060497

City of Gainesville

Inter-OfficeCommunication

Planning Division
X5022, FAX x2282, Station 11

Item No. 1

TO: City Plan Board

DATE: March 15, 2007

FROM: Planning Division Staff

SUBJECT: **Petition 139TCH-06 PB.** City Plan Board. Amend the City of Gainesville Land Development Code to add regulations pertaining to electronic signs (including digital and LED signs), and to amend the definition of "animated signs."

Recommendation

Staff recommends administrative approval of electronic signs based on recommended criteria.

Explanation

Electronic, digital, light-emitting-diode (LED) signs are a recent technological innovation rapidly being adopted for use by businesses for signage, primarily because their imagery is able to seize the attention of even the most inattentive of viewers. The attractiveness of these signs to many businesses is due to their unusually strong and effervescent light intensity, their ease of being programmed to change messages and animate, and their low power consumption.

While they are still relatively expensive compared to more traditional signs (and therefore not as available to most smaller businesses), continued technological advances are expected to substantially lower the cost of electronic signs.

When this happens, staff expects that the signs will proliferate throughout the city due to their ability, like billboards, to seize the attention of viewers. This proliferation is already being seen along Interstate highways throughout Florida.

Over the past number of decades, billboards have been the most important form of visual blight associated with signs in communities throughout the nation. Indeed, billboards have been seen so universally as a scenic detriment that over 700 communities in the US now prohibit them.

Staff believes that the newly-emerging digital electronic signs may replace billboards as the leading cause of sign-induced visual blight, and that communities which do not adopt

specific regulations for such signs will not be prepared once the cost of such signs drops and the signs proliferate.

At the October 19, 2006 and January 30, 2007 Plan Board meetings, it was stated that planning staff had looked at the sign ordinance used by every local government in the U.S., and only found 15 ordinances which prohibit all electronic signs, even when they are "static" (do not flash, blink or change message). This statement is not correct. There are approximately 33,000 cities and counties within the U.S. Planning staff has nowhere near the capability of looking at 33,000 sign ordinances. Staff instead selected what it believed was a representative sample of approximately 50 ordinances (0.2% of all ordinances).

Allowing "static" electronic signs (signs that do not blink, flash or change) or time/temperature electronic devices (presently allowed) can be a problem, because even if the electronic sign is initially static or is a non-offensive time/temperature sign, such signs can readily become flashing, blinking or otherwise animated signs *after* the sign has been issued a permit and has been installed (such signs are generally designed to be programmed to flash or otherwise animate, even if they are initially static).

The cost of eliminating such non-conforming signs, after a permit has been issued and the sign installed, can be very high. Staff therefore believes that rather than having the City face the resulting proliferation of jarring, distracting, flashing electronic signs in the city (and the substantial extra demands on Codes Enforcement), it would be prudent to either prohibit electronic signs or establish size limitations and other specific regulations for electronic signs. The size limitations and other requirements would limit their negative impact without prohibiting their use.

An item appeared in the October 21, 2006 issue of the Gainesville Sun. The Sun published the following (unscientific) survey results to the question: "What is your impression of the animated electronic signs in front of some businesses around town?" The 546 survey respondents, replying to this newspaper survey found online at gainesville.com, responded in the following way:

Love them	71	13% of total
Hate them	178	33% of total
Somewhere in between	69	13% of total
Indifferent to them	147	27% of total
I have no idea what you're talking about	81	15% of total

The Plan Board has held public meetings for this petition on October 19, 2006 and January 30, 2007. On December 7, 2006, staff held a public workshop regarding electronic signs.

Planning staff held a public workshop on December 7, 2006at the Chamber of Commerce Community Design Center regarding electronic signs. Approximately 25-30 citizens

attended, including a number of Plan Board members, representatives from several local sign companies and businesses now using electronic signs, and other interested citizens. Staff made a presentation about issues and regulatory options pertaining to electronic signs, then accepted citizen questions and comments. The meeting lasted approximately 90 minutes.

Nearly all in attendance agreed that the City should have a sign ordinance and that blinking or flashing or animated signs should continue to be prohibited.

Concerns were expressed about:

1. Electronic signs being a safety hazard for motorists.
2. Electronic signs not being compatible with residential areas (they are "out of context").
3. Whether this petition before the Board was inappropriately initiated unilaterally by staff, rather than as a result of citizen outcry.
4. A representative from the Florida Credit Union indicated that most calls the Credit Union has received about their electronic sign have been supportive.
5. A citizen indicated that the City sign regulations are sufficient. ("If it ain't broke, don't fix it.")
6. Another indicated that rather than punitive regulations, the City should establish incentives.
7. Another suggested that the City should better enforce the existing sign regulations.
8. A citizen indicated that the cost of electronic signs has only gone down 2 or 3 percent in the past 14 years.
9. Another suggested that if the City decided to prohibit electronic signs, the City should be obligated to buy all existing electronic signs in order to have them removed (so that businesses with such signs do not have an unfair advantage over their competitors).
10. Another was concerned that if electronic signs were not regulated, a form of "one-upmanship" would be engaged in by local businesses striving to "out-shout" each other with signs.
11. One question asked if City staff had complained when the University of Florida installed electronic signs at some of their gateways.

At its January 30, 2007 special meeting, after numerous public comments and lengthy discussion, the Plan Board voted to continue this item, and asked staff to complete the following actions:

1. Speak with stakeholder representatives (from the Chamber of Commerce, sign companies and City Beautification Board) regarding this petition.
2. Prepare a list of options for how to regulate (or not regulate) electronic signs.

Board members asked for the following, although there were no majorities for any of these, and no votes were taken:

- A special use permit would be a good idea;
- Permit criteria should be more objective;
- Proliferation of electronic signs should be a concern in the ordinance;
- The brightness of electronic signs should be controlled;
- Electronic signs should be prohibited;
- A moratorium on electronic signs should be imposed until new regulations are in place;
- Electronic signs as ground-mounted signs should only be allowed as monument signs;
- Do not create new regulations for electronic signs; and
- Make the maximum size of electronic signs a percentage of what is allowed for non-electronic signs.

Regulatory Options for Electronic Signs

Staff proposes that the following recommendations be considered for electronic signs:

1. Allow electronic signs through staff approval based on special criteria.
2. Allow electronic signs through a Plan Board-approved special use permit.
3. Prohibit electronic signs, including time/temperature electronic signs.

For each of the three regulatory options, staff recommends that a definition for *electronic signs* be added to the Land Development Code, that the definition of *animated sign* be amended, and that *changing message device* be deleted due to its incorporation into the amended definition of *animated sign:*

Sec. 30-23. Definitions.

Animated sign means any sign that uses movement or change of lighting or change of color to depict action or create a special effect or scene. Also includes a sign or device visible from the public right-of-way with letters or characters that move or change more frequently than every 3 minutes. The move or change can occur mechanically or electronically without altering the face or the surface of the sign. Time and temperature devices are not exempt from this definition.

~~*Animated sign* means any sign which involves motion or rotation of any part by any means, or is illuminated by flashing, intermittent or color changing light or lighting.~~

~~*Changing message device* means any device visible from a public right of way across the face of which a written message appears to move or containing a written message which changes mechanically more than once in any three minutes.~~

Electronic sign means any sign, or portions of a sign, where any light source, including but not limited to incandescent bulbs or light-emitting diodes (LED), constitute the sign text or image. This type of sign includes, but is not limited to electronic message boards; television screens; plasma screens; digital screens; flat screens; LED screens; video boards; other types of electric and electronic display boards and screens; and holographic displays. Electronic signs include projected images or messages onto buildings or other objects. Signs that are illuminated by light sources only for the purpose of internal or external illumination are not considered electronic signs, nor are non-animated neon signs.

Sec. 30-316. Sign Regulations. General Restrictions

(b) **Prohibited Signs.**

(8) Animated sign(s), including time and temperature devices. (See section 30-23. Definitions)

~~(9) Changing message devices, except for time and temperature devices. (See section 30-23. Definitions)~~

Option 1. Allow electronic signs through administrative approval based on special criteria

Sec. 30-316. Sign Regulations. General Restrictions.

(xxx) Electronic signs. It shall be unlawful to erect, cause to be erected, maintain or cause to be maintained any electronic sign unless the electronic sign conforms to the following criteria:

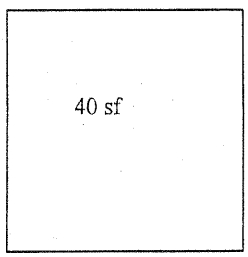
a) Special Area Plans (SAPs). Where such signs are not prohibited by sign materials or other requirements in the Traditional City, College Park, University Heights, Southwest 13th Street, or the Five Points Special Area Plans, the sign area of an electronic sign shall be no larger than 6 square feet.

b) Types of sign. Electronic signs shall be either *Ground-mounted signs for single- and multiple-occupancy developments* (Sec. 30-318 (b)), or *Wall-mounted, roof, projecting and marquee signs* (Sec. 30-318 (c)). Ground-mounted signs that are electronic shall be monument signs only, as defined by Sec. 30-23. The provisions in this section shall also apply to church signs, subdivision signs, multi-family signs and pedestrian signs.

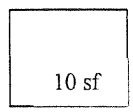
c) Size. *Wall-mounted signs* ((Sec. 30-318(c)) that are at least partly an electronic sign may be no greater than 25 percent of the maximum allowable size for a non-electronic wall-mounted sign, or 20 square feet, whichever is less.

Monument signs that are at least partly electronic signs may be no greater than 50 percent of the maximum allowable size for a non-electronic monument sign. For signs that are partly electronic, the electronic portion of the sign may be no larger than 50 percent of this reduced sign size. In no case shall the sign area of the electronic portion of the sign exceed 20 square feet.

Example of Wall Sign Using Electronic Signage

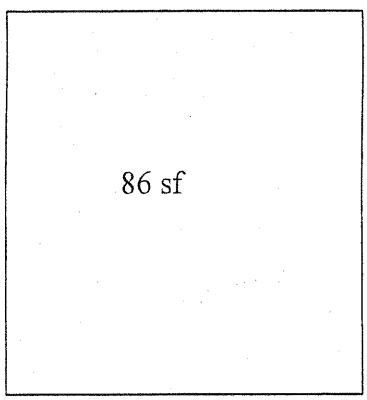


Allowable wall-mount sign
without electronic signage

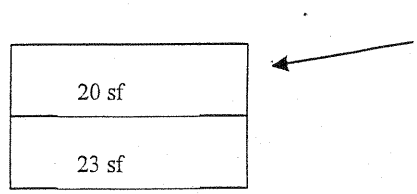


Allowable wall-mount sign
with electronic signage

Example of Monument Sign Using Electronic Signage



Allowable monument sign
without electronic signage



Allowable monument sign
with electronic signage

Street frontage (ft)**	# of Signs	Size of Ground-Mounted Sign (sq ft)*	Size of Monument Sign (sq ft)	Size of Monument Sign if Part of Sign is Electronic (sq ft)	Size of Electronic Sign (sq ft)***	Distance from Side Property Line (feet)	Distance from Other Signs (feet)
Less than 50	1	24	29	15	7	10	---
50 to less than 100	1	32	38	19	10	10	---
100 to less than 200	1	64	77	39	19	20	---
200 to less than 300	1	72	86	43	20	50	50
Greater than 300	1	96	115	58	20	50	100
Greater than 600 with no outparcels	2 (only 1 if an electronic sign is used)	Total sq footage no more than 144; neither sign may be greater than 96 sq ft or more than 10 ft in ht.	Total sq footage no more than 173; neither sign may be greater than 96 sq ft or more than 10 ft in ht.	60	20	50	250

*Maximum height of a ground-mounted and a monument sign is 10 feet; 8 feet for a secondary frontage sign.
**Only one street frontage may be used to determine the maximum size of ground-mounted or monument sign.
***Electronic signs that are ground-mounted shall be monument signs only, as defined by Sec. 30-23.

[NOTE: Table above revises table in Sec. 30-316 (b)]

d) Animation. Animated signs, as defined by Sec. 30-23, are not allowed.

e) Non-Conformities. New electronic signs shall be allowed only if all existing, non-conforming signage on the property is made to conform.

f) Brightness. The maximum brightness of an electronic sign shall not exceed illumination of 3,500 nits (candelas per square meter) during daylight hours, nor of 500 nits (candelas per square meter) between dusk to dawn, as measured from the signs face at maximum brightness. The signs must have an automatic dimmer control to produce a distinct illumination change from a higher illumination level to a lower level for the time period between one half hour before sunset and one half hour after sunrise.

Option 2. Allow electronic signs through a Plan Board-approved special use permit

Sec. 30-316. Sign Regulations. General Restrictions.

(xxx) *Special Use Permit for Electronic Signs*. No electronic sign shall be erected or maintained unless a special use permit is issued by the city plan board.

No special use permit shall be approved by the city plan board unless the following findings are made concerning the proposed electronic sign:

a) Special Area Plans (SAPs). Where such signs are not prohibited by sign materials or other requirements in the Traditional City, College Park, University Heights, Southwest 13th Street, or the Five Points Special Area Plans, the sign area of an electronic sign shall be no larger than 6 square feet.

b) Types of sign. Electronic signs shall be either *Ground-mounted signs for single- and multiple-occupancy developments* (Sec. 30-318 (b)), or *Wall-mounted, roof, projecting and marquee signs* (Sec. 30-318 (c)). Ground-mounted signs that are electronic shall be monument signs only, as defined by Sec. 30-23. The provisions in this section shall also apply to church signs, subdivision signs, multi-family signs and pedestrian signs.

c) Size. *Wall-mounted signs* ((Sec. 30-318(c)) that are at least partly an electronic sign may be no greater than 25 percent of the maximum allowable size for a non-electronic wall-mounted sign, or 20 square feet, whichever is less.

Monument signs that are at least partly electronic signs may be no greater than 50 percent of the maximum allowable size for a non-electronic monument sign. For signs that are partly electronic, the electronic portion of the sign may be no larger than 50 percent of this reduced sign size. In no case shall the sign area of the electronic portion of the sign exceed 20 square feet.

(NOTE: Size examples on page 6 and Table on page 7 of this report are also part of Option 2.)

d) Animation. Animated signs, as defined by Sec. 30-23, are not allowed.

e) Non-Conformities. New electronic signs shall only be allowed only if any existing, non-conforming signage on the property is made to conform.

f) Brightness. The maximum brightness of an electronic sign shall not exceed illumination of 3,500 nits (candelas per square meter) during daylight hours, nor of 500 nits (candelas per square meter) between dusk to dawn, as measured from the signs face at maximum brightness. The signs must have an automatic dimmer control to produce a distinct illumination change from a higher illumination level to a lower level for the time period between one half hour before sunset and one half hour after sunrise.

Option 3. Prohibit electronic signs, including time/temperature signs

(b) Prohibited signs. It shall be unlawful to erect, cause to be erected, maintain or cause to be maintained any of the following signs:

(15) Electronic signs (including time and temperature devices).

Recommendation
Allow electronic signs through administrative approval based on special criteria (Option 1).

Fiscal Note
Brightness measurement equipment must be purchased and staff must be trained to use equipment.

Respectfully submitted,

Ralph Hilliard

Ralph Hilliard
Planning Manager

DM: DN
Appendix:

- Examples of regulating electronic sign brightness.
- Comparison of City Planning Division recommendations to Gainesville Chamber of Commerce Recommendations.
- Chamber of Commerce Position Paper – received 3/2/07.
- Letter from John Hudson to City Plan Board – dated 2/22/07.
- Letter from City Beautification Board to City Commission – dated 2/26/07.

Appendix

Regulating Electronic Sign Brightness

Example Ordinance Language

From Duluth MN:
The maximum brightness of a flashing, video display, or electronic graphic display sign shall not exceed illumination of 3,500 nits (candelas per square meter) during daylight hours, nor of 500 nits (candelas per square meter) between dusk to dawn, as measured from the signs face at maximum brightness. The signs must have an automatic dimmer control to produce a distinct illumination change from a higher illumination level to a lower level for the time period between one half hour before sunset and one half hour after sunrise.

From Murfreesboro TN:
"*Brightness*: Also known as intensity. The brightness/intensity of LED is measured in candelas per square meter, which is also referred to as "nits".
[dd] brightness/intensity does not exceed 3,000 nits in daylight and 750 nits at night;
[ee] is controlled by a light detector with dimmer with dimming set to "AUTO" (it is the responsibility of the permit holder to demonstrate compliance);
[gg] has a minimum display time of thirty seconds;

From Bloomington MN:
(F) Brightness. The sign must have a maximum illumination of 3,500 nits (candelas per square meter) during daylight hours and a maximum illumination of 500 nits (candelas per square meter) between dusk to dawn as measured from the sign's face at maximum brightness;
(G) Dimmer control. Video display signs must have an automatic dimmer control to produce a distinct illumination change from a higher illumination level to a lower level for the time period between one half-hour before sunset and one half-hour after sunrise;

From Vernonhills IL:
The brightness level of the electronic message center sign shall not exceed 3,250 nits. From dusk to dawn the brightness level shall not exceed 812.5 nits. Sign messages shall not change more frequently than once every 30 minutes. The change shall be a full screen replacement without fading, motion, or other action techniques.

Anchorage AK:
nighttime luminance standard was raised to 750 candelas per square meter from 600 candelas per square meter that was in the initial review draft. This change is being proposed by staff to minimize the potential number of fluorescent backlit signs that may not meet the initially proposed luminance standard. At the same time, this increase still meets the overall intent of reducing sign brightness. Regulation: "During daylight hours between sunrise and sunset, luminance shall be no greater than 5,000 candelas per square

meter. At all other times, luminance shall be no greater than 750 candelas per square meter."

These standards are primarily directed at setting maximum daytime and nighttime luminance levels for electronic changeable copy signs, since these signs utilize the brightest lighting technology and have the greatest potential to impact residential neighborhoods and to distract drivers. Electronic changeable copy signs are capable of being programmed so that brightness levels can be changed for night viewing versus daytime viewing.

The proposed maximum daytime standard of 5,000 candelas per square meter was determined to be of sufficient brightness to allow an electronic changeable copy sign to be clearly read against a clear day sky. According to a memorandum provided by Clanton & Associates, a clear day sky luminance is 3,000 candelas per square meter. For comparison, an overcast day's sky can have 300 or less candelas per square meter. The memorandum also states that sign luminance maximums are not set to compete against the direct sun since that would be in response to an unusual occurrence and also result in an unreasonably high sign luminance for typical sky conditions.

According to the Clanton & Associates memorandum, the maximum nighttime standard of 600 candelas per square meter is acceptable and allows signs to be easily read without being too bright. Most fluorescent backlit signs that were measured produced luminance levels less than 600 candelas per square meter.

However, after additional measurements were taken by staff in August and September, the Department determined that raising the minimum nighttime standard to 750 candelas per square meter would cause fewer potential nonconformities among existing fluorescent backlit signs while still meeting the intent of a nighttime standard which limits sign brightness. It is important to note that even though a few fluorescent backlit signs with light colored translucent backgrounds and dark letters did not exceed the maximum luminance standards, the Department is not recommending changing provisions of the sign standards to allow fluorescent backlit signs with light translucent colored backgrounds with dark translucent letters. These signs still produce more overall glare than fluorescent backlit signs with dark translucent colored backgrounds and lighter colored translucent letters. One of the primary purposes of proposed new exterior lighting standards in the rewrite of Title 21 is to control glare and excessive brightness to improve visual performance, allow better visibility with relatively less light, and protect residents from nuisance and discomfort. Luminance measurements obtained by Planning staff in September also indicated that many neon signs do not meet the nighttime luminance standard. As of the date of this report, staff is researching the possible impacts of the luminance standard on neon signs and a recommended option for addressing these signs.

Plymouth MN:
[a similar provision will be necessary for our sign application if we adopt a brightness regulation] All applications for signs which are to be internally illuminated shall indicate the lamp wattage and luminance level in candelas per square meter (nits), and a permit shall only be issued upon the determination by the Zoning Administrator that the luminance level is within the adopted standards of Section 21105.06

Range of Illumination Regs Found

Daytime Candelas	Dusk to Dawn Candelas
3,000 to 5,000 nits	500 to 812.5 nits

Comparison of City Planning Division Recommendations to Gainesville Chamber of Commerce Recommendations (dated 3/2/07)

	City Planning Division	Chamber of Commerce
Special Areas (SAPs)	Max Size = 6 square feet	Max Size = 10 square feet
Size	If wall-mount is at least partly electronic, 25% of what is allowed for non-electronic wall mount. In no case larger than 20 square feet. If monument sign is at least partly electronic, 50% of the maximum allowable size for a non-electronic monument sign. If monument is at least partly electronic, the electronic portion of the sign may be no larger than 50% of this reduced sign size. In no case larger than 20 sf.	If entire wall-mount is electronic, 75% of what is allowed for non-electronic wall-mount. If entire monument is electronic, 75% of what is allowed for monument. If only a portion of monument sign is electronic, the full non-electronic monument sign is allowed, but the electronic portion can be no more than 50% of face. In no case larger than 60 square feet.
Animation	Same standard	
Non-Conformities	Same standard	
Brightness	Same standard	
Number of Signs	No standard proposed	Only one electronic sign allowed on property, even if street frontage exceeds 600 feet

Electronic Sign Regulation

Position Paper

Gainesville Area Chamber of Commerce

Gainesville Area
CHAMBER OF COMMERCE

Rec'd Comm. Devel. Dept.
3/2/07

Introduction

Since late 2006, the City of Gainesville Plan Board has been considering additional regulation or an outright ban of electronic signs within city limits. This effort was first brought to the Plan Board as a formal petition at its October 19, 2006 meeting. At that point, city planning staff's recommendation was to add electronic signs to the list of prohibited signs in the City of Gainesville.

Since that meeting, staff has worked with various stakeholders in the community, including the Gainesville Area Chamber of Commerce, to get input on the petition; this effort has led to much discussion on this issue which we believe has facilitated some compromise.

At its January 30, 2007 special meeting, after numerous public comments and lengthy discussion, the Gainesville Plan Board voted to continue this item, and asked staff to complete the following actions:

1. Speak with stakeholder representatives (from the Chamber of Commerce, sign companies and City Beautification Board) regarding this petition.
2. Prepare a list of options for how to regulate (or not regulate) electronic signs.

In their most recent report to the Plan Board, Gainesville planning division staff proposes that the following options be considered for electronic signs:

1. Allow electronic signs through staff approval based on special criteria.
2. Allow electronic signs through a Plan Board-approved special use permit.
3. Prohibit electronic signs, except time/temperature electronic signs.

Another perspective

Concerns have been expressed recently that the emergence of electronic, digital, light-emitting diode (LED), plasma and television signage in the city is creating:

1. aesthetic problems, and
2. may create traffic hazards to motorists who may be distracted by such signs.

We would like to point out that there is no evidence to suggest that electronic signs create safely problems for motorists. In fact, the Plan Board chairman acknowledged that this was not a safety issue at the start of that body's special meeting on January 30.

So this issue is truly one of aesthetics; in our opinion, that makes this issue much difficult for regulation.

Position

It is the Chamber's position that no action is needed at this time regarding this matter.

1. Beauty is in the eye of the beholder and difficult to define through regulation. In fact, at least one parcel that includes an electronic sign in the City of Gainesville has been singled out for a beautification award by Keep Alachua County Beautiful.
2. There are sound studies that have found commercials signs did not adversely affect safety. Several researchers have independently concluded that well-designed and strategically placed signs may actually "wake up" drivers suffering from "highway hypnosis" by attracting their attention to their surroundings.
3. Creating regulation at this time will create an un-level playing field between those companies that currently have electronic signs and those that may wish to have electronic signs. It is a soundly-researched and well-established fact that the on premise sign, when readable and conspicuous, can greatly increase the income of a business.
4. Most electronic signs in use in our community not only promote the first impression of the business but also assist our not-for-profit organizations acting as a vital method of communication.

However, noting the comments of the Plan Board members at the January 30, the Chamber is advocating a compromise approach to this subject.

The Chamber supports developing new regulations that would allow for staff approval of electronic signs based on special criteria.

The specific regulations that are agreeable to the Chamber are:

1. Addition of electronic signs to the Land Development Code as proposed by city planning staff.
2. Allow electronic signs through administrative approval based on special criteria, to wit:
   a. Special Area Plans (SAPs). Where such signs are not prohibited by sign materials or other requirements in the Traditional City, College Park, University Heights, Southwest 13th, or the Five Points Special Area Plans, the sign area of an electronic sign shall be no larger than 10 square feet.
   b. Size. When installed as a wall-mounted sign, the electronic sign may be no greater than 75 percent of the maximum allowable size for a non-electronic wall-mounted sign for the building in question. When installed as a ground mounted sign, the electronic sign must be a monument sign as defined by Sec. 30-23. If the entire face of the monument sign is to be utilized as an electronic sign, the size of the sign may be no larger than 75 percent of the maximum allowable size for a non-electronic monument

sign for the parcel in question. As an alternative, a parcel may utilize the fully allowable monument sign size for non-electronic signs if the electronic portion of the sign is equal to or less than 50 percent of the face. In no case shall the sign area of an electronic sign exceed 60 square feet. [Please see Exhibit A for a proposed new signage table.]

c. Animation. Animated signs, as defined by Sec. 30-23, are not allowed.
d. Non-Conformities. New electronic signs shall lonely be allowed only if any existing, non-conforming signage on the property is made to conform.
e. Brightness. The maximum brightness of an electronic sign shall not exceed illumination of 3,500 nits (candelas per square meter) during daylight hours, nor of 500 nits (candelas per square meter) between dusk and dawn, as measured from the sign's face at maximum brightness. The signs must have an automatic dimmer control to produce a distinct illumination change from a higher illumination level to a lower level for the time period between one-half hour before sunset and one-half hour after sunrise.
f. Number of signs. Any parcel that contains more than 600 feet of street frontage shall be allowed only one sign if it utilizes an electronic sign.

Conclusion

It has been said that a compromise is a solution with which no one is completely happy. The Chamber's position is a compromise position that we hope will find a warm reception with the City of Gainesville's Plan Board.

Exhibit A

Street Frontage (feet)	Number of Signs	Size of Ground-Mounted Sign (square feet)	Size of Monument Sign (square feet)	Maximum Electronic Portion Allowed if a Mix of Electronic and Non-Electronic (square feet)	Maximum Size Allowed if Entire Face is Utilized as Electronic Sign (square feet)
Less than 50	1	24	29	14.5	21.75
50 to less than 100	1	32	38	19	28.5
100 to less than 200	1	64	77	38.5	57.75
200 to less than 300	1	72	86	43	60
Greater than 300	1	96	115	57.5	60
Greater than 600 with no outparcels	2 (only 1 if an electronic sign is utilized)	Total square footage no more than 144; neither sign may be greater than 96 square feet or more than 10 feet in height	Total square footage no more than 173; neither sign may be greater than 96 square feet or more than 10 feet in height	60	60

HUDSON & COMPANY, INC.
BUILDING CONSTRUCTION CONSULTANTS

352-377-0623

February 22, 2007

02-26-07A02:32 RCVD

City of Gainesvile
Planning Department
Station 9, P.O. Box 490
Gainesville, FL 32602-0490

Attn: Dean Mimms

Re: Petition 139TCH-06PB

Dear Dean,

Please provide copies of this letter and the attachments to all Plan Board members in their packets for the next meeting dealing with electronic signs. I am writing to urge the members of the Gainesville Plan Board to modify the sign ordinance to prohibit the use of any device that directs light sources toward the Right of Way and any property not owned by the owner of the offending sign by simply adding a reference to the existing code section 30-345 (b) (8) (a).

Our Land Development Code already contains provisions to prevent "Light Trespass and Glare" in Section 30-345 (b) (8) (a). Quoting from the code "Directional luminaires such as floodlights, spotlights, **sign lights**, and area lights shall be so installed and aimed that they illuminate only the task intended and that the light they produce **does not shine directly onto neighboring properties or roadways**." The existing LED signs in Gainesville that I have observed violate this provision of our code. Apparently the staff permitting these signs are not aware of the design of LED's, and that they have a focused beam of light of about 20 to 30 degrees which is aimed toward the viewer of the sign and **does shine** directly onto neighboring properties or roadways.

Brightness in LED's is controlled by the angle of light being emitted which is built into the LED's themselves, or by adding a current limiting circuit that is very cheap, typically less than $2.00. This is a concern in sign codes as some light sources are very bright (by being more focused) such as lasers, and have gotten cheap enough to be used in signs (like LED's have), so any code must be broad enough to restrict any light source from being directed into the roadways. It appears to me that the drafters of our existing code have covered these concerns very well and application of the current code should prohibit LED signs due to their design. Conventional back-lit sign boxes would be illegal if the diffusers (sign faces) were removed and one could look directly at the florescent lamps that are typically used to illuminate them. LED signs could be made acceptable if the LED's were not able to shine directly onto roadways and neighboring properties, and instead could glow through a diffuser that could be mounted over the lamps to achieve compliance.

Finally, I must comment that in all of my 25+ years in development I never had a client who came in and said "I'd like a small sign." They ALL want to know how big and how bright they can be. Unless we want to look at these electronic signs for a LONG time we need to stop them now. I recently removed the old Plaza Theater sign that had polluted the 13th Street corridor for almost half a century, and I was only able to remove it because it had deteriorated structurally to the point that metal parts were falling onto the street below.

Sincerely,

Hudson & Company, Inc.

John E. Hudson
President

Cc: Ralph Hilliard

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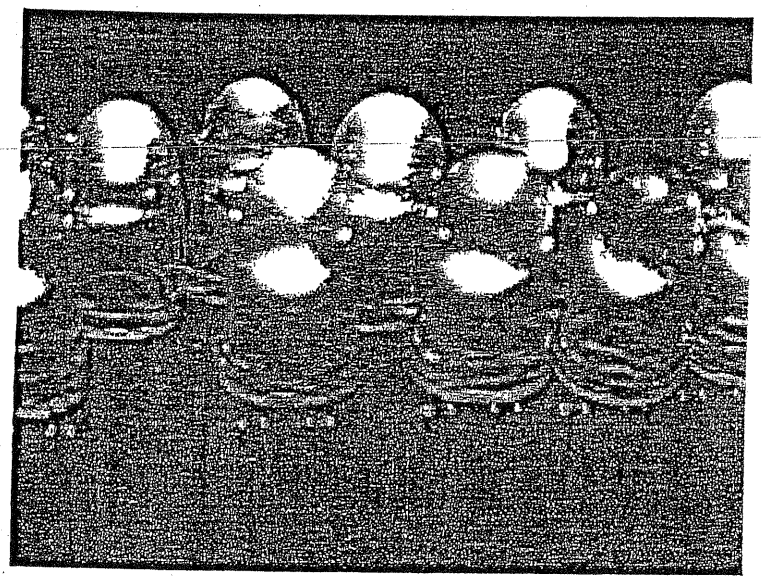
Home Built LED Lighting

Light Emitting Diodes (LEDs) have been around for years in red, yellow and green. New technological advances have given us incredibly bright blue and white versions--the white LEDs on our products page are state-of-the-art in brightness. The rated brightness varies by how wide the beam angle is. LEDs with a super-high brightness rating also have a very narrow beam angle. Wider-angle LEDs have a lower brightness rating, but may put out just as much light. It's important to choose the beam angle to suit your needs.

- **LEDs can last tens of thousands of hours if used at rated current**
- **No annoying flicker like from fluorescents**
- **LEDs are impervious to heat, cold, shock and vibration**
- **No breakable glass is used, and LED lights can be waterproofed for marine use**

White LEDs are perfect for replacing small, inefficient incandescent bulbs in night lights, flashlights, path lights, task lights and exit signs. Try 6-9 white LEDs for reading and task lights, and 1-3 LEDs for flashlights and path lights.



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Designing LED lighting

DISCLAIMER: None of us here are electronics experts. We've already corrected this page numerous times thanks to real electronics experts who have emailed us. What we'd really like is for a real electronics expert to

Large AC LED lights

Large LED clusters that run on 120VAC are extremely expensive to purchase--usually US$200 and up. You can home build them, but the electronics and design are much more complicated than the DC circuits above. Because LEDs are directional, they are not always a very good choice for room lighting...but work very well for task lighting. Here's some more information:

3-watt AC 10-LED Reading Lamp Circuit

LEDs are excellent for task lighting, and this circuit also has battery backup built in -- when AC power goes out, the LED cluster switches to battery power. Submitted by Pranab Kumar Roy, an electrical engineering student at Nagpur University, India. Designed for 230VAC European grid power, and could be used on 120VAC USA grid power by replacing the transformer. Circuit and text image is 500K bytes.

More AC LED circuit design information:
http://ourworld.compuserve.com/homepages/Bill_Bowden/page10.htm#lineled.gif

We'd appreciate any other links you can send us about designing LED lighting fixtures, especially for 120v AC house current applications.

Other LED design and handling concerns

- If your LED mounting does not allow any air circulation, we recommend running them at 18-20ma instead of 25ma to avoid any heat buildup, which will shorten their life.
- LED lights generally do not need reflectors, as the angles at which they emit light are set internally. Our white LEDs emit in a 20 degree arc. Very little light is wasted from shining in the wrong direction.
- Although our LEDs are not powerful enough to require eye protection labelling, DO NOT look directly into the beam from a close distance, just like with a halogen lamp.
- Solder your connections quickly and efficiently, using a small (less than 30 watt) soldering iron. LEDs can be ruined if the internal temperature gets too high from soldering.
- Do not place too much strain on the LED leads when bending them. Bend the leads ONLY below the sqaure tab on each lead.
- LEDs are sensitive to static. The manufacturer recommends a grounding wrist strap, but we have had no problems without one during our research. Just be careful not to drag your feet across the carpet and grab a handful of LEDs...or simply touch a grounded metal chassis before handling LEDs.

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This page last updated 12/04/2006

ICNIRP STATEMENT ON LIGHT-EMITTING DIODES (LEDS) AND LASER DIODES: IMPLICATIONS FOR HAZARD ASSESSMENT

International Commission on Non-Ionizing Radiation Protection*†

INTRODUCTION

BOTH VISIBLE and infrared laser diodes and light-emitting diodes (LEDs, or sometimes referred to as IREDs in the infrared) are widely used in displays and in many home entertainment systems, toys, signal lamps, optical fiber communication, and optical surveillance systems. Collectively these are referred to as diode emitters (DEs). While the higher power laser diodes have routinely been considered to be "eye hazards," traditional LEDs have been regarded as safe. However, with the recent development of higher power LEDs, there has been an effort to develop LED safety standards. There are a variety of LED types ranging from surface emitters to superluminescent diodes (SLDs). The latter have some characteristics more typical of diode lasers. Questions have therefore arisen as to whether laser or incoherent radiation exposure limits (ELs) should be applied to each type of emitter. Based upon current exposure limits, most LEDs—particularly surface-emitting LEDs—pose no clear hazard to the eye. Current surface-emitting LEDs produce exposure levels at the retina that are less than 1% of the levels that are known to cause retinal injury (WHO 1982; Sliney and Wolbarsht 1980) even when the LEDs are viewed at extremely close distances (e.g., at 10 cm) (Sliney and Wolbarsht 1980). At typical viewing distances of 0.5 to 2 m, the levels are less than 0.1% of retinal injury levels. Even lengthy exposures of the cornea and lens of the eye pose no hazards whatsoever. From a safety standpoint, LEDs have been treated both as lasers (e.g., in IEC standard 60825-1) (IEC 1998; ANSI 1988) and as lamps (CIE 1999; ANSI/IESNA 1996a,b). Because of some confusion relating to the actual risk, ICNIRP organized a panel of experts to review the potential hazards of current DEs.

Laser diodes are constructed with miniature resonant cavities with gain, produce a very narrow spectral bandwidth, can generally achieve shorter pulse durations, are not limited in radiance, and can emit much higher radiant powers than LEDs.

Light-emitting diodes of low to moderate brightness (luminance) are used in many types of visual displays as indicator lights and many related products. Higher power LEDs and IREDs are used as signal lamps and in a wide variety of domestic and industrial products, and can compete with laser diodes in limited optical communications systems, i.e., in local-area networks (LANs). They are generally not competitive with laser diodes because of different output characteristics. These differences in output characteristics define both their uses and their potential eye hazards. Most current LEDs have very limited radiance and do not pose a clear eye hazard, despite the fact that they have been included in some laser safety standards in the past few years.

LED TECHNOLOGY

What are the key differences between LEDs and diode lasers?

Laser diodes are constructed with miniature resonant cavities (with optical gain, as with Fabry-Perot structures) where stimulated emission ("lasing") occurs. As a result, they produce a very narrow spectral bandwidth, and because of heat-flow geometry and other reasons they can generally achieve shorter pulse durations than LEDs—critically important in optical fiber communications. Diode lasers—unlike most LEDs—are not limited in radiance, and can emit much higher radiant powers than LEDs. This is particularly true of surface-emitting LEDs, which have a radiance of the same order of magnitude as tungsten filaments. Edge-emitting LEDs and related structures can have higher radiances. The emission area in an edge-emitting diode laser is measured in square micrometers, but the emission surface in

* ICNIRP Secretariat, c/o R. Matthes, Bundesamt für Strahlenschutz, Institut für Strahlenhygiene, Ingolstädter Landstrasse 1, D-85764 Oberschleissheim, Germany.

† This statement is based upon the deliberations of the ICNIRP Standing Committee IV ("Optics") and was extensively discussed in a task group meeting of experts convened by ICNIRP which took place on 23–25 September 1998 at the University Eye Clinic, Regensburg, Germany. The following experts participated in this meeting: W. Cornelius (Australia), D. Courant (France), P. J. Delfyett (USA), S. Diemer (Germany), V.-P. Gabel (Germany), W. Horak (Germany), G. Lidgard (UK), R. Matthes (Germany), J. Mellerio (UK), T. Okuno (Japan), M. B. Ritter (USA), K. Schulmeister (Austria), D. H. Sliney (USA), B. E. Stuck (USA), E. Sutter (Germany), and J. Tajnai (USA).

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an LED is normally of the order of a square mm. If one magnifies the image of a laser diode, one sees a brilliant source, frequently oblong, sometimes a line, and sometimes nearly a point. This geometry allows the laser beam energy to be collimated, as with other lasers, to beam divergences of the order of one milliradian. By contrast, the LED emitter when magnified appears as a large disc or square area of high brightness, and if one attempts to collimate the beam, it is simply not readily possible without a large lens, as in a flashlight (hand torch). Fig. 1 compares the emission characteristics of laser diodes and light-emitting diodes (LEDs).

The radiance of a surface-emitting LED is limited both by semiconductor physics and device structure. At room temperature, nonradiative mechanisms often mediated by phonons (lattice vibrations) limit the likely achievable quantum efficiency to below 40%. State-of-the-art LEDs have a quantum efficiency of roughly 20%; that is, 20% of the electrons flowing through the semiconductor junction are converted into photons. As more current flows through the semiconductor junction, these nonradiative mechanisms heat the semiconductor and reduce the efficiency resulting in a self-limiting radiance. For visible LEDs, light is typically emitted only from the front facet of the device, then collected by an integral molded plastic lens. IREDs often have substrates transparent to the generated photons, resulting in a greater external efficiency—more photons escape the device before being absorbed. However, for IREDs, roughly half the totally emitted optical power emanates from the edges of the device through the transparent substrate, and is often redirected by an annular reflecting cup (Sze 1981). In all IREDs known, this annular reflection (Fig. 1) has a much larger area and a size greater than the minimum angular subtense (α_{min}) for extended sources, hence a lower radiance and less hazard than the front-facet die emission. This fact was taken into account when computing radiance values in Table 1. Only the highest radiance value, that of the front facet of the die, is included in the table. Because of the fundamental limitations in quantum efficiency without optical gain, the room-temperature radiance is not likely to increase by more than a factor of two in the future.

The radiance of a laser is typically much more than a 1,000 times greater than that of a surface-emitting LED. Because of the limited radiance of surface-emitting LEDs, far less radiant power can be launched into optical fibers compared to lasers; therefore, their use is limited in optical fiber communications. Because of lower cost, LEDs are generally favored in applications where either an LED or a laser can be employed. An additional incentive to use an LED rather than a laser has been the lack of safety regulations applying to LEDs, as compared to the maze of regulations related to lasers.

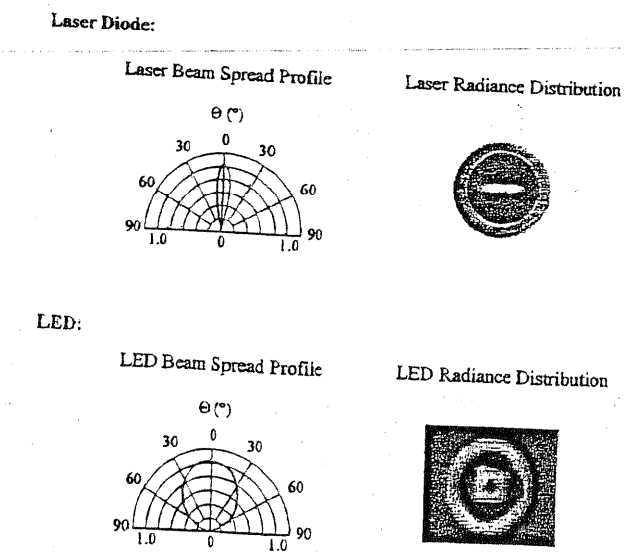

Fig. 1. Differences between diode lasers and LEDs. The beam spread is generally smaller for a laser (top) and it is clearly smaller than that for an LED. The source size of the LED (bottom, right) is much larger than that of a laser diode (top, right) as shown in the magnified near-field photographic images. In addition, the spectral bandwidth of laser diodes is far narrower than for any LED (not shown here).

New device types and comparisons

New developments in semiconductor technology have allowed new DE devices to be created that have led to the question whether these should be treated as laser diodes or LEDs for safety evaluations. The properties of some of these devices fall between conventional LEDs and diode lasers. A simple distinction between what a user would call a laser and an LED is no longer possible.

These device types are as follows:

1. Surface-emitting (large area) LED (SLED);
2. Micro-cavity surface emitter;
3. Edge-emitting LED (ELED);
4. Super-luminescent diode emitter (SLD);
5. Vertical-cavity surface-emitting laser (VCSEL); and
6. Ridge-wave guide laser (clearly a full-fledged laser; included for comparison).

Each of these devices will be described in the following.

Surface-emitting LEDs (or SLEDs) are the conventional LEDs which have existed for decades. In comparison to the latter types, these emit from relatively large surfaces oriented orthogonally to the axis of the emission pattern.

Micro-cavity surface emitters are SLEDs with an internal mirror and layer thicknesses tailored to act as a low-finesse Fabry-Perot cavity. These devices do not show optical gain; the cavity is added only to reduce the optical linewidth. This micro cavity also has the effect of reducing the emission half-angle, since the layer thicknesses forming the cavity reduces emission efficiency at larger angles. Assuming that device structures can be designed which reduce the half angle while preserving the total power emitted from the front facet of the device, one obtains the maximum brightness. These devices are

City Beautification Board

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Gainesville, FL 32602
352-334-2171
duffiedl@cityofgainesville.org

February 26, 2007

Gainesville City Commission
P.O. Box 490
Station 19
Gainesville, FL 32601-0490

Dear Members of the Gainesville City Commission:

As an advisory board, the City Beautification Board wishes to express its strong opposition to electronic signs within the City of Gainesville.

Thanks to the foresight and historic past efforts of the Gainesville City Commission, we are fortunate to have effective landscape, lighting and sign ordinances – along with other excellent civic design measures – that contribute significantly to the quality of life and economic attractiveness of our city. We believe the presence of electronic signs will diminish the appearance of the community by turning our major gateway corridors into a display of competing messages.

LED lighting is distracting to passing motorists. If electronic signs were not attention-grabbing, they would not serve the purpose for which they were designed. Worse yet, bright red LEDs may be a safety hazard. At a time when we are already exposed to so many signs along our major streets, electronic signs will add even more distracting visual clutter.

In almost every case, electronic signs go beyond the basic purpose of identifying a business and become electronic billboards conveying non-essential information. One service station uses its electronic sign to advertise cigarettes for $29.29 a carton while another business uses its electronic sign to post slogans that have nothing to do with the business. All diminish the quality and ambiance of our cityscape.

While the number and location of electronic signs in the city is currently relatively "few and far between," if these signs are not immediately regulated, they will continue to proliferate, competing with one another and diminishing the quality of the urban space we have worked so hard to enhance and protect for so many years.

Furthermore, the cost of electronic signage is expected to decline in the future, making these devises increasingly affordable for even the smallest business.

Clearly, now is the time to deal with this problem before it's too late. If the City Commission cannot agree to prohibit the proliferation of electronic signs at this time, the commission should enact an immediate moratorium on electronic signs until strict new regulations can be developed.

Sincerely yours

Anita Spring, Chair

City Beautification Board

Petition139TCH-06 PB City Plan Board. Amend the City of Gainesville Land Development Code to add regulations pertaining to electronic signs (including digital and LED signs), and to amend the definition of "animated signs."

Dom Nozzi, Sr. Planner gave the Staff presentation and stated that the options before the Board tonight are to take no action; use the Special Use Permit options of Administrative/Staff approval or Board approval; or to prohibit electronic signs. Mr. Nozzi further stated that Staff recommends establishing a set of conditions through administrative or staff approval.

Citizen John Hudson presented to the Board a protective face plate that diffuses the light of LED signs while still allowing signs to be clearly read and seen.

Citizens came forward against LED signage and sited reasons for their disapproval as:

- Diminishing the appearance of the community
- Attention grabbing and distract motorist causing a safety hazard from the glare of the lights
- Promotes competition between businesses to erect these types of signs
- Messages are promoting cigarettes and alcohol
- Tax payer dollars will be used to monitor these types of signs
- Intrusive when residential areas are in close proximity to these types of signs
- Wants Gainesville to remain the "City of Trees" not "Route 66"
- Invades personal space and can be offensive

Business owners came forward in favor of this petition and sited reasons for their approval as:

- Businesses rely on walk-ins and drive-by traffic
- Cost effective approach for advertising
- Technology that is evolving
- No study has ever been published that LED's signs are a safety issue
- It is an integrated part of a non-profit marketing ability

The Board discussed the petition and asked questions.

Mr. Gold stated he does not like LED signs and is in favor of banning them except for the time and temperature signage. Mr. Gold further stated that if the Board bans electronic signs now it does not mean that they are banned forever, however if the Board were to allow electronic signs they would be opening the door to visual blight. Mr. Gold added he is interested in what Mr. Hudson suggested regarding the face plate but is too late into the proceedings to try to incorporate it into the regulations.

Mr. Cohen stated he is sympatric to businesses that need to advertise and finds that Staff's proposal eliminates non-conforming signs and would restrict the size of signs controlling visual blight. Mr. Cohen further stated that a Special Use Permit is not appropriate procedurally and would support Staff's recommendation as long as a specific reference was included to deal with the light pollution issue.

These minutes are not a verbatim account of this meeting. Tape recordings from which the minutes were prepared are available from the Community Development Department of the City of Gainesville.

Jon Reiskind stated he is concerned about having a level playing field for businesses and if the signs are prohibited within the city of Gainesville there are aesthetic factors that become very important. Mr. Reiskind further stated he was disappointed to see a sign that displays time and temperature have a portion of the sign missing for over a week and inquired what kind of quality control exists.

Laura High stated she is a small business owner and would not erect an electronic sign as it may offend her customers and feels that her quality and care she gives her customers is what brings them back. Ms. High further stated that she loves Gainesville for the trees and would not like to see the beauty destroyed by becoming an eye sore with electronic signs.

Chair Polshek stated that putting limits on where technology enters our lives is an important consideration as the signs that different business have are adequately visible both as a pedestrian and a motorist. Chair Polshek further stated that he agrees with Mr. Gold's statement that if the Board prohibits electronic signs today, and five years from now, if the Code needs to be changed, it can be done.

Jack Walls stated he helped write the sign ordinance in Aspen, Colorado and feels that Gainesville is such a beautiful community and believes that if this petition is approved, each business owner will be competing with each other for attention and is absolutely against electronic signs and proposed a motion to be made.

Motion By: Jack Walls	**Seconded By:** David Gold
Moved To: Deny with the Board's statement that electronic, digital light emitting-diode (LED) signs shall be prohibited to be erected or caused to be erected within the city of Gainesville. As for those signs that have already been erected, the City shall provide a system, whereby the sign owner can amortize the sign cost over a legitimate period of time, before removal.	**Upon Vote:** None taken.

Motion By: Jack Walls	**Seconded By:** David Gold
Moved To: Amend motion to incorporate all definitions of Electronic Signs as defined in the Staff report. Deny with the Board's statement that electronic, digital light emitting-diode	**Upon Vote:** None taken.

(LED) signs shall be prohibited to be erected or caused to be erected within the city of Gainesville. As for those signs that have already been erected, the City shall provide a system, whereby the sign owner can amortize the sign cost over a legitimate period of time, before removal, abiding by the revised definition of electronic signs enclosed in the Board's packets.	

Mr. Gold inquired from the Board if there was any support for the continued existence of the time and temperature devices. No Board member came forward for support.

Chair Polshek inquired from the Board how the amortization mechanicism will work if the objective is to have the grandfathered-in signs removed. Mr. Walls stated that he has done research on this and a maximum of five years would be adequate in amortizing the cost of the electronic sign and at the end of the five year period, those signs will no longer be displayed.

Motion By: Jack Walls	**Seconded By:** David Gold
Moved To: Deny with the Board's statement that electronic, digital light emitting-diode (LED) signs shall be prohibited to be erected or caused to be erected within the city of Gainesville. As for those signs that have already been erected, the City shall provide a system, whereby the sign owner can amortize the sign cost over a legitimate period of time, before removal, abiding by the revised definition of electronic signs enclosed in the Board's packets.	**Upon Vote:** 5 – 0.

DRAFT