Ordinance No. 120466

Council Bill No. 113692

The City of Seattl
Council Bill/Ordina

AN ORDINANCE relating to land use and zoning, repealing the moratorium adopted by Ordinance 119487 as amended, Seattle Municipal Code Sections 23.55.003, 23.55.030, 23.55.034, 23.55.036, 23.55.040, 23.66.160, 23.66.338, 23.69.0 23.84.036 and adding a new section 23.55.005, Video Display Methods, to regulate use of video display on signs.

CF No.

Date Introduced: JUN - 4 2001	
Date 1st Referred: JUN - 4 2001	To: (committee) FBED ~~Landlord-Tenant & Land Use Committee~~
Date Re - Referred:	To: (committee)
Date Re - Referred:	To: (committee)
Date of Final Passage: 8-6-01	Full Council Vote: 8-0
Date Presented to Mayor: 8-6-01	Date Approved: 8/10/01
Date Returned to City Clerk: 8/13/01	Date Published: 7 pg. T.O. F.T. ✓
Date Vetoed by Mayor:	Date Veto Published:
Date Passed Over Veto:	Veto Sustained:

DP as amended

8-6-0

This file is complete and ready

Law Department

Law Dept. Review

The City of Seattle - Legislative Department

Council Bill/Ordinance sponsored by: Drago ~~Harrell~~

Councilmember

amended, amending
3, 23.69.021,
ns.

Committee Action:

DP as amended 4-0 (JD, NL, RC, RM)

E-C-O (Passed 8-0 (Excused: McIver))

As

Amended

This file is complete and ready for presentation to Full Council. Committee: _____
(Initial/Date)

Law Dept.

Law Dept. Review	OMP Review	City Clerk Review	Electronic Copy Loaded	Indexed

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ORDINANCE 120466

AN ORDINANCE relating to land use and zoning, repealing the moratorium adopted by Ordinance 119487 as amended, amending Seattle Municipal Code Sections 23.55.003, 23.55.030, 23.55.034, 23.55.036, 23.55.040, 23.66.160, 23.66.338, 23.69.021, 23.84.036 and adding a new section 23.55.005, Video Display Methods, to regulate use of video display on signs.

WHEREAS, among the purposes of the Sign Code are to allow signs that invite rather than demand the public's attention, to encourage the use of signs that enhance the visual environment of the city, and to protect the public interest and safety;

WHEREAS, the City of Seattle regulates signs and displays on signs in order to reduce potential traffic safety hazards and visual blight, among other reasons set out in SMC 23.55.001;

WHEREAS, for these reasons the City prohibits or otherwise regulates signs that flash, or that rotate or have moving parts that rotate rapidly;

WHEREAS, a major study on electronic signs prepared by the Federal Highway Administration found that "motion or the illusion of motion of lights or other display features," including animation, has "the greatest potential for motorist distraction as well as a dominant visual impact on the aesthetic environment." (FHA Report, Part VI, Section L.);

NOW THEREFORE, BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Subsection A of Section 23.55.003 of the Seattle Municipal Code, which Section was last amended by Ordinance 112830, is further amended as follows:

SMC 23.55.003 Signs prohibited in all zones.

A. The following signs shall be prohibited in all zones:

1. Flashing signs;

2. Signs which rotate or have a rotating or moving part or parts that revolve at a speed in excess of seven (7) revolutions per minute;

3. Signs attached to or located on stationary motor vehicles, equipment, trailers, and related devices, except for signs not exceeding five (5) square feet in area and relating to the sale, lease or rent of a motor vehicle to which the signs are attached;

4. Portable signs other than readily detachable signs having a fixed base or mounting for the placement and intermittent use of such signs;

5. Banners, streamers, strings of pennants, fabric signs, festoons of lights, clusters of flags, wind-animated objects, balloons, searchlights, and similar devices, except where the principal use or activity on the lot is outdoor retail sales in NC3, C1, C2 and downtown zones, and except where permitted as temporary signs under Section 23.55.012.

6. Signs that attempt or appear to attempt to direct the movement of traffic or that interfere with, imitate or resemble any official traffic sign, signal or device.

7. Signs using a video display method, except as provided in section 23.55.005, Video Display Methods.

* * *

NEW SECTION. Section 2. A new section 23.55.005, Video Display Methods, is added to Chapter 23.55 of the Seattle Municipal Code, as follows:

SMC 23.55.005 Video Display Methods

A. Development standards. Video display may be used on a sign when the sign meets all of the following development standards:

1. The sign is an on-premises sign;

2. The sign is not located in a residential, NC1 or NC2 zone, Special Review District, Historical District, Preservation District, or shoreline environment;

3. The sign meets one of the following criteria:

i. the sign face is not visible from a street, driveway, or surface parking area, and also is not visible from a lot that is owned by a different person, in which case the size of the sign is not limited by this subsection of 23.55.005, Video Display Methods, and the standards for duration or pause periods and subsection A 5, shall not apply; or

ii. the sign area is less than or equal to 1000 square inches and no single dimension of the sign exceeds three (3) feet; or

iii. the sign meets the standards set out in subsection B, in addition to meeting all other standards of this subsection A.

4. The maximum height for any sign using a video display method shall be fifteen (15') feet above existing grade. Pole signs using a video display method shall be at least ten feet (10') above the ground;

5. The sign is at least thirty-five (35) linear feet in any direction from any other sign that uses a video display method;

6. When located within fifty (50) feet of a lot in a residential zone, any part of the sign using a video display method is oriented so that no portion of the sign face is visible from an existing or permitted principal structure on that lot;

7. Duration: Any portion of the message that uses a video display method shall have a minimum duration of two (2) seconds and a maximum duration of five (5) seconds. Calculation of the duration shall not include the number of frames per second used in a video display method. Calculation of the maximum duration shall include the time used for any other display methods incorporated within that portion of the message displayed using a video display method;

8. Pause Between Video Portions of Message. There shall be twenty (20) seconds of still image or blank screen following every message using a video display method;

9. Audio speakers shall be prohibited in association with a sign using a video method of display;

10. Between dusk and dawn the video display shall be limited in brightness to no more than 500 nits when measured from the sign's face at its maximum brightness; and

11. Signs using a video display method may be used after dusk only until 11:00 p.m. or, if the advertising is an on-premises message about an event at the site where the sign is located, for up to one hour after said event.

B. In lieu of complying with subsection A (3) above, the Director of DCLU shall allow video display methods on a sign if the sign meets all of the following additional development standards:

1. The sign is within the area shown on the map attached as Exhibit A and not within a Special Review District, Historic District, Preservation District, residential zone or shoreline environment;

2. The sign is a minimum distance of fifteen feet (15') from the curb; and

3. The maximum size of the sign is twenty (20) square feet as independently applied to each sign face, including framework and border.

C. Video Signs Previously Erected. On-premises signs using the video method of display, that have permits authorizing use of that method of display issued prior to August 1, 2001, may continue to use the video method of display authorized in the permit provided that they meet the standards of 23.55.005.A.6-11 above within 180 days from the effective date of the ordinance codified in this section. Previously erected and permitted signs that use a video method of display located within the area shown on the map attached as Exhibit A shall not be subject to the foregoing standards of 23.55.005 except 23.55.005.A.1. If the video method of display is terminated for 180 days or the sign is relocated or reconstructed, then the video method of display cannot be used except in conformance with the development standards of section 23.55.005.

* * *

Section 3. Subsection B of Section 23.55.030 of the Seattle Municipal Code, which Section was last amended by Ordinance 118302, is further amended as follows:

23.55.030 Signs in NC3, C1 and C2 zones.

* * *

B. Signs may be electric, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 4. Subsection C of Section 23.55.034 of the Seattle Municipal Code, which Section was last amended by Ordinance 119239, is further amended as follows:

23.55.034 Signs in downtown zones.

* * *

C. General Standards for All Signs.

1. Signs may be electrical, externally illuminated, ((~~or~~))nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 5. Subsection B of Section 23.55.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119391, is further amended as follows:

23.55.036 Signs in IB, IC, IG1 and IG2 zones.

* * *

B. Signs may be electrical, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 6. Section 23.55.040 of the Seattle Municipal Code, which Section was last amended by Ordinance 118888, is further amended as follows:

SMC 23.55.040 Special exception for signs in commercial and downtown zones.

The Director may authorize exceptions to the regulations for the size, number, type, height and depth of projection of on-premises signs in neighborhood commercial, commercial, downtown office core, downtown ret((~~ia~~))ail core, downtown mixed commercial, and downtown harborfront zones as a special exception pursuant to Chapter 23.76, Procedures for Master Use Permit and Council Land Use Decisions((~~,~~)), except that no special exception may be authorized for a sign using video display methods. When one (1) or more of the conditions in subsection A of this section have been met, the characteristics described in subsection B of this section shall be used to evaluate the merits of the proposal. Proposals must also meet the intent of the Sign Code as specified in Section 23.55.001, Intent. An exception shall not be granted for roof signs or signs prohibited in Section 23.55.003. In downtown zones, the Director shall consult with the Seattle Design Commission before issuance of the special exception decision.

* * *

Section 7. Subsection A of Section 23.66.160, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.160 Signs.

A. The following signs shall be prohibited throughout the Pioneer Square Preservation District:

Permanently affixed, freestanding signs (except those used to identify areas such as parks);

Roof signs;

Billboards;

Electric signs((~~,~~)) and signs using video display methods, excluding neon signs.

* * *

Section 8. Subsection E of Section 23.66.338, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.338 Business identification signs

* * *

E. Illumination. Neon-lit signs are encouraged to create an exciting and enhanced visual image in the retail core.

1. No sign or light shall move, flash or make noise. Exceptions may be granted by the Department of Neighborhoods Director for indicators of time or temperature, after review and recommendation by the Board.

2. Illuminated signs shall be designed and sited in a manner to minimize glare on floors above grade in nearby residences.

3. Signs using video display methods are prohibited.

Section 9. Subsection A of Section 23.69.021 of the Seattle Municipal Code, which Section was last amended by Ordinance 118362, is further amended as follows:

SMC 23.69.021 Signs in Major Institution Overlay Districts.

A. General Standards.

1. Signs shall be stationary and shall not rotate.

2. No flashing, changing-image, ((~~or~~)) message board signs, or signs using video display methods, except as permitted as defined in 23.55.005, Video Display Methods, shall be permitted.

3. Signs may be electric, externally illuminated, or nonilluminated.

* * *

Section 10. Section 23.84.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119839, is further amended as follows:

23.84.036 Definitions -- S.

***

"Sign, changing-image" means a sign, including a sign using a video display method, which changes its message or background by means of electrical, kinetic, solar or mechanical energy, not including message board signs. A video display method is a method of display characterized by real-time, full-motion imagery of at least television quality.

***

Section 11. The moratorium enacted in Ordinance 119487 as amended is repealed as of the effective date of this ordinance.

Section 12. The several provisions of this ordinance are declared to be separate and severable, and the invalidity of any clause, sentence, paragraph, subdivision, section, or portion of this ordinance, or the invalidity of the application thereof to any person or circumstance, shall not affect the validity of the remainder of this ordinance or the validity of its application to other persons or circumstances. The Council intends to maintain the Sign Code in order to continue to promote the purposes for which it was adopted, and if the amendments in this ordinance render the Sign Code invalid in any respect, then the Council intends the Sign Code to remain in effect as if this ordinance had not been adopted.

Section 13. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by the City Council the 6th day of August, 2001, and signed by me in open session in authentication of its passage this 6th day of August, 2001.

Margaret A. Pageler
President of the City Council

Approved by me this 10th day of AUGUST, 2001.

Paul Schell
Paul Schell, Mayor

Filed by me this 13th day of August, 2001.

Julie E. Pappas
City Clerk

(SEAL)

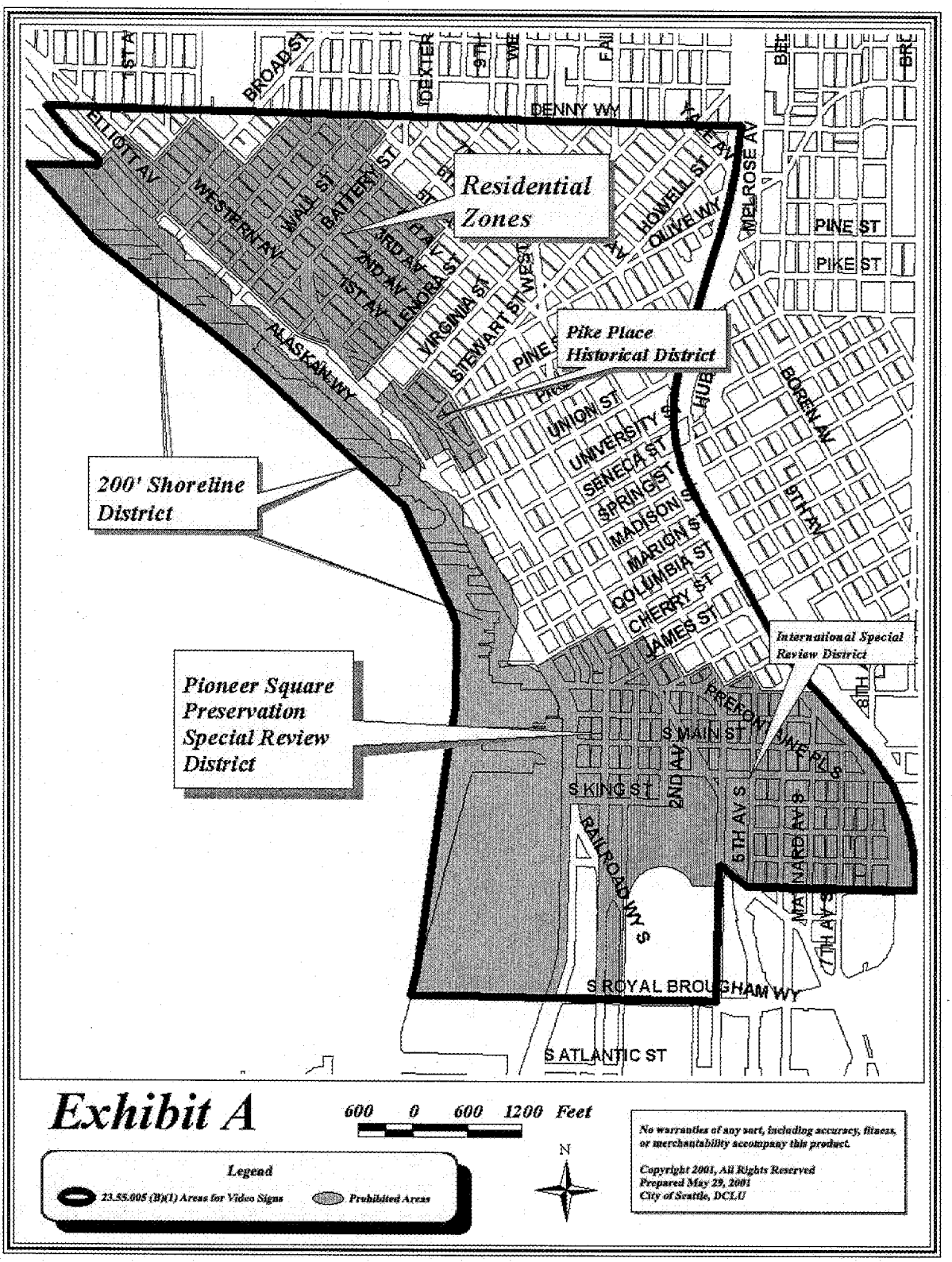
Residential Zones
Pike Place Historical District
200' Shoreline District
Pioneer Square Preservation Special Review District
International Special Review District
BROAD ST
DENNY WY
ELLIOTT AV
WESTERN AV
MAIL ST
BATTERY ST
1ST AV
2ND AV
3RD AV
LENORA ST
VIRGINIA ST
STEWART ST
HOWELL ST
OLIVE WY
MELROSE AV
PINE ST
PIKE ST
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Exhibit A
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Legend
23.55.005 (B)(1) Areas for Video Signs
Prohibited Areas
No warranties of any sort, including accuracy, fitness, or merchantability accompany this product.
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Prepared May 29, 2001
City of Seattle, DCLU

City of Seattle
Paul Scheil, Mayor

Department of Design, Construction and Land Use
R. F. Krochalis, Director

MEMORANDUM

TO: Council President, Margaret Pageler
Via Margaret Klockars, Law Department

FROM: Rick Krochalis, Director

DATE: May 29, 2001

SUBJECT: Video Display Method Ordinance

Transmittal

With this memorandum we are transmitting for City Council consideration proposed legislation amending the Land Use Code to allow signs using video display methods under certain conditions.

Background

In 1999, the Council adopted a moratorium on signs displaying animation or rapidly changing images or messages. The moratorium was extended until October 1, 2001. DCLU is now proposing permanent regulations governing video display methods used on signs. The use of such methods on signs, including the well-known sign on I-5 near Fife, has raised concerns about the effect on traffic safety and aesthetics if such methods are allowed without careful regulation.

DCLU retained a consultant in the field of driver distraction, and this ordinance is based on his advice and on aesthetic concerns about compatibility with the character of certain zones and special districts. The ordinance allows the use of video display methods on signs that are limited in size, restricted to locations where additional traffic safety impacts and aesthetic impacts are minimized, and where the portion of the message using video display methods is limited in duration.

Regulation of these methods for displaying messages on signs does not change the number of signs allowed in the city, nor does it restrict content on signs because messages can still be displayed using all methods allowed by the Sign Code.

Environmental Determination

The Director of DCLU has determined that the proposed amendments are not likely to have a significant adverse environmental impact, and has issued a Determination of Non-Significance. (DNS – no Environmental Impact Statement required.)

Public Hearing Scheduled

A public hearing on the proposed legislation is scheduled before the Council's Finance, Budget and Economic Development Committee on Wednesday, June 13, 2001, at 5:30 p.m. in the Council Chambers.

Non-Financial Legislation

The proposed legislation will not have a substantial impact on City resources, as permit fees will cover the costs of administration.

If you have any questions about the proposed legislation, please contact Kristian Kofoed by email at *kristian.kofoed@ci.seattle.wa.us* or by phone at (206) 233-7191.

Attachment

SIGN CODE AMENDMENTS TO REGULATE VIDEO DISPLAY METHODS

DIRECTOR'S REPORT AND RECOMMENDATION

INTRODUCTION

The Department of Design, Construction and Land Use (DCLU) is proposing to amend the Land Use Code to regulate video display methods on signs. This ordinance repeals the moratorium on these methods of display and adopts permanent standards for such methods.

Among the purposes of the Sign Code are to allow signs that promote certain public goals, including promoting local business vitality, encouraging the use of signs that enhance the visual environment of the city and mitigating impacts on traffic safety.

Signs using video display methods are likely to have more distractive effects than other signs, and thus may pose an additional risk to traffic safety. In addition, too many of these signs within a small area may affect the character of that area in a way not contemplated by the zoning for that area.

Because of these additional potential traffic safety and aesthetic impacts, additional regulations are proposed to regulate video display methods on signs. Video display methods that operate in compliance with these regulations would be consistent with the City's Sign Code. Adopting these proposed standards does not change the number of signs allowed in the city, nor does it restrict content on signs because messages can be displayed using all methods currently allowed by the Sign Code.

BACKGROUND

The City Council approved a moratorium on June 1, 1999, made effective on June 4, 1999, which related to certain methods of displaying animation or rapidly changing images or messages. The Council directed DCLU to study these methods and develop permanent standards. The moratorium was extended through October 1, 2001, while DCLU was engaged in studying these methods of display and appropriate permanent regulations.

To assist in its study, DCLU retained a consultant, Gerald Wachtel/Veridian Group, to advise on traffic hazards posed by these signs and mitigation of those hazards. The proposed regulations are based on the characteristics of such display methods, on DCLU's expertise in determining whether particular activities are consistent with the aesthetic character of particular zones, DCLU's review of other jurisdictions' regulations of such display methods, and on the consultant's advice.

The regulatory structure proposed for permanent standards was also used in the moratorium, with some modifications.

ANALYSIS

The proposed Land Use Code amendment generally prohibits signs using video display methods, unless certain development standards are met.

Signs using video display methods are considered to be a subset of 'changing-image signs.' The Land Use Code defines changing-image signs as signs that change message or background by means of electrical, kinetic, solar or mechanical energy. The ordinance defines the video display method as "a method of display characterized by real-time, full-motion imagery of television quality." Similar to changing-image display methods, video display methods change their message and background, but in a way that potentially increases hazards for drivers as compared to other changing-image signs.

DCLU's consultant has advised that video display methods are at the most technologically advanced end of a continuum of possible sign technologies. Such display methods are capable of showing text and images of television-like quality, and can do so on large, bright screens that can be seen from great distances and at very wide viewing angles, both day and night. It is the sum total of these characteristics (size, brightness, viewing angle, rich color, television-quality image resolution) that provides video display methods with the capability to capture, and hold for extended periods, the driver's attention, and supports a finding that these methods have a greater potential to contribute to driver distraction.

Because of the difference between video display methods and other methods, different regulations are proposed to address this greater potential for driver distraction.

The ordinance adds a new section, 23.55.003, to the Sign Code to generally prohibit such display methods unless all of these criteria are met:

- The sign is an on-premises sign;
- The sign is not located in a residential zone, Special Review District, Historical District, Preservation District, or shoreline environment;
- The sign area, as measured in square inches, is less than or equal to 1000 square inches and no single dimension of the sign exceeds three (3) feet;
- The maximum height for any sign using a video display method is fifteen (15') feet above existing grade. Pole signs using a video display method must be at least ten feet (10') above the ground; and
- The sign is at least thirty-five (35) linear feet in any direction from any other sign that uses a video display method.
- Larger signs are permitted if additional standards are met.

<u>Requirement that the sign be an on-premises sign</u>

The City's Sign Code does not allow new off-premises signs because these signs do not promote a public purpose, except for sign kiosks.

Allowing this method of display on off-premise signs, such as billboards, would increase their potential for driver distraction, as explained above. Since these signs do not serve a public purpose, it is not desirable to increase their impacts on traffic safety. The prohibition of video display methods is consistent with the State Department of Transportation's prohibition of such methods on off-premise signs visible from the highway.

Locational requirements

This display method is not allowed on a sign located in a residential zone, a Special Review District, Historical District, Preservation District, or shoreline environment. Because signs using video display methods are a type of changing-image sign, and changing-image signs are prohibited in any residential zone and NC1 and NC2 zones, video display methods are also prohibited in these zones. In addition, the effects of these methods of display are more likely to conflict with the intended character of the special districts and the shoreline environment.

Size and height requirements

The ordinance sets a maximum size of 1000 square inches for signs using video display methods, with no single dimension of the sign exceeding three (3) feet. This size is more likely to be pedestrian oriented. The ordinance also sets a maximum height for any sign using a video display method of fifteen (15') feet above existing grade, to limit the extent of visibility to drivers, with pole signs using a video display method required to be at least ten feet (10') above the ground to promote adequate clearance for pedestrians and bicyclists.

Dispersion requirements

The ordinance requires that a sign using the video display method be at least thirty-five (35) linear feet in any direction from any other sign using such a method. Similar to the size and height requirements, a dispersion requirement will help promote a pedestrian orientation and prevent a cluster of such signs in any particular zone. Clustering of these signs could change the character of an area in a way inconsistent with the goals of the zoning for that area, as well as increasing driver distraction.

ADDITIONAL STANDARDS

This report recommends that for signs that meet all the development standards except for size, additional standards be met allowing a sign of greater size but with safeguards to mitigate potential impacts on driver safety and the visual environment.

Location

In addition to the locational requirements set out above, the larger size sign is only allowed in the area illustrated in Exhibit A, generally the downtown area. Larger signs using video display methods are likely to be more consistent with the urban character of the downtown area, with the same prohibition against such methods in residential zones, shorelines and special review districts. The ordinance includes a prohibition against light trespass. When signs using such methods are located within fifty (50) feet of an abutting lot in a residential zone, these signs shall be oriented so that no portion of the sign face is visible from an existing or permitted principal structure on the abutting lot. In addition, signs using video display methods are required to be at

least fifteen feet (15') from the street edge, making them more likely to be oriented to pedestrians and not motorists.

Size

The sign using video display methods may to be up to twenty (20) square feet in size. The City of Portland has recently adopted this size limit for similar signs. According to the City of Portland's report, this size would allow smaller, pedestrian-oriented signs such as those traditionally used in downtown, while prohibiting larger signs from overwhelming the pedestrian or built environment, or adding to the distraction of motorists.

The ordinance applies this maximum size limit to any sign face that uses video display methods, including the framework and border. Including the framework and border would prohibit the twenty square feet limit from being used for a portion of the sign face, with different display methods being used for the remainder of the sign face, thus increasing potential distraction.

Duration

The ordinance imposes a minimum and maximum duration limit on images using video display methods. This is more of a concern for signs using video display methods that may be larger than 1000 square inches.

Any portion of the sign that displays video must be on the screen for at least two seconds and must not remain on the screen for more than ten seconds. DCLU's consultant has advised that constraints on minimum and maximum display time can reduce the likelihood of the driver being distracted from primary driving tasks. Setting a limit on maximum display time reduces the likelihood that a driver will become engrossed in the message being presented and try to view the entire message regardless of its length. If there is a maximum permitted presentation time per message, then, in the worst case, a driver will see the message when it first appears, but the duration constraint will capture his or her attention from the driving task for the shortest possible time. Placing a minimum display time constraint reduces the likelihood that any driver will see such a message and believe that he or she has missed part of it, thus leading to anticipation that it will be shown again.

Existing signs with valid permits for using video display methods are allowed to continue, but if relocated will be required to meet the new development standards. Existing signs that are not using video display methods but are capable of converting to such a method must meet the new development standards in order to use the video display method.

SUMMARY OF RECOMMENDATIONS

The effect of these proposed amendments is to generally prohibit video display methods but to allow them with regulations that address the City's concerns about signs contributing to traffic safety and visual blight. This report recommends that the potential distractive effect and aesthetic impact of these display methods is addressed by the small size, height, dispersion standards and location set forth in the general development standards. These development standards also help promote a pedestrian orientation for signs using these methods. For those signs with video

display methods that exceed the size limit in the general development standards, the additional regulations will also mitigate the impacts of slightly larger signs.

VIDEO SIGNS IN SEATTLE – FINAL REPORT

1. INTRODUCTION AND BACKGROUND

Electronic outdoor advertising using video technology is one of the latest advances available to the advertising industry. Because such displays can present moving images in full color, at brightness levels that render them highly visible both day and night, and with the image quality of television, such signs have the potential to distract approaching motorists from their primary driving task to a greater degree than earlier generations of commercial electronic variable message signs (CEVMS). Further, video signs, because of their wider angle of view than traditional CEVMS, can contribute to such distraction for longer intervals than can other CEVMS technology. As a result of these capabilities, video displays pose a greater risk to traffic safety than other forms of outdoor advertising. The City of Seattle recognized the potential for distraction posed by the introduction of this technology and set out to develop proactive legislation to address these display methods. This report is submitted to the Seattle Department of Design, Construction and Land Use (DCLU) to help inform development of this legislation. The report represents an effort to address traffic safety issues related to video signs from the perspective of the disciplines of human factors and positive guidance.

(A) BRIEF HISTORY OF LARGE SCREEN VIDEO DISPLAYS

Although there is no single definition of a "large screen video display" (particularly as home "theaters" grow ever larger), I have used the term in this report to refer to any video display intended to be, or that may be, viewed by drivers from a public right-of-way. Bright, large screen video displays have been difficult to accomplish well until recently. Originally, front or rear projection techniques were used to create such displays, but these suffered from poor brightness and contrast which rendered them unsuitable for high ambient light conditions such as outdoors in daylight. The first displays that provided both bright and large images were based on CRT (cathode ray tube) technology, and traded under brand names such as SONY JumboTron™ and Mitsubishi Diamond Vision™. The major limitations of these technologies were that they were very heavy and consumed large amounts of power. Newer technologies, particularly those using LEDs (light-emitting diodes) to form the image, have made such displays more practical and economical.

The largest of large screen video displays can show "full color" moving images to large groups and over large distances. Indeed, most of the early applications of such displays have been in sports stadiums and arenas and in entertainment venues. These displays differ, technologically, from more traditional moving image signs in that they are capable of using true video sources (such as videotape or cameras [including "live feeds"]) to generate the image for display. They can, of course, also use other sources such as computer generated graphics, scans, digital photographs, etc. Although the size of the video signs that will be permitted by the proposed Seattle legislation is considerably smaller than the largest such signs in use today, they use similar technologies for similar effects.

Because there are many different technologies that can be used to create the image that is seen on a large screen video display, it is infeasible and inappropriate to develop technology-based regulations for such signs. Further, the City's interest in regulation is not based on any restriction of a particular technology, but to address the potential impact on traffic safety that may result from the unrestricted use of any of the video technologies that can produce the effects that cause driver distraction.

(B) CHARACTERISTICS OF VIDEO SIGN TECHNOLOGY :

(i) Color

Every video picture is divided into a number of dots called pixels (an industry term meaning picture elements). In the case of a large screen CRT display, each pixel may in turn be made up of three (or more) small CRTs, one red, one green, and one blue. By varying the brightness of each CRT, any color can be

created. This is often referred to as a "full color" display. Each small CRT is the same as a traditional television picture tube, except that, since it forms only one small part of a large display, it needs to produce only the intensity of one pixel. Thus, by combining thousands of these small CRTs to create the display, it is possible to generate a very bright, full color image on the screen.

(ii) Image Creation

LED-based displays work on the same principle as CRT-based displays, addressed in the previous section. During the 1990s, LED-based displays began to succeed CRTs in large screen video displays for three principal reasons: they consume far less power, they weigh much less, and they are considerably smaller. Further, whereas CRT-based displays are difficult to manufacture, LED-based displays are far simpler to produce, leading to a dramatic expansion of the field of suppliers. Thus, LED-based displays have become by far the most popular today, although other technologies are being developed and improved that may someday supplant the LED as the technology of choice for large screen video.

(iii) Image Quality

The visual quality of the image that is displayed on a video screen is affected by several factors. These include: resolution, screen size, distance between pixels, quality of the source image, and image processing electronics and technology. These factors are explained below.

a. Resolution. The most important factor in image quality is resolution. Resolution is simply the total number of vertical and horizontal pixels that form the image. The greater the number of pixels, the greater the resolution.

b. Screen size. In general, because a larger screen can contain a greater number of pixels, it can provide better resolution than a smaller screen.

c. Pixel pitch. "Pixel pitch" is defined as the distance between adjacent pixels. A smaller pixel pitch means that individual pixels are closer to each other, yielding a better quality image. A larger pixel pitch means the pixels are further away from each other, resulting in a poorer quality image.

d. Video source. The source of the video image itself also affects image quality. The broadcast television standard in the United States, called NTSC (National Television System Committee), has a "native resolution" of about 640 pixels horizontally by 480 pixels vertically. (These figures can vary slightly under some circumstances). Other countries use different video broadcast standards (the most common are known as PAL and SECAM) with different "native resolutions." Thus, when we refer to images of "television quality" we are referring to the NTSC native resolution that is the standard in the U.S. Images that, for whatever reason, are not displayed with a minimum resolution at least as great as the "native resolution" will be of poorer quality.

e. Image processing. Because a standard video signal cannot be directly displayed on a screen without first being processed, the number of steps used in this processing, the technological approach chosen to convert the image, and the quality of the electronics used can all affect the final, displayed image quality.

(iv) Brightness

Other characteristics being equal (such as size of the screen and the same image being displayed), the brighter the display, the farther away it can be seen, and the better it will "stand out" from other objects in the visual field (this is known as "conspicuity"). Brightness, for commercial video displays is typically measured in *nits* (cd/m^2 or candelas per square meter) - the higher the number, the brighter the display. For large screen video displays to be highly visible outdoors in daylight, most writers suggest that a brightness of 3500-5000 nits is a necessary minimum. Many manufacturers claim, in their product specifications, to be able to achieve this level of brightness. However, because there are many variables present in the design

and operation of video displays and in the techniques used for brightness measurement, display brightness measurement is not straightforward.

2. BASIS FOR REGULATING VIDEO DISPLAYS

Traditional CEVMS can display computer-generated images ranging from simple matrices of light bulbs turned on and off in computer-driven patterns to more complex computer graphics, typically at VGA, EGA, or SVGA resolutions. Displays on such signs can also be generated from sources such as scanned and digital camera images. By comparison, video signs are capable of displaying the same computer graphics as CEVMS, but, in addition, images originating from television broadcast and video system signals, such as NTSC, PAL, SECAM, and HDTV, including live camera "feeds" in real time.

In addition to a wider variety of static and dynamic image sources and far greater graphics resolution, video displays can present full color, television-quality images that are more realistic than standard CEVMS, and can display these images at significantly wider viewing angles. Because the video presentation of complete stories, scenes or vignettes, of potentially unlimited duration, can be so realistic, they are likely to be more compelling to view than such presentations on traditional CEVMS. For all of these reasons, video displays can be more distracting to drivers than traditional CEVMS. Consequently, different standards should be established for signs using video display methods than for other signs that are capable of presenting moving or changing images and messages.

Image quality was addressed in the previous section of this report. Color and viewing angle are discussed below.

(A) Color

All video display signs produce color images by using different colored lighting sources in various combinations. Signs that do not use video as their source can display tens of thousands of colors, according to manufacturers' literature. A typical non-video display has the capability to depict 32,768 colors simultaneously (see, for example, www.hitechled.com). In contrast, video displays are capable of displaying millions of colors simultaneously. Although the human eye cannot distinguish this many colors directly, this palette permits the sign to produce an image which is far more realistic, saturated, complex, and visually "rich" than is possible for non-video signs. A video sign that can display 16.7 million colors (see, for example, www.videoplusdisplays.com) is approximately 500 times greater in this regard than the non-video sign discussed above. The Mitsubishi Diamond Vision™ technology (www.diamond-vision.com), which claims more than one *billion* colors, (actually 1,073,741,824) presents the number of colors of the older technology multiplied by itself (i.e. 32,768 x 32,768). Therefore, the number of colors displayed and the richness of the resultant visual image is one distinguishing characteristic of video sign technology.

(B) Viewing angle

The wider the horizontal viewing angle, the longer the time that a motorist, driving along a route approaching the display, will be able to see the images presented on the screen. In other words, a wider viewing angle makes possible a longer period of time in which the sign can capture and hold the attention of the approaching driver.

Viewing angle can be measured both vertically and horizontally, from a point at the geometric center of the display. The most widely accepted definition of viewing angle is the point at which the measured brightness of the display "falls off" (is reduced) to 50% of its maximum brightness when measured on axis (directly in line with the display). Vertical viewing angle refers to the degree, above and below the center of the display, at which brightness is reduced by 50%, whereas horizontal viewing angle refers to the degree to the left or right of the display center at which the 50% brightness level is reached.

For purposes of traffic safety, we are principally concerned with horizontal viewing angle. We are less concerned with the vertical viewing angle because video advertising or message center signs are commonly

placed ten or more feet above the ground and may be tilted down at the top so that approaching viewers will have the longest possible sight distance with maximum brightness. This downward tilt of the sign has the effect of increasing the vertical viewing angle to the approaching driver such that the 50% brightness cutoff point will not be reached before the driver passes the sign. Accordingly, from the traffic safety perspective we need not be concerned with the vertical viewing angle.

According to manufacturers' specifications, horizontal viewing angle for CEVMS signs seems to range from 30-60° to the left and right of the sign (see, for example, www.hitechled.com). Equivalent values for video signs, however, are typically as great as 120° left and right (see, for example, www.diamond-vision.com). A viewing angle two to four times wider for video signs than for non-video signs suggests that video displays can attract and hold a driver's attention for a longer period of time than a traditional CEVMS.

It should be noted that two additional factors can serve to reduce the effective viewing angle of an LED sign (video or non-video). Although these factors are a product of sign design and construction, their impact on the display's viewing angle is subject to individual differences on the part of the viewers. In other words, the extent to which either (or both) of these factors adversely affects viewing distance is subjective, and will differ from one observer to another. The first, called "shouldering," may cause a color shift at wider viewing angles. This phenomenon is caused by an LED of one color blocking the viewing path of the LED of another color. If this phenomenon occurs at a greater distance from the sign than the distance at which the brightness falls off to 50%, it could lead a sign operator to claim a narrower viewing angle for a given sign. The second is called pixelization, and it enables the viewer to see the pixel structure, i.e. the individual dots that make up the image on the sign. Pixelization results from viewing the image from a close distance, and is more likely to occur with screens with large pixel pitch (i.e. greater space between the LEDs that form each pixel). It also sets an effective minimum distance from which the display can be viewed with acceptable image quality. Because, as stated above, of individual differences in judgment of the effects on image quality of both shouldering and pixelization, and because there is no objective method to measure this effect, I believe that neither of them should be used in calculations of viewing angle when traffic safety is the criterion.

(C) The Zeigarnik Effect

Messages on signs with television-quality imagery may trigger what is known as the Zeigarnik Effect. In 1927, the German Gestalt Psychologist Zeigarnik observed that tasks left uncompleted were more likely to be recalled and attended to than tasks that had been completed. The Zeigarnik Effect, as it has since become known, has been the subject of considerable psychological research and has been shown to apply to a wide variety of behavioral situations.

For example, the Zeigarnik Effect has been shown to affect a need for people to exert considerable effort to complete one task before beginning another, to explain why some people resist interruption during the performance of tasks, and why some people have difficulty in simultaneously handling multiple tasks. See, for example, Gillie & Broadbent (1989) Schiffman & Greist-Bousquet (1992), and Harris (1998).

The Zeigarnik Effect has direct relevance to the regulation of video signs. When viewing a video sign that presents a visual story or message, a driver may be motivated (if not compelled) to watch the story through to its completion. Such motivations, when they occur behind the wheel, can result in such risky behaviors as slowing, stopping, unsafe lane changing, and inappropriate eye and head movements ("improper lookout"). In the field of traffic safety known as Positive Guidance (see, for example, Alexander, G.J. & Lunenfeld, H., 1986, 1990), such behaviors may result from what these authors refer to as an inappropriate shift in a driver's assignment of primacy. Video signs, because of their realistic, television-like quality, may trigger this behavior more readily than traditional CEVMS or other non-video signs.

(3) PROPOSED REGULATIONS OF VIDEO SIGNS IN SEATTLE

The Zeigarnik Effect suggests that the proposed regulation should serve to reduce the potential for approaching drivers to observe an incomplete video segment. If only part of a video segment is viewed,

then the driver may be motivated or compelled to finish watching the segment, even though this is unsafe. Therefore, the regulation should limit the duration of video segments and reduce the likelihood that multiple video segments can be viewed. This can be accomplished by extrapolating from the results and conclusions of the human factors research studies discussed below and applying them to the regulation of video signs.

(A) The 80-20 Rule

Specific research into the attentional demand imposed upon, and tolerated by, drivers was first conducted in 1967 by Senders, J., Kristofferson, A., Levison, W.H., Dietrich, C.W. & Ward, J.L. (1967). These researchers performed a series of studies to evaluate the extent to which different driving situations imposed demands upon drivers' attention.[1] In this pioneering work drivers wore a motorcycle-type helmet while driving on a closed road course. Attached to the helmet was a visor which, when in the lowered position, completely blocked the driver's view of the road ahead. Subjects were instructed to stay in their lane, obey traffic regulations, and view the forward (roadway) scene as little as possible. They could control the position of the visor with their foot. After a series of carefully controlled experiments, the researchers concluded that the position of the visor was directly related to the degree of attentional demand placed on the driver. When the demand was high, subjects kept the visor open to be sure that they could see, and attend to, the road ahead; when demand was reduced, drivers lowered the visor and willingly blocked their own view of the road ahead, indicating that they felt comfortable in temporarily reducing the amount of attention given to the driving task.

Since this early research, other investigators have studied the same phenomenon using a variety of experimental techniques to measure attentional demand. Recently, Mourant and Ge (1997) expanded upon Senders' work using a driving simulator with a helmet mounted visual display system. Results from these two studies 30 years apart demonstrate quite consistent results, including the following *(values in parentheses are taken from the Mourant study)*: (a) attentional demand increases with increasing speed (from 77% at 33 kph to 86% at 100 kph); (b) attentional demand on curves (85%) exceeds that on straight sections of road (81%); and (c) attentional demand on curves in the presence of oncoming traffic (88%) exceeds the demand on such curves when traffic was absent (80%).

The relevance of this work to video sign regulation is in the reciprocal relationship of attentional demand to what psychologists refer to as "spare" attentional or information processing capacity. For example, when attentional demand upon a driver caused by the driving task itself is 80%, that driver can be said to have 20% spare capacity; i.e. 20% of that driver's cognitive resources are available to attend to stimuli that are non-essential, or even irrelevant, to the primary (driving) task. Considerable human factors research (see, for example, Wachtel & Netherton, 1980) tells us that the risk of driver error increases as spare capacity decreases. When spare capacity is reduced to zero drivers then enter a condition often referred to as information overload and the risk of error increases greatly.

For purposes of this report, I reviewed Mourant's data with the above assumptions. My review of his research concluded that he found drivers' spare capacities to be 23, 14, 15, 19, 12, and 20% respectively, under the simulated road, traffic and speed conditions that he studied.

Although the traffic speeds, volumes and movements on an inner-city street network such as that found in downtown Seattle cannot be directly compared with the simulated traffic conditions evaluated by Mourant or the earlier closed-track studies of Senders, I believe that both the Senders and Mourant work lend support to the conclusion that a regulation should restrict, to the extent practical, a driver's exposure to video imagery on displays that are visible from the road to a maximum of about 20% of the driver's

[1] The measurement of attentional demand imposed upon drivers is of importance to highway designers, traffic engineers, and human factors professionals because, when attentional demand is great, drivers in general, and older drivers in particular, are subjected to information overload which may adversely affect their driving performance. This concern has been well documented in the highway safety and human factors literature for many years.

capacity. Displays below the maximum are still distracting, but will be safer than those exceeding the maximum.

If certain assumptions are made about prevailing traffic speeds and sight distances to such signs, this 20% limit can be expressed as an upper limit on video display segment duration measured in seconds, because a driver has only a fixed amount of time available to traverse the distance, at a given speed, between the point at which the sign can first be read and the point at which it can no longer be read. In the time it takes to traverse this distance, approximately 20% of the driver's attention can be expended on non-primary tasks, including observation of a video message on a commercial sign. The reciprocal, 80%, of this amount of time should remain available for use in the primary driving tasks.

Although the 80-20 Rule can and should be applied, in my opinion, to the establishment of constraints on the maximum video message display time, I believe that it should be applied in conjunction with another "rule," which I have extrapolated from a different set of relevant human factors research studies. This is known as the "15 Second Rule," and is discussed below.

(B) The 15 Second Rule

The Safety and Human Factors Committee of the Society of Automotive Engineers (SAE) has been developing a draft document titled: "SAE Recommended Practice -
Navigation and Route Guidance Function Accessibility While Driving (SAE 2364)" (SAE, 2000), commonly known as the "15-Second Rule for Total Task Time", or, more simply, the 15 Second Rule. This draft document specifies that 15 seconds is the maximum time that should be allowed for a driver to perform an in-vehicle navigation system task when that task involves both manual controls and visual displays[2]. The proposed rule requires that manufacturers of such devices demonstrate their compliance with the rule through a series of carefully defined and conducted tests.

The Recommended Practice, if approved in its current form, will establish a "design limit" for the total task time associated with the presentation of visual information and the corresponding manual control actions necessary to operate such systems if those functions are accessible to the driver while the vehicle is in motion.

Recently, questions have been raised about the applicability of the proposed 15 Second Rule to other driving-related tasks, including those that are "predominantly visual, such as reading a map… ." One of the principal developers of the 15 Second Rule recently addressed the question about expanding the applicability of the rule to other tasks (Green, 2000). Green concludes, based upon his own and third party research findings, that the "eyes-off-the-road time" associated with other tasks that require visual guidance was typically 60% to 75% of the total task time used in the calculation of the 15 Second Rule, or approximately 10 seconds. He further believes that "the 10 second total for eyes-off-the-road time … can be applied more broadly" (i.e. to other "predominantly visual" tasks).

(C) Maximum Duration of Video Message

There is a potentially wide range of locations in which a video sign may be sited –locations which may include a variety of traffic speeds and posted speed limits as well as topographic and structural considerations that could expand or reduce the sight distance to any given sign. Therefore, it was not possible to develop a single value for the maximum duration of a video message segment that could satisfy all situations. However, extrapolating from the 80-20 Rule and the 15 Second Rule and combining the

[2] Automobiles are increasingly being equipped with sophisticated on-board navigation and route guidance systems. Although these systems are intended to provide a convenience to drivers by reducing their need for pre-trip planning, they typically require both manual control (such as entering a destination) and visual ("eyes-off-the-road") attention (such as reading the display's map or route instructions) that can take substantially more time to use and demand more of the driver's attentional capacity than conventional controls and displays such as headlights, windshield wipers, or the radio.

relevant findings of each, I developed a formula that can be used to determine an "reasonable"[3] maximum video message length and interval between successive messages that is, in my opinion, appropriate to a Seattle regulation. I accepted Green's preliminary recommendations and determined that 10 seconds was an appropriate absolute upper limit for the duration of any given video message, regardless of its setting. I then, as discussed above, extrapolated from Senders' and Mourant's work and concluded that that no such message should occupy more than approximately 20% of a driver's traverse time to a video sign from the point at which the sign can first be read. These two recommendations, when used together, should enable an upper limit on video message length to be established for any given sign, depending upon the specifics of its site, with an absolute upper limit of 10 seconds regardless of site.

(D) Minimum Duration of Video Message

From the standpoint of traffic safety, there is one principal concern that should be used to inform the regulatory imposition of a minimum video message display time. That is, no such message should be permitted to be displayed so briefly that it appears to flash. I understand that the City of Seattle presently regulates against flashing signs, and these regulations may be applicable to video signs as well.

(E) Pause Between Successive Video Message

In accordance with the applicability of the 80-20 Rule and the 15 Second Rule to the establishment of maximum video message display lengths, it is equally important that a regulation mandate that successive video messages be separated by pauses in which the video screen presents either a blank face or a static image. Such a pause is necessary to minimize the likelihood that any given driver will see more than one video message, or that multiple successive messages could be interpreted as one single message, thus risking the onset of the Zeigarnik Effect. The duration of such pauses is also of significance and, in my opinion, flows directly from the 80-20 Rule. Specifically, extrapolation from the Senders and Mourant research leads me to recommend that the inter-video pause duration should be four times the duration of the actual video message that is permitted, in accordance with the recommendations discussed above. I further believe that longer pauses cause no problem and that there is no need for a regulation to address other than the minimum pause duration.

(F) Conclusion

I believe that all signs (official and non-official) visible to drivers pose a degree of risk to traffic safety because they contribute to potential driver distraction. I further believe that non-official signs pose a potentially greater risk because the message conveyed on such signs is, generally, irrelevant to the driving task. The City of Seattle has determined that it will accept some risk of distraction for on-premises signs. I believe that signs using video display are more distracting than the on-premises signs the City currently allows for the reasons discussed in this report. I would, however, consider that a video message sign designed and operated in accordance with the guidelines proposed in this report to be a reasonable risk within the risks the City of Seattle.

[3] The term "reasonable" should not be taken to suggest that any video message, regardless of duration, is not distracting. All signs can be distracting and, in my opinion, video signs more so than others. See Conclusion.

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APPENDIX

DEFINITIONS OF KEY TERMS

Full color – A term used to describe the capability of video displays to present millions or more colors simultaneously through the use of separate red, green and blue CRTs or LEDs for each picture element (pixel) of the display combined with the ability to vary the brightness of each.

Television Quality – A video image displayed with a resolution of at least that of the U.S. broadcast television standard in the United States, as established by the National Television System Committee (NTSC). This "native resolution" is approximately 640 pixels horizontally by 480 pixels vertically, although it can vary slightly under some circumstances.

Nits – A measure of sign brightness increasingly used in the signage industry. A nit is equivalent to the standard international unit of brightness (luminance) of *candela per square meter (cd/m^2)*.

Brightness – Commonly measured in *NITS* (cd/m^2). Video displays intended for use outdoors under daylight conditions (the most demanding application) typically advertise brightness levels of 3000-5000 NITS.

Viewing Angle – The point, specified in degrees from the center of the display, at which the measured brightness of the display is reduced ("falls off") to 50% of its maximum. Viewing angle is typically measured both vertically and horizontally, and is commonly, although not necessarily, symmetrical around the axis of the display.

SEATTLE VIDEO SIGNS SUPPLEMENTAL REPORT

1. BRIGHTNESS OF VIDEO SIGNS DURING THE DAY

Other characteristics being equal (such as size of screen and image being displayed), the brighter the display, the farther away it can be seen and the better it will "stand out" from other objects in the visual field (this is known as "conspicuity"). Brightness, for commercial video displays is typically measured in *nits* (cd/m^2 or candelas per square meter) - the higher the number, the brighter the display. For large screen video displays to be highly visible outdoors in daylight, most writers suggest that a brightness of 3500-5000 nits is a necessary minimum. Many manufacturers claim, in their product specifications, to be able to achieve this level of brightness. However, because there are many variables present in the design and operation of video displays and in the techniques used for brightness measurement, display brightness measurement is not straightforward.

2. CONCERNS ABOUT SIGN BRIGHTNESS AT NIGHT

Video technology has only recently enabled displays that are bright enough (while presenting full color, moving images of television quality) to be effectively used in bright daylight. For traffic safety, however, we must be more concerned with their potential brightness at night and on dark, overcast days. There are three closely related issues that are the sources of concern. These are (a) the driver's state of dark adaptation; (b) glare; and (c) the loss of conspicuity of official signs and markings in proximity to bright commercial displays.

a. Dark Adaptation. When driving at night, drivers' eyes gradually become dark-adapted, enabling them to see objects of relatively low brightness and contrast. Dark adaptation is a physiological mechanism that may require several minutes or more, depending on factors such as the extent of the change in ambient illumination, the presence of lighting or glare sources which might delay or otherwise hinder the dark adaptation process, the person's age, and general eye health. The phenomenon of dark adaptation is commonly experienced when one walks into a darkened movie theater. At first it is quite difficult to recognize objects within the theater such as vacant seats or other people. Over time, however, as one's eyes gradually adapt to the reduced light levels, objects within the environment become quite recognizable. Upon leaving the movie theater and entering a sunlit streetscape, the reverse phenomenon, known as light adaptation, occurs. Light adaptation takes place far more quickly than does dark adaptation due to differences in the physiological mechanisms involved, and this is a principal cause for concern in night driving. If, when driving at night a driver's dark-adapted state is compromised by the presence of a bright object, such as a video sign within the field-of-view, the driver's ability to discern potential hazards such as pedestrians or bicyclists (especially those wearing dark clothing), potholes or objects in the roadway, may be compromised. Prior research has shown that high-luminance signs can change the adaptation level of the viewer's eye, suggesting that a driver's night vision might be temporarily impaired for other tasks requiring dark adaptation.

b. Glare. Glare is caused when a bright object temporarily overwhelms the eye's ability to adapt quickly. Bright objects such as highly illuminated signs can cause glare that, in turn, can compromise dark adaptation. There are two types of glare, known as

discomfort glare and disability glare. The former makes the visual task of driving, including sign reading, temporarily more physically stressful, and thus may reduce the effort that a driver will make to use his or her eyes for a time. Disability glare, also called veiling luminance, is of greater concern for road and traffic safety. It results in a reduction in the perceived contrast of visual stimuli, rendering them nearly invisible for a time. Most drivers have encountered a form of disability glare when driving on a two-lane country road at night. The glare of oncoming headlights (especially high beams) can temporarily blind the affected driver, making it difficult or impossible for him or her to observe lane markings, road signs, hazards, or the taillights of a vehicle ahead. It must also be noted that, as people age, both dark adaptation and glare recovery take longer. Because disability glare can adversely affect safety, a brightness standard should have, as its criterion, the reduced likelihood of disability glare.

c. Loss of Conspicuity. A third phenomenon related to the adverse effect of a bright object in the visual field is that other nearby objects of lower brightness may lose conspicuity by comparison. This is of concern in environments such as downtown Seattle because there are likely to be official traffic control devices, including signs, signals and markings, that can become visually "lost" due to the attention-getting brightness of nearby video signs

For these reasons it is important that upper limits on sign brightness be established for video signs operating during dark or overcast daytime conditions, although it is not necessary to turn the signs off completely. What is necessary is to reduce the luminance of the sign such that it is not so much brighter than the background luminance of the streetscape against which it will be seen that it can cause disability glare, impair a driver's dark adaptation, or diminish the conspicuity of nearby traffic control devices.

Sign brightness (in nits) is measured at the display surface, when the display is producing solid white light (or as close to it as possible), and this measurement is independent of size of the display. Measuring display brightness with readily available handheld light meters is inadequate because such meters do not measure display brightness per se, but instead measure foot-candles at the location of the meter – hence they are influenced by factors independent of, and outside the control of, the sign operator. Because accurate measurement of display brightness requires specialized equipment and, as stated above, there does not seem to be general agreement about how such measurement should be taken, the establishment of a nighttime brightness standard is not straightforward.

The Illuminating Engineering Society of North America (IESNA) has published a comprehensive *Lighting Handbook* that addresses issues of lighting and glare. In a chapter on "Roadway Lighting," the Handbook suggests that internally illuminated and luminous source message signs (a category that includes video signs), in order to remain legible at night, should maintain brightness levels of 520 nits in areas of "medium ambient luminance" (defined as "areas with small commercial developments and lighted roadways and interchanges") or 1000 nits in areas of "high ambient luminance" (defined as "areas with high street lighting levels and brightly lighted advertising signs). It must be kept in mind that these are maximum suggested brightness levels for official roadway signs that may have to compete for attention with other stimuli. Clearly, non-essential video displays should not maintain similar brightness levels or the conspicuity of official traffic control devices might be lost. Accordingly, I suggest that the proposed legislation

require that video signs be dimmed at night such that they produce a maximum of 500 nits at the display face.

Seattle City Council

PLEASE PRINT

PUBLIC HEARING SIGN-UP SHEET

Wednesday, June 13, 2001

Video Signs

INFORMATION ON THIS SIGN-UP SHEET IS ***PUBLIC RECORD***

#	(PLEASE PRINT) NAME	ORGANIZATION	(OPTIONAL) ADDRESS	ZIP	(OPTIONAL) PHONE/FAX
1.	JoAnn McRistan	ARTS	2450 4th Ave. W.	98119	206-282-5471
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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12.					
13.					

author/ kfk
final video sign ord
05/30/01

ORDINANCE _____

AN ORDINANCE relating to land use and zoning, repealing the moratorium adopted by Ordinance 119487 as amended, amending Seattle Municipal Code Sections 23.55.003, 23.55.030, 23.55.034, 23.55.036, 23.55.040, 23.66.160, 23.66.338, 23.69.021, 23.84.036 and adding a new section 23.55.005, Video Display Methods, to regulate use of video display on signs.

WHEREAS, among the purposes of the Sign Code are to allow signs that invite rather than demand the public's attention, to encourage the use of signs that enhance the visual environment of the city, and to protect the public interest and safety;

WHEREAS, the City of Seattle regulates signs and displays on signs in order to reduce potential traffic safety hazards and visual blight, among other reasons set out in SMC 23.55.001;

WHEREAS, for these reasons the City prohibits or otherwise regulates signs that flash, or that rotate or have moving parts that rotate rapidly;

WHEREAS, a major study on electronic signs prepared by the Federal Highway Administration found that "motion or the illusion of motion of lights or other display features," including animation, has "the greatest potential for motorist distraction as well as a dominant visual impact on the aesthetic environment." (FHA Report, Part VI, Section L.);

NOW THEREFORE, BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Subsection A of Section 23.55.003 of the Seattle Municipal Code, which Section was last amended by Ordinance 112830, is further amended as follows:

SMC 23.55.003 Signs prohibited in all zones.

A. The following signs shall be prohibited in all zones:

1. Flashing signs;

2. Signs which rotate or have a rotating or moving part or parts that revolve at a speed in excess of seven (7) revolutions per minute;

3. Signs attached to or located on stationary motor vehicles, equipment, trailers, and related devices, except for signs not exceeding five (5) square feet in area and relating to the sale, lease or rent of a motor vehicle to which the signs are attached;

4. Portable signs other than readily detachable signs having a fixed base or mounting for the placement and intermittent use of such signs;

5. Banners, streamers, strings of pennants, fabric signs, festoons of lights, clusters of flags, wind-animated objects, balloons, searchlights, and similar devices, except where the principal use or activity on the lot is outdoor retail sales in NC3, C1, C2 and downtown zones, and except where permitted as temporary signs under Section 23.55.012.

6. Signs that attempt or appear to attempt to direct the movement of traffic or that interfere with, imitate or resemble any official traffic sign, signal or device.

7. Signs using a video display method, except as provided in section 23.55.005, Video Display Methods.

NEW SECTION. Section 2. A new section 23.55.005, Video Display Methods, is added to Chapter 23.55 of the Seattle Municipal Code, as follows:

SMC 23.55.005 Video Display Methods

A. Development standards. Video display may be used on an existing sign or on a new sign when the sign meets all of the following development standards:

1. The sign is an on-premises sign;

2. The sign is not located in a residential, NC1 or NC2 zone, Special Review District, Historical District, Preservation District, or shoreline environment;

3. The sign area, as measured in square inches, is less than or equal to 1000 square inches and no single dimension of the sign exceeds three (3) feet; or the sign meets the standards set out in subsection B, in addition to meeting all other standards of this subsection A.

4. The maximum height for any sign using a video display method shall be fifteen (15') feet above existing grade. Pole signs using a video display method shall be at least ten feet (10') above the ground; and

5. The sign is at least thirty-five (35) linear feet in any direction from any other sign that uses a video display method.

B. In lieu of complying with subsection A (3) above, the Director of DCLU shall allow video display methods on a sign if the sign meets all of the following additional development standards:

1. The sign is within the area shown on the map attached as Exhibit A and not within Special Review Districts, Historic Districts, Preservation Districts, residential zones and shoreline environments;

2. The sign is a minimum distance of fifteen feet (15') from the street edge.

3. The maximum size of the sign is twenty (20) square feet as independently applied to each sign face, including framework and border.

4. When located within fifty (50) feet of an abutting lot in a residential zone, any part of the sign using a video display method is oriented so that no portion of the sign face is visible from an existing or permitted principal structure on that abutting lot.

5. Duration: Any portion of the message that uses a video display method shall have a minimum duration of two (2) seconds and a maximum duration of ten (10) seconds. Calculation of the duration shall not include the number of frames per second used in a video display method. Calculation of the maximum duration shall include the time used for any other display methods incorporated within that portion of the message displayed using a video display method.

Section 3. Subsection B of Section 23.55.030 of the Seattle Municipal Code, which Section was last amended by Council Bill 113665, is further amended as follows:

23.55.030 Signs in NC3, C1 and C2 zones.

B. Signs may be electric, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

Section 4. Subsection C of Section 23.55.034 of the Seattle Municipal Code, which Section was last amended by Council Bill 113665, is further amended as follows:

23.55.034 Signs in downtown zones.

C. General Standards for All Signs.

1. Signs may be electrical, externally illuminated, ((~~or~~))nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

Section 5. Subsection B of Section 23.55.036 of the Seattle Municipal Code, which Section was last amended by Council Bill 113665, is further amended as follows:

23.55.036 Signs in IB, IC, IG1 and IG2 zones.

B. Signs may be electrical, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

Section 6. Section 23.55.040 of the Seattle Municipal Code, which Section was last amended by Ordinance 118888, is further amended as follows:

SMC 23.55.040 Special exception for signs in commercial and downtown zones.

The Director may authorize exceptions to the regulations for the size, number, type, height and depth of projection of on-premises signs in neighborhood commercial, commercial, downtown office core, downtown ret((~~ia~~))ail core, downtown mixed commercial, and downtown harborfront zones as a special exception pursuant to Chapter 23.76, Procedures for Master Use Permit and Council Land Use Decisions((~~,~~)), except that no special exception may be authorized for a sign using video display methods. When one (1) or more of the conditions in subsection A of this section have been met, the characteristics described in subsection B of this section shall be used to evaluate the merits of the proposal. Proposals must also meet the intent of the Sign Code as specified in Section 23.55.001, Intent. An exception shall not be granted for roof signs or signs prohibited in Section 23.55.003. In downtown zones, the Director shall consult with the Seattle Design Commission before issuance of the special exception decision.

Section 7. Subsection A of Section 23.66.160, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.160 Signs.

A. The following signs shall be prohibited throughout the Pioneer Square Preservation District:

1. Permanently affixed, freestanding signs (except those used to identify areas such as parks);
2. Roof signs;
3. Billboards;
4. Electric signs((~~,~~)) and signs using video display methods, excluding neon signs.

Section 8. Subsection E of Section 23.66.338, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.338 Business identification signs

E. Illumination. Neon-lit signs are encouraged to create an exciting and enhanced visual image in the retail core.

1. No sign or light shall move, flash or make noise. Exceptions may be granted by the Department of Neighborhoods Director for indicators of time or temperature, after review and recommendation by the Board.
2. Illuminated signs shall be designed and sited in a manner to minimize glare on floors above grade in nearby residences.

3. Signs using video display methods are prohibited.

Section 9. Subsection A of Section 23.69.021 of the Seattle Municipal Code, which Section was last amended by Council Bill 113665, is further amended as follows:

SMC 23.69.021 Signs in Major Institution Overlay Districts.

A. General Standards.

1. Signs shall be stationary and shall not rotate.

2. No flashing, changing-image, ((or)) message board signs, or signs using video display methods, except as permitted as defined in 23.55.005, Video Display Methods, shall be permitted.

3. Signs may be electric, externally illuminated, or nonilluminated.

Section 10. Section 23.84.036 of the Seattle Municipal Code, which Section was last amended by Council Bill 113665, is further amended as follows:

23.84.036 Definitions -- S.

"Sign, changing-image" means a sign, including a sign using a video display method, which changes its message or background by means of electrical, kinetic, solar or mechanical energy, not including message board signs. A video display method is a method of display characterized by real-time, full-motion imagery of at least television quality.

Section 11. The moratorium enacted in Ordinance 119487 as amended is repealed as of the effective date of this ordinance.

Section 12. The several provisions of this ordinance are declared to be separate and severable, and the invalidity of any clause, sentence, paragraph, subdivision, section, or portion of this ordinance, or the invalidity of the application thereof to any person or circumstance, shall not affect the validity of the remainder of this ordinance or the validity of its application to other persons or circumstances. The Council intends to maintain the Sign Code in order to continue to promote the purposes for which it was adopted, and if the amendments in this ordinance render the Sign Code invalid in any respect, then the Council intends the Sign Code to remain in effect as if this ordinance had not been adopted.

Section 13. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by the City Council the ____ day of _____, 2001, and signed by me in open session in authentication of its passage this ____ day of _____, 2001.

_____
President of the City Council

Approved by me this ____ day of _____, 2001.

_____
Paul Schell, Mayor

Filed by me this ____ day of _____, 2001.

_____
City Clerk

(SEAL)

List of Accompanying Attachments

1. Exhibit A: Map VIDEOSIGNS

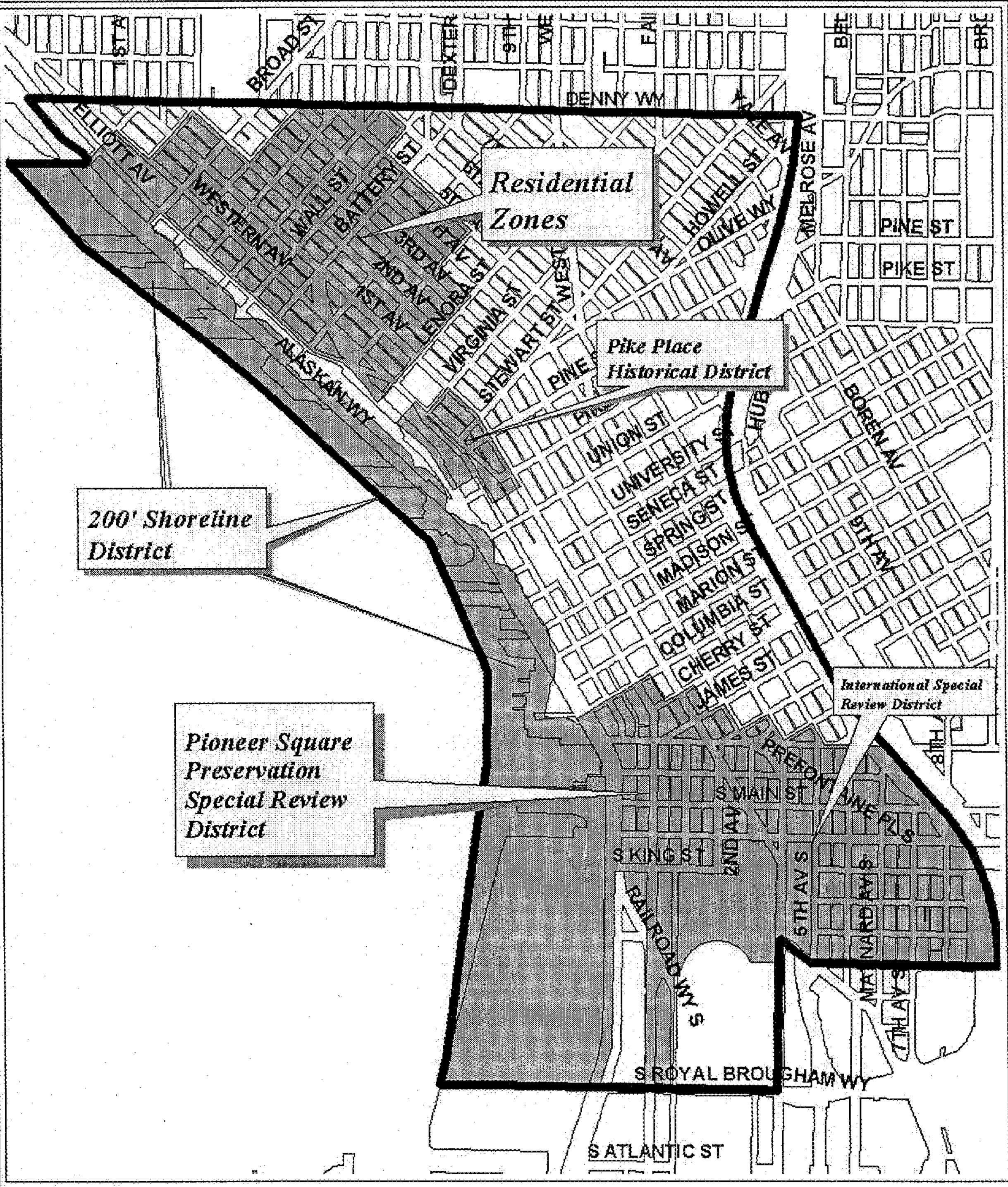

Exhibit A

600 0 600 1200 Feet

N

Legend

23.55.005 (B)(1) Areas for Video Signs

Prohibited Areas

No warranties of any sort, including accuracy, fitness, or merchantability accompany this product.

Prepared May 29, 2001

City of Seattle, DCLU

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ORDINANCE _____

AN ORDINANCE relating to land use and zoning, repealing the moratorium adopted by Ordinance 119487 as amended, amending Seattle Municipal Code Sections 23.55.003, 23.55.030, 23.55.034, 23.55.036, 23.55.040, 23.66.160, 23.66.338, 23.69.021, 23.84.036 and adding a new section 23.55.005, Video Display Methods, to regulate use of video display on signs.

WHEREAS, among the purposes of the Sign Code are to allow signs that invite rather than demand the public's attention, to encourage the use of signs that enhance the visual environment of the city, and to protect the public interest and safety;

WHEREAS, the City of Seattle regulates signs and displays on signs in order to reduce potential traffic safety hazards and visual blight, among other reasons set out in SMC 23.55.001;

WHEREAS, for these reasons the City prohibits or otherwise regulates signs that flash, or that rotate or have moving parts that rotate rapidly;

WHEREAS, a major study on electronic signs prepared by the Federal Highway Administration found that "motion or the illusion of motion of lights or other display features," including animation, has "the greatest potential for motorist distraction as well as a dominant visual impact on the aesthetic environment." (FHA Report, Part VI, Section L.);

NOW THEREFORE, BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Subsection A of Section 23.55.003 of the Seattle Municipal Code, which Section was last amended by Ordinance 112830, is further amended as follows:

SMC 23.55.003 Signs prohibited in all zones.

A. The following signs shall be prohibited in all zones:

1. Flashing signs;

2. Signs which rotate or have a rotating or moving part or parts that revolve at a speed in excess of seven (7) revolutions per minute;

3. Signs attached to or located on stationary motor vehicles, equipment, trailers, and related devices, except for signs not exceeding five (5) square feet in area and relating to the sale, lease or rent of a motor vehicle to which the signs are attached;

4. Portable signs other than readily detachable signs having a fixed base or mounting for the placement and intermittent use of such signs;

5. Banners, streamers, strings of pennants, fabric signs, festoons of lights, clusters of flags, wind-animated objects, balloons, searchlights, and similar devices, except where the principal use or activity on the lot is outdoor retail sales in NC3, C1, C2 and downtown zones, and except where permitted as temporary signs under Section 23.55.012.

6. Signs that attempt or appear to attempt to direct the movement of traffic or that interfere with, imitate or resemble any official traffic sign, signal or device.

7. Signs using a video display method, except as provided in section 23.55.005, Video Display Methods.

* * *

NEW SECTION. Section 2. A new section 23.55.005, Video Display Methods, is added to Chapter 23.55 of the Seattle Municipal Code, as follows:

SMC 23.55.005 Video Display Methods

A. Development standards. Video display may be used on a sign when the sign meets all of the following development standards:

1. The sign is an on-premises sign;

2. The sign is not located in a residential, NC1 or NC2 zone, Special Review District, Historical District, Preservation District, or shoreline environment;

3. The sign meets one of the following criteria:

   i. the sign face is not visible from a street, driveway, or surface parking area, and also is not visible from a lot that is owned by a different person, in which case the size of the sign is not limited by this subsection of 23.55.005, Video Display Methods, and the standards for duration or pause periods and subsection A 5, shall not apply; or

   ii. the sign area is less than or equal to 1000 square inches and no single dimension of the sign exceeds three (3) feet; or

   iii. the sign meets the standards set out in subsection B, in addition to meeting all other standards of this subsection A.

4. The maximum height for any sign using a video display method shall be fifteen (15') feet above existing grade. Pole signs using a video display method shall be at least ten feet (10') above the ground;

5. The sign is at least thirty-five (35) linear feet in any direction from any other sign that uses a video display method;

6. When located within fifty (50) feet of a lot in a residential zone, any part of the sign using a video display method is oriented so that no portion of the sign face is visible from an existing or permitted principal structure on that lot;

7. Duration: Any portion of the message that uses a video display method shall have a minimum duration of two (2) seconds and a maximum duration of five (5) seconds. Calculation of the duration shall not include the number of frames per second used in a video display method. Calculation of the maximum duration shall include the time used for any other display methods incorporated within that portion of the message displayed using a video display method;

8. Pause Between Video Portions of Message. There shall be twenty (20) seconds of still image or blank screen following every message using a video display method;

9. Audio speakers shall be prohibited in association with a sign using a video method of display;

10. Between dusk and dawn the video display shall be limited in brightness to no more than 500 nits when measured from the sign's face at its maximum brightness; and

11. Signs using a video display method may be used after dusk only until 11:00 p.m. or, if the advertising is an on-premises message about an event at the site where the sign is located, for up to one hour after said event.

B. In lieu of complying with subsection A (3) above, the Director of DCLU shall allow video display methods on a sign if the sign meets all of the following additional development standards:

1. The sign is within the area shown on the map attached as Exhibit A and not within a Special Review District, Historic District, Preservation District, residential zone or shoreline environment;

2. The sign is a minimum distance of fifteen feet (15') from the curb; and

3. The maximum size of the sign is twenty (20) square feet as independently applied to each sign face, including framework and border.

C. Video Signs Previously Erected. On-premises signs using the video method of display, that have permits authorizing use of that method of display issued prior to August 1, 2001, may continue to use the video method of display authorized in the permit provided that they meet the standards of 23.55.005.A.6-11 above within 180 days from the effective date of the ordinance codified in this section. Previously erected and permitted signs that use a video method of display located within the area shown on the map attached as Exhibit A shall not be subject to the standards of 23.55.055. If the video method of display is terminated for 180 days or the sign is relocated or reconstructed, then the video method of display cannot be used except in conformance with the development standards of section 23.55.005.

* * *

Section 3. Subsection B of Section 23.55.030 of the Seattle Municipal Code, which Section was last amended by Ordinance 118302, is further amended as follows:

23.55.030 Signs in NC3, C1 and C2 zones.

* * *

B. Signs may be electric, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 4. Subsection C of Section 23.55.034 of the Seattle Municipal Code, which Section was last amended by Ordinance 119239, is further amended as follows:

23.55.034 Signs in downtown zones.

* * *

C. General Standards for All Signs.

1. Signs may be electrical, externally illuminated, ((~~or~~))nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 5. Subsection B of Section 23.55.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119391, is further amended as follows:

23.55.036 Signs in IB, IC, IG1 and IG2 zones.

* * *

B. Signs may be electrical, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 6. Section 23.55.040 of the Seattle Municipal Code, which Section was last amended by Ordinance 118888, is further amended as follows:

SMC 23.55.040 Special exception for signs in commercial and downtown zones.

The Director may authorize exceptions to the regulations for the size, number, type, height and depth of projection of on-premises signs in neighborhood commercial, commercial, downtown office core, downtown ret((~~ia~~))ail core, downtown mixed commercial, and downtown harborfront zones as a special exception pursuant to Chapter 23.76, Procedures for Master Use Permit and Council Land Use Decisions((~~,~~)), except that no special exception may be authorized for a sign using video display methods. When one (1) or more of the conditions in subsection A of this section have been met, the characteristics described in subsection B of this section shall be used to evaluate the merits of the proposal. Proposals must also meet the intent of the Sign Code as specified in Section 23.55.001, Intent. An exception shall not be granted for roof signs or signs prohibited in Section 23.55.003. In downtown zones, the Director shall consult with the Seattle Design Commission before issuance of the special exception decision.

* * *

Section 7. Subsection A of Section 23.66.160, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.160 Signs.

A. The following signs shall be prohibited throughout the Pioneer Square Preservation District:

Permanently affixed, freestanding signs (except those used to identify areas such as parks);

Roof signs;

Billboards;

Electric signs((~~,~~)) and signs using video display methods, excluding neon signs.

* * *

Section 8. Subsection E of Section 23.66.338, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.338 Business identification signs

* * *

E. Illumination. Neon-lit signs are encouraged to create an exciting and enhanced visual image in the retail core.

1. No sign or light shall move, flash or make noise. Exceptions may be granted by the Department of Neighborhoods Director for indicators of time or temperature, after review and recommendation by the Board.

2. Illuminated signs shall be designed and sited in a manner to minimize glare on floors above grade in nearby residences.

3. Signs using video display methods are prohibited.

Section 9. Subsection A of Section 23.69.021 of the Seattle Municipal Code, which Section was last amended by Ordinance 118362, is further amended as follows:

SMC 23.69.021 Signs in Major Institution Overlay Districts.

A. General Standards.

1. Signs shall be stationary and shall not rotate.

2. No flashing, changing-image, ((or)) message board signs, or signs using video display methods, except as permitted as defined in 23.55.005, Video Display Methods, shall be permitted.

3. Signs may be electric, externally illuminated, or nonilluminated.

* * *

Section 10. Section 23.84.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119839, is further amended as follows:

23.84.036 Definitions -- S.

***

"Sign, changing-image" means a sign, including a sign using a video display method, which changes its message or background by means of electrical, kinetic, solar or mechanical energy, not including message board signs. A video display method is a method of display characterized by real-time, full-motion imagery of at least television quality.

***

Section 11. The moratorium enacted in Ordinance 119487 as amended is repealed as of the effective date of this ordinance.

Section 12. The several provisions of this ordinance are declared to be separate and severable, and the invalidity of any clause, sentence, paragraph, subdivision, section, or portion of this ordinance, or the invalidity of the application thereof to any person or circumstance, shall not affect the validity of the remainder of this ordinance or the validity of its application to other persons or circumstances. The Council intends to maintain the Sign Code in order to continue to promote the purposes for which it was adopted, and if the amendments in this ordinance render the Sign Code invalid in any respect, then the Council intends the Sign Code to remain in effect as if this ordinance had not been adopted.

Section 13. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by the City Council the _____ day of _____, 2001, and signed by me in open session in authentication of its passage this _____ day of _____, 2001.

_____
President of the City Council

Approved by me this _____ day of _____, 2001.

_____
Paul Schell, Mayor

Filed by me this _____ day of _____, 2001.

_____
City Clerk

(SEAL)

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ORDINANCE _____

AN ORDINANCE relating to land use and zoning, repealing the moratorium adopted by Ordinance 119487 as amended, amending Seattle Municipal Code Sections 23.55.003, 23.55.030, 23.55.034, 23.55.036, 23.55.040, 23.66.160, 23.66.338, 23.69.021, 23.84.036 and adding a new section 23.55.005, Video Display Methods, to regulate use of video display on signs.

WHEREAS, among the purposes of the Sign Code are to allow signs that invite rather than demand the public's attention, to encourage the use of signs that enhance the visual environment of the city, and to protect the public interest and safety;

WHEREAS, the City of Seattle regulates signs and displays on signs in order to reduce potential traffic safety hazards and visual blight, among other reasons set out in SMC 23.55.001;

WHEREAS, for these reasons the City prohibits or otherwise regulates signs that flash, or that rotate or have moving parts that rotate rapidly;

WHEREAS, a major study on electronic signs prepared by the Federal Highway Administration found that "motion or the illusion of motion of lights or other display features," including animation, has "the greatest potential for motorist distraction as well as a dominant visual impact on the aesthetic environment." (FHA Report, Part VI, Section L.);

NOW THEREFORE, BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Subsection A of Section 23.55.003 of the Seattle Municipal Code, which Section was last amended by Ordinance 112830, is further amended as follows:

SMC 23.55.003 Signs prohibited in all zones.

A. The following signs shall be prohibited in all zones:

1. Flashing signs;

2. Signs which rotate or have a rotating or moving part or parts that revolve at a speed in excess of seven (7) revolutions per minute;

3. Signs attached to or located on stationary motor vehicles, equipment, trailers, and related devices, except for signs not exceeding five (5) square feet in area and relating to the sale, lease or rent of a motor vehicle to which the signs are attached;

4. Portable signs other than readily detachable signs having a fixed base or mounting for the placement and intermittent use of such signs;

5. Banners, streamers, strings of pennants, fabric signs, festoons of lights, clusters of flags, wind-animated objects, balloons, searchlights, and similar devices, except where the principal use or activity on the lot is outdoor retail sales in NC3, C1, C2 and downtown zones, and except where permitted as temporary signs under Section 23.55.012.

6. Signs that attempt or appear to attempt to direct the movement of traffic or that interfere with, imitate or resemble any official traffic sign, signal or device.

7. Signs using a video display method, except as provided in section 23.55.005, Video Display Methods.

* * *

NEW SECTION. Section 2. A new section 23.55.005, Video Display Methods, is added to Chapter 23.55 of the Seattle Municipal Code, as follows:

SMC 23.55.005 Video Display Methods

A. Development standards. Video display may be used on a sign when the sign meets all of the following development standards:

1. The sign is an on-premises sign;

2. The sign is not located in a residential, NC1 or NC2 zone, Special Review District, Historical District, Preservation District, or shoreline environment;

3. The sign meets one of the following criteria:

i. the sign face is not visible from a street, driveway, or surface parking area, and also is not visible from a lot that is owned by a different person, in which case the size of the sign is not limited by this subsection of 23.55.005, Video Display Methods, and the standards for duration or pause periods and subsection A 5, shall not apply; or

ii. the sign area is less than or equal to 1000 square inches and no single dimension of the sign exceeds three (3) feet; or

iii. the sign meets the standards set out in subsection B, in addition to meeting all other standards of this subsection A.

4. The maximum height for any sign using a video display method shall be fifteen (15') feet above existing grade. Pole signs using a video display method shall be at least ten feet (10') above the ground;

5. The sign is at least thirty-five (35) linear feet in any direction from any other sign that uses a video display method;

6. When located within fifty (50) feet of a lot in a residential zone, any part of the sign using a video display method is oriented so that no portion of the sign face is visible from an existing or permitted principal structure on that lot;

7. Duration: Any portion of the message that uses a video display method shall have a minimum duration of two (2) seconds and a maximum duration of five (5) seconds. Calculation of the duration shall not include the number of frames per second used in a video display method. Calculation of the maximum duration shall include the time used for any other display methods incorporated within that portion of the message displayed using a video display method;

8. Pause Between Video Portions of Message. There shall be twenty (20) seconds of still image or blank screen following every message using a video display method;

9. Audio speakers shall be prohibited in association with a sign using a video method of display;

10. Between dusk and dawn the video display shall be limited in brightness to no more than 500 nits when measured from the sign's face at its maximum brightness; and

11. Signs using a video display method may be used after dusk only until 11:00 p.m. or, if the advertising is an on-premises message about an event at the site where the sign is located, for up to one hour after said event.

B. In lieu of complying with subsection A (3) above, the Director of DCLU shall allow video display methods on a sign if the sign meets all of the following additional development standards:

1. The sign is within the area shown on the map attached as Exhibit A and not within a Special Review District, Historic District, Preservation District, residential zone or shoreline environment;

2. The sign is a minimum distance of fifteen feet (15') from the curb; and

3. The maximum size of the sign is twenty (20) square feet as independently applied to each sign face, including framework and border.

C. Video Signs Previously Erected. On-premises signs using the video method of display, that have permits authorizing use of that method of display issued prior to August 1, 2001, may continue to use the video method of display authorized in the permit provided that they meet the standards of 23.55.005.A.6-11 above within 180 days from the effective date of the ordinance codified in this section. Previously erected and permitted signs that use a video method of display located within the area shown on the map attached as Exhibit A shall not be subject to the standards of 23.55.005. If the video method of display is terminated for 180 days or the sign is relocated or reconstructed, then the video method of display cannot be used except in conformance with the development standards of section 23.55.005.

* * *

Section 3. Subsection B of Section 23.55.030 of the Seattle Municipal Code, which Section was last amended by Ordinance 118302, is further amended as follows:

23.55.030 Signs in NC3, C1 and C2 zones.

* * *

B. Signs may be electric, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 4. Subsection C of Section 23.55.034 of the Seattle Municipal Code, which Section was last amended by Ordinance 119239, is further amended as follows:

23.55.034 Signs in downtown zones.

* * *

C. General Standards for All Signs.

1. Signs may be electrical, externally illuminated, ((~~or~~))nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 5. Subsection B of Section 23.55.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119391, is further amended as follows:

23.55.036 Signs in IB, IC, IG1 and IG2 zones.

* * *

B. Signs may be electrical, externally illuminated, ((~~or~~)) nonilluminated ((~~,~~)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

Section 6. Section 23.55.040 of the Seattle Municipal Code, which Section was last amended by Ordinance 118888, is further amended as follows:

SMC 23.55.040 Special exception for signs in commercial and downtown zones.

The Director may authorize exceptions to the regulations for the size, number, type, height and depth of projection of on-premises signs in neighborhood commercial, commercial, downtown office core, downtown ret((~~ia~~))ail core, downtown mixed commercial, and downtown harborfront zones as a special exception pursuant to Chapter 23.76, Procedures for Master Use Permit and Council Land Use Decisions((~~,~~)), except that no special exception may be authorized for a sign using video display methods. When one (1) or more of the conditions in subsection A of this section have been met, the characteristics described in subsection B of this section shall be used to evaluate the merits of the proposal. Proposals must also meet the intent of the Sign Code as specified in Section 23.55.001, Intent. An exception shall not be granted for roof signs or signs prohibited in Section 23.55.003. In downtown zones, the Director shall consult with the Seattle Design Commission before issuance of the special exception decision.

* * *

Section 7. Subsection A of Section 23.66.160, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.160 Signs.

A. The following signs shall be prohibited throughout the Pioneer Square Preservation District:

Permanently affixed, freestanding signs (except those used to identify areas such as parks);

Roof signs;

Billboards;

Electric signs((~~,~~)) and signs using video display methods, excluding neon signs.

* * *

Section 8. Subsection E of Section 23.66.338, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.338 Business identification signs

* * *

E. Illumination. Neon-lit signs are encouraged to create an exciting and enhanced visual image in the retail core.

1. No sign or light shall move, flash or make noise. Exceptions may be granted by the Department of Neighborhoods Director for indicators of time or temperature, after review and recommendation by the Board.

2. Illuminated signs shall be designed and sited in a manner to minimize glare on floors above grade in nearby residences.

3. Signs using video display methods are prohibited.

Section 9. Subsection A of Section 23.69.021 of the Seattle Municipal Code, which Section was last amended by Ordinance 118362, is further amended as follows:

SMC 23.69.021 Signs in Major Institution Overlay Districts.

A. General Standards.

1. Signs shall be stationary and shall not rotate.

2. No flashing, changing-image, ((~~or~~)) message board signs, or signs using video display methods, except as permitted as defined in 23.55.005, Video Display Methods, shall be permitted.

3. Signs may be electric, externally illuminated, or nonilluminated.

* * *

Section 10. Section 23.84.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119839, is further amended as follows:

23.84.036 Definitions -- S.

***

"Sign, changing-image" means a sign, including a sign using a video display method, which changes its message or background by means of electrical, kinetic, solar or

mechanical energy, not including message board signs. A video display method is a method of display characterized by real-time, full-motion imagery of at least television quality.

***

Section 11. The moratorium enacted in Ordinance 119487 as amended is repealed as of the effective date of this ordinance.

Section 12. The several provisions of this ordinance are declared to be separate and severable, and the invalidity of any clause, sentence, paragraph, subdivision, section, or portion of this ordinance, or the invalidity of the application thereof to any person or circumstance, shall not affect the validity of the remainder of this ordinance or the validity of its application to other persons or circumstances. The Council intends to maintain the Sign Code in order to continue to promote the purposes for which it was adopted, and if the amendments in this ordinance render the Sign Code invalid in any respect, then the Council intends the Sign Code to remain in effect as if this ordinance had not been adopted.

Section 13. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by the City Council the 6th day of August, 2001, and signed by me in open session in authentication of its passage this 6th day of August, 2001.

_____
President of the City Council

Approved by me this _____ day of _____, 2001.

_____
Paul Schell, Mayor

Filed by me this _____ day of _____, 2001.

_____
City Clerk

(**SEAL**)

STATE OF WASHINGTON – KING COUNTY

--ss.

135103
City of Seattle,Clerk's Office

No. ORDINANCE IN FULL

Affidavit of Publication

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12th day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

CT:120466 ORD.IN FULL

was published on

08/21/01

J. Stedman

Subscribed and sworn to before me on

08/21/01

Melissa M. Pascua

Notary public for the State of Washington,
residing in Seattle

MELISSA M. PASCUA
NOTARY PUBLIC
STATE OF WASHINGTON
COMMISSION EXPIRES
NOV 21, 2004

Affidavit of Publication

State of Washington, King County

City of Seattle

ORDINANCE 120466

AN ORDINANCE RELATING TO LAND USE AND ZONING, repealing the moratorium adopted by Ordinance 119487 as amended, amending Seattle Municipal Code Sections 23.55.003, 23.55.030, 23.55.034, 23.55.036, 23.55.040, 23.66.160, 23.66.338, 23.69.021, 23.84.036 and adding a new section 23.55.005, Video Display Methods, to regulate use of video display on signs.

WHEREAS, among the purposes of the Sign Code are to allow signs that invite rather than demand the public's attention, to encourage the use of signs that enhance the visual environment of the city, and to protect the public interest and safety;

WHEREAS, the City of Seattle regulates signs and displays on signs in order to reduce potential traffic safety hazards and visual blight, among other reasons set out in SMC 23.55.001;

WHEREAS, for these reasons the City prohibits or otherwise regulates signs that flash, or that rotate or have moving parts that rotate rapidly;

WHEREAS, a major study on electronic signs prepared by the Federal Highway Administration found that "motion or the illusion of motion of lights or other display features," including animation, has "the greatest potential for motorist distraction as well as a dominant visual impact on the aesthetic environment." (FHA Report, Part VI, Section L.);

NOW THEREFORE, BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

SECTION 1. Subsection A of Section 23.55.003 of the Seattle Municipal Code, which Section was last amended by Ordinance 112830, is further amended as follows:

SMC 23.55.003 SIGNS PROHIBITED IN ALL ZONES.

A. The following signs shall be prohibited in all zones:

1. Flashing signs;

2. Signs which rotate or have a rotating or moving part or parts that revolve at a speed in excess of seven (7) revolutions per minute;

3. Signs attached to or located on stationary motor vehicles, equipment, trailers, and related devices, except for signs not exceeding five (5) square feet in area and relating to the sale, lease or rent of a motor vehicle to which the signs are attached;

4. Portable signs other than readily detachable signs having a fixed base or mounting for the placement and intermittent use of such signs;

5. Banners, streamers, strings of pennants, fabric signs, festoons of lights, clusters of flags, wind-animated objects, balloons, searchlights, and similar devices, except where the principal use or activity on the lot is outdoor retail sales in NC3, C1, C2 and downtown zones, and except where permitted as temporary signs under Section 23.55.012.

6. Signs that attempt or appear to attempt to direct the movement of traffic or that interfere with, imitate or resemble any official traffic sign, signal or device.

7. Signs using a video display method, except as provided in section 23.55.005, Video Display Methods.

* * *

NEW SECTION. 2. A new section 23.55.005, Video Display Methods, is added to Chapter 23.55 of the Seattle Municipal Code, as follows:

SMC 23.55.005 VIDEO DISPLAY METHODS

A. Development standards. Video display may be used on a sign when the sign meets all of the following development standards:

1. The sign is an on-premises sign;

7. Duration: Any portion of the message that uses a video display method shall have a minimum duration of two (2) seconds and a maximum duration of five (5) seconds. Calculation of the duration shall not include the number of frames per second used in a video display method. Calculation of the maximum duration shall include the time used for any other display methods incorporated within that portion of the message displayed using a video display method;

8. Pause Between Video Portions of Message. There shall be twenty (20) seconds of still image or blank screen following every message using a video display method;

9. Audio speakers shall be prohibited in association with a sign using a video method of display;

10. Between dusk and dawn the video display shall be limited in brightness to no more than 500 nits when measured from the sign's face at its maximum brightness; and

11. Signs using a video display method may be used after dusk only until 11:00 p.m. or, if the advertising is an on-premises message about an event at the site where the sign is located, for up to one hour after said event.

B. In lieu of complying with subsection A (3) above, the Director of DCLU shall allow video display methods on a sign if the sign meets all of the following additional development standards;

1. The sign is within the area shown on the map attached as Exhibit A and not within a Special Review District, Historic District, Preservation District, residential zone or shoreline environment;

2. The sign is a minimum distance of fifteen feet (15') from the curb; and

3. The maximum size of the sign is twenty (20) square feet as independently applied to each sign face, including framework and border.

C. Video Signs Previously Erected. On-premises signs using the video method of display, that have permits authorizing use of that method of display issued prior to August 1, 2001, may continue to use the video method of display authorized in the permit provided that they meet the standards of 23.55.005.A.6-11 above within 180 days from the effective date of the ordinance codified in this section. Previously erected and permitted signs that use a video method of display located within the area shown on the map attached as Exhibit A shall not be subject to the foregoing standards of 23.55.005 except 23.55.005.A.1. If the video method of display is terminated for 180 days or the sign is relocated or reconstructed, then the video method of display cannot be used except in conformance with the development standards of section 23.55.005.

* * *

SECTION 3. Subsection B of Section 23.55.030 of the Seattle Municipal Code, which Section was last amended by Ordinance 118302, is further amended as follows:

23.55.030 SIGNS IN NC3, C1 AND C2 ZONES.

* * *

B. Signs may be electric, externally illuminated, ((or)) nonilluminated ((.)), or may use video display methods when the sign meets the development standards in Section 23.55.005, Video Display Methods.

* * *

SECTION 4. Subsection C of Section 23.55.034 of the Seattle Municipal Code, which Section was last amended by Ordinance 119239, is further amended as follows:

23.55.034 SIGNS IN DOWNTOWN ZONES.

* * *

C. General Standards for All Signs.

to Chapter 23.76, Procedures for Master Use Permit and Council Land Use Decisions((.)), except that no special exception may be authorized for a sign using video display methods. When one (1) or more of the conditions in subsection A of this section have been met, the characteristics described in subsection B of this section shall be used to evaluate the merits of the proposal. Proposals must also meet the intent of the Sign Code as specified in Section 23.55.001, Intent. An exception shall not be granted for roof signs or signs prohibited in Section 23.55.003. In downtown zones, the Director shall consult with the Seattle Design Commission before issuance of the special exception decision.

* * *

SECTION 7. Subsection A of Section 23.66.160, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.160 SIGNS.

A. The following signs shall be prohibited throughout the Pioneer Square Preservation District:

Permanently affixed, freestanding signs (except those used to identify areas such as parks);

Roof signs;

Billboards;

Electric signs((,)) and signs using video display methods, excluding neon signs.

* * *

SECTION 8. Subsection E of Section 23.66.338, which Section was last amended by Ordinance 117555, is further amended as follows:

SMC 23.66.338 BUSINESS IDENTIFICATION SIGNS

* * *

E. Illumination. Neon-lit signs are encouraged to create an exciting and enhanced visual image in the retail core.

1. No sign or light shall move, flash or make noise. Exceptions may be granted by the Department of Neighborhoods Director for indicators of time or temperature, after review and recommendation by the Board.

2. Illuminated signs shall be designed and sited in a manner to minimize glare on floors above grade in nearby residences.

3. Signs using video display methods are prohibited.

SECTION 9. Subsection A of Section 23.69.021 of the Seattle Municipal Code, which Section was last amended by Ordinance 118362, is further amended as follows:

SMC 23.69.021 SIGNS IN MAJOR INSTITUTION OVERLAY DISTRICTS.

A. General Standards.

1. Signs shall be stationary and shall not rotate.

2. No flashing, changing-image, ((or)) message board signs, or signs using video display methods, except as permitted as defined in 23.55.005, Video Display Methods, shall be permitted.

3. Signs may be electric, externally illuminated, or nonilluminated.

* * *

SECTION 10. Section 23.84.036 of the Seattle Municipal Code, which Section was last amended by Ordinance 119839, is further amended as follows:

23.84.036 DEFINITIONS — S.

* * *

"Sign, changing-image" means a sign, including a sign using a video display method, which changes its message or background by means of electrical, kinetic, solar or mechanical energy, not including message board signs. A video display method is a method of display characterized by real-time, full-motion imagery of at least television quality.

* * *

SECTION 11. The moratorium enacted in Ordinance 119487 as amended is repealed as of the effective date of this ordinance.

SECTION 12. The several provisions of this ordinance are declared to be separate and severable, and the invalidity of any clause, sentence, paragraph, subdivision, section, or portion of this ordinance, or the