strictly regulate billboards in order to mitigate their visual impacts, which supports implementation of the City's adopted plans and policies.
Whether a proposed text amendment furthers the specific purpose statements of the zoning ordinance;	The proposal generally furthers the specific purpose statements of the zoning ordinance by ensuring their enforcement and administration.	The purpose of the zoning ordinance is to "promote the health, safety, morals, convenience, order, prosperity and welfare of the present and future inhabitants of Salt Lake City, to implement the adopted plans of the City, and carry out the purposes of the Municipal Land Use Development and Management Act (State Code). The proposed amendments reduce conflicts between City and State Code, simplify administration and improve enforcement of the City's zoning ordinance. The proposed changes maintain conformity with the general purpose statements of the zoning ordinance and ensure that the code can be legally administered and enforced to further those ordinance purposes.
Whether a proposed text amendment is consistent with the purposes and provisions of any applicable overlay zoning districts which may impose additional standards;	Any overlay district that may apply to a billboard's location would continue to apply. The amendments retain all prior consistency with any applicable overlay district.	The proposed amendments remove an outdated and complicated method of regulating the relocation of billboards and replaces it with a clear prohibition on relocating, unless a provision of State law overrides the City's prohibition. The amendments do not impact any overlay zoning districts.
The extent to which a proposed text amendment implements best current, professional practices of urban planning and design.	The proposed changes eliminate legal conflicts, improve enforceability and administration of City Code, and so implement best professional practices.	The proposed changes eliminate legal conflicts in the code, allowing for better enforceability and administration of City Code provisions. Legal, enforceable code is a best professional practice in urban planning. The amendments to the height, size, spacing and landscaping provisions implement best practices by mitigating visual and operational impacts of billboards, where State law overrides the City's prohibition on billboards

ATTACHMENT D: PUBLIC PROCESS AND COMMENTS

Meetings & Public Notice

The following is a list of public meetings that have been held, and other public input opportunities, related to the proposed project.

Early notification/online Open House notices e-mailed out July 29, 2020

- Notices were e-mailed to all recognized community organizations (community councils) per City Code 2.60 with a link to the online open house webpage

Notice of the public hearing for the proposal included:

- Public hearing notice mailed on October 16, 2020
- Public hearing notice published to newspaper October 16, 2020
- Public notice posted on City and State websites and Planning Division listserv on October 16, 2020

COMMENTS

One community council (Sugar House) responded with comments and a general statement against the proposed amendments. A mix of individuals and organizations also responded with comments, many questioning the elimination of designated “gateway” streets and raising a concern that this will “open up” those gateways for the construction of billboards? *Staff response:* the concern is misplaced. The proposed amendments do not expand the ability to construct new billboards or relocate existing billboards under City Code. To the contrary, the amendments preserve the clear prohibition on the construction of any new billboard and make clear that replacement or relocated billboards are also not permitted. Notably, City code currently allows the construction of replacement billboards in “gateway” streets in certain circumstances. This option is removed with the proposed amendments.

The proposed changes have no effect, either widening or narrowing, on the ability of a billboard owner to relocate a billboard under State law.

All public comments are attached in the following pages.

Stewart, Casey

From: Diane Whittaker [REDACTED]
Sent: Monday, August 17, 2020 5:13 PM
To: Stewart, Casey
Subject: (EXTERNAL) Billboard Changes

Categories: Billboard Amendments 2020

Dear Casey,

Any changes to SLC's billboard ordinances should restrict billboards on streets, not make it easier to add billboards. The ordinance was difficult to read, but the redline areas seemed to be aimed at making it easier for billboard owners to put up more billboards.

This is crazy ... must be a group with a lot of money trying to win over the city council.

Diane Whittaker
1948 E Michigan Ave, Salt Lake City, UT 84108

Stewart, Casey

From: debdayolivier [REDACTED]
Sent: Thursday, August 13, 2020 10:21 AM
To: Stewart, Casey
Subject: (EXTERNAL) Re: Billboards

Categories: Billboard Amendments 2020

And I forgot this:

We live on Wasatch Drive and can see them miles and miles away. With one third of our bird population gone missing, the electric billboards are contrary to the Dark Sky Initiative. Reducing or freezing the number of electric billboards will help our struggling birds.

On Aug 13, 2020, at 10:17 AM, debdayolivier <debdayolivier@gmail.com> wrote:

Please don't change the billboard rules. We can see electric billboards 7 miles from our home! We live above Foothill Drive and can see the lit signs by I15.

It's our understanding that billboard companies are huge campaign contributors. We don't want to give them carte blanche to do as they please. We don't want more billboards in our city. We are business owners too and understand those companies not wanting limits. We want a good looking cityscape. Maybe they can diversify and build affordable housing 😊 instead, something our city needs.

Marc and Deb Day Olivier
Salt Lake City

PS Please define billboard bank on your site, I had to ask a former Planning Commissioner what it meant.

Stewart, Casey

From: René [REDACTED]
Sent: Tuesday, September 8, 2020 11:25 PM
To: Stewart, Casey
Subject: (EXTERNAL) Billboard comments

Categories: Billboard Amendments 2020

Hi Casey

I live downtown and do not understand why we still have a billboard on 400 south near 400 east at the Betos location . Both Betos and this billboard should be demolished and a nice high rise should appear with a Betos on the Ground level and no more drive thru Downtown should become a more walkAble friendly city

And I hope all these ugly billboards can be Taken down soon

Thanks

Regards,

René Ha smink
[REDACTED]

Stewart, Casey

From: Suzanne Stensaas [REDACTED]
Sent: Tuesday, August 11, 2020 10:56 AM
To: Stewart, Casey
Subject: (EXTERNAL) billboards

I don't know the in's and out's of the ordinance, but I prefer as few billboards as possible, as small as possible and as unobtrusive as possible. I am ashamed of our state every time I arrive on I-80 and about Tooele there is nothing but ugly billboards in front of the mountains. Along 1-15 they are awful and the ones with movement distract the driver as our brains are built to pay attention to motion. This can be dangerous. Do what you can to make the city beautiful not a commercial alley, please.

Suzanne S. Stensaas
2460 Lynwood Drive
Salt Lake City, Utah 84109, USA
[REDACTED]

Stewart, Casey

From: S. Fleming [REDACTED]
Sent: Monday, August 31, 2020 9:53 AM
To: Stewart, Casey
Cc: S. Fleming
Subject: (EXTERNAL) Billboard bank

Categories: Billboard Amendments 2020

Dear Casey Stewart,

I have received some information, but need to understand more about the "billboard bank" versus the state code.

In general, I prefer no billboards at all--they are an unsightly blight. Some states, like Hawaii and Vermont, do not allow any billboards at all. Billboards are ugly, distracting, and a blight on the city streets.

Susan F Fleming

Stewart, Casey

From: Susan Wurtzburg [REDACTED]
Sent: Monday, August 31, 2020 1:28 PM
To: Stewart, Casey
Subject: (EXTERNAL) billboards

Categories: Billboard Amendments 2020

Greetings,

I own 1567 E Laird Ave, SLC, 84105, and I want to submit on the changes to billboards. I support any measure that decreases the number of billboards along the highway, or other roads. They are ugly, deface the skyline, and distract drivers.

I received information about an amendment that was impossible to understand, since there was no context to the current status, and the changes. So, the above is my response, which may not fit the changes envisaged, but certainly covers my feelings about billboards as a SLC home owner.

Thanks, Sue

--

Susan J. Wurtzburg, Ph.D.

* * *

Owner/Editor, Sandy Dog Books LLC (editing books & journal articles)

Kailua, Hawaii

"Let me live, love, and say it well in good sentences" (Sylvia Plath).

* * *

[REDACTED]

Stewart, Casey

From: thea [REDACTED]
Sent: Wednesday, August 12, 2020 8:31 PM
To: Stewart, Casey
Subject: (EXTERNAL) proposed billboard changes

Categories: Billboard Amendments 2020

Dear Sir:

While reading the clean draft and the redlined draft, I wondered just what prompted this action. Why was the original Section A stating that the city wanted to protect its entryways in order to beautify the city etc, was completely removed, along with the list of streets to be protected? No explanation is given.

In addition, I can hardly believe that our city government is willing to be subject to the whims of the state legislature in determining what our city looks like and functions like (vis a vis the "state code."

I am extremely suspicious of this proposed change and think it is evasive of your department to not explain the background and what engendered this proposal.

Sincerely,
Thea Brannon
SLC citizen

Sent from [Mail](#) for Windows 10

Stewart, Casey

From: dfdansie [REDACTED]
Sent: Monday, August 31, 2020 11:44 AM
To: Stewart, Casey
Subject: (EXTERNAL) RE: billboard amendments - FAQ's'

Categories: Billboard Amendments 2020

Thanks

I am still concerned that you say no to billboards on gateways, but in the next paragraph say yes maybe. The faq says "No provision of City ordinance can prevent this result". That is not entirely true. State law allows the city to say no to relocation, although with horrible draconian methods. Therefore the city should be clear about when it will concede and when it will fight relocation. The adopted master plans (urban design element on) prohibit boards in certain areas, including gateways. The new ordinance should not go silent regarding city policy and merely say, "whatever the state says." It should reflect slc's policy. The original legislative draft does not do that. I think that is a major issue.

I am drafting a letter based on the original legislative proposal. Is there a new one?

Thanks
Doug

PS Washington was not hot. Which was good.

Sent from my T-Mobile 4G LTE Device

----- Original message -----

From: "Stewart, Casey" <Casey.Stewart@slcgov.com>
Date: 8/31/20 11:20 AM (GMT-07:00)
To: [REDACTED]
Subject: billboard amendments - FAQ's'

Doug,

I hope your Washington trip was fun. We've put together an FAQ that I am using to respond to citizen questions and will post on the website. I thought you should have this too...

What do the amendments to the billboard ordinance do?

The amendments terminate the City's billboard banking system. Under the current ordinance, if a billboard owner demolishes a billboard, the owner can collect "billboard credits" from the City. These "billboard credits" allow the billboard owner to construct a new billboard (of the same size) to replace the billboard the owner demolished. A billboard owner has three years to use the credits. Where the new billboard may be constructed in the City depends on where the demolished billboard was located.

The ordinance is being amended to remove this system of issuing billboard credits and allowing construction of new billboards with the use of billboard credits. Going forward, if a billboard is demolished, no credits will be issued and no new billboard may be constructed.

Do the amendments to the billboard ordinance allow more billboards in Salt Lake City?

No. The basic rule under the current ordinance is that no new billboard can be constructed in Salt Lake City, except with billboard credits. The rule under the ordinance, as amended, is that no new billboards can be constructed.

Do the amendments to the billboard ordinance allow for construction of electronic billboards?

No. The current ordinance prohibits the construction of electronic billboards or the conversion of a regular billboard to an electronic billboard, unless a provision of state law compels the City to permit such billboards. The current ordinance also provides certain regulations designed to limit the detrimental effects of electronic billboards, in the event the State legislature passes provisions that compel the City to permit electronic billboards. Those provisions remain verbatim in the amended ordinance.

Do the amendments to the billboard ordinance allow for construction of billboards in streets currently designated as "gateways?"

No. The amended ordinance does not permit the construction of any new billboard in Salt Lake City or the relocation of any billboard from one location in Salt Lake City to another location. This means no billboard can be constructed in a street that is designated a "gateway" by the current ordinance or any other street.

Can a billboard ever be constructed in a street the City designated as a "gateway" under the current ordinance?

Yes. There are provisions of state law that provide for movement of billboards within the City's limits. In most circumstances state law is superior to and trumps any contrary provision of City ordinance. If one these provisions of state law applies, it could allow for construction of a billboard in a "gateway" street. No provision of City ordinance can prevent this result.

Why does the ordinance reference "relocated billboards" if billboards cannot be moved from one location to another under City ordinance?

There are provisions of state law that provide for movement of billboards within the City's limits. In circumstances where these state law provisions apply, they trump provisions of city ordinance that prohibit construction of new billboards or moving one billboard from one location to another. If a billboard is "relocated" under an applicable provision of state law, the City's amended ordinance sets forth size, height and spacing requirements that will apply to the extent they are not contrary to an applicable provision of state law.

Why was the purpose provision removed?

The purpose provision described the purpose of the City's billboard bank and the system of issuing billboard credits. Since the amendments to the ordinance terminate the billboard bank, that purpose provision is outdated. Based on and in response to public comment, the City intends to add an updated purpose provision.

Stewart, Casey

From: Dewey Reagan [REDACTED]
Sent: Friday, September 11, 2020 3:57 PM
To: Stewart, Casey
Subject: (EXTERNAL) Question Regarding SLC City's Proposed Billboard Ordinance

Categories: Billboard Amendments 2020

Dear Mr. Stewart,

Below Reagan Outdoor Advertising Employees, who work with the current SLC Billboard Ordinance, have presented their billboard specific questions.

In additions to the specific questions below, Reagan Outdoor Advertising has the following questions and comments:

- Reagan requests that it be informed, why SLC City has decided propose the billboard ordinance at this point in time (The existing ordinance has been in place for almost 30 years)?
- Which SLC City Department(s) is/are requesting the change?
- Hypothetically assuming the proposed ordinance change is passed by the SLC City Council, it the fundamental intent of the new ordinance to allow existing billboards to be relocated in areas where the existing/present ordinance does not allow billboards to be placed? Or is the purpose of the new ordinance to create a regulatory system in which SLC City uses tax payer dollars to condemn existing billboards in each and every instance that a billboard relocation is applied for in Salt Lake City?

I want to thank you for taking the time to have a zoom meeting with myself and other Reagan representatives a couple of weeks ago, and if you will recall, I posed these questions to you at that time. If Reagan could obtain answers to the above, prior to this matter going to planning commission and in all likelihood the SLC City Council it will be much appreciated.

As the present time Reagan does not have an understanding of why this ordinance analysis and potential change is taking place at this time, gaining this knowledge will enable Reagan to maximize its effectiveness in working with the SLC Planning Department, Planning Commission and City Council during this process.

As I mentioned above, in addition to the general questions I have presented below you will find specific question pertaining to the proposed ordinance:

Salt Lake City Proposed Ordinance Comments:

Bottom of Page 4

- B) What procedure is there for relocation? Do we need to find a new home for the relocated board prior to removal and if we don't there is nothing that prevents us from losing the footage.
- C) States that the billboard bank will be eliminated. They need to specifically state that the current credits that are in the existing bank account or any permit that has been obtained for the removal of any sign but not yet removed is included in the bank account.

Page 5 Size, Height and Spacing:

D. 1. It is my understanding that if you are building a new sign and are using the credits in the bank account you are subject to the ordinance that exists today. The height setback size and spacing of today's code governs that new build. If you don't have credits and are just moving a sign you use State Code for the size, height and spacing. The State allows you to build up to 65 or 25 feet above grade.

2. (c) The Salt Lake City spacing of 800 feet or 300 feet from another billboard sign is only applicable if you are using the credits but not if you are relocating pursuant to State Code. In this case all relocated signs would have a spacing of 500 lineal feet.

Page 7 Landscaping:

F. There is no landscaping requirement in State Code so why don't they follow it? If you substantially rebuild a sign and it doesn't meet the required landscaping requirements you are required to bring it into conformity and landscape around the sign. You can't put asphalt around or gravel around the sign. Does this mean you can't place a sign in the existing asphalt or gravel?

All of F) is really going to be tough to deal with. I do not like it.

Page 8 Electronic Billboards:

1. A) It states that no electronic billboard shall be constructed or reconstructed. Will this prevent us from upgrading our existing digital faces?
2. Are they saying we can put up new digital board under State Code?

Reagan looks forward to hearing back from you in the near future.

Sincerely,
Dewey A. Reagan

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Sept 11, 2020

Casey Stewart

Senior Planner

Salt Lake City Planning

Mr Stewart;

Media Resources is a manufacturer of LED displays used in the sign industry for on-premise and off-premise signs with many customers in Salt Lake City. We participate in local, state and national trade organizations and provide technical assistance to our customers in matters of local ordinances, regulations and compliance. Some of our customers have requested that I review the proposed Salt Lake City billboard ordinance and provide comments as the city prepares a draft ordinance for further review by the Planning Commission.

Please consider the following comments to the draft of SLC proposed ordinance 21A.46.160:
BILLBOARDS

Section A. Definitions:

Comment: The definition of "FOOT-CANDLE" remains in the proposed ordinance; however the definition of "Illuminance" is being deleted. I suggest the definition of "Illuminance" remain and the references in Section I. changed to "illuminance" from "illumination" Your brightness standard is based upon measurement of illuminance and that definition should remain.

Section D: Size, Height and Spacing Requirements:

Comment: 2.C.i. : The spacing requirement of 1600 linear feet is excessive as the brightness standard you have in place already takes neighboring uses into consideration, it should state that the linear measurement should be taken between two digital billboards oriented toward the same direction.

Section H: Permits:

Comment: This section requires a permit for some customary maintenance of electronic billboards that would be excessive. General repairs and improvements such as adding safety equipment per OSHA, repairing lighting components, upgrading power to renewable or other Utility regulations and other repairs for vandalism and acts of God should not require a sign

permit. Maintaining, repairing, refurbishing even replacing the digital display should be considered within the vested rights of the original permit as long as the use is not enlarged.

Section I. Electronic Billboards: 1. Prohibitions: a.

Comment: By including the phrase "...for any reason: this section contradicts part 2. which allows conversion to an electronic billboard when the city is required by UCA. Then only applies the operational standards to those electronic billboards. No other part of the ordinance applies the operational and brightness standards to existing electronic billboards.

Part 2.a.(2). c. (2) requires certification that the sign has been tested and complies with the motion, dwell time, brightness" etc. *prior* to approval of any permit. This is an impossible requirement since the sign cannot be installed and turned on without a permit, in order to certify compliance. I would remove this requirement or change the language to "upon completion.... Rather than "prior to approval..." Alternatively, a certification from the display manufacturer that the display is capable of meeting all of the operational requirements of the Salt Lake ordinance, would be reasonable. As a manufacturer, we have a factory technician on site to commission every electronic billboard we provide. Commissioning includes the setting of cameras, dwell time, brightness, scheduling and certifying those settings would be possible at that time if requested.

Part 2.a.(2). c. (3) Requires the annual report by the operator, certifying that the electronic billboard complies with motion, dwell time brightness etc. The City has a Code Enforcement department who can address compliance, annual certification is an unreasonable burden. Alternatively, the City should consider changing this language to requiring the operator of a digital billboard to provide certification of compliance in response to a code enforcement action taken on behalf of a citizen complaint.

Please let me know if I can participate further in any public forum concerning this proposed ordinance.

Best regards,



Jared Johnson email: jjohnson@mediaresources.com

Director of Digital OOH

Media Resources

716 E Whisper Bend Dr

Draper, UT 84020



October 1, 2020

TO: Salt Lake City Planning Commission

FROM: Judi Short, Vice Chair and Land Use Chair
Sugar House Community Council

RE: PLNPCM2020-00351 Billboard Amendments

We have no problem with doing away with the billboard bank. It is a cumbersome process. We are hopeful that this will allow the removal of billboards that are clearly in the wrong place, like a residential district. Salt Lake City should retain the right to not allow billboards on certain gateway streets, and should have the right to update that list to include gateways that may not have existed in 1993. It should remain a priority of Salt Lake City to relocate billboards to areas of this city where they will have less negative impact on the gateways, views and urban design elements of the city's master plans.

We look forward to seeing Salt Lake City's revised Purpose Statement to clarify Salt Lake city's role in determining where any billboards will be placed or allowed within its boundaries. However, we are concerned about the statement written by Casey Stewart, in his email to me of August 21, which reads:

“Do the amendments to the billboard ordinance allow for construction of billboards in streets currently designated as “gateways?”

No. The amended ordinance does not permit the construction of any new billboard in Salt Lake City or the relocation of any billboard from one location in Salt Lake City to another location. This means no billboard can be constructed in a street that is designated a “gateway” by the current ordinance or any other street.

Can a billboard ever be constructed in a street the City designated as a “gateway” under the current ordinance?

Yes. There are provisions of state law that provide for movement of billboards within the City's limits. In most circumstances state law is superior to and trumps any contrary provision of City ordinance. If one these provisions of state law applies, it could allow for construction of a billboard in a “gateway” street. No provision of City ordinance can prevent this result.

Why does the ordinance reference “relocated billboards” if billboards cannot be moved from one location to another under City ordinance?

There are provisions of state law that provide for movement of billboards within the City's limits. In circumstances where these state law provisions apply, they trump provisions of city ordinance that prohibit construction of new billboards or moving one billboard from one location to another. If a billboard is “relocated” under an applicable provision of state law, the City's amended ordinance sets forth size, height and spacing requirements that will apply to the extent they are not contrary to an applicable provision of state law.”

First it says no, cannot have a billboard on a gateway street, and then it says Yes, but. And that state law trumps city law. Which is it? And if they can be relocated, what is our guarantee that they cannot be located on a gateway street. This whole argument goes in circles and needs to be revised. And at what point in time are you writing the purpose statement? After you get public comment?

Billboards create visual blight and should not be allowed on Salt Lake City gateway streets.

The language about electronic billboards is particularly unclear. In the DRAFT document 21A.46.160, it adds in and defines Motion Billboards, and then it says 21A.46.160 I. No billboard shall be constructed or reconstructed for any reason andelectronic format is prohibited. Then 21A.46.161 2 says If the city is required by Utah Code... to construct a new electronic billboard, etc it cannot have motion, and goes on at length to talk about motion and lighting of electronic billboards. Why don't you just say "Salt Lake City relinquishes any control over billboards, and the State of Utah will dictate everything about where they go and what they look like." You would save quite a bit of time and paper.

We are opposed to these changes.



"Center of Scenic America"

Comments on changes to current SLC ordinances regulating billboards
Chapter 21A.46.160 Billboards

August 11, 2020

Scenic Utah, a non-profit organization and affiliate of Scenic America, works to protect and enhance the scenic qualities of our communities, countryside, and roadways. Our efforts include advocacy and promotion of policies that reduce visual pollution, including billboards.

Our comments address two aspects of the proposed ordinance change: (1) elimination of the city's Billboard Bank and (2) movement and relocation of existing billboards.

Eliminating the Billboard Bank and Billboard Credit System

Scenic Utah enthusiastically supports elimination of the billboard bank and billboard credits system.

- State laws regulating billboards have changed significantly since 1993, when the bank and system for tracking credits was first established. The system has become cumbersome administratively and largely unnecessary. Also, due to changes in state statutes, the billboard bank now gives outdoor advertisers an additional three years to move their signs. Eliminating the bank will provide consistency on billboard relocation and modification policies, and will eliminate red tape for administrators of the system.

Movement / Relocation of Billboards

Noting the dual intent of SLC's original ordinance – to (1) enable the movement / relocation of billboards, and (2) provide a philosophical direction as to where those boards should be moved – we disagree with other proposed amendments which we believe would effectively gut the City's billboard policy.

- State law has largely superseded the interests of Salt Lake City when it comes to billboard movement/relocation. However, it still offers a (somewhat convoluted) alternative to billboard relocation when that relocation is not in the best interest of the City.
- We believe SLC's billboard ordinance should retain the City's right to purchase signs when appropriate, and to retain its prerogative to limit where and when it will allow relocation of billboards.
- For example, SLC established 'gateway streets' specifically to disallow the movement of billboards from minor streets to major thoroughfares that define our City. I-215 through SLC currently has NO billboards. Does the City truly intend, through this ordinance change, to now open I-215 through SLC

to billboards? Or to begin allowing billboards on Foothill Boulevard, Main Street, North Temple, and other previously protected gateway streets?

- We urge Salt Lake City to retain its list of streets already determined to be inappropriate for billboards. In addition, we urge an assessment and addition to that list of other gateway streets that did not exist in 1993 – including the Mountain View Corridor, where placement of billboards would further obstruct our actual mountain views!
- SLC also delineates zoning districts where it believes billboards should and should not be moved. According to the ordinance, general industrial zones may allow new billboards, without question, whereas commercial zones within neighborhoods prohibit relocated billboards. This approach helps inform billboard companies where their signs will be allowed without question or will instead be opposed by residents and businesses. This approach helps guide decision making for both the City and the outdoor advertising industry.
- The current zoning and gateway provisions provide important policy direction for staff when determining whether billboard movement is appropriate, or whether it should be questioned and raised to higher level of decision making with public input. For instance, a request to move a billboard from 5600 West to the Mountain View freeway, or from Parley's Way to Foothill Boulevard, should certainly trigger further review and community input before such a move is automatically granted.
- Removing these provisions could easily preclude such reviews. More broadly, deleting the provisions would further disregard the interests of Salt Lake City residents – as well as many businesses and city officials – a majority of whom believe our community deserves a say in where billboards should be located.

As advocates for viewshed protection and the right of local governments to regulate outdoor advertising, Scenic Utah strongly urges SLC's ordinance to retain its longstanding commitment to providing "reasonable processes and methods for the replacement or relocation of existing nonconforming billboards to areas of the city where they will have less negative impact on the goals and policies of the city which promote the enhancement of the city's gateways, views, vistas and related urban design elements of the city's master plans." Eliminating this text from the ordinance's purpose statement gives the impression these issues are no longer important to Salt Lake City.

Ralph Becker (Chair)

Kate Kopischke (Executive Director)

Scenic Utah

www.scenicutah.org

Stewart, Casey

From: Kate Kopischke <kate@scenicutah.org>
Sent: Monday, September 28, 2020 10:55 AM
To: katherine.lewis@slcgov.org
Cc: Stewart, Casey; Pace, Lynn; Doug Dansie; Ralph Becker
Subject: (EXTERNAL) Scenic Utah suggested amendments to SLC Billboard Ordinance
Attachments: ScenicUtah proposed SLC amendments Sept25.docx

Dear Katie,

As promised during the phone call we had a few weeks ago about Scenic Utah's comments on the billboard ordinance amendments, we've prepared the attached suggested version for the city's consideration. This draft is a combined effort of our volunteer legal team and interns, and Doug Dansie – who has been an invaluable advisor, and whom I know you've been in communication with about this amendment.

As you'll see, this version includes updates to definitions and reflects current realities, and it retains the gateway protections we think are essential if SLC is to continue its strong commitment to reducing billboard blight.

We would be happy to discuss further once you and your team have had a chance to review.

Warm regards,

Kate K. and Ralph B.
Scenic Utah

21A.46.160: BILLBOARDS:

A. **Purpose Statement:** This section is intended to limit the maximum number of billboards in Salt Lake City to no greater than the current number. This chapter further provides reasonable processes and methods for the ~~replacement or~~ relocation of existing ~~nonconforming~~ billboards to areas of the city where they will have less negative impact on the goals and policies of the city which promote the enhancement of the city's gateways, views, vistas and related urban design elements of the city's master plans.

B. **Definitions:** The definitions in this section apply in addition to those in section 21A.46.020 of this chapter.

BILLBOARD: A form of an off-premises sign, ~~not otherwise authorized by this code. -A freestanding ground sign located on industrial, commercial or residential property if the sign is~~ designed or intended to direct attention to a business, product or service that is not sold, offered or existing on the property where the sign is located.

~~**BILLBOARD BANK:** An accounting system established by the city to keep track of the number and square footage of nonconforming billboards removed pursuant to this chapter.~~

~~**BILLBOARD CREDIT:** An entry into a billboard owner's billboard bank account that shows the number and square footage of demolished nonconforming billboards.~~

BILLBOARD OWNER: The owner of a billboard in Salt Lake City.

DWELL TIME: The length of time that elapses between text, images, or graphics on an electronic billboard or electronic sign.

ELECTRONIC BILLBOARD: Any off-premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic billboards include, but are not limited to, billboards that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

ELECTRONIC SIGN: Any on premises sign, video display, projected image, or similar device with text, images, or graphics generated by solid state electronic components. Electronic signs include, but are not limited to, signs that use light emitting diodes (LED), plasma displays, fiber optics, or other technology that results in bright, high resolution text, images, and graphics.

EXISTING BILLBOARD: A billboard ~~which that~~ was constructed, maintained and in use or for which a permit for construction was issued as of ~~July 13, 1993~~ [insert date of adoption].

FOOT-CANDLE: The English unit of measurement for luminance, which is equal to one lumen, incident upon an area of one square foot.

GATEWAY: The following streets or highways within Salt Lake City:

1. Interstate 80;

Commented [A1]: As long as state law allows cities to reject a billboard relocation through the purchase process, there should be a philosophical statement as to when and why a city would allow a movement to occur

2. Interstate 215;
3. Interstate 15;
4. 4000 West/ Bangerter Highway
5. 5600 West;
6. 2100 South Street from Interstate 15 to 1300 East;
7. The 2100 South Expressway from I-15 west to the city limit;
8. Foothill Drive from Guardsman Way 1000 East to Interstate 80;
9. 400 South from Interstate 15 Redwood Road to 800-1000 East;
10. 500 South from Interstate 15 to 700 East;
11. 600 South from Interstate 15 to 700 East;
12. 300 West from 900 North to 900 South;
13. North Temple ~~from Main Street to Interstate 80;~~
14. Main Street ~~from North Temple to 2100 South Street;~~
15. State Street ~~from South Temple to 2100 South; and~~
16. 600 /700 North ~~from 800 West to 300 West.~~
17. The Mountain View corridor; and
18. 700 East

ILLUMINANCE: The intensity of light falling on a subsurface at a defined distance from the source.

MOTION: The depiction of movement or change of position of text, images, or graphics. Motion shall include, but not be limited to, visual effects such as dissolving and fading text and images, running sequential text, graphic bursts, lighting that resembles zooming, twinkling, or sparkling, changes in light or color, transitory bursts of light intensity, moving patterns or bands of light, expanding or contracting shapes, and similar actions.

NEW BILLBOARD: A billboard for which a permit to construct is issued after ~~December 31, 1993~~ [insert date of adoption]

NONCONFORMING BILLBOARD: An existing billboard ~~which is~~ located in a zoning district or otherwise situated in a way which would not be permitted by the provisions of this chapter.

~~SPECIAL GATEWAY: The following streets or highways within Salt Lake City:~~

- ~~— 1. North Temple between 600 West and 2200 West;~~
- ~~— 2. 400 South between 200 East and 800 East;~~
- ~~— 3. State Street between 600 South and 2100 South; and~~
- ~~— 4. Main Street between 600 South and 2100 South.~~

TEMPORARY EMBELLISHMENT: An extension of the billboard resulting in increased square footage as part of an artistic design to convey a specific message or advertisement.

TWIRL TIME: The time it takes for static text, images, and graphics on an electronic billboard or electronic sign to change to a different text, images, or graphics on a subsequent sign face.

C. Limit on the Total Number of Billboards: No greater number of billboards shall be allowed in Salt Lake City than the number of existing billboards. If the number decreases through attrition, purchase, or other form of removal, the number of billboards allowed also decreases.

D. Permit Required For Removal Of ~~Nonconforming~~ Billboards:

1. Permit: ~~Nonconforming~~ Billboards may be removed by the billboard owner only after obtaining a permit for the demolition of the ~~nonconforming~~ billboard.
2. Application: Application for demolition shall be on a form provided by the zoning administrator.
3. Fee: The fee for demolishing a ~~nonconforming~~ billboard shall be as shown on the Salt Lake City consolidated fee schedule.

~~E. Relocation Of Existing Billboards: Credits For Nonconforming Billboard Removal: After a nonconforming billboard is demolished pursuant to a permit issued under subsection D1 of this section, or its successor, the city shall create a billboard bank account for the billboard owner. The account shall show the date of the removal and the zoning district of the demolished nonconforming billboard. The account shall reflect billboard credits for the billboard and its square footage. Demolition of a conforming billboard shall not result in any billboard credit. Billboards may be removed and relocated in accordance with Utah State Law as outlined in subsection CCAA. Billboards also may be relocated independent of State Law when they are relocated to an area identified on the official billboard map identified in subsection F and meet all other code requirements.~~

~~F. Permitted Zoning Districts: Relocated billboards may be constructed in the area identified on the official billboard map. An increase in the distance that State Law allows a billboard to be relocated is permitted if the billboard proposed for relocation is not presently located within the permitted area of the billboard map but will be moved to a location within the permitted area on the map.~~

~~G. Salt Lake City supports the removal of billboards in the following areas ranked by priority, and reserves the right to oppose relocation within, or to, these areas with the same priority. Priority For Removal Of Nonconforming Billboards: Nonconforming billboards shall be removed subject to the following priority schedule:~~

1. Billboards in districts zoned residential, historic, residential R-MU or downtown D-1, D-3 and D-4 shall be removed first;

Commented [A2]: The official map included general commercial and industrial zones as they existed in 1993. The map should be updated to include new gateway streets and industrial areas that have been since rezoned and exclude areas of east downtown and sugar house that are now zoned mixed-use

2. Billboards in districts zoned commercial CN or CB, or gateway or on gateways shall be removed second;

3. Billboards which are nonconforming for any other reason shall be removed third, ~~last; and~~

~~4. A billboard owner may demolish nonconforming billboards of a lower priority before removing billboards in a higher priority; however, the billboard credits for removing the lower priority billboard shall not become effective for use in constructing a new billboard until two (2) billboards specified in subsection F1 of this section, or its successor, with a total square footage equal to or greater than the lower priority billboard, are credited in the billboard owner's billboard bank account. If a billboard owner has no subsection F1 of this section, or its successor, nonconforming billboards, two (2) subsection F2 of this section, or its successor, priority billboards may be credited in the billboard owner's billboard bank account to effectuate the billboard credits of a subsection F3 of this section, or its successor, billboard to allow the construction of a new billboard. For the purposes of this section, the two (2) higher priority billboards credited in the billboard bank account can be used only once to effectuate the billboard credits for a lower priority billboard.~~

H.G. Lifespan Of Billboard Relocation Credits: Any billboard owner credits not used within thirty six (36) months of their creation shall expire and be of no further value or use except that lower priority credits effectuated pursuant to subsection F4 of this section, or its successor, shall expire and be of no further value or use within sixty (60) months of their initial creation. who applies for relocation of a billboard must have secured a new location and approval from the City prior to removal of the old billboard. The movement must occur within 90 days or the billboard is determined to be abandoned.

I.H. Financial value of removed billboard: Billboard Credits Transferable: A billboard owner may sell or otherwise transfer a billboard and/or billboard credits. Transferred billboard credits which are not effective because of the priority provisions of subsection F of this section, or its successor, shall not become effective for their new owner until they would have become effective for the original owner. The transfer of any billboard credits do not extend their thirty six (36) month life provided in subsection G of this section, or its successor. For an application to be considered valid:

1. At the time of application for relocation, a billboard owner must provide the City with relevant values to determine purchase price of the existing board in the event the City chooses to purchase, rather than relocate, the billboard.
2. Any timetables or time constraints applied to the application do not begin until the application is complete.
3. The City will use assessed value to determine the value of the billboard to be moved. The number of billboards in an economic unit shall be one, unless the billboard owner provides information that defines how the economic unit has been determined.

~~J. Double Faced Billboards: Demolition of a nonconforming billboard that has two (2) or more advertising faces cannot be converted to two (2) or more separate billboards. shall receive billboard credits for the square footage on each face, but only as one billboard.~~

~~K. New Billboard Construction: It is unlawful to construct a new billboard other than pursuant to the terms of this chapter. In the event of a conflict between this chapter and any other provision in this code, the provisions of this chapter shall prevail.~~

~~K. Permitted Zoning Districts: New billboards may be constructed only in the area identified on the official billboard map.~~

L. New Relocated or Rebuilt Billboard Permits:

1. Application: Anyone desiring to construct a new billboard shall file an application on a form provided by the zoning administrator.
2. Fees: The fees for a new billboard construction permit shall be:
 - a. Building permit and plan review fees required by the uniform building code as adopted by the city; and
 - b. Inspection tag fees as shown on the Salt Lake City consolidated fee schedule.

~~M. Use Of Billboard Credits:~~

~~—1. A new billboard permit shall only be issued if the applicant has billboard credits of a sufficient number of square feet and billboards to allow construction of the new billboard.~~

~~—2. When the permit for the construction of a new billboard is issued, the zoning administrator shall deduct from the billboard owner's billboard bank account:~~

~~—a. The square footage of the new billboard; and~~

~~—b. The number of billboards whose square footage was used to allow the new billboard construction.~~

~~—3. If the new billboard uses less than the entire available billboard credits considering both the number of billboards and square footage, any remaining square footage shall remain in the billboard bank.~~

~~M. N. New Billboards Prohibited On Gateways: Except as provided in subsection O of this section, or its successor, No new billboards may be constructed within six hundred feet (600') of the right of way of any gateway.~~

~~—O. Special Gateway Provisions:~~

~~—1. If a nonconforming billboard is demolished within a special gateway, the billboard owner may construct a new billboard along the same special gateway in a zoning district equal to or less restrictive than that from which the nonconforming billboard was removed and subject to subsections P, Q, R and S of this section, provided that the size of the new billboard does not exceed the amount of billboard credits in the special gateway billboard bank.~~

~~—2. The demolition of a nonconforming billboard pursuant to this section shall not accrue billboard credits within the general billboard bank. Credits for a billboard demolished or constructed within a special gateway shall be tracked within a separate bank account for each special gateway. A permit for the construction of a new billboard pursuant to this section must be taken out within thirty six (36) months of the demolition of the nonconforming billboard.~~

~~P.~~ P. Maximum Size: The maximum size of the advertising area of any new billboard shall not exceed fifteen feet (15') in height and fifty feet (50') in width.

~~Q.~~ Q. Temporary Embellishments:

1. Temporary embellishments shall not exceed ten percent (10%) of the advertising face of any billboard, and shall not exceed five feet (5') in height above the billboard structure.
2. No temporary embellishment shall be maintained on a billboard more than twelve (12) months.

~~P.~~ P. Height: The highest point of any new billboard, excluding temporary embellishments shall not be more than:

1. Forty five feet (45') above the existing grade; or
2. If a street within one hundred feet (100') of the billboard, measured from the street at the point at which the billboard is perpendicular to the street, is on a different grade than the new billboard, twenty five feet (25') above the pavement elevation of the street.
3. If the provisions of subsection R2 of this section, or its successor subsection, apply to more than one street, the new billboard may be the higher of the two (2) heights.

~~Q.~~ Q. Minimum Setback Requirements: All freestanding billboards shall be subject to pole sign setback requirements listed for the district in which the billboard is located. In the absence of setback standards for a particular district, freestanding billboards shall maintain a setback of not less than five feet (5') from the front or corner side lot line. This setback requirement shall be applied to all parts of the billboard, not just the sign support structure.

~~R.~~ R. Spacing:

1. Small Signs: Billboards with an advertising face three hundred (300) square feet or less in size shall not be located closer than three hundred (300) linear feet from any other small billboard or eight hundred feet (800') from a large billboard on the same side of the street;
2. Large Signs: Billboards with an advertising face greater than three hundred (300) square feet in size shall not be located closer than eight hundred (800) linear feet from any other billboard, small or large, on the same side of the street.

3. Electronic Billboards: Electronic billboards shall not be located closer than one thousand six hundred (1,600) linear feet from any other electronic billboard on the same or opposite side of the street.

~~S.~~~~U~~ Electronic Billboards:

1. Prohibitions: Except as provided in subsection ~~U~~~~S~~2 of this section, after the effective date of this subsection ~~U~~~~S~~:

- a. No electronic billboard shall be constructed or reconstructed for any reason, and
- b. The conversion, remodeling, or rehabilitation of any existing billboard to an electronic format is prohibited.

2. Standards When Construction/Conversion Required By Law: If after the effective date of this subsection ~~U~~~~S~~ the city is required by law to allow construction of a new electronic billboard, or to allow conversion of an existing billboard to an electronic format, any such electronic billboard shall be operated pursuant to the following standards:

- a. Any motion of any kind is prohibited on an electronic sign face. Electronic billboards shall have only static text, images, and graphics.
 - 1) The dwell time of any text, image, or display on an electronic billboard may not exceed more than once every eight (8) seconds. Twirl time between subsequent text, images, or display shall not exceed one-fourth (0.25) second.
 - 2) The illumination of any electronic billboard shall not increase the ambient lighting level more than three-tenths (0.3) foot-candle when measured by a foot-candle meter perpendicular to the electronic billboard face at:
 - A. One hundred fifty feet (150') for an electronic billboard with a surface area of not more than two hundred forty-two (242) square feet;
 - B. Two hundred feet (200') for an electronic billboard with a surface area greater than two hundred forty-two (242) square feet but not more than three hundred seventy-eight (378) square feet;
 - C. Two hundred fifty feet (250') for an electronic billboard with a surface area greater than three hundred seventy-eight (378) square feet but not more than six hundred seventy-two (672) square feet; and
 - D. Three hundred fifty feet (350') for an electronic billboard with a surface area greater than six hundred seventy-two (672) square feet.
- b. Electronic billboards may not be illuminated or lit between the hours of twelve o'clock (12:00) midnight and six o'clock (6:00) A.M. if they are located in, or within six hundred feet (600') of a residential, mixed use, downtown, Sugar House business district, gateway, neighborhood commercial, community business, or community shopping center zoning district.

c. Controls shall be provided as follows:

- 1) All electronic billboards shall be equipped with an automatic dimmer control or other mechanism that automatically controls the sign's brightness and display period as provided above.
- 2) Prior to approval of any permit to operate an electronic billboard, the applicant shall certify that the sign has been tested and complies with the motion, dwell time, brightness, and other requirements herein.
- 3) The owner and/or operator of an electronic billboard shall submit an annual report to the city certifying that the sign complies with the motion, dwell time, brightness, and other requirements herein.

T. ~~W~~Landscaping In Residential And Commercial CN And CB Zoning Districts: Properties in any residential zone and commercial CN or CB zones on which a billboard is the only structure shall be landscaped as required by sections 21A.26.020 and 21A.26.030 and chapter 21A.48 of this title, or its successor chapter. No portion of such property shall be hard or gravel surfaced.

U. ~~W~~Landscaping In Other Zoning Districts: Property in all districts other than as specified in subsection V of this section, or its successor subsection, upon which a billboard is the only structure, shall be landscaped from the front of the property to the deepest interior point of the billboard for fifty (50) linear feet along the street frontage distributed, to the maximum extent possible, evenly on each side of the billboard.

V. ~~X~~Xeriscape Alternative: If all the properties adjacent to and across any street from the property for which billboard landscaping is required pursuant to subsection W of this section, or its successor subsection, are not developed or, if a water line for irrigation does not exist on the property or in the street right of way adjacent to such property, the zoning administrator may authorize xeriscaping as an alternative for the required landscaping.

W. ~~Y~~Existing Billboard Landscaping: Existing billboards shall comply with the landscaping provisions of this section on or before January 1, 1996.

X. ~~Z~~Compliance With Tree Stewardship Ordinance: Construction, demolition or maintenance of billboards shall comply with the provisions of the Salt Lake City tree stewardship ordinance.

Y. ~~AA~~Subdivision Registration: To the extent that the lease or other acquisition of land for the site of a new billboard may be determined to be a subdivision pursuant to state statute no subdivision plat shall be required and the zoning administrator is authorized to approve, make minor subsequent amendments to, and record as necessary, such subdivision.

Z. ~~BB~~Special Provisions:

1. Applicability: The provisions of this section shall apply to specified billboards located:

- a. Four (4) existing billboards between 1500 North and 1800 North adjacent to the west side of Interstate 15; and
 - b. One existing billboard on the east side of Victory Road at approximately 1100 North.
2. General Applicability: Except as modified by this section, all other provisions of this chapter shall apply to the five (5) specified billboards.
3. Special Priority: The five (5) specified billboards shall be considered as gateway billboards for the purposes of the priority provisions of subsection F of this section, or its successor subsection.
4. Landscaping: The five (5) specified billboards shall be landscaped pursuant to the provisions of subsection W of this section, or its successor subsection.

AA. ~~CC~~ State Mandated Relocation Of Billboards: Except as otherwise authorized herein, existing billboards may not be relocated except as mandated by the requirements of Utah state law. (Ord. 4-12, 2012; Ord. 24-11, 2011)

Stewart, Casey

From: Joshua Stewart [REDACTED]
Sent: Thursday, July 30, 2020 3:32 PM
To: Stewart, Casey
Subject: (EXTERNAL) Regarding Billboards: Billboard Ordinance Amendments
Attachments: sign study-compendium.pdf

Casey,

From what I've read and experienced myself, billboards and digital billboards are shown to be distracting to drivers. (Attached is a compendium of studies that are available at the Scenic America website). When I was part of the Bonneville School Community Council, we often talked about safety for the children crossing streets and how to make them safer. With the increase of folks using active transportation these days, the last thing we need are more distracted drivers. Billboards and large electronic signs literally shine in the face of drivers when they should be paying attention to the road and any students or people crossing the street. I've had a family relation who was walking across a crosswalk in Salt Lake City get hit and seriously injured by a driver who was not paying attention. My impression is that local control of billboards is very crucial and locals should make the final call about the safety of their streets better than anyone at the State level. I wish the council would push to eliminate billboards, digital billboards, and big digital signs in our city.

Second, as an architect, I find them ugly and more visual pollution in our shared public spaces. Salt Lake City is in a beautiful valley surrounded by gorgeous mountains. We're trying to add to the valley with charming architecture. The City has many historic homes and important community buildings. The streets are tree lined and we are the beneficiaries of a tremendous legacy of love for this community. A digital sign detracts from the beauty of the neighborhood and prevents quality growth in places where new development could occur.

Third, electronic signs are really unnecessary in today's hi-tech targeted advertising. With the ubiquity of phones and messaging, it's so simple to reach out to the community. Banners and other tasteful on-premise signs are very sufficient to promote businesses and select activities and programs.

Fourth, digital or electronic signs throw off huge amounts of light into neighboring homes and the night sky, and constitute a magnified blight on the landscape. These types of signs will lower the value of the neighboring homes and businesses to the benefit of a few advertisers.

Sincerely,

Josh Stewart
1867 Princeton Ave.
Salt Lake City

Compendium of Recent Research Studies on Distraction from Commercial Electronic Variable Message Signs (CEVMS)

**Prepared by
Jerry Wachtel, CPE
President, The Veridian Group, Inc.
Berkeley, California**



February 2018

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Background

This is the second in a series of brief updates based upon this author's 2009 report for AASHTO through NCHRP Project 20-7/256,¹ which was a comprehensive and critical review of research that had been undertaken, and guidelines that had been developed up to that time that addressed the potential consequences for driver distraction from Commercial Electronic Variable Message Signs (CEVMS) along the roadside.

We critically reviewed all of the research papers (more than 40) that had been published or presented within the prior 30 years. These papers represented the work of academic, industry, and government researchers in many countries (including, but not limited to: Sweden, Denmark, Israel, Canada, US, England, and Australia), and which followed many different research protocols. Whereas earlier studies (primarily those from the 1990s and prior) often suffered from limitations in equipment, methodology, or statistical rigor, leaving their conclusions open to question and controversy, those performed in the more recent past were generally more robust, and tended to reach similar conclusions to each other.

The previous update was done in June, 2013 and presented at a joint meeting of AASHTO's traffic engineering and highway safety subcommittees. The new material in this update includes nine studies in five countries.

Broadly summarized, the more recent studies have tended to find that outdoor advertising signs, particularly CEVMS, attract drivers' attention, and that more dramatic and salient signs attract longer and more frequent glances. This attention is often captured through a "bottom up" physiological process, in which the driver attends to the sign unintentionally and unconsciously, with the eyes captured involuntarily by the sign's changing imagery, brightness, conspicuity, and/or movement.

Several of the reported studies suggested that the distraction caused by outdoor advertising signs could be tolerated by experienced drivers and when attentional or cognitive demands of the driving task were low, but that the risk increased when such signs competed for the driver's visual attention with more demanding road, traffic, and weather conditions, when travel speeds were higher, or when an unanticipated event or action (such as a sudden lane change or hard braking by a lead vehicle) occurred to which the driver had to respond quickly and correctly.

In addition, the more recent research continues to show that the drivers most susceptible to unsafe levels of distraction from roadside billboards are the young (who are more prone to distraction and less adept at emergency vehicle response) and the elderly (who have more difficulty with rapidly shifting attention, poorer night vision and glare susceptibility, and slower mental processing time). As will be seen in this Compendium, these concerns are heightened today, with our elderly driver population growing quickly, traffic

¹ Wachtel, J. (2009). "Safety Impacts of the Emerging Digital Display Technology for Outdoor Advertising Signs: Final Report. NCHRP Report 20-7/256. Available at: [http://rightofway.transportation.org/Documents/NCHRP%20Reports/20-7\(256\)%20digital%20outdoor%20advertising_aashto.pdf](http://rightofway.transportation.org/Documents/NCHRP%20Reports/20-7(256)%20digital%20outdoor%20advertising_aashto.pdf)

increasingly dense, more roads under maintenance or repair (construction and work zones create added risks), and larger, brighter digital and video roadside advertising signs competing for the driver's attention.

Finally, the most recent epidemiological studies (dating from 2014 and 2015) have begun to demonstrate what has long been suspected but not proven that roadside billboards are associated with increases in crash rates where such billboards are located.

The research and guidelines reviewed in our 2009 report set the stage for the 21 research articles and guidelines that are reviewed and summarized in this compendium.

While employing a broad array of approaches and methodologies, the common theme clearly indicates that the more that commercial digital signs succeed in attracting the attention of motorists that render them a worthwhile investment for owners and advertisers, the more they represent a threat to safety along our busiest streets and highways, where these signs tend to be located.

The long awaited study by the Federal Highway Administration (FHWA), announced on the agency's website on December 30, 2014, is an outlier in this group of recent studies (except for those sponsored by the outdoor advertising industry²), in that it found no relationship

² In 2007, two studies sponsored by the outdoor advertising industry (the Outdoor Advertising Association of America [OAAA] and its research arm, the Foundation for Outdoor Advertising Research and Education [FOARE]) were submitted through the peer review process to the Transportation Research Board of The National Academies. Both reports, one a human factors study by the Virginia Tech Transportation Institute (VTTI), and the other an epidemiological study by Tantala and Tantala, received overall negative reviews from peer reviewers, and were therefore rejected by TRB both for presentation and publication. Although Virginia Tech has not performed subsequent work in this field, Tantala and Tantala have continued to perform research under the sponsorship of OAAA/FOARE. However, for whatever reasons, FOARE and OAAA have not made the subsequent studies available to the public, so they could not be addressed in this Compendium of research.

The Tantala and Tantala 2007 study was an epidemiological analyses of crash rates, but the authors established data collection parameters that led them to exclude from examination the very driver cohorts (older drivers) and road locations (interchange areas) known to be at greatest risk for distraction. Subsequent comments from the senior author of these studies, to the effect that their subsequent studies follow the same basic methodology as the one performed in 2007 (with the exception of a more robust statistical technique to analyze the data), remains a cause for concern because of these methodological biases. The other industry study released by FOARE in 2007, the human factors analysis performed by VTTI, actually found that digital signs were associated with more long-duration glances away from the forward roadway than other types of signs, and further found that the problem was considerably worse at night. However, the authors edited their final report to make it seem as if these adverse consequences did not exist, and their industry sponsors terminated the nighttime research after the pilot data had been collected and reviewed. At that time, many experts considered an "eyes-off-road" duration of two seconds or longer to be the threshold for a substantially higher level of crash risk, and the Virginia Tech team actually found a number of instances in which digital signs caused participating drivers to take their eyes off the road for two and three seconds or longer, whereas the other test conditions (areas with traditional billboards and roadway sections devoid of billboards) did not produce this result to the same extent.

between digital billboards and adverse driver scanning behavior. The FHWA study, however, has been severely criticized for faulty methods and analyses in a peer-reviewed critique by the present author³. The FHWA study remains available on the agency's website, but has never been formally published.

It has been shown that road environments cluttered with driving-irrelevant material (often called visual complexity) make it difficult to extract critical information necessary for safe driving in a timely manner, a particular problem for older drivers. In addition, with the growing proliferation of CEVMS, ever-newer technology that renders them more compelling, the expansion of on-premise signs using this technology, and several States considering the use of such signs within the right-of-way, it was deemed appropriate to provide an up-to-date review of the most recent research and guidelines.

The next section of this report provides a brief summary of each of the studies. The following section, the Compendium itself, provides further details about each study, including its sponsorship, research protocol, strengths and weaknesses, and source identification. This document concludes with a complete list of references as cited.

³ Wachtel, Jerry (2015). "A Peer-Reviewed Critique of the Federal Highway Administration (FHWA) Report Titled: "Driver Visual Behavior in the Presence of Commercial Electronic Variable Message Signs (CEVMS)."
Available at:
<http://nebula.wsimg.com/722c5bb9d76d4b10b6d7add54d962329?AccessKeyId=388DC3CA49BF0BEF098B&disposition=0&alloworigin=1>

Summary of Findings

This section summarizes the major findings of each of the 22 studies discussed in the Compendium. Key conclusions are highlighted in **bold**. The subsequent section of this report, the Compendium itself, provides additional detail about each study, and information about how to access the study, where available.

The studies are cited here, and in the Compendium, in generally chronological order.

Chan, et al., 2008 – USA, Amherst, MA

The researchers compared susceptibility to distraction from sources inside the vehicle (e.g. phone dialing, map reading) to those outside the vehicle (e.g. billboards) for both young novice drivers and experienced drivers. As predicted, for the in-vehicle distractors, the young drivers looked away from the roadway for extended periods (2 seconds or longer) more than twice as often as the experienced drivers. Surprisingly, however, results showed that: (a) external distractors were even more distracting, and (b) the experienced drivers were just as distracted as the newly-licensed drivers on this critical measure of distraction when they performed the outside-the-vehicle tasks. The authors had assumed that experienced drivers would exercise the same degree of caution with the external distractors as they did with the internal ones. Instead, “the experienced drivers showed little concern for the effect that diverting their attention to the side of the roadway might have had on their ability to perceive potential risks immediately in front.” In some 81% of the external tasks, older drivers glanced for longer than 2s away from the forward roadway. The authors concluded by saying: **“...we think that our drivers engaged in the external search task were truly distracted with potentially serious consequences.”**

Young, et al., 2009 - England

In this driving simulator study, participants drove rural, urban, and highway routes in the presence and absence of roadside billboards, while their driving performance was measured. Billboards had a detrimental effect on lateral control, and appeared to increase crash risk. Longitudinal control was not affected. The most striking effects were found for driver attention. Driver mental workload (using the NASA developed TLX scale) significantly increased in the presence of billboards. On rural roads and motorways, results showed that billboards were consciously attended to at the cost of more relevant road signs. The authors reached a **“persuasive overall conclusion that advertising has adverse effects on driving performance and driver attention.** Whilst there are sometimes conflicts of interest at Local Authority level when authorizing billboards (since Councils often take a share of the profit from roadside advertising), these data could and should be used to redress the balance in favour of road safety.”

Backer-Grøndahl, & Sagberg, 2009 - Norway

The authors asked drivers who had actually been involved in a crash to identify, from a list, what they believed were the causes of distraction for that crash. (Cell phone use was excluded). The most frequently reported sources of distraction were: (1)

conversations with passengers, and (2) attending to children in the back seat. However, **when the researchers applied the statistical method known as quasi-induced exposure, they found that distractions with the “highest relative risk” were: (1) billboards outside the vehicle, and, (2) searching for addresses.** The authors note that both of the highest risk distractors were *visual* distractions, rather than physical, auditory, or cognitive ones.

Chattington, et al., 2009 - England

The researchers found “significant effects on both drivers’ visual behavior and driving performance” in the presence of both static and video billboards. As expected, the video signs were seen as more potent distractors than similarly placed static signs. The authors state that their results “support and extend (the findings of) other studies of driver distraction by advertising,” citing studies by Crundall, et al, and of Young and Mahfoud (both of which were extensively reviewed in the Wachtel 2009 report for AASHTO). The study showed that **several aspects of driving performance were adversely affected by both video and static billboards, with the video signs generally more harmful to such performance than the static signs.** The authors list these effects as: speed control, braking, and lane position maintenance.

Horberry, et al., 2009 - Australia

Road authorities may be justified in using the best research information available, even if incomplete, coupled with engineering judgment, for the development of billboard guidelines. **The authors recommend that their client (Queensland, Australia) adopt advertising restrictions at known areas of high driver workload, including “locations with high accident rates, lane merges, curves/bends, hills and road/works/abnormal traffic flows.”** (They state that) “this is broadly in line with Wachtel who recommended a restriction of advertisements at times when driver decision, action points and cognitive demand are greatest such as at freeway exits/entrances, lane reductions, merges and curves. Although useful for all road users, such restrictions would be of specific benefit to older drivers.”

Gitelman, et al., 2010 - Israel

The authors studied crashes at two highway locations along the same heavily traveled freeway a “treatment” section in which previously visible billboards were covered as part of a trial period, and a “control” section in which the billboards remained visible. At the control sites, crashes remained essentially the same throughout the 3-year study period; at the treatment sites, crashes declined dramatically after the billboards were covered. The results were similar for injury and fatal crashes. After adjusting for traffic volume, **crashes were reduced at the treatment sites (where billboards had been covered) by the following percentages: all crashes by 60%; injury/fatal crashes by 39%; property damage crashes by 72%.**

Bendak & Al-Saleh, 2010 - Saudi Arabia

The authors used a driving simulator in which test subjects drove on two similar roads, one with advertising signs and one without. Twelve male volunteers, ages 23-28,

participated in the study. Driver opinions about billboards were also sought using a simple questionnaire distributed to male drivers at random in the city of Riyadh, Saudi Arabia. 160 questionnaires were returned. Results of the simulator study showed that **the driving speed of participants was not affected by the presence of advertising signs. However, two of the five indicators were statistically significant. Both “drifting unnecessarily from (the) lane” and “recklessly crossing dangerous intersections” were significantly more prevalent in the presence of billboards.** Although not reaching statistical significance, each of the other three measures, tailgating, speeding, and failure to signal, were all worse in the presence of billboards. Half of the respondents to the questionnaire indicated that they had been distracted by a billboard, and 22% indicated that they had been put in a dangerous situation due to distraction from billboards.

Milloy & Caird, 2011 - Canada

This was a driving simulator study that looked at distraction effects of a video billboard and a wind turbine. **The results demonstrated a *causal* (italics original) relationship between the presence of a video billboard and collisions with, and delays in responding to, the lead vehicle.**

Edquist, et al., 2011 - Australia

“The finding that the presence of billboards increases time to detect changes is an important one.” Billboards can automatically attract attention when drivers are engaged in other tasks, delaying their responses to other aspects in the environment. The effect of billboards was particularly strong in scenes where response times are already lengthened by high levels of visual clutter. This is of particular concern because roads with high levels of clutter are the very kind of busy, commercial, high traffic environments where billboards are most often erected.”

The results are consistent with growing evidence suggesting that billboards impair aspects of driving performance such as visual search and the detection of hazards, and therefore should be more precisely regulated.

Dukic, et al., 2012 - Sweden

In this on-road, instrumented vehicle study, **drivers had a significantly longer dwell time (time looking at the billboards), a greater number of fixations, and a longer maximum fixation duration when driving past digital billboards compared to other signs along the same road sections.**

Perez, et al., 2012 – USA, Washington, DC

The authors of this Federal Highway Administration (FHWA) sponsored study used an instrumented vehicle that recorded volunteer drivers’ eye glances as they drove along pre-determined routes in Reading, Pennsylvania and Richmond, Virginia. The routes included digital as well as static billboards, undefined on-premise signs, and areas free of commercial signage. The routes were driven during daylight and at night, and the report found that **digital billboards “were not associated with ‘unacceptably long glances away from the road’.”** As noted above, however, the draft report of this

study was strongly criticized by the agency's selected peer reviewers, particularly with regard to the efficacy of the obtained eye glance data. Indeed, the participants in the study did gaze more often to digital billboards than to other signs, in some cases more than twice as much. (For example 71% vs. 29% at night in Richmond). As a result of the critical peer reviews, the authors took 33 months to revise the study, which, although dated September 2012, was released on the agency's website on December 30, 2013. This revised report, in turn, was reviewed by the present author, whose critical report was reviewed and agreed-to by 14 independent expert peer reviewers. To our knowledge, the revised FHWA report was not subjected to peer review by the agency prior to its issuance on the agency website, and it has never been given an official agency report number, putting it in a state of uncertainty with regard to its publication.

Divekar, et al., 2013 – USA, Amherst, MA

Experienced drivers are far less likely to be distracted by inside-the-vehicle tasks (e.g. cell phone, map display, entertainment system) than novice drivers. However, the researchers were surprised to find that **experienced and novice drivers are at an equal and elevated risk of getting into a crash when they are performing a secondary task outside the vehicle such as looking at billboards**

Roberts, et al., 2013 - Australia

The appearance of movement or changes in luminance can involuntarily capture attention, and engaging information can capture attention to the detriment of driving performance, particularly in inexperienced drivers. Where this happens in a driving situation that is also cognitively demanding, the consequences for driving performance are likely to be significant. Further, if this results in a situation where a driver's eyes are off the forward roadway for 2 seconds or longer, this will further reduce safety. Additionally, road environments cluttered with driving-irrelevant material may make it difficult to extract information that is necessary for safe driving, particularly for older drivers. The studies that have been conducted show convincingly that roadside advertising is distracting and that it may lead to poorer vehicle control.

Herrstedt, et al., 2013 - Denmark

The authors studied drivers using an instrumented car equipped with an eye-tracking system, a GPS system for registering the vehicle's speed, and a laser scanner for measurement of following distances to other road users. The overall findings of the studies demonstrate that **"advertising signs do affect driver attention to the extent that road safety is compromised."** In 69% of all drives past advertising signs, the driver glanced at least once at the sign; in almost half of all drives, the driver glanced twice or more at the same sign. For 22% of all drives, the total glance duration of successive glances was two (2) seconds or longer. In 18% of all drives, glance durations of one (1) second or longer was recorded. In approximately 25% of all glances, the safety buffer to the vehicle ahead was less than two (2) seconds, and in 20% of the glances, the safety buffer was less than 1.5 seconds. This study has been praised in independent peer review by Dr. Richard Pain, Transportation Research Board Senior Program Officer, retired. Dr. Pain considered this study to be the best designed and

conducted on-road study in this field, the conclusions of which, he believes, were far more valid and robust than those of the FHWA study (discussed above).

Hawkins, et al., 2014 – USA, College Station, TX

This study, sponsored by the on-premise signage industry, was a statistical (epidemiological) analysis of crash rates in the vicinity of on-premise digital signs that had been first installed in 2006-07. On premise signs differ from billboards in several ways. Per the common meaning of the term, on-premise signs must advertise only a business or service that is available on the property on which the sign is located. Because of that, on-premise signs typically function to identify the business and, as such, they may have little text or imagery other than that required for such identification. On the other hand, they are often closer to the road than billboards are permitted to be, and it is often possible for them to be larger than billboards and to feature motion or the appearance of motion. This study employed an analysis methodology known as *empirical Bayes* (or EB) to look at before-and-after crash data in four states. A total of 135 sign locations and 1,301 control sites were used, and the researchers found **“no evidence the installation of on-premise signs at these locations led to an automatic increase in the number of crashes.”**

Schieber, et al., 2014 – USA, Vermillion, SD

In this simulator study the authors varied message length (4, 8, or 12 words) on digital billboards that participants drove past at either 25 or 50 MPH. Although there was no decrement in lane keeping or billboard reading performance at the lower speed on straight roads, **“clear evidence of impaired performance became apparent at the higher (50 MPH) driving speed.”** The analysis revealed that, **rather than weaving in and out of lane while reading the billboards with longer messages, participants tended to slowly drift away from the lane center and then execute a large amplitude corrective steering input about eight (8) seconds after passing the billboard.** Eye gaze analysis showed that information processing overload began to emerge with a message length of eight (8) words, and was clearly present with twelve (12) word messages under the 50 MPH condition.

Gitelman, et al., 2014 - Israel

In 2014, these authors had the opportunity to add an additional data set to that in their 2010 study (discussed above), and to reanalyze the data from the original study. This was because the road authorities issued a decision to reauthorize the display of billboards that they had previously had ordered covered. In other words, the authors had the opportunity to study traffic crashes on a single roadway when billboards were: (a) visible, then (b) covered, then (c) visible again. The 2010 study examined conditions (a) and (b), and the 2014 supplement added condition (c) and a reanalysis of (a) and (b). They found that: **“The results support and strengthen the previous findings.”** **Removal/covering of the billboards from the highway (condition [b]) was associated with a 30-40% reduction in injury crashes from condition (a) according to two different databases, whereas the reintroduction/uncovering of the billboards (condition [c]) was associated with a 40-50% or 18-45% increase in such crashes, depending on the database cited. The trends were similar and**

consistent across damage-only, injury, and total accidents as well as nighttime vs. daytime injury accidents.

Sisiopiku, et al., 2015 – USA, AL, FL

The authors analyzed crashes from eight (8) digital billboard locations in Alabama and ten (10) in Florida. All sites were on high speed, limited access highways. A total of 377 crashes in Florida and 77 in Alabama were used in the analysis. Actual traffic collision reports were used since the authors discovered numerous errors in coding in the summary crash databases that they initially examined. Although the data set was too small to employ statistical analyses, the authors found that **“the presence of digital billboards increased the overall crash rates in areas of billboard influence compared to control areas downstream of the digital billboard locations. The increase was 25% in Florida and 29% in Alabama.”** The predominant crash types that were overrepresented at billboard locations were rear-end and sideswipe collisions, both typical of driver distraction.

Rempel, et al., 2015 - Canada

These authors, working on behalf of the Transport Association of Canada, developed a set of guidelines for the control of digital and projected advertising signs. The resultant guidelines are based on a comprehensive literature review, a survey of Canadian governmental jurisdictions, a review of existing sign regulations, interviews with international Governmental agencies, discussions with sign industry representatives, and the application of human factors and traffic engineering principles. **The key principle documented in the Guidelines is that they “provide recommendations designed to control (digital billboards) such that they emulate static advertising signs (italics added), and therefore result in a similar distracting and road safety effect as static advertisements.”**

Samsa & Phillips, 2015 - Australia

These authors, working on behalf of the Outdoor Media Association of Australia, studied 29 participants, ages 25-54 in an instrumented vehicle. The participants were fitted with “eye tracking glasses” and their eye fixations and driving performance was assessed as they drove a 14.6 km route in Brisbane, Queensland. **The route took them past a “number” of advertising signs, including static, digital, and on-premise signs. The results showed that fixation durations “were well below” 0.75 seconds, and that there were no significant differences in vehicle headways between the three types of signage. One statistically significant finding was that lateral deviation was poorer when billboards were present.** (Note that, at present, only an Abstract of this industry-sponsored study is available).

Belyusar, et al., 2016 – USA, Cambridge, MA

In this on-road study, data was collected from 123 subjects, nearly equally divided between males (63) and females (60) and between young (age 20-29, N = 63) and older (age 60-69, N = 60). These volunteers drove an instrumented vehicle under normal driving conditions (with no specific tasks to perform) past a digital billboard on a

posted 65 MPH roadway with four travel lanes in each direction. Data was collected during late morning and early afternoon to avoid commuter traffic. The authors state: **“In contrast to the recent FHWA report (Perez, et al., 2012), the findings revealed statistically significant changes in total number of glances and, depending upon the direction of travel, moderate-to-long duration glances in the direction of the billboard.”** Older drivers were thought to be particularly affected. The authors also found that: **“Drivers glanced more at the time of a switch to a new advertisement display than during a comparable section of roadway when the billboard was simply visible and stable.”** Given typical billboard dwell (cycle) times of six (6) or eight (8) seconds, these findings add to the argument the dwell times for such signs should be considerably longer.

Mollu, 2018 - Belgium

Per a 2015 European Commission report, distraction accounts for 10-30% of all European road accidents. Although there is no consistent definition of distraction, most definitions describe a *diversion* of attention away from the driving task, and *toward a competing activity* inside or outside the vehicle. This diversion of attention may be visual and/or cognitive. The author and his colleagues sought to study whether the glance behavior of road users was influenced by advertising signs, whether such signs lead to changes in driving behavior and whether there were notable effects on road safety as a result. Thirty-five test subjects (age range 20-69; 54% male) completed the protocol and drove a simulator past LED billboards with 3, 6, and 15-second dwell times, and at 41 and 65-meter distances from pedestrian crossings. The signs were placed in a road segment with a retail zone and in one transitioning to a built-up area. All other characteristics of the sign (size, placement, illumination, etc., were held constant. At the shortest display times and the closest distance to the pedestrian crossing the study showed significantly higher mental demands and lower performance. The longer the message display time, the fewer glances were made to the sign. The signs also contributed to higher approach speeds to pedestrian crossings and delayed slowing upon approach to the crossing. There was also an indication, although not statistically significant, of increased swerving behavior (change in lateral position) in the presence of the billboards.

Compendium of Recent Research Studies on Commercial Electronic Variable Message Signs (CEVMS)

Key to Codes Used in Tables:

***Type of Study:**

N = on-road, naturalistic
Q = on-road, quasi-naturalistic
C = on-road, controlled
S = lab, simulator
L = lab, other
E = epidemiological, crash data
R = review of other work
CR = critical review of other work
D = discussion /consultation with experts
G = guidelines or regulations development
QI = questionnaires, interviews, surveys, focus groups, etc.

****Type of Signs Studied:**

O = On-premise
C = Conventional billboard
D = Digital billboard
V = Sign contains video or animation
H = Official highway sign
U = Unknown

Date 1 st published/presented	2008
Location	U.S. (Massachusetts)
Author(s) Title Affiliation	Chan, E., Pradhan, AK, Knodler, MA, Jr., Pollatsek, A. & Fisher, DL Empirical Evaluation on a Driving Simulator of the Effect of Distractions Inside and Outside the Vehicle on Drivers' Eye Behaviors
Forum	TRB presentation and CD ROM
Peer Reviewed?	Yes
Sponsor/funding source	National Science Foundation; National Highway Traffic Safety Administration (NHTSA)
Type of Study*	S
Type of Signs Studied**	C (simulated)
Brief Description of Method	Young, novice drivers (age 16-17) are at greatly elevated risk of crashing, and it is believed that distraction plays a large role in such crashes. More experienced, older teen drivers (age 18-19) have also been shown to look away from the forward roadway for extended periods of time. This simulator study compared such extended, off-roadway glance durations of newly licensed drivers to those of older, experienced drivers, using eye movement recordings as participants drove along a simulated roadway and engaged in distracting tasks both inside and outside the vehicle.
Summary of Findings	The researchers compared the average maximum duration of an <i>episode</i> , (the maximum time that drivers spent continuously looking away from the forward roadway). For the in-vehicle distractors, the average was 1.63s for the experienced drivers, and 2.76s for the younger drivers. Another measure, the percentage of scenarios in which the maximum duration of an episode was greater than 2s, yielded similar findings. The results were statistically significant between the two groups. As predicted for in-vehicle distractors, the young drivers looked away from the roadway for extended periods (2s or longer) more than twice as often as the experienced drivers while engaged in inside-the-vehicle distractors (such as phone dialing, map reading, and CD searching). Surprisingly, however, results showed that: (a) external distractors were even more distracting, and (b) there was no difference between newly-licensed and experienced drivers on this critical measure of distraction when the drivers performed outside-the-vehicle tasks, specifically, searching for a target letter in a 5x5 grid representative of a billboard. The authors had assumed that experienced drivers would exercise the same degree of caution with the external distractors as they did with the internal ones. Instead, "the experienced drivers showed little concern for the effect that diverting their attention to the side of the roadway might have had on their ability to perceive potential risks immediately in front. In fact, in 81% of the external tasks, older drivers glanced for longer than 2s away from the forward roadway. The authors conclude: "...we think that our drivers engaged in the external search task were truly distracted with potential serious consequences."
Strengths	The study is the first to directly compare the susceptibility to distraction from internal and external tasks between newly licensed and experienced drivers.
Weaknesses/Limitations	Older drivers were not included in this study. The representativeness of the outside-the-vehicle task is questionable.
Availability/Accessibility	TRB 2008 Annual Meeting CD-ROM

Date 1 st published/presented	2009
Location	UK (England, London)
Author(s)	Young, MS, Mahfoud, JM, Stanton, N. Salmon, PM, Jenkins, DP & Walker, GH.
Title	"Conflicts of Interest: The implications of roadside advertising for driver attention."
Affiliation	Brunel University, West London, England
Forum	Transportation Research Part F: Traffic Psychology and Behaviour, Vol. 12(5), September 2009, 381-388.
Peer Reviewed?	Yes
Sponsor/funding source	Insurance company The Rees Jeffreys Road Fund
Type of Study*	S
Type of Signs Studied**	C, H
Brief Description of Method	The study was conducted in the University's driving simulator. 48 drivers drove urban, rural, and motorway routes in the presence and absence of billboards. Dependent variables included measures of speed and lateral control, and driver attention (mental workload, eye movements, and recall of signs and billboards).
Summary of Findings	The presence of billboards had a detrimental effect on lateral control, and appeared to increase crash risk. Longitudinal control was not affected. More striking effects were found for driver attention. Driver mental workload significantly increased in the presence of billboards. On rural roads and motorways, results showed that billboards were consciously attended to at the cost of more relevant road signs. "We must once again emphasize the persuasive overall conclusion that advertising has adverse effects on driving performance and driver attention. Whilst there are sometimes conflicts of interest at Local Authority level when authorizing billboards (since Councils often take a share of the profit from roadside advertising), these data could and should be used to redress the balance in favour of road safety."
Strengths	A fully interactive high fidelity simulator was used. The use of the NASA-TLX instrument for measuring subjective mental workload was a useful tool that is used too infrequently in studies of driver performance. All participants experienced identical road and sign condition the only manipulation being the presence or absence of billboards.
Weaknesses/Limitations	The sample of participants did not include either older or younger drivers the age groups thought to be at greatest risk for adverse consequences of billboard distraction. Measures of lateral and longitudinal variability were constrained by the study design and were not fully representative of the measures of these variables used most commonly in the US.
Availability/Accessibility	Journal is available online.

Date 1 st published/presented	2009
Location	Norway
Author(s)	Backer-Grøndahl, A., & Sagberg, F.
Title;	"Relative crash involvement risk associated with different sources of driver distraction."
Affiliation	Institute of Transport Economics, Norway
Forum	First International Conference on Driver Distraction and Inattention
Peer Reviewed?	Yes
Sponsor/funding source	Unknown
Type of Study*	E, QI
Type of Signs Studied**	C
Brief description of method	Used web- and paper-based questionnaire to ask 4300+ drivers who had been in a crash to identify from a list of possible choices the cause of their crash. Separated those at fault from those not at fault. Relative crash risk of each factor was estimated using the quasi-induced exposure method.
Summary of Findings	The most <i>frequent</i> sources of distraction were: (1) conversations with passengers, and (2) attending to children in the back seat. When the statistical method was applied to the data, it was found that distractions with the " <i>highest relative risk</i> " were: (1) billboards outside the vehicle, and, (2) searching for addresses. The authors note that both of the highest risk distractors were <i>visual</i> distractions, vs. physical, auditory, or cognitive.
Strengths	Authors controlled for possible confounding variables (such as age, gender, driving experience [years] and annual mileage driven) using logistical regression with culpability as the dependent variable.
Weaknesses/Limitations	Some researchers question the viability of the quasi-induced exposure method; cell phone use was (intentionally) excluded from the questionnaire. (It likely would have proven to be the highest risk factor). Confidence intervals were quite large.
Availability/Accessibility	Presented at large international conference; published in conference proceedings.

Date 1 st published/presented	2009
Location	UK - England
Author(s)	Chattington, M., Reed, N., Basacik, D., Flint, A., & Parkes, A.
Title	"Investigating Driver Distraction: The Effects of Video and Static Advertising:
Affiliation	Transport Research Laboratory
Forum	Report
Peer Reviewed?	Yes
Sponsor/funding source	Transport for London
Type of Study*	S
Type of Signs Studied**	C, V
Brief Description of Method	Used the high fidelity TRL driving simulator, with a specifically designed urban/suburban database typical of the area around London. 48 participants drove 4 different routes, each of which required about 15 minutes. Participants did not know the purpose of the study. Their eye movements were unobtrusively recorded. Roadside advertising was designed to vary by: location (placement within the scene); type (static or video); and exposure duration (at 30 MPH, drivers could see at least 50% of the advertisement for either 2, 4, or 6+ seconds. Video ads ran in a 6-second loop.
Summary of Findings	<p>"The report has found significant effects on both drivers' visual behavior and driving performance when static and video adverts are present and that the video adverts seem more potent distractors than similarly placed static adverts. The results support and extend (the findings of) other studies of driver distraction by advertising." (Here, the authors cite the work of Crundall, et al, and of Young and Mahfoud, both of which were extensively reviewed in the Wachtel 2009 report for AASHTO).</p> <p>The study showed that several different aspects of driving performance were adversely affected both video and static billboards, with the video signs generally more harmful to such performance than the static signs. The authors describe these effects as being "fundamental to the safe control of the vehicle." The effects include: speed control, braking, and the variability of each of these measures, as well as drivers showing that they are "less able to maintain a consistent lane position"</p>
Strengths	A very comprehensive and sophisticated simulation study. The researchers went so far as to pre-screen the content of the simulated advertisements to ensure that they were of equivalent interest to the different age groups in their participant population.
Weaknesses/Limitations	It is important to note that this study compared digital video billboards to traditional static billboards (i.e. it did not examine digital billboards with intermittent displays (i.e. those that change their message every 6-8 seconds) that are typical in the U.S. Although the authors state that their participants represented a "wide range of ages," it is not known how well young and old drivers were represented in the study. This is of concern because these two age groups at the ends of the driving population distribution are known to have the greatest degree of difficulty with attention and distraction.
Availability/Accessibility	TRL Report Number RPN256.

Date 1 st published/presented	2009
Location	Australia, Queensland
Author(s) Title Affiliation	Horberry, T., Regan, MA, & Edquist, J. Driver Distraction from Roadside Advertising: The clash of road safety evidence, highway authority guidelines, and commercial advertising pressure. University of Queensland (Australia), INRETS (France), Monash University (Australia).
Forum	Unknown
Peer Reviewed?	Yes
Sponsor/funding source	Swedish National Road and Transport Institute, VTI
Type of Study*	CR, D, G
Type of Signs Studied**	C, D
Brief Description of Method	Critical review of the research, worldwide, as well as existing guidelines and regulations.
Summary of Findings	“Road authorities around the world may ... be justified in using the best research information available (albeit incomplete) coupled with engineering judgment for the development of 3 rd party advertising guidelines.” The authors recommend that Main Roads Queensland adopt advertising restrictions at known areas of high driver workload including “locations with high accident rates, non-junction related lane merges, curves/bends, hills and road/works/abnormal traffic flows. This is broadly in line with Wachtel who recommended a restriction of advertisements at times when driver decision, action points and cognitive demand are greatest such as at freeway exits/entrances, lane reductions, merges and curves. Although useful for all road users, such restrictions would be of specific benefit to older drivers.” The authors correctly point out the flaw in arguments that suggest that guidance or regulatory controls are premature because there is a lack of data showing a causal relationship between billboards and accidents
Strengths	The study examined in detail the existing (2002) guidelines that seek to “minimize the possibility for 3 rd party roadside advertisements to distract drivers...” with an intent toward developing upgraded guidelines.
Weaknesses/Limitations	The review of current guidelines, worldwide, is somewhat superficial.
Availability/Accessibility	https://document.chalmers.se/download?docid=653291678

Date 1 st published/presented	2010
Location	Israel (Tel Aviv)
Author(s) Title Affiliation	Gitelman, V., Zaidel, D., & Doveh, E. “Influence of Billboards on Driving Behavior and Road Safety,”
Forum	Presented at: Fifth International Conference on Traffic and Transportation Psychology (2012); and at Annual Meeting of Transportation Research Board of the National Academies (2013)
Peer Reviewed?	Yes
Sponsor/funding source	Israel National Roads Authority
Type of Study*	E
Study Design	Quasi-experimental: Before and after crash data with controls Crash data with DBBs present (2006-7) and absent (2008), with and without signs that were covered. Dependent measure crashes and injuries. Control variable traffic volume. Study sites 8 treatment and 6 control.
Type of Signs Studied**	C
Brief Description of Method	Because of complaints, Israel’s Supreme Court ruled that a series of billboards on an urban freeway near Tel Aviv had to be removed for 1 year while an evaluation took place. At control sites, the billboards remained visible throughout the study period. At treatment sites, billboards were visible in the “before” period (2006-7), and were covered during the “after” period (2008). Crashes were recorded and categorized (property damage only, injury or fatality) under four conditions: (a) at treatment sites while signs were visible; (b) at treatment sites after signs were covered; (c) at control sites where signs were visible; and (d) at the same control sites while signs were still visible but signs were covered at the treatment sites.
Summary of Findings	At control sites, crashes remained essentially the same throughout the 3-year study period; at the treatment sites, crashes declined dramatically after the billboards were covered. The results were the same for injury and fatal crashes. After adjusting for traffic volume, crashes were reduced at the treatment sites (where billboards were visible in the “before” period but covered during the “after” period) by the following percentages: all crashes by 60%; injury/fatal crashes by 39%; property damage crashes by 72%.
Strengths	For a field study, this used a well-controlled research design. Before-and-after measures were obtained both for sites where the billboards were covered during the study, and for the sites where the billboards remained visible during this same time period. Road sections were in close proximity, on the same highway, ensuring that traffic speeds and volumes, as well as weather conditions, law enforcement activity, etc. were comparable.
Weaknesses/Limitations	There might have been differences in certain roadway characteristics between the treatment and control sites (e.g. curves, merges, etc.) that were not identified.
Availability/Accessibility	Findings available as PowerPoint from either conference; original study is in Hebrew only; English translation not yet available.

Date 1 st published/presented	2010
Location	Saudi Arabia
Author(s)	Bendak, S., & Al-Saleh, K.
Title	"The Role of Roadside Advertising Signs in Distracting Drivers."
Affiliation	King Saud University
Forum	<i>International Journal of Industrial Ergonomics</i> , 40, 233-236.
Peer Reviewed?	Yes
Sponsor/funding source	Research Centre of the College of Engineering, King Saud University
Type of Study*	S, QI
Study Design	
Type of Signs Studied**	O, C, D, V
Brief Description of Method	Twelve male drivers, age 23-28, drove a simulator consisting of two urban roadways, each 9.3-km long, and matched for physical, environmental and traffic characteristics. One road contained advertising signs; the other was devoid of advertisements.
Summary of Findings	The average driving duration was 12.83 minutes for each route showing that the presence of advertising signs did not materially affect driving speed. There were no accidents. Lane placement and position maintenance suffered significantly in the presence of advertising signs. According to the authors: "swinging and drifting from lane in the presence of advertising signs is a strong indication of how such signs distract drivers and affect their performance." A second finding was that "recklessly crossing dangerous intersections" was also significantly and adversely affected by the presence of advertising signs. This finding, according to the authors "indicates the loss of this fine coordination between paying attention and driving. ... This can reasonably attributed... to the longer reaction time needed in the presence of hazards due to being distracted." All three of the other measures: tailgating, "overspeeding," and failure to signal, were poorer in the presence of advertising signs, but these were not statistically significant. In response to the questionnaire, 50% of the 160 respondents said they had been distracted by advertising signs, and 22% reported having been in a dangerous situation at least once due to being distracted by advertising signs.
Strengths	The two simulated routes driven were matched for key characteristics; the differences between them were essentially only in the presence or absence of advertising signs.
Weaknesses/Limitations	No females and no drivers older than 28 were included. "Advertising" signs of many different types were comingled, so it was impossible to identify the effects of any one category of signs, such as billboards. No definition is provided of the behavior identified as "recklessly crossing dangerous intersections." The authors attribute poorer performance in this measure to longer reaction time in the presence of the advertising signs, but there is no indication that they measured this response. The questionnaire completed by 160 respondents was not included in the paper.
Availability/Accessibility	www.elsevier.com/locate/ergon

Date 1 st published/presented	2011
Location	Canada (Calgary, Alberta)
Author(s)	Milloy, SL; and Caird, JK.
Title	"External Driver Distractions: The Effects of Video Billboards and Wind Farms on Driver Performance."
Affiliation	University of Calgary
Forum	Book chapter
Peer Reviewed?	Yes
Sponsor/funding source	Unspecified
Type of Study*	S
Type of Signs Studied**	V (simulated)
Brief Description of Method	The contribution to driver distraction from in-vehicle technologies such as cell phones, I-Pods, and navigation systems have been studied extensively. But it is external distractions that compose the single largest category of distraction-related crashes. The least is known about such crashes, possibly because the variety of people, objects and events that make up external distractions are very difficult to study in a controlled empirical fashion. In theory, drivers often have spare cognitive capacity that they can allocate toward distractors such as billboards. The question asked here was: what happens when an unlikely but totally plausible emergency event takes place – can the driver "reallocate" his or her attention so as to respond to the event in a timely manner. In this "event-based" scenario, either the driver responds adequately or not. In this simulator study, drivers on a freeway moving at 80 km/h (50 mph) in an industrial environment passed a video billboard at the same time that a lead vehicle suddenly braked hard.
Summary of Findings	The results found a <i>causal</i> (italics original) relationship between the presence of the video billboard and collisions with, and delays in responding to, the lead vehicle. The authors note that the billboards in this study were less able to capture the drivers' attention than video billboards in the real world because the simulated billboards were not as bright as actual billboards, and because the study was not conducted at night, where the distracting effects were believed to be greater. The implication is that real world safety problems may be more significant than those indicated by the study.
Strengths	A high fidelity, interactive driving simulator with a 150-degree forward field of view was used. All 21 subjects made three drives, and viewed two static and two video billboards in each. The images on the billboards were different in each presentation. A lead vehicle appeared intermittently, and, twice during each presentation, braked suddenly so that the subject had to respond quickly to avoid a collision
Weaknesses/Limitations	Younger and older drivers, those believed to be most susceptible to such distractions, were not included in the study. Learning may have occurred from earlier drives, and subjects may have come to use the appearance of billboards as a visual cue to prepare to brake for the lead vehicle.
Availability/Accessibility	Published in: "Handbook of Driving Simulation for Engineering, Medicine and Psychology." Edited by: D.L. Fisher, M. Rizzo, J.K. Caird, & J.D. Lee. Boca Raton: CRC Press.

Date 1 st published/presented	2011
Location	Australia, Perth
Author(s)	Edquist, J., Horberry, T., Hosking, S. & Johnston, I
Title	“Advertising billboards impair change detection in road scenes”
Affiliation	Monash University Accident Research Centre
Forum	2011 Australasian Road Safety Research, Education & Policing Conference
Peer Reviewed?	Yes
Sponsor/funding source	Unknown
Type of Study*	L
Type of Signs Studied**	C, H
Brief Description of Method	The authors used a “change detection” paradigm to study how billboards affect visual search and situation awareness in road scenes. Change detection time has been shown to correlate with at-fault errors in a simulated driving task. In a controlled experiment, inexperienced (mean age 19.3), older (73.0), and comparison (34.8) drivers searched for changes to road signs and vehicle locations in static photographs of road scenes. The road scenes ranged from suburban main streets to multilane highways to provide varying levels of background clutter. The actual experimental protocol is too complex to include in this summary, but may be found in the original article.
Summary of Findings	“The finding that the presence of billboards increases time to detect changes is an important one. This result lends support to the idea that billboards can automatically attract attention when drivers are engaged in other tasks, delaying their responses to other aspects in the environment. The effect of billboards was particularly strong in scenes where response times are already lengthened by high levels of built or designed clutter. This is particularly concerning, as road scenes with high levels of built and/or designed clutter are just the sort of busy, commercial, high traffic environments where billboards are most often erected.” Participants took longer to detect changes in road scenes that contained advertising billboards. This finding was especially true when the roadway background was more cluttered, when the change was to an official road sign, and for older drivers. The results are consistent with the small but growing body of evidence suggesting that roadside billboards impair aspects of driving performance such as visual search and the detection of hazards, and therefore should be more precisely regulated in order to ensure a safe road system.
Strengths	The change detection task has been shown to be relevant to safe driving performance, but has been underutilized in research. The inclusion of three diverse age cohorts addresses limitations in many other studies.
Weaknesses/Limitations	The study did not include an actual, or simulated driving task; rather a surrogate measure for visual subtasks required during driving. (However, the results are consistent with mounting evidence showing that roadside billboards impair key aspects of driving performance). Horberry, et al., (2009) argue that: “rather than waiting until it can be proven beyond doubt that roadside advertising is responsible for a particular collision, road authorities should regulate billboards to minimize the probability of interference with driving.”
Availability/Accessibility	http://casr.adelaide.edu.au/rsr/RSR2011/4CPaper%20166%20Edquist.pdf

Date 1 st published/presented	2012
Location	Sweden (Stockholm)
Author(s) Title Affiliation	Dukic, T., Ahlstrom, C., Patten, C., Kettwich, C., & Kircher, K. "Effects of Electronic Billboards on Driver Distraction." Swedish National Road and Transport Research Institute, and Karlsruhe Institute of Technology
Forum	Journal of Traffic Injury Prevention
Peer Reviewed?	Y
Sponsor/funding source	Swedish Transport Administration
Type of Study*	Q
Type of Signs Studied**	D
Brief Description of Method	The Swedish government allowed 12 digital billboards to be erected along highways near Stockholm for a trial period during which this, and related research was conducted. 41 volunteers drove an instrumented vehicle past 4 of the billboards in both day (N = 20) and night (N = 21) conditions. Eye movements (and other measures) were recorded. "A driver (was) considered to be visually distracted when looking at a billboard continuously for more than two seconds with a single long glance, or if the driver looked away from the road for a 'high percentage of time'." (This is defined in the study based on prior research, but is too complex for inclusion in this brief summary). Dependent measures were eye tracking and driving performance measures.
Summary of Findings	Drivers had a significantly longer dwell time (time looking at the billboards), a greater number of fixations, and a longer maximum fixation duration when driving past a DBB compared to other signs along the same road sections. No differences were found for day-night, or for specific driver performance variables.
Strengths	Excellent review of the relevant literature and explanation of the psycho-physiological processes involved
Weaknesses/Limitations	It is known from other research that younger drivers (e.g. those under age 25) and older drivers (e.g. those over age 65) are more likely to be distracted by roadside stimuli that are irrelevant to the driving task; this study was limited to drivers between the ages of 35 and 55.
Availability/Accessibility	http://www.tandfonline.com/doi/abs/10.1080/15389588.2012.731546

Date 1 st published/presented	2012
Location	USA
Author(s) Title	Perez, WA, Bertola, MA, Kennedy, JF, & Molino, JA “Driver Visual Behavior in the Presence of Commercial Electronic Variable Message Signs (CEVMS).”
Affiliation	SAIC (now Leidos)
Forum	Unnumbered FHWA Report
Peer Reviewed?	N ⁴
Sponsor/funding source	Federal Highway Administration
Type of Study*	C
Type of Signs Studied**	O, C, D, H
Brief Description of Method	FHWA contractor used instrumented vehicle with on-board eye glance data recording as participant drivers drove along predetermined routes in Reading, PA and Richmond, VA. Each route took the participants past a series of on-premise and off-premise (billboard) signs, apparently both conventional and digital, during daytime and at night.
Summary of Findings	Gazes to the road ahead were high across all test conditions; however, in three of the four test conditions digital and conventional billboards resulted in a lower probability of gazes to the road ahead as compared to the control conditions in which billboards were not present (although on-premise signs, including, potentially, electronic signs, might have been present). In Richmond, drivers gazed more at the digital than standard billboards at night, but this difference was not found in Reading.
Strengths	The study used state-of-the-art eye glance recording equipment. The study route had drivers pass signs on rural and urban routes, and surroundings that differed in visual complexity.
Weaknesses/Limitations	Numerous critical discrepancies between draft and final reports; errors in identifying billboard locations including size, distance from road edge, side of road; both far and near distances at which eye glances to billboards were recorded were artificially truncated; two experimenters sat in the vehicle with the participant driver; data overload required experimental vehicle to pull off road for resets; inappropriate recordation of billboard luminance levels; confounding of billboards with on-premise signs.
Availability/Accessibility	Report is available on the FHWA website at http://www.fhwa.dot.gov/real_estate/oac/visual_behavior_report/final/cevmsfinal.pdf

⁴In March 2011, FHWA released a draft version of the report to three pre-selected peer reviewers. The reviewers were not identified and the draft report was not made available to the public. The comments of two of the three reviewers (the third did not provide meaningful or comprehensive comments) were so critical of the draft report (stating, in essence, that the report’s findings about eye glance durations to billboards were not credible) that FHWA spent the next 33 months revising and rewriting the report. A final report, which was *not* peer reviewed, was released on the agency’s website on December 30, 2013, although the report was dated September 2012. Although the unreleased draft report was given the official agency report number FHWA-HEP-11-014, the final report remains unnumbered and unpublished.

Date 1 st published/presented	2013
Location	U.S. (Massachusetts, Amherst)
Author(s)	Divekar, G., Pradhan, AK, Pollatsek, A., & Fisher, DL;
Title	"Effects of External Distractions"
Affiliation	University of Massachusetts, Amherst
Forum	Journal
Peer Reviewed?	Yes
Sponsor/funding source	National Institutes of Health, National Science Foundation, Arbella Insurance Group Charitable Foundation
Type of Study*	S
Type of Signs Studied**	D (simulated)
Brief Description of Method	Following previous research in the same lab, the authors sought to understand: (a) why experienced drivers were taking such long glances at external distractions (simulated billboards) when they were unwilling to do so for distractors inside the vehicle, and (b) if these experienced drivers were sacrificing some of their ability to monitor visible hazards in the roadway ahead of their vehicle, are they sacrificing even more of their ability to anticipate unseen hazards. Novice and experienced drivers performed an external search task (reading a simulated billboard) while driving in a simulator. Eye movements were recorded, as were vehicle performance.
Summary of Findings	Distractions are a major contributor to crashes, and almost one-third of such distractions are caused by sources external to the vehicle. Of these, digital billboards stand out because of their brightness and changing imagery. Recent research indicates that such billboards may attract attention away from the forward roadway for extended periods of time, and converging evidence shows that looking away from the forward roadway for such extended periods is associated with elevated crash risk. The external tasks in this study were designed to be similar to scanning a sign dense with information in the real world, such as a digital billboard that changed message every few seconds. "This study provides clear evidence that external tasks are distracting not only for novice drivers, but also for more experienced drivers." For both groups, external distractions significantly affect the drivers' anticipation of hazards. Overall the study showed that experienced as well as novice drivers are at an elevated risk of getting into a crash when they are performing a secondary task such as looking at a billboard.
Strengths	Sophisticated driving simulator with realistic hazard scenarios.
Weaknesses/Limitations	The simulated billboards, although requiring an external, visual distraction task, were not very representative of roadside billboards. There was no effort to study the effects of such external distractions on older drivers, a group known to be at high risk for such distraction
Availability/Accessibility	Transportation Research Record, Journal of the Transportation Research Board No. 2321.

Date 1 st published/presented	2013
Location	Australia
Author(s)	Roberts, P., Boddington, K., & Rodwell, L.
Title	"Impact of Roadside Advertising on Road Safety"
Affiliation	ARRB Group (formerly Australian Road Research Board)
Forum	Austroads Road Research Report: Publication No. AP-R420-13
Peer Reviewed?	Unknown
Sponsor/funding source	Austroads (The Association of Australian and New Zealand Road Transport and Traffic Authorities)
Type of Study*	CR, G
Type of Signs Studied**	O, C, D, V
Brief Description of Method	(a) A critical review of existing literature to study the risk of distraction from roadside advertising, and to communicate these findings; (b) document and review existing guidelines across different highway agencies to identify gaps and inconsistencies; (c) develop guiding principles and make guidance recommendations that could be used to create guidelines and to harmonize guidelines across diverse agencies.
Summary of Findings	Most drivers, under most conditions, most of the time, probably possess sufficient spare cognitive capacity that they can tolerate driving-irrelevant information. The problem comes in some driving situations where it becomes likely that (the appearance of) movement or changes in luminance will involuntarily capture attention and that particularly salient emotional or engaging information will capture attention to the detriment of driving performance, particularly in inexperienced drivers. Where this happens in a driving situation that is also cognitively demanding, the consequences for driving performance are likely to be significant. Further, if this attentional capture also results in a situation where a driver's eyes are off the forward roadway for a significant amount of time (i.e. 2 seconds or longer) this will further reduce safety. Additionally, road environments cluttered with driving-irrelevant material may make it difficult to extract information that is necessary for safe driving, particularly for older drivers. The studies that have been conducted show convincingly that roadside advertising is distracting and that it may lead to poorer vehicle control. Results from the Klauer, et al (2006) studies show that looking at an external object increased the crash risk by nearly four times, nonetheless the number of crashes resulting from such distraction is probably quite small. This suggests that the contribution of roadside advertising to crashes is likely to be relatively minor. Nonetheless, from the Safe System perspective it would be difficult to justify adding any infrastructure to the road environment that could result in increased distraction for drivers. The exception to this may be in the case long drives on monotonous roads where drivers are likely to suffer the effects of passive fatigue.
Strengths	A comprehensive review, not only of existing research, but also of relevant human factors principles, advertising sign technology, and best practices.
Weaknesses/Limitations	Although the authors extensively review and comment on existing regulations and guidelines, only brief mention is made of guidelines in the U.S.
Availability/Accessibility	Available on the Austroads website

Date 1 st published/presented	2013
Location	Denmark
Author(s)	Herrstedt, L., Greibe, P., & Andersson, P.
Title	"Roadside Advertising Affects Driver Attention and Road Safety."
Affiliation	Trafitec, Denmark
Forum	International Conference
Peer Reviewed?	Yes
Sponsor/funding source	Unknown
Type of Study*	Q
Type of Signs Studied**	C, D
Brief Description of Method	32 drivers, both men and women between the ages of 23 and 70, drove an instrumented vehicle on one of several comparable routes. Drivers had to have a current license and not require eyeglasses while driving. Drivers were not informed in advance of the purpose of the drive. The car's instruments recorded eye movements, vehicle speed and position, and proximity to vehicles ahead of the test vehicle. A "safety buffer" was calculated which reflected the time available for the driver to respond to a sudden critical situation requiring immediate action to avoid an accident.
Summary of Findings	A total of 109 drives past advertising signs were completed, and a total of 233 glances to the 16 roadside advertising signs were recorded. Results showed that, in 69% of all drives, the driver glanced at the advertisement at least once. In nearly half of all drives, the driver glanced two or more times to the same billboard. 18% of all glances lasted for 1 second or longer, and the total duration of successive glances on a single drive was 1.5 seconds or longer in 29% of trials, 2.0 seconds or longer in 22% of trials, and 3.0 seconds or longer in 10% of trials. In 65 of the 233 glances (28%), a vehicle ahead was present within a time gap of less than 3.0 seconds. In 59 cases (25%) the safety buffer was less than 2.0 seconds, and in 20% of all cases, the safety buffer was as low as 1.5 seconds. The authors conclude that, in 25% of all cases, driving safety was reduced because the safety buffer was less than 2 seconds to the lead vehicle. Further, in 16% of all drives (17 out of 109), the sum of cumulative glances to the same billboard resulted in visual distraction using the method developed by VTTI (2.0 seconds or more within a 6.0 second window). In other words, the authors state: "In more than every sixth drive past, visual distraction occurs as a result of the advertising sign." Their overall conclusion was that "the investigated advertising signs do capture drivers' attention to the extent that it impacts road safety."
Strengths	This is one of only two known on-road studies to combine measures of driver glance behavior (number and duration of glances to billboards) with the simultaneous measure of following distance to a vehicle ahead, and the only one to (apparently) calculate such following distances via laser scanner for accuracy. Older drivers were included in the participant group.
Weaknesses/Limitations	More details about the specific billboards studied would have been helpful.
Availability/Accessibility	<i>Proceedings of the 3rd International Conference on Driver Distraction and Inattention.</i>

Date 1 st published/presented	2014
Location	US
Author(s)	Hawkins, HG, Jr., Kuo, P-F, & Lord, D.
Title	“Statistical Analysis of the Traffic Safety Impacts of On-Premise Digital Signs”
Affiliation	Texas A&M University
Forum	93 rd Annual Meeting of the Transportation Research Board
Peer Reviewed?	Yes
Sponsor/funding source	On-premise sign industry (Signage Foundation, Inc.)
Type of Study*	E
Type of Signs Studied**	O
Brief Description of Method	135 sites in four states, where on premise signs had been installed in 2006-07, were compared to 1,301 control sites using the Empirical Bayes (EB) statistical methodology.
Summary of Findings	There were no statistically significant changes in crash frequency associated with the installation of the on-premise digital signs studied. A calculated safety effectiveness index was equal to 1.00, with the 95 percent confidence interval between 0.93 and 1.07. The findings were similar for each of the four investigated States. The researchers concluded that “there is no evidence (that) the installation of on-premise signs at the locations (studied) led to an automatic increase in the number of crashes.” The authors point out in their conclusions that it might be of interest to examine whether or not the index varies as a function of sign design and operation or characteristics of the crashes themselves.
Strengths	The study employed a large database and a robust statistical analysis procedure.
Weaknesses/Limitations	The on-premise signs to be studied were chosen by the sponsor and individual sign companies rather than by the authors or at random. It is possible that the selection criteria included a bias toward the least potentially distracting signs (in terms of size, color, contrast, animation, video, etc.).
Availability/Accessibility	Paper No.: 14-2772 of the 93 rd Annual Meeting of the Transportation Research Board.

Date 1 st published/presented	2014
Location	USA
Author(s) Title Affiliation	Schieber, F., Limrick, K., McCall, R., & Beck, A. “Evaluation of the Visual Demands of Digital Billboards Using a Hybrid Driving Simulator” University of South Dakota
Forum	Journal
Peer Reviewed?	Yes
Sponsor/funding source	Unknown
Type of Study*	S
Type of Signs Studied**	D (Simulated)
Brief Description of Method	The authors used a purpose-built hybrid driving simulator designed “for investigating the limits of sign reading performance while driving.” The driving task and the view of the road ahead used a validated, commercial simulator; but the digital billboard stimulus was implemented on a separate 20:1 scaled LCD display mounted on a linear actuator rail that could move the simulated sign toward the observer at angular velocities simulating speeds up to 55 mph. 18 university undergraduates participated. Gaze direction (road ahead vs. billboard) was captured by a video recording of each participant’s face as they drove this technique was previously demonstrated by the senior author. Participants drove once at 25 and again at 50 mph. Digital billboard stimuli were presented at predetermined random intervals, and contained either 4, 8, or 12 frequently used English words, also displayed at random.
Summary of Findings	The authors state: “Although little or no decrement in lane keeping or reading performance was observed at slow speed (25 MPH) on straight roads, clear evidence of impaired performance became apparent at the higher driving speed (50 MPH). Lane keeping performance was significantly degraded when participants were required to read digital billboards with 8 or more words at the higher speed. This decrement became greater when the sign contained 12 words. Surprisingly, the decrements in lane keeping performance emerged <i>after</i> the participants had finished reading the sign. The participants tended to slowly drift away from the center of the lane, and then executed a large amplitude corrective steering input during the 8-second interval after encountering the digital billboard. Eye gaze statistics and reading performance showed that information processing overload began to emerge at a message length of 8 words and was clearly present when 12 words were displayed.
Strengths	Sophisticated, hybrid driving simulator with a custom built zoomed image sign projector designed to overcome traditional simulator constraints on sign legibility at realistic distances. Simulated digital billboards contained different, common words of 4-5 letters each, and each was presented in the same size and location on the billboard.
Weaknesses/Limitations	No older drivers were studied. There is no discussion of the validity of the hybrid driving simulator for this specific application. The simulated billboards were only 10 ft. in width, only about one-fifth the width of typical highway billboards.
Availability/Accessibility	<i>Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting, 2214-2218.</i>

Date 1 st published/presented	2014
Location	Israel (Tel Aviv)
Author(s)	Gitelman, V., Zaidel, D., Doveh, E., & Silberstein, R.
Title	“Accidents on Ayalon Highway - Three Periods Comparison: Billboards Present, Removed, and Returned”
Affiliation	
Forum	
Peer Reviewed?	Yes
Sponsor/funding source	Israel National Roads Authority
Type of Study*	E
Study Design	Quasi-experimental: Billboards present (2006-07), absent (2008), present again (2009-12) with controls. Dependent measure property damage and injury crashes. Control variable traffic volume. Study sites 8 treatment and 6 control.
Type of Signs Studied**	C
Brief Description of Method	Because of complaints, Israel’s Supreme Court ruled that a series of billboards on an urban freeway near Tel Aviv had to be removed, i.e. covered, for one year while an evaluation took place. At the end of the experimental period, the billboards were uncovered such that they were again visible to motorists. At control sites, the billboards remained visible throughout the study period. At treatment sites, billboards were visible in the “present” period (2006-7), covered during the “removed” period (2008), and visible again in the “returned” period (2009-12). Crashes were recorded and categorized (property damage only, injury or fatality) under six conditions: (a) at treatment sites while signs were visible; (b) at treatment sites after signs were covered; (c) at treatment sites where signs were visible again after having been uncovered; (d) at control sites where signs were visible; and (e) at the same control sites while signs were still visible but signs were covered at the treatment sites; and (f) at control sites while signs were again visible at the treatment sites.
Summary of Findings	At control sites, crashes remained essentially the same throughout the 6-year study period; at the treatment sites, crashes declined dramatically after the billboards were covered, and returned just as dramatically once the billboards were uncovered and therefore again visible. The results were the same for injury and fatal crashes. After adjusting for traffic volume, crashes were reduced at the treatment sites (where billboards were visible in the “before” period but covered during the “after” period) by the following percentages: all crashes by 60%; injury/fatal crashes by 39%; property damage crashes by 72%.
Strengths	For a field study, this used a well-controlled research design. Before-and-after measures were obtained both for sites where the billboards were covered during the study, and for the sites where the billboards remained visible during this same time period. Road sections were in close proximity, on the same highway, ensuring that traffic speeds and volumes, as well as weather conditions, law enforcement activity, etc. were comparable.
Weaknesses/Limitations	There might have been differences in certain roadway characteristics between the treatment and control sites (e.g. curves, merges, etc.) that were not identified.
Availability/Accessibility	Complete study is in Hebrew only; English translation is available for the Executive Summary only.

Date 1 st published/presented	2015
Location	USA
Author(s) Title Affiliation	Sisiopiku, VP, Islam, M., Haleem, K., Alluri, P. & Gan, A. “Investigation of the Potential Relationship between Crash Occurrences and the Presence of Digital Billboards in Alabama and Florida”
Forum	Conference Paper
Peer Reviewed?	Yes
Sponsor/funding source	U.S. Department of Transportation/RITA, Alabama Department of Transportation, Florida Department of Transportation
Type of Study*	E
Type of Signs Studied**	D
Brief Description of Method	The authors analyzed historical crash records from the states of Alabama and Florida. They identified locations of digital billboards along major limited-access roadways and chose 18 suitable sites for analysis, each with its own control site. Crash records were obtained for a five-year period from a centralized database in Alabama, and crash rates were determined per million vehicle miles travelled at each site. The procedure was similar in Florida, although only three years were studied. Because many crashes in the vicinity of the billboards were found to be located incorrectly, the authors retrieved the actual police traffic collision reports for 783 crashes. Of these, 406 had to be eliminated due to coding errors in the original summary reports, leaving a total of 377 crashes for the safety assessment.
Summary of Findings	The authors state: “The overall results were consistent between the two states. The presence of digital billboards increased the overall crash rates at “digital advertising billboard influence zones” by 25% in Florida and 29% in Alabama, compared to control sites. In addition, sideswipe and rear-end crashes were overrepresented at digital billboard influence zones compared to control sites.
Strengths	Included in their influence zone was a short distance (minimum 0.05 mile) downstream of each billboard. This is in keeping with the findings of Schieber, et al., discussed elsewhere in the present document. The influence zone and associated control zone for each billboard were matched for traffic and roadway conditions.
Weaknesses/Limitations	The authors provide no explanation for how the specific billboard locations were chosen out of all possibilities that they identified. Apparently, they identified “influence zones” by calculating the distances upstream of each digital billboard from which the sign could be seen, using Google Street View. There seems to have been no effort to relate sight distance in the real world to that shown in the Google Street View images. It is unclear whether their 5 years of data (AL) and 3 years (FL) correspond to periods when the billboards studied were actually in place, given that the authors seem to have selected sites from Google Street View.
Availability/Accessibility	<i>Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting</i> , 2214-2218.

Date 1 st published/presented	2015
Location	Canada
Author(s)	Rempel, G., Montufar, J., Forbes, G., & Dewar, R.
Title	"Digital and projected advertising Displays: Regulatory and Road Safety Assessment Guidelines."
Affiliation	MORR Transportation Consulting, Ltd., Intus Road Safety Engineering, Inc., Western Ergonomics, Inc.
Forum	Transportation Association of Canada Report
Peer Reviewed?	Yes
Sponsor/funding source	Transportation Association of Canada
Type of Study*	CR
Type of Signs Studied**	O, D
Brief Description of Method	The authors performed a critical literature review, met with representatives of Canadian government agencies and outdoor advertising companies, investigated practices and regulations/guidelines in other countries, and applied human factors principles toward the development of guidelines for Canada.
Summary of Findings	The resultant guidelines are specific to traffic safety issues they do not address the aesthetic, "nuisance," or economic factors of such signs. Guidance is developed for sign density, spacing, dwell time (which they call "frame duration"), illuminance (which they authors call "brightness"), proximity to traffic control devices and driver decision points, message sequencing and text scrolling, animation, and transition time between messages. The overriding principle proposed in this report is that digital advertising signs should "emulate" traditional signs.
Strengths	A comprehensive review, not only of existing research, but also of relevant human factors principles, advertising sign technology, and best practices.
Weaknesses/Limitations	Accepted industry practices regarding DBB lighting rather than getting the views of lighting experts or undertaking their own independent evaluation.
Availability/Accessibility	Available for purchase from Transportation Association of Canada at http://tac-atc.ca/en/digital-and-projected-advertising-displays-publication-now-available

Date 1 st published/presented	2015 ²
Location	Australia
Author(s)	Samsa, C., & Phillips, T.
Title	"Digital Billboards 'Down Under': Are they Distracting to Drivers and can Industry and Regulators Work Together for a Successful Road Safety Outcome?"
Affiliation	Samsa Consulting, Outdoor Media Association of Australia
Forum	<i>4th International Conference on Driver Distraction and Inattention</i>
Peer Reviewed?	Yes
Sponsor/funding source	Outdoor Media Association of Australia
Type of Study*	C
Type of Signs Studied**	C, D, O
Brief Description of Method	29 participants, ages 25-54, drove an instrumented vehicle along a 14.6 km route in Brisbane, Queensland. Drivers were fitted with "eye tracking glasses."
Summary of Findings	Average fixation durations were "well below 0.75 s". There were no significant differences in average vehicle headway between the three signage types. There was a statistically significant difference in lateral deviation when billboards were present.
Strengths	The data showing significant differences in lateral deviation in the presence of billboards is in accord with findings from other recent studies.
Weaknesses/Limitations	No older drivers were studied. There is little description of the eye tracking glasses used, but this apparatus is not known to provide the precision necessary to determine exactly where the wearer is looking. No information is provided to enable the reader to determine how vehicle headways were measured; as such it is not possible to compare this study to the one conducted in Denmark, where headway measurement was clearly described.
Availability/Accessibility	https://www.ivvy.com/event/DD2015

²At the present time, this paper is available only as an Abstract. Our comments might change once we are able to review the complete paper.

Date 1 st published/presented	2016
Location	USA
Author(s)	Belyusar, D., Reimer, B. Mehler B., & Coughlin, JF.
Title	"A Field Study on the Effects of Digital Billboards on Glance Behavior During Highway Driving."
Affiliation	New England University Transportation Center & MIT Age Lab
Forum	Accident Analysis and Prevention, 88, 88-96
Peer Reviewed?	Yes
Sponsor/funding source	US Department of Transportation, Region 1 New England, University Transportation Center at MIT, and the Toyota Class Action Settlement Safety Research and Education Program.
Type of Study*	Q
Type of Signs Studied**	D
Brief Description of Method	This on-road study had 123 subjects, nearly equally divided between males and females and between young and old. Participants drove an instrumented vehicle under normal driving conditions, with no specific tasks to perform, past a digital billboard on a highway with a speed limit of 65 MPH.
Summary of Findings	The authors found statistically significant changes in total number of glances and, depending upon the direction of travel, moderate-to-long duration glances in the direction of the billboard as compared to sections of the roadway in which the billboard was not visible. Older drivers were particularly affected. The authors also found that: "Drivers glanced more at the time of a switch to a new advertisement display than during a comparable section of roadway when the billboard was simply visible and stable." They concluded: "Given typical billboard dwell (cycle) times of six (6) or eight (8) seconds, these findings add to the argument the dwell times for such signs should be considerably longer."
Strengths	The driving task was quasi naturalistic; both young and old drivers, and both males and females, were equally represented.
Weaknesses/Limitations	Only one billboard, with two faces, was used in the analysis. There could be characteristics of that sign, or its location, which make the results not generalizable to other billboards.
Availability/Accessibility	http://www.sciencedirect.com/science/article/pii/S0001457515301664

Date 1 st published/presented	2018
Location	Belgium, Flanders
Author(s)	Mollu, K.
Title	"Influence of an Illuminated Digital Billboard on Driving Behavior with a Focus on Variable Display Time and Distance from a Pedestrian Crossing."
Affiliation	Hasselt University and Flanders Agency for Roads and Traffic
Forum	TRB Subcommittee on Digital Billboards
Peer Reviewed?	Yes
Sponsor/funding source	Flanders Agency for Roads and Traffic
Type of Study*	N
Type of Signs Studied**	D (simulated)
Brief Description of Method	Using a driving simulator, investigators compared subjective workload and responses of drivers to pedestrians crossing in crosswalks. Subjects included 35 persons, age 20-60, with 54% male. Signs varied in dwell time and location in retail zones or in transitions to built-up areas.
Summary of Findings	Study participants rated their mental demand significantly higher and their own performance lower when a digital billboard was present. The minimum speed upon approach to the pedestrian was higher and was reached closer when a DBB was present. Although not statistically significant, lateral displacement was higher in the presence of the DBB. Brake-reaction time (perception reaction time) to the pedestrian was approximately 1.5 times higher in the presence of the DBB and there was no effect of dwell time or distance to the sign.
Strengths	High definition driving simulator; roads agency sponsored; reasonably large number of subjects. A large number of billboards and road settings were used.
Weaknesses/Limitations	None of the display times matched those in most common use; simulated digital billboards were smaller than those in common use in the U.S.
Availability/Accessibility	Author

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