



Agenda Report

2725 Judge Fran Jamieson
Way
Viera, FL 32940

New Business - County Attorney

I.1.

8/22/2023

Subject:

Proposed ordinance amending Chapter 46 - Environment, Article IV. - Noise, and Section 62-2271. - Noise, of the Brevard County Code of Ordinances, relating to the regulation of noise.

Fiscal Impact:

None

Dept/Office:

District 2 Commissioner / County Attorney

Requested Action:

It is requested that the Board of County Commissioners hold a public hearing and consider adopting an ordinance amending Chapter 46 - Environment, Article IV. - Noise, and Section 62-2271. - Noise, of the Brevard County Code of Ordinances, relating to the regulation of noise.

Summary Explanation and Background:

Chapter 46 - Environment, Article IV. - Noise, and Section 62-2271. - Noise, of the Brevard County Code of Ordinances regulate noise and provide performance standards for noise emissions, respectively.

Chapter 46 - Environment, Article IV. - Noise prohibits "loud and raucous" noise, which is defined as any sound which, because of its volume level, duration, and character, annoys, disturbs, injures, or endangers the comfort, health, peace, or safety of reasonable persons of ordinary sensibilities within the limits of unincorporated Brevard County.

Section 62-2271 of the Code provides for limitations on noise using an A-weighted decibel scale (dBA), with varying dBA limitations depending on the time of day and the use of the property from which the noise is generated.

The proposed ordinance provides for amendments to Chapter 46 - Environment, Article IV. - Noise, and Section 62-2271. - Noise, of the Brevard County Code of Ordinances Section 46-130 to accomplish the statement of legislative intent adopted by the Board at its regular meeting on July 11, 2023. If adopted, the ordinance will:

- Replace the "loud and raucous" standard with a "plainly audible" standard, which would provide enforcement officers with an easily understood noise regulation prohibiting noises that are plainly audible at designated distances from a noise-emitting property or source. The "plainly audible" standard has been upheld by Florida courts to be a constitutional method of regulating noise. The proposed ordinance establishes distances of 300 feet during daytime hours (7 a.m. to 10 p.m.) and 150

feet during nighttime hours (10:01 p.m. to 6:59 a.m.). These daytime and nighttime hours mirror the hours in the existing County noise regulations.

- Introduce an additional measurement standard for enforcement through the C-weighted decibel scale (dBC). Measurements in dBC allow for more accurate assessment of low frequency sounds and peak sound pressures from loud impulsive sources.

The ordinance does not alter the existing maximum permissible sound levels on the A-weighted decibel scale. In each instance, the adopted maximum allowable sound level on the C-weighted decibel scale is 5 decibels higher than on the A-weighted scale.

Type of Use	Time Period	Maximum Level dBA	Maximum Level dBC
Residential	Daytime	60 dBA	65 dBC
	Nighttime	55 dBA	60 dBC
Commercial	Daytime	65 dBA	70 dBA
	Nighttime	55 dBA	60 dBA
Industrial	Daytime	75 dBA	80 dBC
	Nighttime	65 dBA	70 dBC

- Continue to allow for enforcement by code enforcement officers in special magistrate proceedings, or by the Brevard County Sheriff’s Office as a misdemeanor ordinance violation, punishable by a maximum fine of \$500 and imprisonment in the county jail for up to 60 days. The ordinance introduces a requirement that a warning be issued to violators, requiring them to comply with the warning immediately or within a reasonable amount of time (so long as it would take a reasonably diligent person to reduce the noise, but not more than five minutes). If the noise is not eliminated or reduced to allowable limits after the warning, or if the person so warned complies with the warning but violates the noise regulations again after the first warning, the person shall be subject to the penalties described above.
- Preserve and expand upon existing exemptions (e.g., emergency vehicle sirens), as well as actions that are prohibited without the need for a sound level meter reading or “plainly audible” determination (e.g., operating a motor vehicle without a muffler).

On August 9, 2023, the Building and Construction Advisory Committee considered the ordinance at a public meeting and recommended its approval. On August 14, 2023, the Local Planning Agency considered the ordinance at a public meeting and recommended its approval.

Note regarding the south barrier island: Earlier this year, the State Legislature designated the Brevard barrier island area from the southern boundary of the Town of Melbourne Beach extending south to the southern boundary of the Sebastian Inlet State Park as an area of critical state concern. As a result of this designation, if adopted, the ordinance will not be effective within the area of critical state concern until it is approved by the State land planning agency (Department of Commerce).

Attachments:

1. Proposed Ordinance
2. Chapter 46 - Environment, Article IV. - Noise (current version)
3. Section 62-2271 (current version)

Clerk to the Board Instructions:

Upon approval by the Board, execution by the Chair, and attestation by the Clerk, file the ordinance with the Department of State as required by law within the 10-day deadline.



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Kimberly.Powell@brevardclerk.us

August 23, 2023

MEMORANDUM

TO: Morris Richardson, County Attorney

RE: Item I.1., Ordinance Amending Chapter 46 – Environment, Article IV. – Noise, and Section 62-2271 – Noise, of the Brevard County Code of Ordinances, relating to the Regulation of Noise

The Board of County Commissioners, in regular session on August 22, 2023, conducted the public hearing and adopted Ordinance No. 23-18, amending Section 46-135(c)(1). The absentee owner was notified of at least two warnings issued by any enforcement officer for a violation of this article within the previous 12-month period. Notice of any previous warnings pursuant to this subsection shall be affected in writing by registered or certified mail. Enclosed is the fully-executed Ordinance.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
RACHEL M. SADOFF, CLERK

Donna Scott
for: Kimberly Powell, Clerk to the Board

/ds

Encl. (1)

cc: Each Commissioner
Planning and Development

ORDINANCE NO. 2023-18

AN ORDINANCE OF THE BOARD OF COUNTY COMMISSIONERS OF BREVARD COUNTY, FLORIDA, RELATING TO NOISE REGULATION; PROVIDING FOR LEGISLATIVE FINDINGS AND INTENT; REPEALING AND REPLACING THE PROVISIONS OF CHAPTER 46 – ENVIRONMENT, ARTICLE IV. – NOISE OF THE BREVARD COUNTY CODE OF ORDINANCES; PROVIDING DEFINITIONS; PROVIDING A STATEMENT OF PUBLIC POLICY, PURPOSE AND APPLICATION; ESTABLISHING MAXIMUM NOISE LEVELS; PROHIBITING NOISE DISTURBANCES; PROVIDING FOR ENFORCEMENT, PENALTIES, AND EXCEPTIONS; REPEALING AND REPLACING THE PROVISIONS OF CHAPTER 62 – LAND DEVELOPMENT REGULATIONS, ARTICLE VI. – ZONING REGULATIONS, DIVISION 6. – SUPPLEMENTAL REGULATIONS, SUBDIVISION III. – PERFORMANCE STANDARDS, SECTION 62-2271. – NOISE OF THE BREVARD COUNTY CODE OF ORDINANCES; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the purpose of this ordinance is to provide for the public health, comfort, safety, welfare, and quality of life of the citizens of the unincorporated areas of Brevard County, Florida through the regulation of noise pollution and the reduction and abatement of unreasonable and excessive noise; and

WHEREAS, the residents of the unincorporated areas of Brevard County, Florida have a right to an environment free from unreasonable and excessive noise, including the vibration and disturbances associated with low frequency noise; and

WHEREAS, Brevard County must meet the challenge of effectively abating harmful noise pollution in a way that balances the sometimes conflicting interests of neighborhood residents, commercial and industrial enterprises, and institutional uses; and

WHEREAS, it is not the intent of this ordinance to interfere unduly with the individual rights to freedom of speech or religion; and

WHEREAS, Chapter 162, Florida Statutes, provides a process for counties and municipalities to enforce code and ordinance violations; and

WHEREAS, the Board of County Commissioners of Brevard County, Florida desires for the County to implement an array of flexible legal remedies to address violations of this ordinance; and

WHEREAS, from time to time, noise is made in residential areas of the county that is excessive and unreasonably loud for the area; and

WHEREAS, although an appropriate means of enforcement, the use of a sound measuring device by officers is a cumbersome process that is both inefficient and requires training and maintenance of sound measuring devices; and

OFFICIALLY FILED WITH SECRETARY OF THE STATE ON AUGUST 28, 2023.

WHEREAS, citizens wish to have noise issues addressed in an appropriate, but expeditious, manner; and

WHEREAS, while enforcement officers are oftentimes able to obtain compliance with their requests to reduce noise, there are situations in which the officers do not obtain voluntary compliance; and

WHEREAS, this ordinance provides enforcement officers with an opportunity to enforce an easy to understand noise regulation by prohibiting noises that are "plainly audible" at designated distances from the noise-emitting property; and

WHEREAS, the "plainly audible" standard has been held by the courts of Florida to be a constitutional method of regulating noise; and

WHEREAS, the provisions of this ordinance also provide enforcement officers with technical methodologies and standards that can be implemented to protect citizens from excessive and unreasonable noise; and

WHEREAS, Article II, Section 7, of the Florida Constitution provides that adequate provisions shall be made by law for the abatement of excessive and unnecessary noise; and

WHEREAS, providing for the quietude of residential neighborhoods within the unincorporated areas of Brevard County, Florida is an important governmental interest in support of the constitutional provision cited in the foregoing recital; and

WHEREAS, the Board of County Commissioners finds that the provisions of this ordinance serve that important interest in a fair and constitutional manner and that the adoption of this ordinance is otherwise in the best interests of the public health, comfort, safety, welfare, and quality of life of the citizens of the unincorporated areas of Brevard County, Florida; and

WHEREAS, the owners of real property in Brevard County have basic rights, are presumed innocent until proven guilty and deserve due process, this Ordinance is not intended, nor shall the result be, to remove, impair, or injure a Brevard County property owner's right to their legal and allowable use; and

WHEREAS, the provisions of this ordinance balance the interests of neighborhood residents, commercial and industrial enterprises, and institutional uses; and

WHEREAS, the provisions of this ordinance amending the Brevard County land development regulations are not intended to be more restrictive or burdensome than the existing regulations with regard to the review, approval, or issuance of a site plan, development permit, or development order, as those terms are defined by section 163.3164, Florida Statutes; and

WHEREAS, the Board of County Commissioners of Brevard County, Florida has the power and authority to enact this ordinance under the controlling provisions of State law such as, by way of example only, the provisions of Article VIII, Section 1 of the Florida Constitution and Chapters 125 and 162, Florida Statutes, as well as controlling case law of the State of Florida.

NOW, THEREFORE, BE IT ORDAINED by the Board of County Commissioners

of Brevard County, Florida:

Section 1. Legislative Findings and Intent. The foregoing Recitals are hereby ratified and incorporated as findings of the Board of County Commissioners and as the legislative intent of this ordinance.

Section 2. Repeal and Replacement of Chapter 46, Article IV, County Code. The provisions of Chapter 46 – Environment, Article IV – Noise, of the Code of Ordinances of Brevard County, Florida are repealed in their entirety and replaced with the following:

ARTICLE IV. – NOISE

Section 46-126. - Definitions.

The following words, terms, and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. Definitions of technical terms used in this article which are not defined in this section shall be obtained from publications of acoustical terminology issued by the American National Standards Institute (ANSI) or the American Society for Testing and Materials (ASTM) or their successor bodies.

Agricultural means any area that is being lawfully used for an agricultural use pursuant to the county's land development regulations.

Ambient noise sound means the surrounding or steady background sound associated with a given environment, exclusive of a particular sound being tested, being usually a composite of sounds from many sources near and far, exclusive of intruding sounds from isolated identifiable sources.

A-weighted sound level means the sound pressure level in decibels as measured on a sound level meter using the A-weighting network on a sound level meter that meets the standards set forth in ANSI Standard S.1.4-1983 (or more recent version). The level is designated dBA.

Adjoining property means property which shares a contiguous boundary with another property.

ASTM means the American Society for Testing and Materials or its successor body or bodies.

Amplified sound means any sound or noise, including the human voice, that is increased in volume or intensity by means of electrical power.

ANSI means the American National Standards Institute or its successor body or bodies.

C-weighted sound level means the sound pressure level in decibels measured using the C- weighting network on a sound level meter that meets the standards set forth in ANSI Standard S1.4-1983 (or more recent version). The level so read is designated "dBC."

Commercial use means any area that is being lawfully used for a commercial use pursuant to the county's land development regulations.

Continuous sound means a sound which remains essentially constant in level during a period of observation.

Construction activity means any site preparation, assembly, erection, substantial repair, alteration, improvement or similar action on real property, whether publicly or privately owned, and whether above ground or below ground.

Daytime hours means 7:00 a.m. to 10:00 p.m.

Decibel (dB) means a logarithmic and dimensionless unit of measure often used in describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

Demolition means any dismantling, intentional destruction or removal of structures, utilities, public or private right-of-way surfaces, or similar property.

Emergency means any occurrence or set of circumstances involving actual or imminent physical or psychological trauma or property damage which demands immediate action.

Emergency work means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency, including work necessary to restore property to a safe condition following an emergency.

Enforcement officer means all officers authorized to enforce the provisions of this article, including, but not limited to, Brevard County code enforcement officers and the county sheriff and his duly authorized deputies.

Impulsive sound means non-repetitive sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions and drop force impacts.

Industrial use means any area that is being lawfully used for an industrial use pursuant to the county's land development regulations.

Institutional use means any area that is being lawfully used for an institutional use pursuant to the county's land development regulations.

Leq means the average sound level.

Motor vehicle means a self-propelled vehicle not operated upon rails or guideway and including, but not limited to, automobiles, passenger cars, motorcycles, trucks, trailers, semitrailers, truck tractor and semitrailer combinations, or any other vehicle operated on the roads used to transport persons or goods.

Muffler means any apparatus consisting of baffles, chambers, or acoustical absorbing material whose primary purpose is to transmit liquids or gases while causing a reduction in sound emission at one end.

Necessary activity means any activity analyzed and determined by the county to be an activity that cannot be avoided for the purpose of construction, public safety, constitutionality, or any other activity otherwise prohibited which the county considers acceptable to be permitted for a limited period of time.

Necessary business equipment means equipment physically affixed, joined, or connected to the outside of a building, and without which a business located inside the building would not be able to operate. Examples include but are not limited to heating and air conditioning units, electrical generators, water pumps, ventilation systems, and air/water chillers.

Neighboring property means property which does not share a contiguous boundary with another property, but which is close enough in proximity to be affected by sound produced on the other property.

Nighttime hours means 10:01 p.m. to 6:59 a.m.

Noise is a type of sound which disturbs a reasonable person of ordinary sensibilities or which causes or tends to cause an adverse psychological or physiological effect on a reasonable person of ordinary sensibilities. "Noise" includes, but is not limited to, low frequency sounds caused by amplified bass music that can induce vibration in building structures or human beings.

Noise disturbance means any sound or vibration or combination of sounds or vibrations which:

- (1) May disturb, annoy, or be harmful or injurious to the health or welfare of a reasonable person of ordinary sensibilities; or
- (2) Which, because of its volume or quality or time of day, tends to annoy, disturb, frighten, or otherwise cause an adverse psychological or physiological effect upon a reasonable person of normal sensitivity, or unreasonably prevents such person from being able to enjoy her or his activities of daily living; or
- (3) Exceeds the maximum allowable limits set forth in this article.

Person shall mean and include any officer, employee, department, agency, or instrumentally of the State or any political subdivision of the State and shall include a natural person and any corporation, firm, association, joint venture, partnership, or any other entity whatsoever or any combination of such, jointly and severally.

Plainly audible means any noise, sound, or component of sound produced by any source, or reproduced by a radio, audio visual equipment, sound equipment, sound amplification device, exterior loudspeaker, musical instrument and similar devices, or other mechanical or electronic

sound-making device, for which any of the content of that sound is unambiguous, verifiable, and discernible above ambient levels by a person using his or her unaided hearing faculties, including, but not limited to, comprehensible musical rhythms, understandable speech, or rhythmic bass, or that can be clearly heard by a person using his or her normal hearing faculties, at a distance from the property line or right-of-way line of the source of the noise as follows:

Time of Day	Distance
Daytime hours	300 feet or more
Nighttime hours	150 feet or more

Without in any way limiting the foregoing, the detection of a rhythmic bass reverberating type of noise is sufficient to be plainly audible.

Public right-of-way means any street, avenue, boulevard, highway, sidewalk, or alley or similar place which is owned or controlled by a governmental entity and includes all property interests as set forth in the definition of the term at Section 334.03, Florida Statutes, or its successor provisions.

Public space means any real property, including any structure thereon, which is owned or controlled by a governmental entity.

Pure tone means any sound which can be distinctly heard as a single pitch or as a set of single pitches.

Real property boundary means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intrabuilding real property division, otherwise defined as the imaginary line along the ground surface, including its vertical extension that separates one parcel of real property from another; or the vertical and horizontal boundaries of a dwelling unit that is one unit in a multi-dwelling-unit building.

Receiving property means the property which receives the transmission of sound.

Residential use means any area that is being lawfully used for a residential use pursuant to the county's land development regulations.

RMS sound pressure means the square root of the time averaged square of the sound pressure, denoted P_{rms} .

Short duration and non-repetitive means any sound with a duration of less than thirty seconds.

Sound means an oscillation, including temporal and spatial oscillation, in pressure, particle displacement, particle velocity or other physical parameter, in a medium with internal forces that cause compression and rarefaction of that medium. The description of sound may

include any characteristic of such sound, including duration, intensity and frequency.

Sound equipment means any radio, record player, compact disc player, stereo, television, tape deck or player, Bluetooth speaker, loudspeaker, amplifier, sound truck, or other device for producing, reproducing, or amplifying sounds.

Sound level means the conversion of sound pressure to a logarithmic measure called the decibel. The criteria required to properly define the sound level limits include the following:

- (1) The actual sound level limit with the frequency weighting to be used, such as A-weighting or C-weighting (e.g. 55 dBA, 60 dBA, etc. or 60 dBC, 65 dBC, etc.)
- (2) The acoustical metric to be used, such as real time measurement using fast/slow time constant, an average sound level (L_{eq}), a maximum sound level (L_{max}), etc. or a combination of multiple metrics.
- (3) The time duration of the measurement (e.g. instantaneous, time average, percentage of time sound level is not to be exceeded, etc.)

Sound level meter means an instrument which includes a microphone, amplifier, RMS detector, integrator or time average, output or display meter, and weighting networks used to measure sound pressure levels. The output meter reads sound pressure level when properly calibrated, and the instrument is of type 2 or better, as specified in American National Standards Institute 1.4-1971 as amended from time to time.

Sound pressure means the instantaneous difference between the actual pressure and the average or barometric pressure at a given point in space, as produced by sound energy.

Sound pressure level means 20 times the logarithm to the base 10 of the ratio of the RMS sound pressure to the reference pressure of 20 micronewtons per square meter ($20 \times 10^{-6} \text{ N/m}^2$). The sound pressure level is denoted L_p or SPL and is expressed in decibels.

Vessel means a watercraft used or capable of being used as a means of transportation on water.

Vibration means a temporal and spatial oscillation of displacement, velocity, or acceleration in a solid material.

Section 46-127. - Statement of public policy.

The Board of County Commissioners finds and declares that:

- (1) Excessive noise is a serious hazard to the public health and welfare and the quality of life in a close urban society.

- (2) A substantial body of science and technology exists by which excessive noise can be substantially abated without serious inconvenience to the public.
- (3) Certain noise-producing equipment is essential to the quality of life in the community and should be allowed to continue at reasonable levels with moderate regulation.
- (4) Each person has a right to an environment reasonably free from noise which jeopardizes health, welfare, or unnecessarily degrades the quality of life.
- (5) It is the policy of this county to promote an environment free from excessive noise, otherwise properly called noise pollution, which unnecessarily jeopardizes the health and welfare and degrades the quality of the lives of the residents of this community, without unduly prohibiting, limiting, or otherwise regulating the function of certain noise-producing equipment which is not amenable to such controls and yet is essential to the economy and quality of life of the community.
- (6) Noise exceeding certain levels or durations and during specific times of day can be detrimental to the health, safety, and welfare of the citizenry, and may infringe upon an individual's right to peaceful and quiet enjoyment of their activities of daily living. It is the policy of the county to prohibit noise disturbances or unreasonably loud noise from all sound sources, subject to its police power, in order to secure and promote the public health, comfort, convenience, safety, welfare, and prosperity of the citizens of Brevard County.
- (7) Nothing in this article is intended to deter individuals from lawfully exercising the individual right of freedom of speech, or any other freedom guaranteed under the constitutions of the United States of America or of the State of Florida, or to unreasonably limit or restrain commercial or industrial enterprises.

Section 46-128. – Purpose and application.

- (a) The purpose of this article is to establish standards for the control of noise pollution in the unincorporated areas of Brevard County by setting maximum permissible sound levels to protect the public health, comfort, convenience, safety, prosperity, and general welfare.
- (b) It is the general and specific intent of this article to implement the public policy of the Board of County Commissioners relative to the protection of the public health, safety, and welfare with regard to the regulation of sound and noise.

- (c) This article shall apply to the control of all noise originating within the unincorporated areas of Brevard County except where a state or federal agency has adopted a different standard or rule than that prescribed within this article and has so preempted the regulation of noise from a particular source as to render this article inapplicable thereto.
- (d) Except as allowed in this article, it is prohibited and unlawful for a person to willfully engage in any activity on any premises or public space in the unincorporated areas of Brevard County, which activity produces or constitutes a noise disturbance on adjoining or neighboring properties or public spaces or otherwise violates the provisions of this article.

Section 46-129. – Exempt activities or actions.

This article shall not apply to the following:

- (1) The reasonable emission of sound for the purpose of alerting persons to the existence of an emergency when such emergency exists or is reasonably believed to exist such as, but not limited to, the sound or noise of safety signals, warning devices, fire alarms, burglar alarms, civil defense alarms, sirens, whistles, emergency pressure relief valves, cries for emergency assistance, and warning calls. Testing of a stationary emergency signaling device may occur at the same time of day each time the test is performed, but not before 9:00 a.m. or after 5:00 p.m. Any such testing shall use only the minimum cycle test time; provided, however that test times shall not exceed 60 seconds.
- (2) The reasonable emission of sound in the performance of governmental or governmentally authorized emergency work including, but not limited to, radios, sirens, horns, and bells on emergency vehicles while performing in conjunction with the official duties of emergency personnel.
- (3) The unamplified human voice, except those activities prohibited by section 46-130 which relates to unreasonable actions and activities.
- (4) Sounds reasonably emanating from bona fide farm operations on land classified as agricultural land by the Brevard County Property Appraiser and which are exempt from local government regulation pursuant to section 823.14, Florida Statutes, the "Florida Right to Farm Act," as amended.
- (5) Rail and air transportation and public mass transportation vehicles, operations, and equipment relating thereto while operating in conformity with controlling federal or state law which are preempted from regulation by the county.

- (6) Special events approved by the county, within such hours as may be imposed as a condition for the issuance of the permit and subject to any limitations placed upon noise in the permit.
- (7) The emission of sound in the performance of military operations, exclusive of travel by individuals to or from military duty, when preempted from regulation by the county.
- (8) The emission of sound in the legal discharge of weapons or in fireworks displays permitted by the county or on such dates that fireworks are otherwise authorized by controlling state law and applicable county ordinance.
- (9) Landscape maintenance equipment with stock sound arrestor between the hours of 7:00 a.m. and 8:00 p.m., provided that all equipment is reasonably operated in accordance with manufacturer's specifications and is equipped with all noise-reducing equipment in proper condition.
- (10) Motor vehicles operating on a public right-of-way in compliance with Chapter 316 and section 403.415, Florida Statutes, as amended. Such exception shall not apply to noise or sound prohibited under section 46-130.
- (11) Vessels operating upon any watercourse, lake, river, or swamp. Such exception shall not apply to noise or sound generated by vessels impacting abutting land areas, unless located at or on a properly zoned marina vessel repair shop or manufacturing facility, or to noise or sound prohibited under section 46-130.
- (12) Any residential unit with air-conditioning or pool pump equipment when in reasonable mechanical condition operating with the standard sound and vibration control systems typically provided by the manufacturer in a sound level not to exceed 60 dBA or 65 dBC. Air conditioning units are presumed to be in reasonable mechanical condition if the unit meets the sound specifications contained in the Air Conditioning, Heating, and Refrigeration Institute's ("AHRI") Applied Directory of Certified Product Performance Variable Air Volume terminals.
- (13) Impulsive sounds which are emanating in a manner consistent with the provisions of this article.
- (14) Sport shooting ranges in compliance with sections 790.33 and 823.16, Florida Statutes, as amended, and operating in a manner that is preempted from regulation by the county.
- (15) Activities on or in county and school athletic facilities and on or in publicly owned property and facilities, provided that such activities have been authorized by the owner of such property

or facilities or its agent.

- (16) Sound or noise emanating from any school facility between the hours of 7:00 a.m. and 5:00 p.m.
- (17) Sound or noise emanating from county permitted concerts, street fairs, festivals, or other public celebrations produced, sponsored, or approved by the county and other similar county events held between the hours of 7:00 a.m. and 11:00 p.m. and in accordance with an associated special event permit.
- (18) Construction activity performed within the hours permitted by section 46-33, provided that all equipment is operated in accordance with manufacturer's specifications and equipped with all noise-reducing equipment in proper condition.
- (19) The reasonable use of necessary business equipment, provided that such equipment is operated in accordance with manufacturer's specifications, is in good working order, and is equipped with appropriate noise-reducing equipment and any reasonable screening; provided, however, that necessary business equipment shall not include equipment that broadcasts sound or noise from a business conducting entertainment activities.
- (20) The collection of garbage, recyclables, or yard waste between the hours of 5:00 a.m. and 9:00 p.m. or as set forth in a solid waste franchise agreement with the county.
- (21) The operation of tow trucks while assisting motorists or towing disabled vehicles.
- (22) Air blasts as a result of mining activity as regulated by the Florida State Fire Marshal.
- (23) Church or clock carillons, bells, or chimes during daytime hours.
- (24) Law enforcement activities, including training.
- (25) Launches approved by the National Aeronautics and Space Administration, the United States Space Force, the Federal Aviation Administration, or other appropriate federal agency having jurisdiction.
- (26) Any other sound authorized by county permit or county contract, but only to the extent allowed by such permit or contract.

Section 46-130. – Specific activities prohibited.

The following actions and activities are prohibited and unlawful:

- (1) Peddling, hawking, vending or barking by shouting or raised voice within any residential or commercial area in the county including, but not limited to, shouting, crying out by peddlers, hawkers, or vendors along or on a roadway.
- (2) Loading and unloading boxes, crates, containers, building materials, garbage cans, or similar objects during nighttime hours as to create a noise disturbance across a residential real property boundary.
- (3) Motor vehicle or vessel repairs, rebuilding, modifying, and testing in such a manner as to cause a noise disturbance across a residential real property boundary.
- (4) The sounding of any horn or signal device on any motor vehicle for an unnecessary or unreasonable period of time, or when directed to another person without a legitimate purpose and for the purposes of harassment.
- (5) The use of any siren upon any vehicle other than police, fire, ambulance, or other emergency vehicles.
- (6) The intentional projection, creating, making, or maintaining of any noise from any drum, cymbals, music, loudspeaker, or other instrument or device onto adjoining or neighboring properties for the purpose of attracting attention by creation of noise to any business, location, performance, show, event, sale, or display of merchandise, or place of business, except for activities permitted during a special event.
- (7) Operating any internal combustion engine including, but not limited to, an engine associated with a vessel or motor vehicle, without a muffler or other device at least as effective as that installed as original equipment by the manufacturer, which will effectively prevent loud or explosive noises therefrom.
- (8) Operating any motor vehicle or vessel so out of repair, or so loaded or in such manner as to create loud, grating, grinding, rattling, so as to create a noise disturbance.
- (9) Yelling, shouting, hooting, whistling, singing, or the making of similar noises, and loud, boisterous conduct other than normal conversation at reasonable levels, inside of or on the grounds of any public or private property during nighttime hours, so as to create a noise disturbance.
- (10) No amplifier, loudspeaker, or other instrument or device in, upon, or attached to a motor vehicle shall be operated or permitted to be operated for advertising purposes or to attract the attention of the public. Ice cream trucks shall be specifically exempt from this prohibition.

- (11) A noise disturbance.
- (12) Any other violation of this article.

Section 46-131. - Maximum noise levels established; noise violation based on sound level meters.

- (a) Sound Level Limits. No person shall generate or cause to be generated from any source, sound which, when measured in accordance with the requirements of subsection (d) of this section, exceeds:
 - (1) 60 dBA or 65 dBC if the generating land is a residential property during daytime hours.
 - (2) 55 dBA or 60 dBC if the generating land is a residential property during nighttime hours.
 - (3) 65 dBA or 70 dBC if the generating land is a commercial or institutional use during daytime hours.
 - (4) 55 dBA or 60 dBC if the generating land is a commercial or institutional use during nighttime hours.
 - (5) 75 dBA or 80 dBC if the generating land is an industrial use during daytime hours.
 - (6) 65 dBA or 70 dBC if the generating land is an industrial use during nighttime hours.
- (b) Correction for character of sound. For any source of sound which emits a continuous pure tone, the maximum sound level limits set forth in subsection (a) shall be reduced by 5 dBA or 5 dBC. For any impulsive sound, the maximum sound level limits set forth in subsection (a) shall be increased by 5 dBA or 5 dBC during daytime hours. Impulsive sound is not permitted during the hours of 10:00 p.m. to 7:00 a.m.
- (c) Correction for ambient noise sound. Corrections for ambient noise sound should be made in accordance with applicable ASTM standards.
- (d) Methods of measurements.
 - (1) Enforcement of this article does not require the use of a sound level meter to determine compliance. However, when a sound level meter is used to determine sound levels pursuant to this article, the standards, instrumentation, personnel, measurement procedures, and reporting procedures shall be as specified in this section.
 - (2) Sound level measurements shall be made with a sound level meter using the A-weighted or C-weighted scale which shall be set on slow response as technically appropriate.

- (3) Sound level meters shall be serviced, calibrated, and operated as recommended by the manufacturer. Persons using the sound level meter shall be trained or otherwise experienced in sound level measurement and the operation of sound level meters.
- (4) Sound level measurements shall be made no closer to the sound source than the real property boundary of the property from which the sound is generated. Whether the sound level violates the prescribed limits of this section will be determined by whether the readings taken are in excess of the levels allowed from the property that is the source of the sound.
- (5) Except with regard to traffic noise and noise from other sources not connected with the sound being measured which shall not be considered in taking sound level measurements, the sound level measurement shall be averaged over a period of at least 30 seconds for purposes of determining the sound level. Sound levels may not exceed the prescribed level by more than 3 decibels or equivalent measurement at any time during the measurement period.
- (6) During sound level measurement, the microphone shall not be positioned so as to create any unnatural enhancement of the measured sound. A windscreen shall be used when technically appropriate.
- (7) In the case of noise that is impulsive or not continuous, the sound level measurement shall be taken over a period of time of at least 1 minute. Any such sound or noise that exceeds the prescribed level more than 2 times in a minute shall be deemed to exceed the prescribed sound levels.
- (8) If an enforcement officer does not have possession of a sound level meter at the time of responding to a noise complaint, sound level measurements for the purpose of determining violations of this section may not be taken using any other device, including, but not limited to, applications on cellular devices or any hand-held personal sound level meters obtained from any other source. The officer shall instead proceed under the other sections of this article in order to determine whether a noise disturbance is occurring.

Section 46-132. - Noise disturbance prohibited; noise violation based on plainly audible standard.

- (a) It is prohibited and unlawful to cause a noise disturbance.
- (b) Noise determined to be a noise disturbance may be confirmed by an enforcement officer when the officer actually witnesses the sound or noise personally and the noise disturbance is plainly audible without using a sound level meter.

- (c) Violations may be based upon statements and evidence obtained from complaining witnesses when the enforcement officer determines that such evidence is reliable, appropriate, and sufficient.
- (d) Although it is preferable for enforcement officers to use a sound level meter as their primary means of detection, when in the field in many circumstances, the officer's normal hearing faculties will need to be the means of detection, provided the officer's hearing is not enhanced by any mechanical or medical device, such as a hearing aid. In such circumstances, the enforcement officer shall have a direct line of sight and hearing to the real property that is the source of the noise so that the officer can identify the offending source of such noise and the distance involved. The enforcement officer shall assess the noise according to the following standards, factors, and considerations:
 - (1) The volume of the noise.
 - (2) The intensity of the noise.
 - (3) Whether the nature of the noise is usual or unusual.
 - (4) Whether the origin of the noise is natural or unnatural.
 - (5) The volume and intensity of the background noise, if any.
 - (6) The proximity of the noise to residential sleeping facilities.
 - (7) The nature and zoning of the area from which the noise emanates.
 - (8) The density of the inhabitation of the area from which the noise emanates.
 - (9) The time of the day or night the noise occurs.
 - (10) The duration of the noise.
 - (11) Statements of any complaining witnesses, including any pictures or audio/video documentation produced by complaining witnesses.
 - (12) Whether the noise is recurrent, impulsive, intermittent, or constant.

Section 46-133. – Construction; hours of operation; exception; permit.

- (a) It is prohibited and unlawful for a person to operate or permit the operation of any tools or equipment in construction activity, drilling, or demolition work of any type or nature, outside of the hours of 7:00 a.m. to 8:00 p.m. Monday through Saturday or at any time on Sunday, except for emergency work or as permitted pursuant to subsection (b).
- (b) Upon application to the building official, a contractor may be approved to exceed the time limitations set forth in this section. Such approval shall be in the form of a permit that shall set forth the days

and time frame in which the time limits may be exceeded, and the duration of the permit. The approval shall be based upon the applicant demonstrating by clear and convincing evidence that the public health, safety, and welfare will not be materially harmed, and that there are bona fide construction requirements which support the time limits being exceeded.

Section 46-134. – Warnings issued.

- (a) When an enforcement officer determines that there is a violation of this article, the enforcement officer shall issue a warning to the person or persons responsible for the noise. The warning shall advise the person or persons of the violation, and of the possible penalty if they fail to eliminate or reduce the noise to within allowable limits. The officer shall document the warning in writing, recording the date, time, property address, and name or identity of the person given the warning.
- (b) After the person or persons responsible for the noise are given such warning, a reasonable time to comply with the warning shall be given. A reasonable time shall generally be deemed immediately or so long as it would take a reasonably diligent person to reduce the noise, but shall not exceed five minutes.
- (c) If the noise is not eliminated or reduced to allowable limits after the warning was given, or if the person or persons so warned comply with the warning but violate this article again after the first warning, the person or persons so warned and not complying shall be subject to the penalties and legal remedies set forth in this article.

Section 46-135. – Penalty; code enforcement remedies and powers; special magistrate proceedings; noise disturbances; hearings and orders.

- (a) It is prohibited and unlawful to violate any provision of this article. The enforcement officers shall enforce the provisions of this article and may use any and all lawful powers, authorities, process, and procedures in taking actions to implement and enforce the provisions of this article.
- (b) Any person who violates any provision of this article shall be punished as provided in section 1-7.
- (c) Violations of this article may result in the issuance of a notice of violation and the initiation of code enforcement proceedings as provided in chapter 2 of this Code and chapter 162, Florida Statutes. In accordance with the provisions of section 2-173, the county may bring cases before the code enforcement special magistrate alleging that a violation of this article is occurring or has occurred on a parcel of property. It shall not be a lawful defense to a code enforcement proceeding brought pursuant to this article to assert that some

person other than the property owner caused the violation. No notice of violation shall be issued against an absentee owner unless at least one of the following applies:

- (1) The absentee owner was notified of at least two warnings issued by any enforcement officer for a violation of this article within the previous 12-month period. Notice of any previous warnings or violations pursuant to this subsection shall be affected in writing by registered or certified mail.
- (2) The violation is a repeat violation.

All provisions of section 2-174 shall apply to special magistrate proceedings relating to violations of this article; provided, however, that any order of the special magistrate finding a violation of this article to have occurred shall include a provision that the property shall not be deemed in compliance until it has been free of any noise violations for a period of 30 days.

- (d) In addition to the specific remedies set forth in this article, the county may pursue any and all remedies available to the county under controlling law in any forum or process available to the county.

Section 3. Sections 46-136 to 46-160 Reserved. Sections 46-136 through 46-160 of the Code of Ordinances of Brevard County, Florida, are hereby reserved.

Section 4. Repeal and Replacement of Chapter 62, Article VI, Division 6, Subdivision III, Section 62-2271, County Code. The provisions of section 62-2271 of the Code of Ordinances of Brevard County, Florida are repealed in their entirety and replaced with the following:

Section 62-2271. - Noise.

No person shall produce, cause to be produced, or allow to be produced, by any means, any sound within private or public property, including a right-of-way, which sound exceeds the applicable sound level limits set forth in chapter 46, article IV of this Code in violation of such article, constitutes a noise disturbance in violation of such article, or is prohibited under section 46-130.

Section 5. Conflicts. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 6. Severability. The provisions of this ordinance are declared to be severable and if any section, sentence, clause or phrase of this ordinance shall for any reason be held by a court of competent jurisdiction to be invalid or unenforceable, such decision shall not affect the validity of the remaining terms, provisions, clauses, sentences, or sections of this ordinance but they shall remain in effect, it being the legislative intent that this ordinance shall stand notwithstanding the invalidity of any part.

Section 7. Inclusion in Code. It is the intention of the Board of County Commissioners that the provisions of this ordinance shall be made a part of the Brevard

County Code of Ordinances, and that the sections of this ordinance may be renumbered to accomplish such intention.

Section 8. Effective Date. This ordinance shall take effect immediately upon its adoption.

DONE, ORDERED, AND ADOPTED by the Board of County Commissioners of Brevard County, Florida, in regular session, this 22nd day of August, 2023.

Attest:

BY: _____

Rachel Sadoff, Clerk

(SEAL)

BOARD OF COUNTY COMMISSIONERS
OF BREVARD COUNTY, FLORIDA

BY: _____

Rita Pritchett, Chair

(as approved by the Board on 8/22/2023)



FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

CORD BYRD
Secretary of State

August 28, 2023

Honorable Rachel M. Sadoff
Board of County Commissioners
Brevard County
Post Office Box 999
Titusville, FL 32781-0999

Attention: Helen Seaman

Dear Honorable Rachel Sadoff,

Pursuant to the provisions of Section 125.66, Florida Statutes, this will acknowledge receipt of your electronic copy of Brevard County Ordinance No. 2023-18, which was filed in this office on August 28, 2023.

Sincerely,

Anya Owens
Administrative Code and Register Director

ACO/wlh

Helen Seaman

From: County Ordinances <CountyOrdinances@dos.myflorida.com>
Sent: Monday, August 28, 2023 3:43 PM
To: Helen Seaman; County Ordinances
Cc: Clerk to the Board
Subject: RE: BRE20230822_ORDINANCE2023_18
Attachments: Brevard20230828_Ordinance2023_18_Ack.pdf

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or on clicking links from unknown senders.

Good afternoon,

Please find the attached acknowledgment letter for Brevard County Ordinance No. 2023-18, which was filed in this office on August 28, 2023.

Best,

County Ordinances
Florida Administrative Code and Register
Room 701 The Capitol | Tallahassee, Florida

From: Helen Seaman <Helen.Seaman@brevardclerk.us>
Sent: Monday, August 28, 2023 1:36 PM
To: County Ordinances <CountyOrdinances@dos.myflorida.com>
Cc: Clerk to the Board <ClerktotheBoard@brevardclerk.us>
Subject: BRE20230822_ORDINANCE2023_18

EMAIL RECEIVED FROM EXTERNAL SOURCE

The attachments/links in this message have been scanned by Proofpoint.

Good Afternoon:

Attached please find Ordinance No. 2023-18 to be filed with the State.

Thank you

Helen Seaman

Administrative Assistant

Clerk to the Board

(321) 637-2001

Helen.Seaman@brevardclerk.us

PART II - CODE OF ORDINANCES
 Chapter 46 - ENVIRONMENT
 ARTICLE IV. NOISE

ARTICLE IV. NOISE¹

Sec. 46-126. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Audible means the quality or characteristic denoting that the information content of sound is unambiguously transferred to the auditor, including but not limited to the understanding of spoken speech and the comprehension of musical rhythms.

Construction activities means any and all activity incidental to the erection, demolition, assembling, alerting, installation or equipping of buildings, structures, roads or appurtenances thereof, including land clearing, grading, excavating and filling.

Device means any equipment or mechanism which is intended to produce or which actually produces sound when installed, used or operated.

Emergency means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage which demands immediate action.

Emergency response vehicles means vehicles of all police and fire departments, emergency vehicles of the county and municipalities within the county, emergency vehicles of any public service corporation, all ambulances and rescue vehicles.

Loud and raucous noise means any sound which, because of its volume level, duration and character, annoys, disturbs, injures or endangers the comfort, health, peace or safety of reasonable persons of ordinary sensibilities.

Motor vehicle means any vehicle which is self-propelled and every vehicle which is propelled by electric power from overhead trolley wires, but not operated on rails. This term also includes motorcycles and motor-driven vehicles.

Person means any natural person, individual, public or private corporation, firm association, joint venture, partnership, municipality, governmental agency, political subdivision, public officer or any other entity whatsoever or any combination of such, jointly or severally.

Sound means an oscillation in pressure, stress, particle displacement, particle velocity or other physical parameter, in a medium with internal forces. The description of sound may include any characteristic of such sound, including duration, intensity and frequency.

Sound-producing device means any equipment or machine for the production or reproduction of speech, music or other sound, including but not limited to radios, televisions, phonographs, tape players, musical instruments, compact disc or tape cassette players, walkie-talkies, CB radios, or synthesizers.

Sound truck means any motor vehicle or any other vehicle regardless of motor power, whether in motion or stationary, having mounted upon or attached to it, any sound-amplifying equipment.

¹State law reference(s)—Motor vehicle noise generally, F.S. §§ 316.272 et seq., 403.415; noise from watercraft, F.S. § 327.65.

Warning device means sound emitting devices used to alert and warn people.

Watercraft means any machine in, upon or by which any person or property is or may be transported or drawn upon or over any watercourse or body of water, including swamplands; this term shall include hovercraft and airboats.

(Ord. No. 93-09, § 2(14-20.42(D)(1)(b)), 5-18-93)

Cross reference(s)—Definitions generally, § 1-2.

Sec. 46-127. Exceptions.

Loud and raucous noise does not include noise or sound generated by the following:

- (1) Cries for emergency assistance and warning calls.
- (2) Radios, sirens, horns and bells on police, fire and other emergency response vehicles.
- (3) Parades, fireworks displays and other special events for which a permit has been obtained from the county, within such hours as may be imposed as a condition for the issuance of the permit.
- (4) Activities on or in county and school athletic facilities and on or in publicly owned property and facilities, provided that such activities have been authorized by the owner of such property or facilities or its agent.
- (5) Fire alarms and burglar alarms, prior to the giving of notice and a reasonable opportunity for the owner or tenant in possession of the premises served by any such alarm to turn off the alarm.
- (6) Religious worship activities, including but not limited to bells and organs, as long as such noise, because of its volume level, duration and character does not annoy, disturb, injure or endanger the comfort, health, peace or safety of a reasonable person of ordinary sensibilities.
- (7) Locomotives and other railroad equipment, and aircraft.
- (8) The operation of lawn mowers, edgers, trimmers and power driven hedge shears in a residential zone or within 500 feet thereof is allowed between the hours of 7:00 a.m. and 8:00 p.m.
- (9) Operation of watercraft upon any watercourse, lake, river, or swamp in the unincorporated county. Such exception shall not apply to noise or sound generated by watercraft impacting abutting land areas, unless located at or on a properly zoned marina watercraft repair shop or manufacturing facility, or to noise or sound prohibited under section 46-131(14).
- (10) Farm equipment, farm machinery or other noise consistent with a lawfully permitted use within an AU zoning classification; however, this exception shall not apply to animal noise.
- (11) The operation of tow trucks while assisting motorists or towing disabled vehicles.

(Ord. No. 93-09, § 2(14-20.42(D)(1)(e)), 5-18-93; Ord. No. 94-01, § 2, 1-11-94; Ord. No. 95-14, § 1, 3-21-95; Ord. No. 95-58, § 1(A—C), 12-12-95; Ord. No. 01-45, § 3, 9-4-01)

Sec. 46-128. Violations.

- (a) Any person violating any provision of this article shall be punished as provided in section 1-7.
- (b) In addition or instead of the penalties provided in subsection (a) of this section, the county may institute any appropriate action or proceeding including a suit for injunctive relief in order to prevent or abate violations of this article.

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- (c) Nothing in this section shall be construed to prohibit any person from commencing a civil action on their own against any person who is alleged to be in violation of any provision of this section, nor shall this section be construed to impair any other common law or statutory courses of action or legal remedies thereunder, of any person for injury or damage arising from any violation of this section or from other law.

(Ord. No. 93-09, § 2(14-20.42(D)(1)(f)—(D)(1)(h)), 5-18-93)

Sec. 46-129. Persons responsible.

- (a) It shall be a violation of this chapter for any owner, lessee or other person in charge of or in control of premises or a vehicle to allow or permit any loud and raucous noise to emanate from such premises or vehicle.
- (b) Any loud and raucous noise made or produced at premises or in a vehicle in which the owner, lessee or other person in control is present shall be presumed and deemed to be made and produced with the consent and permission of the said owner, lessee or other person in charge or control.
- (c) Any owner, lessee, agent, supervisor, or other person in charge of operating, ordering, directing or allowing the operation or maintenance of any device or machine creating a loud and raucous noise as prohibited in this article, shall be deemed guilty of violating this article.

(Ord. No. 93-09, § 2(14-20.42(D)(1)(d)), 5-18-93)

Sec. 46-130. Loud and raucous noise—Prohibited generally.

It shall be unlawful for any person to willfully make, continue or cause to be made or continued any loud and raucous noise. Loud and raucous noise shall mean any sound which, because of its volume level, duration and character, annoys, disturbs, injures, or endangers the comfort, health, peace or safety of reasonable persons of ordinary sensibilities within the limits of unincorporated Brevard County. The term "loud and raucous noise" includes, but not in way of limitation, the kinds of noise generated by the activities enumerated in section 46-131, except as provided in section 46-127. The term shall be limited to loud and raucous noise heard upon the public streets, in any public park, in any school or public building or upon the grounds thereof while in use, in any church or hospital or upon the grounds thereof while in use, upon any parking lot open to members of the public as invitees or licensees, or in any occupied residential unit which is not the source of the noise or upon the grounds thereof, and in any event at a location of not less than 50 feet from the radio, television, stereo, loudspeaker, motor, horn or other noise source.

(Ord. No. 93-09, § 2(14-20.42(D)(1)(a)), 5-18-93; Ord. No. 94-01, § 2, 1-11-94; Ord. No. 95-58, § 1(D), 12-12-95)

Sec. 46-131. Same—Enumeration.

The following acts are declared to be public nuisances and in violation of this article:

- (1) *Engine exhaust.* The discharge into the open air of the exhaust of any steam engine or internal combustion engine, whether stationary or moving, except through a muffler or other device which will effectively prevent loud and raucous noises therefrom.
- (2) *Operation of equipment at night, on Sundays.* The operation between the hours of 8:00 p.m. and 7:00 a.m., on any day or at any time on Sunday, of any pile driver, steam shovel, pneumatic hammer, derrick, dredge, steam or electric hoist or other appliance, machine or equipment, the use of which is attended by loud and raucous noise.

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- (3) *Blowers.* The operation of any blower or power fan or any internal combustion engine, the operation of which causes loud and raucous noise, unless the noise from such blower or fan is muffled or such engine is equipped with a muffler device sufficient to prevent loud and raucous noise.
 - (4) *Horns, signaling device, etc.* The sounding of any horn, whistle or other audible signaling device so as to create a loud and raucous noise.
 - (5) *Radios, televisions, amplifiers, phonographs, etc.* The using, operating or permitting to be played, used or operated any radio, stereo, television, amplifier, musical instrument, phonograph or other device for the producing or reproducing of sound in such manner as to cause loud and raucous noise by any person present and in control of such device or by any person present and in control of the premises wherein such device is located.
 - (6) *Sound trucks.* No amplifier or loudspeaker in, upon or attached to a sound truck or other device for amplifying sound shall be operated or permitted to operate within the unincorporated county for advertising purposes or to attract the attention of the public. Ice cream trucks shall be specifically exempt from the prohibitions contained herein.
 - (7) *Yelling, shouting, etc.* Yelling, shouting, whistling or singing at any time or place so as to create a loud and raucous noise between the hours of 10:00 p.m. and 7:00 a.m. on any day.
 - (8) *Defect in vehicle or load.* The use of any motor vehicle so out of repair, so loaded or in such manner as to create loud grating, grinding, rattling or other loud and raucous noise or which is not equipped with a muffler in good working order and in constant operation so as to prevent loud and raucous noise.
 - (9) *Construction or repairing of buildings.* The erection, including excavating or demolition, alteration or repair of any building so as to create a loud and raucous noise between the hours of 8:00 p.m. and 7:00 a.m. the following day, or at any time on Sunday, except in case of urgent necessity in the interest of public health and safety, and then only with a permit from the building division. Such permit may be granted for a period not to exceed three working days or less while the emergency continues and may be renewed for successive periods of three days or less while the emergency continues. If the building division should determine that the public health and safety necessitates the issuance of such a permit and will not be impaired by the erection, demolition, alteration or repair of any building or the excavation of streets and highways between the hours of 8:00 p.m. and 7:00 a.m., or on Sunday, the building division may grant permission for such work to be done between such hours or within a shorter time period during such hours, upon application being made at the time the permit for the work is issued or during the progress of the work; provided, however, that the making of minor repairs and alterations to a building by the owner or occupant thereof between the hours of 9:00 a.m. and 6:00 p.m. on Sundays shall not be within the proscription of this subsection.
 - (10) *Creation of noise near schools, public buildings, churches, hospitals.* The creation of any loud and raucous noise heard within any school, public building, church or any hospital, or the grounds thereof, while in use, which interferes with the workings of such institution, or which disturbs or annoys patients in the hospital.
 - (11) *Noises used to attract attention.* The use of any drum or other instrument or device to create a loud and raucous noise.
 - (12) *Dropping or throwing objects.* The unnecessary dropping or throwing of objects on or against the ground, pavement, concrete walk or other object so as to create loud or unnecessary clanging, grating, rattling or other noise.
 - (13) *Steam whistles.* The blowing of any train whistle or steam whistle attached to any stationary boiler except to give notice of the time to begin or stop work or as a warning of fire or danger or upon request of county officials.

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- (14) *Motor vehicles.* Loud and raucous noise created by any vehicle which is self-propelled and every vehicle which is propelled by electric power from overhead trolley wires, but not operated on rails, including motorcycles or motor-driven vehicles. This section shall also prohibit the intentional and repeated creation of loud and raucous noise by watercraft. However, this provision shall not apply to motor vehicles operating on the public streets or highways of the county. No provision herein is intended to conflict or otherwise pre-empt F.S. §§ 326.272 (exhaust prevention of noise), 316.293 (motor vehicle noise), or 316.3045 (operation of radios or other mechanical devices or instruments in vehicles) or their successor statutes.
- (15) *Tire screeching.* The intentional repeated creation of loud and raucous noise through the acceleration, turning or stopping of any motor vehicle.

(Ord. No. 93-09, § 2(14-20.42(D)(1)(c)), 5-18-93; Ord. No. 94-01, § 2, 1-11-94; Ord. No. 94-14, § 2, 6-21-94; Ord. No. 95-58, § 1(E), 12-12-95)

Secs. 46-132—46-160. Reserved.

Sec. 62-2271. Noise.**(a) Terminology, standards and definitions.**

- (1) *Terminology and standards.* All technical acoustical terminology and standards used in this article which are not defined in subsection (2) shall be read or construed in conformance with the American National Standards Institute, Inc., (ANSI) publication entitled "Acoustical Terminology, designated as ANSI S1.1-1960, or its successor publication.
- (2) *Definitions.* The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, unless the context clearly indicates a different meaning:
 - a. *A-weighted sound pressure level* shall mean the sound pressure level, in decibels, as measured on a sound level meter using the A-weighting network. The level so read shall be designated as dB (A-wt)
 - b. *Ambient noise level* shall mean the sound pressure level of the all-encompassing noise emanating from a given environment, usually being a composite of sounds from many sources.
 - c. *ANSI* shall mean the American National Standards Institute.
 - d. *Construction activities* shall mean any and all activity incidental to the erection, demolition, assembling, altering, installation or equipping of buildings, structures, roads or appurtenances thereof, including land clearing, grading, excavating and filling.
 - e. *Decibel* or *dB* shall mean a unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-newtons per square meter.
 - f. *Emergency* shall mean any occurrence or circumstance involving actual or imminent physical death or trauma, or property damage, demanding immediate emergency work or service.
 - g. *Emergency work or emergency service* shall mean any labor performed for the purpose of preventing or alleviating, or attempting to prevent or alleviate, an emergency.
 - h. *Equivalent sound pressure level (Leq)* shall mean a sound level descriptor based on the average acoustic intensity over time. Leq is intended as a single number indicator to describe the mean energy or intensity level over a specified period of time during which the sound level fluctuated, Leq is measured in dB and must be A-weighted.
 - i. *Impulsive sound* shall mean a sound of short duration, usually less than one second and of high intensity, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include pile drivers, drop forge impacts, the discharge of firearms, the barking of dogs, and the beating of drums.
 - j. *Motorboat* shall mean any boat or vessel propelled or powered by machinery, regardless of whether such machinery is the principal source of propulsion, including boats, barges, amphibious craft, water ski towing devices and hovercraft.
 - k. *Motor vehicle* shall mean any vehicle defined as motor vehicle by F.S. § 320.01(1)
 - l. *Multifamily residential dwelling* shall mean a building designated or used exclusively for residential occupancy by two (2) or more families.
 - m. *Multifamily residential dwelling unit* shall mean the portion of a multifamily residential dwelling designed or used exclusively for residential occupancy by only one family.

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- n. *Noise* shall mean any sound produced in such quantity and for such duration that it annoys, disturbs or may injure a reasonable man or woman of normal sensitivities.
 - o. *Person* shall mean an individual, association, partnership, or corporation, including any officer, employee, department, agency or instrumentality of the United States, the state or any political subdivision thereof.
 - p. *Plainly audible sound* shall mean any sound for which the information content of that sound is communicated to the listener, including understandable spoken speech or comprehensible musical rhythms.
 - q. *Powered model vehicle* shall mean any self-propelled airborne, waterborne, or landborne plane, vessel, or vehicle, which is not designed to carry persons, including any model airplane, boat, car, or rocket.
 - r. *Property line* shall mean an imaginary line along the surface of land or water, and its vertical plane extension, which separates the real property owned, rented or leased by a person from the real property owned, rented or leased by another person. Where the real property owned, rented or leased by a person abuts a waterbed, the term "property line" shall mean the established normal high water elevation of the waterbed.
 - s. *Public right-of-way* shall mean any street, avenue, boulevard, highway, sidewalk, alley, or similar place normally accessible to the public which is owned or controlled by the county.
 - t. *Pure tone* shall mean any sound which can be distinctly heard as a single pitch or a set of single pitches. For the purposes of measurement, a pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two contiguous one-third octave bands by five dB for center frequencies of five hundred (500) Hz and above and by eight dB for center frequencies between 160 and 400 Hz and by 15 dB for center frequencies less than or equal to 125 Hz.
 - u. *RMS sound pressure* shall mean the square root of the time averaged square of the sound pressure.
 - v. *Sound* shall mean an oscillation in pressure, stress, particle displacement, particle velocity or other physical parameter, in a medium with internal forces. The description of sound may include any characteristic of such sound, including duration, intensity, and frequency.
 - w. *Sound level* shall mean the weighted sound pressure level obtained by the use of a metering characteristic and weighting A, B, or C as specified in American National Standards Institute specifications for sound level meters (ANSI S1.4-1971), or successor publications. If the weighting employed is not indicated, the A-weighting shall apply.
 - x. *Sound level meter* shall mean an instrument which includes a microphone, amplifier, RMS detector, integrator or time averager, output meter, and weighting network used to measure sound pressure levels. The output meter reads sound pressure level when properly calibrated. The sound level meter shall be of type 2 or better as specified in the American National Standards Institute publication entitled "Specifications for Sound-Level Meters," designated as ANSI S1.4-1971.
 - y. *Sound pressure* shall mean the instantaneous difference between the actual pressure and the average or barometric pressure at a given point in space, as produced by the presence of sound energy.
 - z. *Sound pressure level* shall mean a 20 times the logarithm to the base ten of the ratio of the RMS sound pressure to the reference pressure of 20 micro-newtons per meter squared. The sound pressure level is denoted L_p (or SPL) and is expressed in decibels.

- aa. *Use* shall mean any activity, event, operation or facility which creates noise.
 - bb. *Water craft* shall mean any machine in, upon or by which any person or property is or may be transported or drawn upon or over any watercourse or body of water, including swamp lands; this term shall include hovercraft and air boats.
- (b) *Measurement of sound.* Sound shall be measured with a sound level meter. Sound meters utilized for enforcement action shall have data logging capability and output to preserve a graphical record of measurements. Sound measurements shall be taken so as to secure and ensure an accurate representation of the sound. Sound level meters shall utilize an A-weighted filter, set to slow response, with a 3dBA doubling rate and no cut-offs. Measurements of sound in support or defense of an enforcement action shall be performed by individuals with documented training and/or experience in the collection and interpretation of sound level data.
- (1) The sound level shall be measured at a distance no closer to the point from which the sound in question is emanating than the property line of the parcel or lot from which the sound is emanating.
 - (2) A measurement period shall be not less than 15 minutes in duration.
 - (3) The sound being measured shall be representative of the sound which instigated the complaint.
 - (4) A measurement should be taken at approximately five feet above the ground or water surface, away from any obstruction or reflecting surface.
 - (5) A microphone windscreen shall be required to avoid wind noise biasing of a measurement.
 - (6) All manufacturer's directions on the operation of the sound level meter shall be followed (e.g., proper microphone angle).
 - (7) All sound level meters used for measurement shall be in conformance with ANSI section 1.4-1983.
 - (8) All octave and third octave band filter sets of the sound level meter shall be in conformance with ANSI section 1.11-1976.
 - (9) Calibration of all instruments, components, and attachments shall conform to the latest ANSI standards and manufacturer's directions and specifications.
 - (10) Instrumentation for sound level measurements may be class 1 or class 2 (ANSI section 1.4-1971).
- (c) *Maximum permissible sound levels; land use categories, times; and adjustment for character of sound.*
- (1) Subject to subsections (2) and (3) below, at no time shall the predicted or actual sound pressure levels emitted by the proposed use exceed the sound pressure levels specified in the table below at the closest property line of the below specified uses. If a use is located within a strip center, the noise level will be monitored from the outside wall of the use.

Table 1
 Maximum Permissible Time Averaged (Leq)
 A-Weighted Sound Pressure Limits for Receiving Uses

Type of Use	Time Period	Maximum Allowable Sound Pressure Level
Residential	7:00 a.m. to 10:00 p.m.	60 dB(A)

	10:00 p.m. to 7:00 a.m.	55 dB(A)
Commercial	7:00 a.m. to 10:00 p.m.	65 dB(A)
	10:00 p.m. to 7:00 a.m.	55 dB(A)
Industrial	7:00 a.m. to 10:00 p.m.	75 dB(A)
	10:00 p.m. to 7:00 a.m.	65 dB(A)

- (2) For any source of sound that emits a continuous pure tone, the sound level limits set forth in Table 1 shall be reduced by five (5) dB (A-weighted).
- (3) Impulsive sound shall not exceed the maximum sound levels contained in Table 1 during the hours of 7:00 AM to 10:00 PM. Impulsive sound is not permitted during the hours of 10:00 PM to 7:00 AM.
- (d) *Prohibited acts.*
- (1) Subject to the provisions of this section, no person shall produce, cause to be produced, or allow to be produced, by any means, any sound within any private or public property, including a right-of-way, which sound, when measured pursuant to this section, exceed the applicable sound level limits set forth in this section.
- (2) Noises determined and enumerated as public nuisances under Part II Code of Ordinances Chapter 46, Article IV, Section 131.
- (e) *Exemptions.* The provisions of section 62-2271 shall not apply to the following sounds or vibrations.
- (1) Cries for emergency assistance and warning calls. Emergency signals during emergencies. Emergency testing between 7:00 AM and 7:00 PM.
- (2) Radios, sirens, horns and bells on police, fire and other emergency response vehicles. Law enforcement activities including training.
- (3) Parades, fireworks displays and other special events for which a permit has been obtained from the county, within such hours as may be imposed as a condition for the issuance of the permit.
- (4) Activities on or in county and school athletic facilities and on or in publicly owner property and facilities, provided that such activities have been authorized by the owner of such property or facilities or its agent.
- (5) Fire alarms and burglar alarms, prior to the giving of notice and a reasonable opportunity for the owner or tenant in possession of the premises served by any such alarm to turn off the alarm.
- (6) Religious worship activities, including but not limited to bells and organs, as long as such noise, because of its volume level, duration and character does not annoy, disturb, injure or endanger the comfort, health, peace or safety of a reasonable person of ordinary sensibilities.
- (7) Railway locomotives and other railroad equipment, aircraft and airport activity in accordance with federal laws and regulations.
- (8) Motor vehicles operating on a public right-of-way subject to F.S. § 316.293 and applicable Federal criteria.
- (9) The operation of lawn mowers, edgers, trimmers and power driven hedge shears, meeting applicable manufacturers' specifications as to sound, is allowed in a residential zone between the hours of 7:00 am and 8:00 p.m.
- (10) Operation of water craft upon any watercourse, lake, river, or swamp in the unincorporated county. Such exception shall not apply to noise or sound prohibited under section 46-131(14), or to noise or

sound generated by water craft impacting abutting land areas (unless located at or on a properly zoned marina, water craft repair shop or manufacturing facility).

- (11) Refuse collection vehicles not exceeding 86 dB (A-weighted).
 - (12) Construction activities for which the county has issued a development permit, as defined in F.S. § 163.3164, provided such activity occurs between 7:00 am and 10:00 pm.
 - (13) Air blasts as a result of mining activity as regulated by the State of Florida Fire Marshall.
- (Ord. No. 2000-07, § 8, 1-25-00; Ord. No. 00-37, § 2, 8-1-00; Ord. No. 01-45, § 2, 9-4-01)

Noise Ordinance Language Suggestions:

Language Suggestion #1

Insert additional whereas clause between the following existing whereas clauses:

WHEREAS, the Board of County Commissioners finds that the provisions of this ordinance serve that important interest in a fair and constitutional manner and that the adoption of this ordinance is otherwise in the best interests of the public health, comfort, safety, welfare, and quality of life of the citizens of the unincorporated areas of Brevard County, Florida; and

WHEREAS, the owners of real property in Brevard County have basic rights, are presumed innocent until proven guilty and deserve due process, this Ordinance is not intended, nor shall the result be, to remove, impair, or injure a Brevard County property owner's right to their legal and allowable use.

WHEREAS, the provisions of this ordinance balance the interests of neighborhood residents, commercial and industrial enterprises, and institutional uses; and

Language Suggestion #2

Amend the following language:

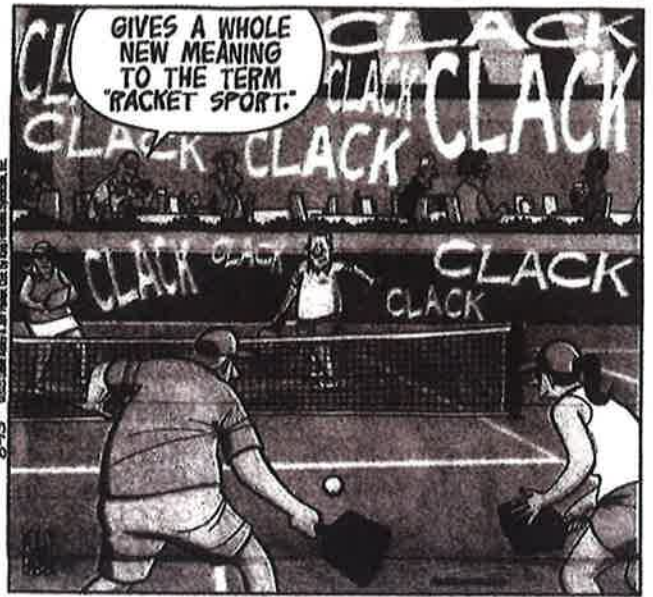
Section 46-135.

(c) (1) The absentee owner was notified of at least ~~one~~two warnings issued by any enforcement officer for a violation of this article within the previous 12-month period. Notice of any previous warnings pursuant to this subsection shall be affected in writing by registered or certified mail.

DUSTIN

BY STEVE KELLEY & JEFF PARKER

I-1
P.C.



CLIFF BRAGDON, PH.D., AICP, FASA



Overview:

Dr. Bragdon was the Vice President for Strategic Initiatives and Dean for Continuing Education at Florida Institute of Technology. Previous to this he served in the university as the Associate Provost and Dean of the University College. Prior to Florida Tech Dr. Bragdon was Director and Vice-President of the National Aviation and Transportation Center and Dean for the School of Aviation and Transportation at Dowling College, Long Island, New York. For 21 years Dr. Bragdon served as Professor, Associate Dean and Associate Vice President, and Assistant to the President at Georgia Institute of Technology, Atlanta, Georgia. While at Georgia Tech he was also the Executive Director of AMCEE, a consortium of engineering based universities involved in distance learning including MIT, Stanford University, Purdue University, University of Florida, Arizona State University, among others. He also served on the Emory University faculty as a clinical visiting professor in the College of Medicine and subsequently the School of Public Health for 12 years

Notable Accomplishments

- 1. U. S. Government Patent: Intermodal Transportation System (ITSS) Invented by Dr. Bragdon, rated as the 9th (Ninth) most important invention for the entire 21st Century. First invention to use multi-modal real-time simulation technology to plan future transportation, assess the integration of roadways, airports, seaports, rail and maglev modes to enhance logistical mobility in the world utilizing 5-D visual simulation, surround sound and aromacology to create a multi-sensory system of infrastructure.*
- 2. First person to complete a 3-D Real-Time Simulation of the World Trade Center 9/11 terrorist attack on the Twin Towers involving two commercial Boeing aircraft, including detailed forensic analysis of 20 forensic factors. Completed within two weeks after the incident. Results prepared for President George W. Bush, Congress, U.S. Secretary of Transportation, National Transportation Safety Board (NTSB) and the New York City Mayor; aired nationally and internationally on TV, cable, radio and print media.*
- 3. Performed planning and analysis for three Olympic venues, including Seoul (1988), Atlanta (1996), and Athens (2004). Dr. Bragdon served on the Atlanta Olympic Committee determining the 20 venue locations for the FAA approved aviation access plan; developed Master Plan for Olympic venue sites at Stone Mountain Park. On the Team developing Master Village at Georgia Institute of Technology. Prepared remarks for Congressman John Lewis (at his personal request) and he successfully obtained Congressional funding for the Atlanta 1996 Summer Olympics.*
- 4. Dr. Bragdon presented invited lectures in Athens. He was a panelist with President of the 2004 Greek Olympics. Met with Greek President Konstantine Stephanopoulos at the Presidential Palace to discuss participation in their hosting the Olympics, along with Greek government officials and the U. S. Embassy.*



TRANSPORTATION SECURITY



His specialty is the field of transportation, land use/space use, simulation, environmental planning, sustainability, safety and security. Dr. Bragdon has published six books as well as over 100 articles. In 2008 Dr. Bragdon authored his latest book, *Transportation Security*, published by Elsevier-Academic/ Butterworth Press. He has lectured widely on these general subjects throughout the world, and has been an invited lecturer and distinguished speaker at over 70 universities (including Harvard University, MIT, Columbia University, University of Pennsylvania, University of North Carolina, Moscow State University, Tianjin and Beijing Universities). His next book (2010-2011) will be entitled, *Diet Cities: A Global Plan For Resilience*.

5. *Environmental Planning Advisor to UN Ambassador and Mayor of Atlanta Andrew Young for 11 years. Projects included the planning and development of the Presidential Parkway and Carter Library, MARTA development and transportation impact, the expansion and development of Atlanta Hartsfield International Airport becoming the world's most commercially active airport, environmental noise impact analysis of urban transportation systems in metro-Atlanta area.*

6. *President George W. Bush and the U. S. Congress funded (\$10,000,000) the nation's first Center for Intermodal Transportation Safety and Security. Dr. Bragdon was appointed the Executive Director of this Center of Excellence, composed of 16 universities. Their primary activity was to investigate methods to enhance transportation security for the United States, reporting to the Congress, the U. S. Secretary of Transportation, Security Task Forces and the Department of Housing and Urban Development.*

6. *Dr. Bragdon was the primary consultant to EPA's Office of Noise Abatement and Control in Washington, D.C. His work included developing the model noise ordinance for EPA to be used by municipalities throughout the United States, maintaining a noise ordinance repository for EPA of all municipalities enacting noise legislation and programs nationwide. Developing the headquarter manual and teaching for EPA Part 150 Airport Noise and Land Use Planning to all FAA personnel and aviation consultants.*

7. *Dr. Bragdon was the primary consultant to EPA's Office of Noise Abatement and Control in Washington, D.C. His work included developing the model noise ordinance for EPA to be used by municipalities throughout the United States, maintaining a noise ordinance repository for EPA of all municipalities enacting noise legislation and programs nationwide.*

8. *Dr. Bragdon performed consultant services for an extensive client list of Fortune 500 Companies, including over 60 private sector businesses. Some of these included, IBM, Coca Cola, Home Depot, Westinghouse, Union Camp, Federal Express, UPS, Cotton States, Union Pacific, Gold Kist, Southern Company, Norfolk and Southern, Georgia Power, Duke Power, Florida Power and Light, Cox Communications, Reuters International, Bell Helicopter, Delta Airlines, Northwest Airlines, Mercedes, Chrysler, Goodyear, Burger King, Walgreens and EDS.*

9. *Dr. Bragdon performed consultant services for an extensive client list of over 150 public sector entities, including 50 airports (Atlanta Hartsfield, DFW, Heathrow, NY LaGuardia, San Francisco, SEATAC, San Juan Puerto Rico, Minneapolis-St. Paul, Palm Beach International, New Orleans, Columbus, Birmingham AL, Springfield, IL, Pensacola, FL, Orlando International and over 10 DOD military airports); over 100 municipalities and port authorities NYC, Atlanta, Baltimore, Denver, Jacksonville, Seattle, St. Louis, Hilton Head, Savannah, Port Authority NY-NJ, Toledo Port Authority, NASA, counties, states, and Federal departments and agencies.*
10. *Dr. Bragdon was the primary consultant to EPA's Office of Noise Abatement and Control in Washington, D.C. His work included developing a model noise ordinance for EPA to be used by municipalities throughout the United States, maintaining a noise ordinance repository for EPA of all municipalities enacting noise legislation and programs nationwide. Developing the headquarter manual and teaching for EPA Part 150 Airport Noise and Land Use Planning to all FAA personnel and aviation consultants.*
11. *As Professor and Vice President of Georgia Institute of Technology Dr. Bragdon Directed the Continuing Education Program where over 250 courses were offered worldwide annually. While Director it was ranked as the number one program in the United States, with Stanford University ranked two and MIT ranked three. Dr. Bragdon was also appointed the Director of the Association of Media Based Continuing Engineering Education (AMCEE) that included Georgia Tech, MIT, Stanford, Purdue, University of Illinois, Arizona, Florida, among others.*
12. *Dr. Bragdon has authored seven books and numerous chapters. His most notable book is Noise Pollution the Unquiet Crisis (University of Pennsylvania Press) which was the first book written on the subject for urban and transportation planners, architects in the world. His second book Transportation Security is ranked as the most popular text used by over 100 universities and has been adopted by the Department of Homeland Security, and the Transportation Security Administration for certification process and in the teaching of transportation security. He has also been affiliated with the FBI Cyber Security Division. In that capacity he has been Sector Chief of the 16 Infrastructure Sectors for the Tampa Bay Chapter of InfraGard.*

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**Dr. Clifford R. Bragdon, Fellow Acoustical Society of America
Distinguished Professor Emeritus, Florida Institute of Technology**

Dr. Bragdon is a celebrated educator, researcher and consultant, specializing in urban-regional planning, sustainability, transportation, economic development, homeland security-resilience, simulation, and environmental assessment and health. At the Florida Institute of Technology (FIT), he served as a Distinguished Research Professor, Dean and Vice president for Strategic Initiatives, and Executive Director of the FIT Research Park and became a Distinguished Professor Emeritus. For over 40 years Dr. Bragdon has held notable positions at national universities, serving on recognized boards, and respected professional science, engineering, and social organizations.

He was at Georgia Institute of Technology 21 years, as a Distinguished Professor, Associate Dean, Vice President for Extended Studies, Special Assistant to President Crecine, and served on the 1996 U. S. Olympics Committee. The Federal Aviation Administration (FAA) retained him to develop the vertical flight plan for all 24 Olympic venues. While at the Georgia Institute of Technology he also served as the President of AMCEE, (Association for Media-Based Continuing Education for Engineers) that included Stanford University, UC Berkeley, MIT, Georgia Tech, University of Chicago, Purdue University, Arizona State University and the University of Florida, among academic institutions.

Representative John Lewis personally requested Dr. Bragdon prepare a memo in his office, which Congressman Lewis then utilized on the House floor, to successfully obtain congressional funding for the 1996 Atlanta Summer Olympics. At Emory University, he was a visiting Clinical Professor for 13 years, teaching graduate level courses in the Emory School of Medicine and subsequently also the Rollins School of Public Health.

At Florida Atlantic University (FAU), Dr. Bragdon was a Distinguished Professor and Executive Director of the Center for Intermodal Transportation Safety and Security, representing all 16 Florida public universities. It was the first center of its type federally established in the United States, approved by Congress and President Bush, awarding their Center \$10,000,000 to address transportation related national security, and reporting to Congress. Dr. Bragdon was the Dean of the only U.S. School of Aviation and Transportation and Vice President of the National Aviation and Transportation Center, Long Island, NY.

While at FIT, Dr. Bragdon founded the internationally focused Global Center for Preparedness and Resilience™ (GCPR) in 2005. Now president of GCPR, his initiatives include creating strategies to mitigate drone technology threatening military-civilian population and infrastructure, besides establishing resilient transportation/logistic plans for addressing COVID-19. This effort has included working with Lieutenant General Russel Honore'. Dr. Bragdon is also developing a Cybersecurity Resilient Master Plan for Tampa FL through Infragard, as Sector Chief Director, and for the FBI Office of Cybersecurity. His resiliency initiative integrates safety, security, sustainability and health, to assure that the earth's global biosphere is preserved.

The GCPR is addressing both natural and manmade disasters and threats and to ensure resiliency prevails and that "resilient certification" is established to protect the built environment, infrastructure, and the world's population. He is also examining the problem of gridlocked cities and creative ways to design them to become more spatially efficient utilizing intermodal movement, spatial-temporal conservation and advanced state-of-the-art technology. As an urban and regional planner he believes the concept of "Fifteen Minute Cities" has considerable potential to address present day urban problems of congestion, human habitats and settlement patterns.

Dr. Bragdon has frequently been a media consultant to CBS, ABC, NBC, CNN, PBS, Fox, *The New York Times* and *USA Today*. He has been an expert witness in environmental health, urban planning, transportation,

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and land use development at local, state, federal and Supreme Court levels. The Supreme Court and State Bar of Georgia appointed him to serve in conflict-resolution-arbitration initiatives nationwide. Dr. Bragdon also provided expertise as adviser and consultant for two U.S. presidents, four governors, 150 mayors, 75 Fortune 500 corporations and eight federal agencies [DOD, EPA, DOT, FAA, HUD, DOL, DOI and DOE]. His mentor, U.N. Ambassador and Atlanta Mayor Andrew Young, retained him as an environmental adviser for 13 years, remarking, "I have enjoyed my association with Cliff Bragdon, because he has not been afraid to dream about impossible things and then work to make them come true, (including Atlanta Hartsfield International Airport, MARTA and the Jimmy Carter Presidential Parkway)." Internationally, Dr. Bragdon has assisted, NATO, United Nations, UNDP, the European Union, European Commission, WHO, Russian and Chinese Academy of Sciences, Organization of Islamic Countries and Cities, and three international Olympic committees (U. S., Greece, and Korea).

He has been president of his consulting firms, MS5 Solutions and C.R. Bragdon and Associates, Executive Director of the University Consortium for Intermodal Transportation and Vice President of Specialized Training in Aeronautics and Research (STAR Worldwide). Dr. Bragdon served as a distinguished member of the Harvard University Lincoln Institute of Land Policy, a think tank seeking to improve the quality of life, use, taxation, and stewardship of land. While at Westminster College, he received the Harvard University Sociology Award.

A seasoned scientist, Dr. Bragdon was the principal investigator [PI] for over \$60 million of funded research. Primary area of research included pollution and ecology. His doctoral dissertation, "Noise Pollution: The Unquiet Crisis," was published as a book by the University of Pennsylvania Press. Dr. Ted Schultz, internationally acclaimed acoustician, architect, and consultant including the Sydney Opera House, remarked, "Dr. Bragdon's book is the first and most important book for city planners and architects practicing noise abatement in the world."

Throughout his career Dr. Bragdon has presented over 175 invited lectures worldwide, including performing the first forensic analysis of the 9/11 Twin Towers attack, which he prepared for Congress, the U. S. Department of Transportation and the New York City Office of the Mayor. Earlier, he was invited to meet Mayor Giuliani and his commissioners to present a 4-D spatial master plan for New York City, incorporating aerial, surface and subsurface attributes, as a global model. It was favorably received, however, 9/11 intervened shortly thereafter. He has given lectures in over 35 countries, many sponsored by the United Nations. Moscow Mayor Yuri Luzhkov invited Dr. Bragdon to speak on the "World Future City", attended by 2,000 invited international guests, held in Moscow.

Dr. Bragdon invented and received a patent for his Intermodal Transportation Simulation System (ITSS). It was ranked as the ninth most important U.S. new invention for the next 100 years in a national survey. A full-scale ITSS was funded by Congress and built at the National Aviation and Transportation Center. For the first time this real-time system linked all transportation sectors together: airports, maritime, roadways and railroad-light rail and magnetic levitation, utilizing computer-based visualization, sound and aroma for planning assessment and design.

Governor Bush (FL) and Governor Pataki (NY) both rode in this magnetic levitation (MagLev) motion-based simulator, "traveling virtually" up to 300 mph. The ITSS has been employed on multiple architectural, engineering, planning projects worldwide. His work has included LaGuardia Airport-Rail Transit Access Study, Magnetic Levitation for Federal Rail Administration, Maximizing the Impact of Infrastructure Investment, NAFTA Intermodal Transportation Institute, NASA Route Corridor Environmental Impact Analysis, Traditional Neighborhood Development, Transportation Conflict Resolution and GIS Certification, 1996 Summer Olympics

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and Transportation Planning for the FAA, Solar Heating and Cooling for NSF, developing a mining plan in Canada for Maglev extraction, and preparing the Environmental Noise Report to Congress.

Widely published, Dr. Bragdon has authored 12 books or book chapters and written over 125 articles. His latest book, *Transportation Security*, is the primary reference on the subject and has been adopted by over 100 universities. The Department of Homeland Security (DHS) and Transportation Security Administration (TSA) uses his text for certification and training purposes. Dr. Bragdon was previously contributing editor for *Sound and Vibration* from 1973 to 2000 and columnist for *Airport Press*, primarily addressing noise impact, assessment and noise mitigation.

He served as a Captain in the U.S. Army Environmental Hygiene Agency (USAEHA) in the Bio-Acoustics Division, under the Surgeon General. Bragdon assisted Secretary of State Henry Kissinger and the Army to control noise emanating from Grafenwoehr, Germany, an Army base training site. Their German Ambassador to the U.S. registered a formal complaint mandating the need for noise abatement, which the Army successfully initiated. As an Army medical service officer, he was responsible for addressing environmental-noise issues globally and as well as implementing the hearing conservation program for all Army military bases worldwide. He also held the position of Bio-Acoustics Division Chief in the AEHA in Edgewood, Maryland, while on active duty.

In 2015, Dr. Bragdon was appointed transportation sector chief of InfraGard, an FBI-affiliated nonprofit organization. More recently he was elected in 2020, as the Sector Chief Director for all 16 InfraGard sectors that address preservation of U. S. infrastructure. Their mission is to mitigate criminal and terrorist threats, risks and losses to protect critical infrastructure and the American people. He is a charter member of the Association of Energy Engineers, American Planning Association and American Institute of Certified Planners. He is past president of both the American Planning Association, and the American Hygiene Association, Georgia Chapters.

As a community leader, Dr. Bragdon served as the President and Chairman of the Board of the Henegar Center for the Performing Arts, a Board Member of the Melbourne Chamber Music Society and the Holy Trinity Episcopal Academy. He now serves on the International Advisory Board of the Pan Pacific Finance Group, headquartered in Singapore. Musically he has been the Guest Conductor of the Brevard Symphony Orchestra (BSO), a member of the Brevard Community Chorus, TWITCHY Florida Tech Faculty Band, and multiple Episcopal Church Choirs.

Dr. Bragdon was professionally recognized by the National Academy of Science and National Academy of Engineering, becoming an Acoustical Society of America (ASA) Fellow and received FAA's Excellence in Education Award. He was recipient of the New York Engineer Achievement of the Year Award in 1998, the Georgia Governor's Distinguished Service Award in High Technology, and the Westminster College Alumni Achievement Award in 2006. A celebrated Marquis listee, Dr. Bragdon has been showcased in over 15 editions of *Who's Who in America*®, *Who's Who in Science and Engineering*®, *Who's Who in the World*® and *Who's Who in Finance and Industry*®. He recently received the Albert Nelson Marquis Lifetime Achievement Award (2019-2020), from Marquis Who's Who Publication Board and is currently listed in the newest 74th Edition of *Who's Who in America* as a Distinguished Listee (Highest Honor), issued June, 2022.

Dr. Bragdon has served as a legally recognized expert witness in the fields of acoustics and environmental noise, air quality, radon, environmental impact, assessment, environmental health and environmental compatibility planning. He has successfully appeared as an expert in civil, and federal courts, and his testimony has been successfully utilized in U. S. Supreme Court decisions. In addition, the Georgia State Bar and the Georgia Supreme Court has designated Dr. Bragdon to be a legal arbiter

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in conflict-resolution matters nationwide. Beside teaching a Conflict Resolution graduate level course at Georgia Tech he also presented several week long continuing education courses throughout the United States.

Educationally, Dr. Bragdon obtained a Bachelor of Arts Degree from Westminster College in 1962, a Master of Science Degree from Michigan State University in 1965, and a Doctor of Philosophy Degree from the University of Pennsylvania in 1970. Both of his Graduate level degrees were in city planning. He also received an honorary degree from the International Informatization Academy located in Moscow, which is a U.N. Associated Member. Academically he graduated with honors from Westminster College (Fulton, MO) Michigan State University (East Lansing, MI) and the University of Pennsylvania (Philadelphia, PA).

Dr. Bragdon has been appointed to serve on the Transportation Research Board (TRB) which is a division of the National Academy of Sciences, Engineering and Medicine, and serves as a national advisor to the President of the United States, Congress and federal agencies on scientific and technical questions of importance. Dr. Bragdon has served as a member of several TRB working group committees including High Speed Rail Technology, Intermodal Transportation, and Transportation Acoustics. He possesses an expertise in numerous transport modes and systems including railroad (maglev, commercial rail, transit and light rail, rail stations, intermodal systems), aviation systems (commercial, military, itinerant, general aviation, helicopter, tilt-wing, intermodal, airports), maritime (seaports including commercial, freight, and military), roadways (automobiles, busses, trucks, vans, SUVs, motorcycles, bikes, and intermodal). He has prepared Transportation Oriented Developments (TODs), Mixed Use Developments, Transportation and Land Use Master Plans, Zoning, Site Plans, Capital Improvement, Environmental Assessment, Environmental Impact Studies, Noise, Air Quality, Radon, etc. Clients have included private sectors, public sectors (federal, state, metropolitan, regional, municipal) and non-profits. For EPA Office of Noise Abatement and Control Bragdon has developed and maintained a repository of noise control legislation (local, state and federal) as well as conducting large scale noise studies, preparing the EPA ONAC Model Noise Ordinance, creating and conducting continuing education programs for federal agency organizations (EPA, DOT, FAA) and private sector businesses nationwide.

Dr. Bragdon's distinguished family members includes his three uncles: Ernest Hemingway (great uncle), who was awarded a Nobel Prize for Literature and a Pulitzer Prize; Paul Scott Mower (great uncle), Poet Laureate who was awarded the first Pulitzer Prize for Correspondence; and W. Langdon Kihn (uncle), a Native American artist who completed 400 paintings among 35 North American tribes, traveling over 40,000 miles. The book, *Indians of the Americas* was published by the National Geographic Society, and contains 125 Native American paintings by Langdon Kihn. The National Geographic Society describes Kihn's paintings as "the most complete, authentic and dramatic picture record of the American Indian ever achieved." *New York Times*, among other media sources, including a multitude of museums and galleries, have also commended him highly. His paintings are in over 100 museums worldwide and in prestigious private collections.

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**Dr. Clifford R. Bragdon, Fellow ASA
Founder and President Global Center for Preparedness
Distinguished Professor Emeritus Florida Institute of Technology
Albert Nelson Marquis Lifetime Achievement Award, Marquis *Who's Who*
Publication Board
Sector Chief Director, InfraGard, Tampa Bay Members Alliance and the FBI Cyber Div.
Marquis *Who's Who* in the World and *Who's Who* in America
Fellow, Acoustical Society of America, National Academy of Science**