


# NOISE REGULATION IN FLORIDA

Presented by  
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and Robert Lilkendey, Siebein Associates, Inc.





**WHY IS NOISE  
DIFFICULT TO  
REGULATE?**

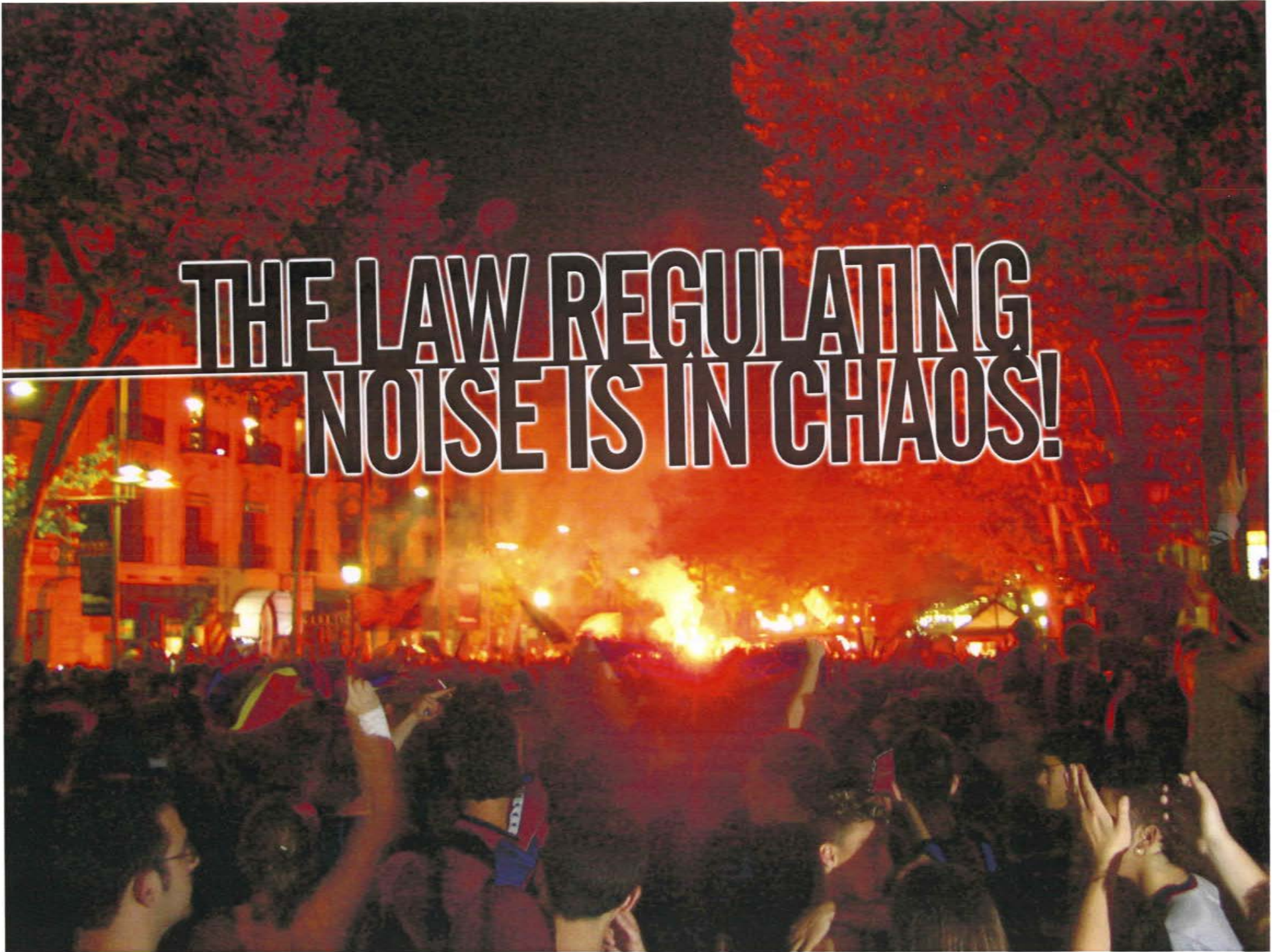


# AMPLIFIED MUSIC IS CONSTITUTIONALLY PROTECTED SPEECH

- 1<sup>st</sup> Amendment as applied to the states through the 14<sup>th</sup> Amendment protects speech and expressive conduct
- Noise regulation includes amplified music, most common source of problem



**THE LAW REGULATING  
NOISE IS IN CHAOS!**











# WHAT ABOUT FLORIDA?



"It shall be the policy of the State to  
conserve and protect its natural  
resources and scenic beauty.

Adequate provision shall be made  
by law for the abatement of air  
and water pollution and of  
excessive and unnecessary  
noise."

## Section 403.061(11)

Legislature delegated authority to DEP to regulate noise.

But the State currently only regulates motor vehicles, loud music from car stereos, and marine vessel noise  
New 2005 State "Boom Box" law makes it nonmoving traffic violation for sound that is "plainly audible" 25 feet from the vehicle







# KoЯn





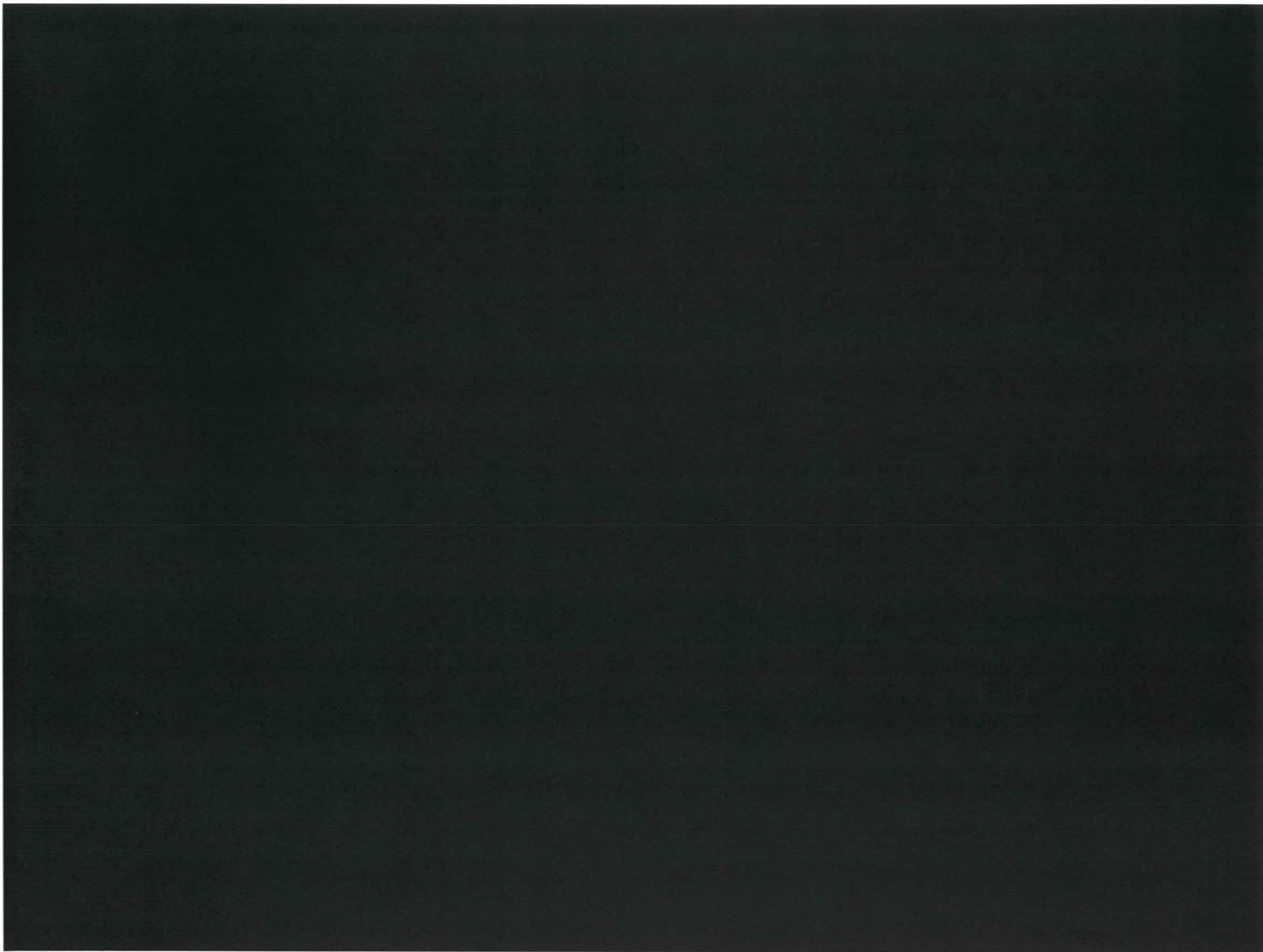
*"I understand that this upcoming concert is different. I don't know if you've ever seen Korn's lyrics..."*

*- County Commissioner Rhonda Storms*



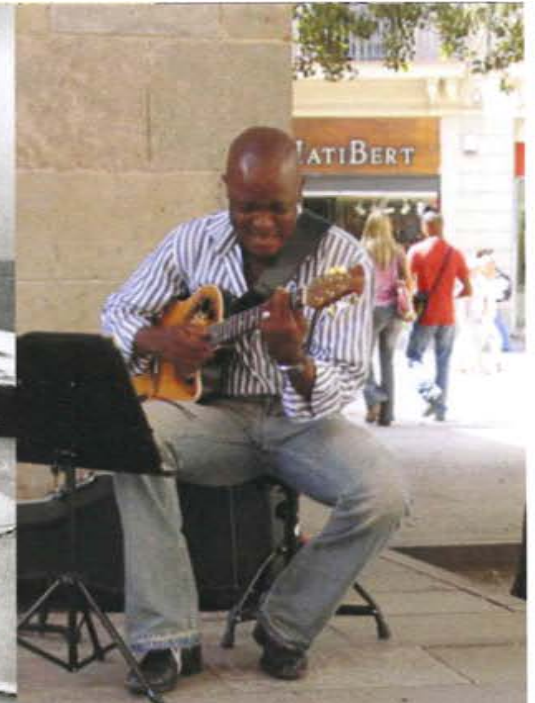
**THE  
DANDY  
A Decade  
Of Hits**





# FREE SPEECH ZONE

8:30 AM  
TO 5:30 PM





A photograph of the United States Supreme Court Building. The building is a large, classical structure with a prominent portico supported by tall, white columns. The pediment above the columns is filled with intricate carvings. To the left of the main entrance, there is a decorative stone pillar topped with three white spheres. In the foreground, a wide set of steps leads up to the building. A few people are visible at the bottom right of the steps. The sky is a clear, bright blue.

If overamplified loudspeakers assault the citizenry,  
government may turn them down.

Kovacs v. Cooper

# DUE PROCESS VAGUENESS CHALLENGE

- Subjective standards challenged as unconstitutionally vague: "annoying," "disturbing," "unreasonable," etc.
- They fail to provide fair warning of what conduct is forbidden, or fail to set reasonable guidelines for enforcement
- Key factor — whether persons of common intelligence understand its prohibitions without the need to guess at its meaning
- Subjective determinations by complainants or enforcement officials are problematic — how do you know you are annoying someone?





# Noise Ordinance Struck Down

■ A judge rules that the owner of the Ford

the Hillsborough Environmental Protection Commission and residents who live near the amphi-

21. "Noise pollution" means the presence of noise in excessive or unnecessary amount or of such duration, wave frequency, or intensity as to be injurious to human or animal life or property; ~~or which unreasonably interferes with the comfortable enjoyment of life or property;~~<sup>\*</sup> or other conduct of business.



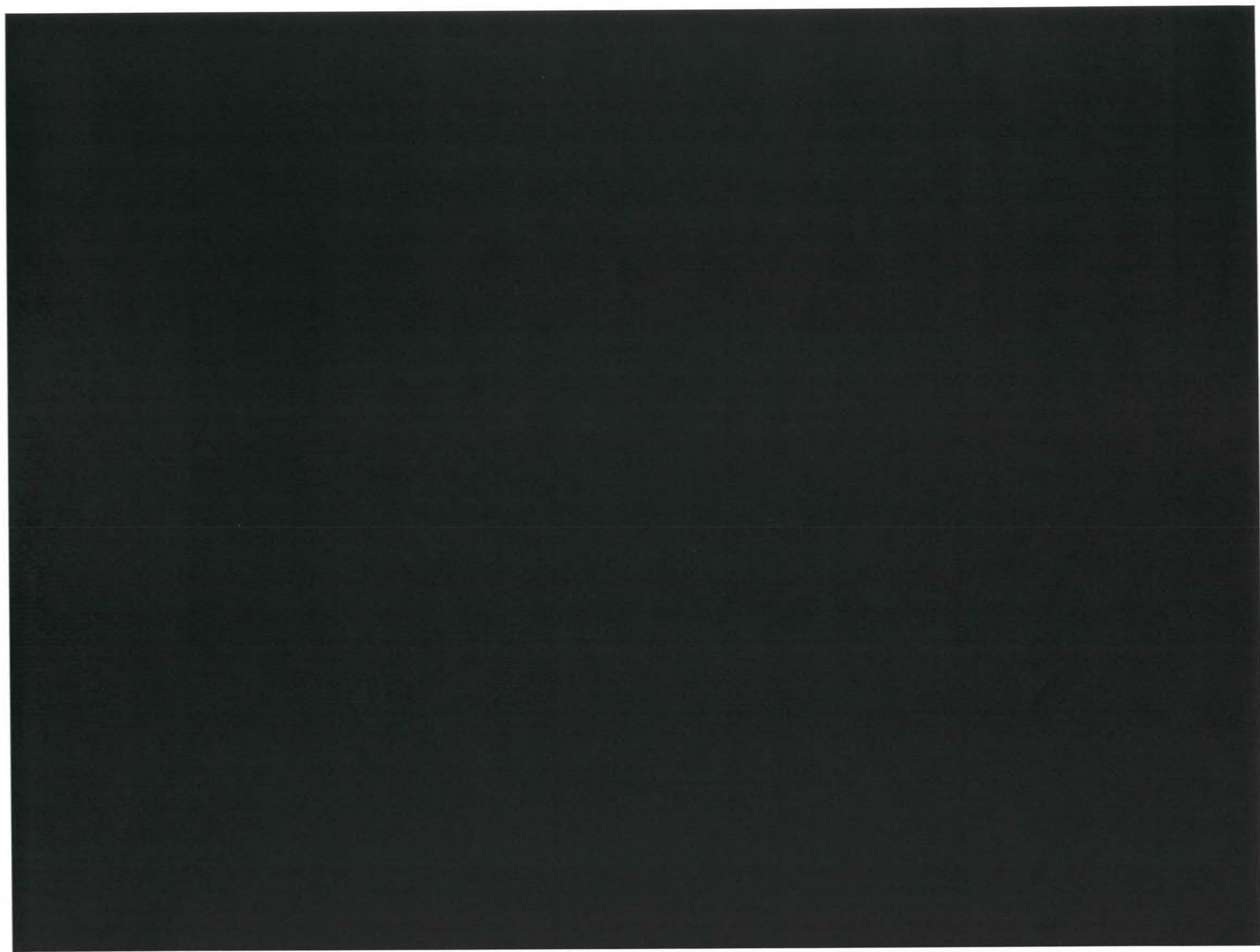


# Objective Ordinances May Still Be Attacked!

- If decibel level restricts more activity than necessary to serve government purpose
- Problem if they contain overbroad decibel standard not suited to area, i.e., 60 decibel level for industrial area would interfere with range of normal industrial activities
- Subject to "as applied" attacks based on defective equipment, lack of training, improper calibration, ambient noise interference



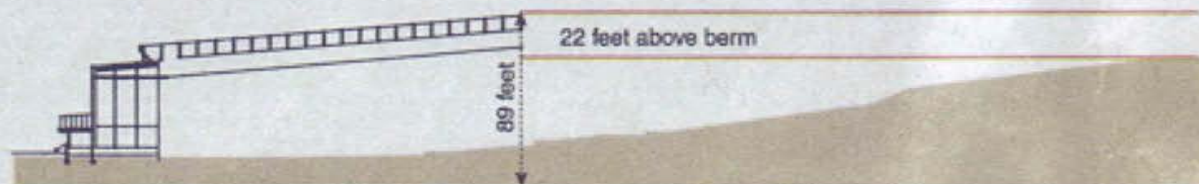




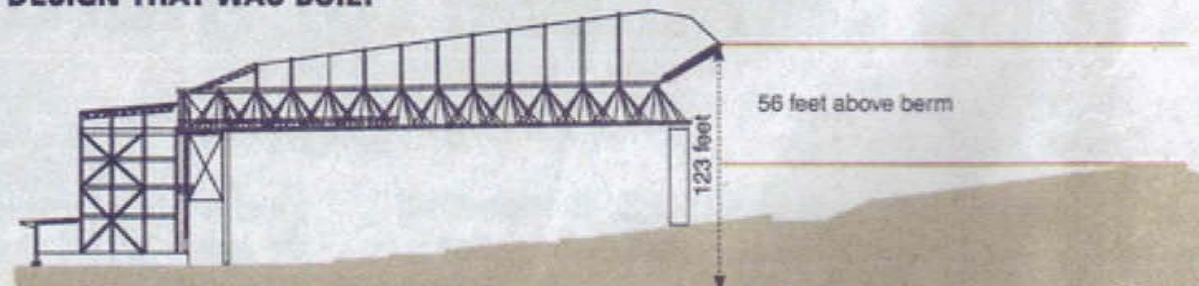
## NOISE COMPLAINTS AT THE FORD AMPHITHEATRE

# Theater roof not built as promised

APPROVED DESIGN



DESIGN THAT WAS BUILT



Source: Hillsborough Environmental Protection Commission

Times graphic — JEFF GOERTZEN

The plans Clear Channel Entertainment sent to the Hillsborough Environmental Protection Commission for approval do not match what it built. The amphitheater's roof is 38 percent higher than the original design. Some say that accounts for the noise issues.



# No immunity for Clear Channel

■ A judge rules that the owner of the Ford Amphitheatre can be held to noise rules.

By **TOM ZUCCO**  
Times Staff Writer

TAMPA — The chances that concerts at the Ford Amphitheatre will get a little quieter got a lot better Monday.

Hillsborough Circuit Judge Charlene Honeywell ruled that media giant Clear Channel Entertainment, owner of the amphitheater at the state fairgrounds, does not have immunity from local noise regulations.

Clear Channel had sought to dismiss two lawsuits brought by

the Hillsborough Environmental Protection Commission and residents who live near the amphitheater. The suits, one of which also names the Florida State Fair Authority as a defendant, seek to halt concerts until the noise is reduced. Several hundred noise complaints have been logged since the amphitheater opened a year ago.

Concerts will continue for now. But one of the biggest hurdles to bringing the amphitheater into compliance with the county noise ordinance has been cleared.

Clear Channel, a San Antonio-based company that owns 41 amphitheaters and about 1,200 radio stations, had sought to attach

Please see **NOISE 7A**



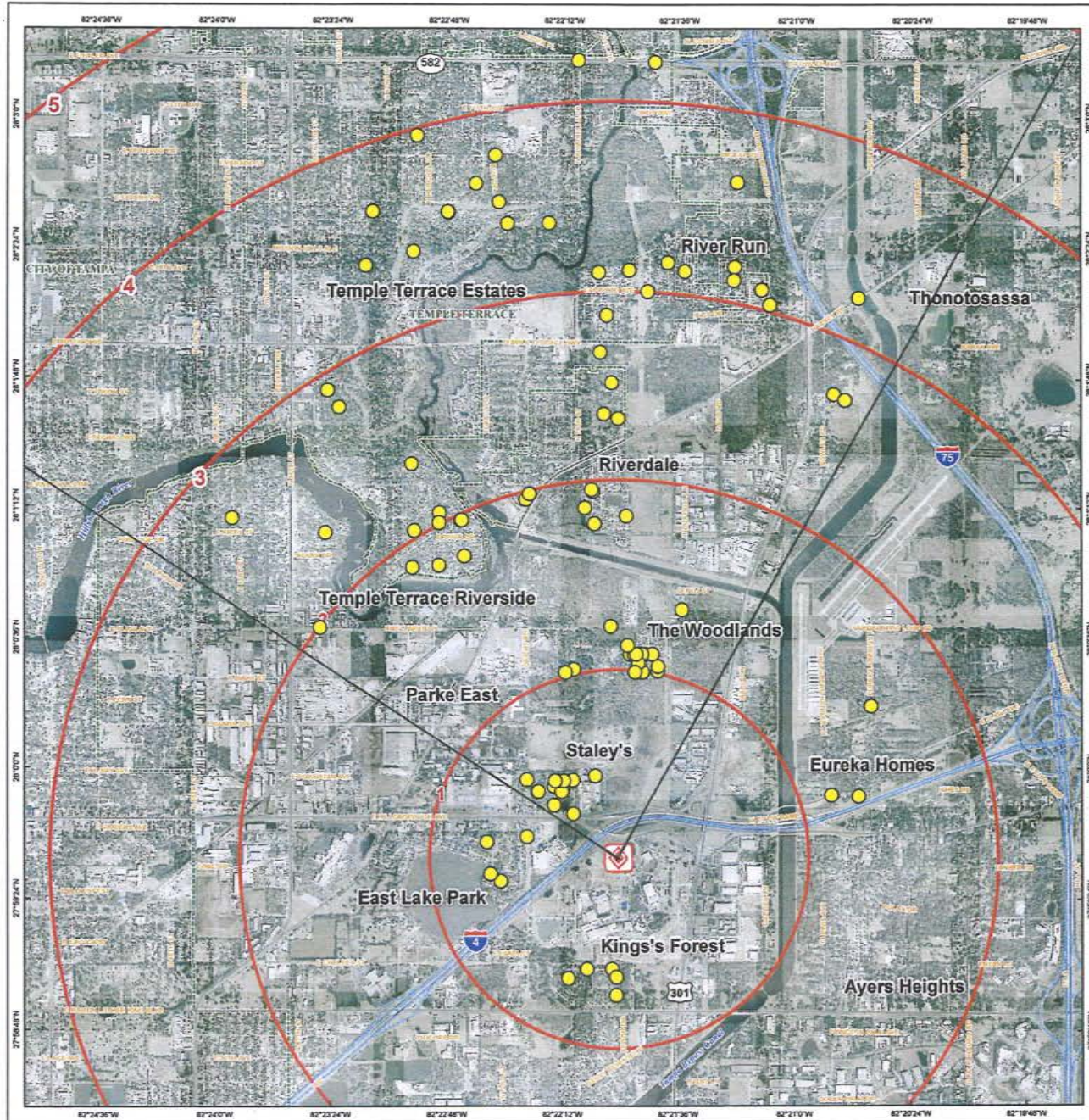
# CASE STUDY 1

## Amplified Music Noise



- Amphitheater located near homes and apartments
- Loud music disturbs residents







# HILLSBOROUGH EPC NOISE RULE

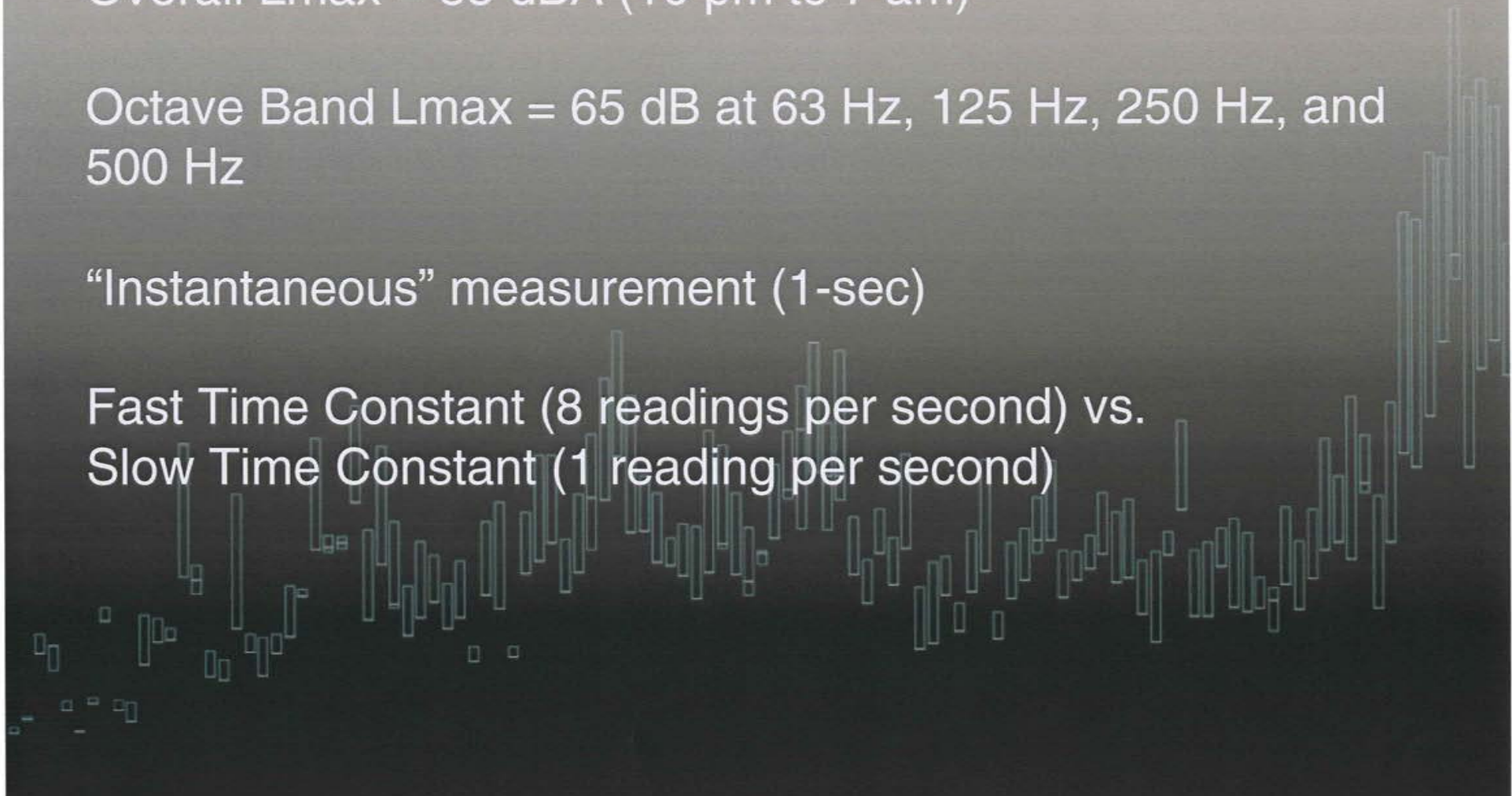
Overall Lmax = 60 dBA (7 am to 10 pm)

Overall Lmax = 55 dBA (10 pm to 7 am)

Octave Band Lmax = 65 dB at 63 Hz, 125 Hz, 250 Hz, and 500 Hz

“Instantaneous” measurement (1-sec)

Fast Time Constant (8 readings per second) vs.  
Slow Time Constant (1 reading per second)





LOCATION OF READING: 7904 Wexford Park Dr			AMBIENT READING:				
BEGINNING CALIBRATION: 1000 Hz <u>114.0</u> dB(A) <u>114.1</u>							
START /END TIME	SCALE (A OR C, 125, 250 Hz)	RANGE	0 - 15 sec	15 - 30 sec	30 - 45 sec	45 - 60 sec	Comments
6:48	A		63	61 <sup>PA</sup>	62 <sup>PA</sup>	62	<u>Rain</u> continuous light traffic from I-4
			63	63	64	61	
			64	63	64	61	
			62	66	70 <sup>PA</sup>	64	
			60	61	62	62	
			62	60	63	65	
6:56	63		70 <sup>T</sup>	71 <sup>T</sup>	78 <sup>T</sup>	65 <sup>T</sup>	T-traffic
			66 <sup>T</sup>	68 <sup>T</sup>	72 <sup>T</sup>	70 <sup>T</sup>	
			70 <sup>T</sup>	72 <sup>T</sup>	69 <sup>T</sup>	68 <sup>T</sup>	
			72 <sup>T</sup>	66 <sup>T</sup>	66 <sup>T</sup>	67 <sup>T</sup>	
			66 <sup>T</sup>	71 <sup>T</sup>	72 <sup>T</sup>	67 <sup>T</sup>	
			65 <sup>T</sup>	65 <sup>T</sup>	65 <sup>T</sup>	66	
			67 <sup>T</sup>				
7:02	125		64	70 <sup>car</sup>	72 <sup>car</sup>	70 <sup>car</sup>	Rain stopped
			66	63	68 <sup>T</sup>	69 <sup>T</sup>	
		crowd	68	67	71 <sup>PA</sup>	74 <sup>T</sup>	
			62	68	69 <sup>T</sup>	63	
ENDING CALIBRATION: 1000 Hz <u>114</u> dB(A) <u>114.1</u>							
			65	62	64	64	

☐ airplane  
☐ vehicle noises  
☐ dog barking

## Current Methods:

1. Type 2 Meter
2. Hand-written notes of sound level only.
3. Difficult data recording method.
4. Non-standard acoustical measurement practices.
5. Hard to defend in a Court of Law.

# RECORDING AND MEASURING SOUNDS FROM THE AMPHITHEATER





# RECORDING AND MEASURING SOUNDS FROM THE AMPHITHEATER

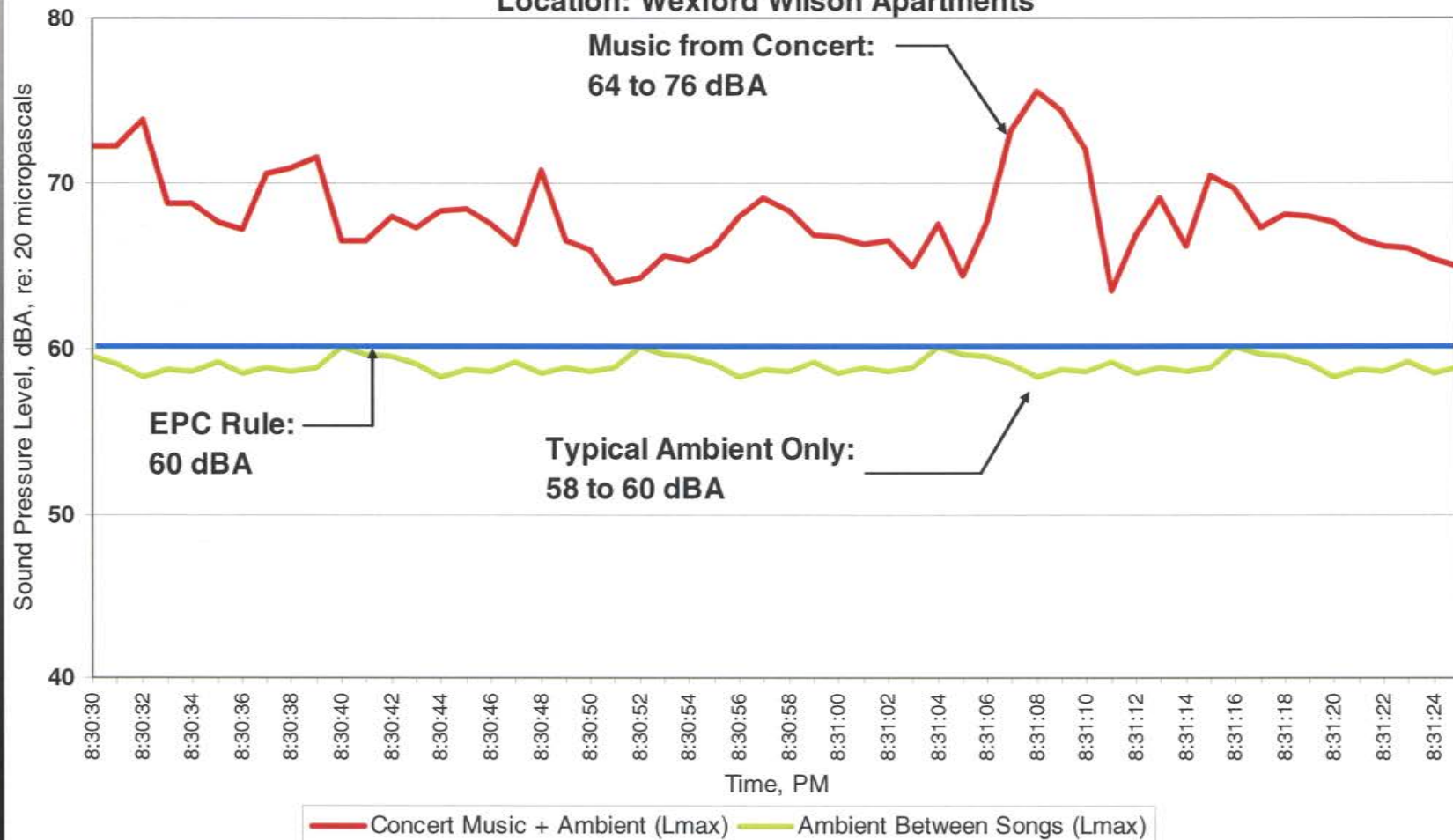




# BURIED IN THE AMBIENT?

Ford Amphitheater Noise Study - Hank Williams, Jr. Concert - January 29, 2005

Location: Wexford Wilson Apartments

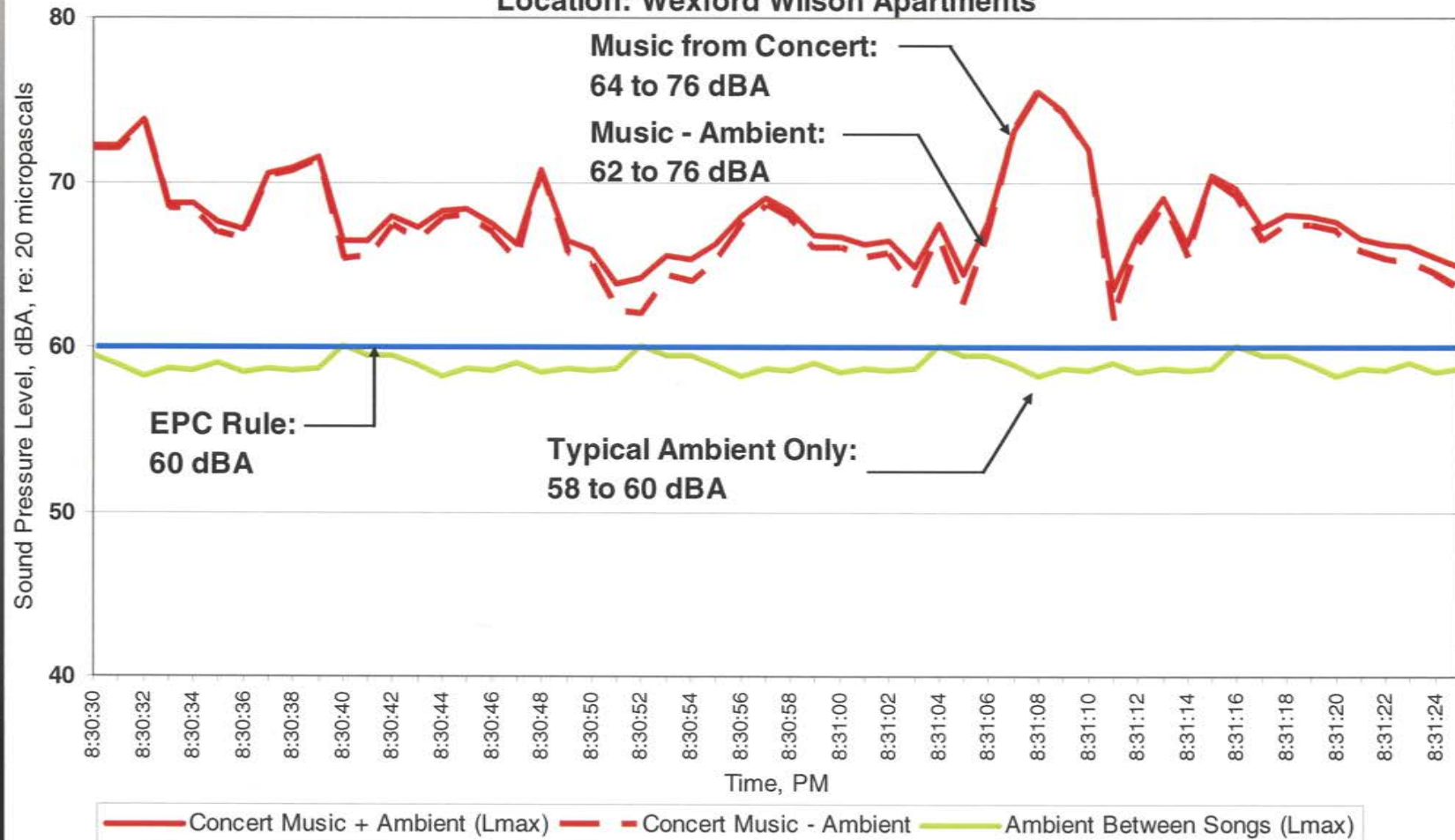




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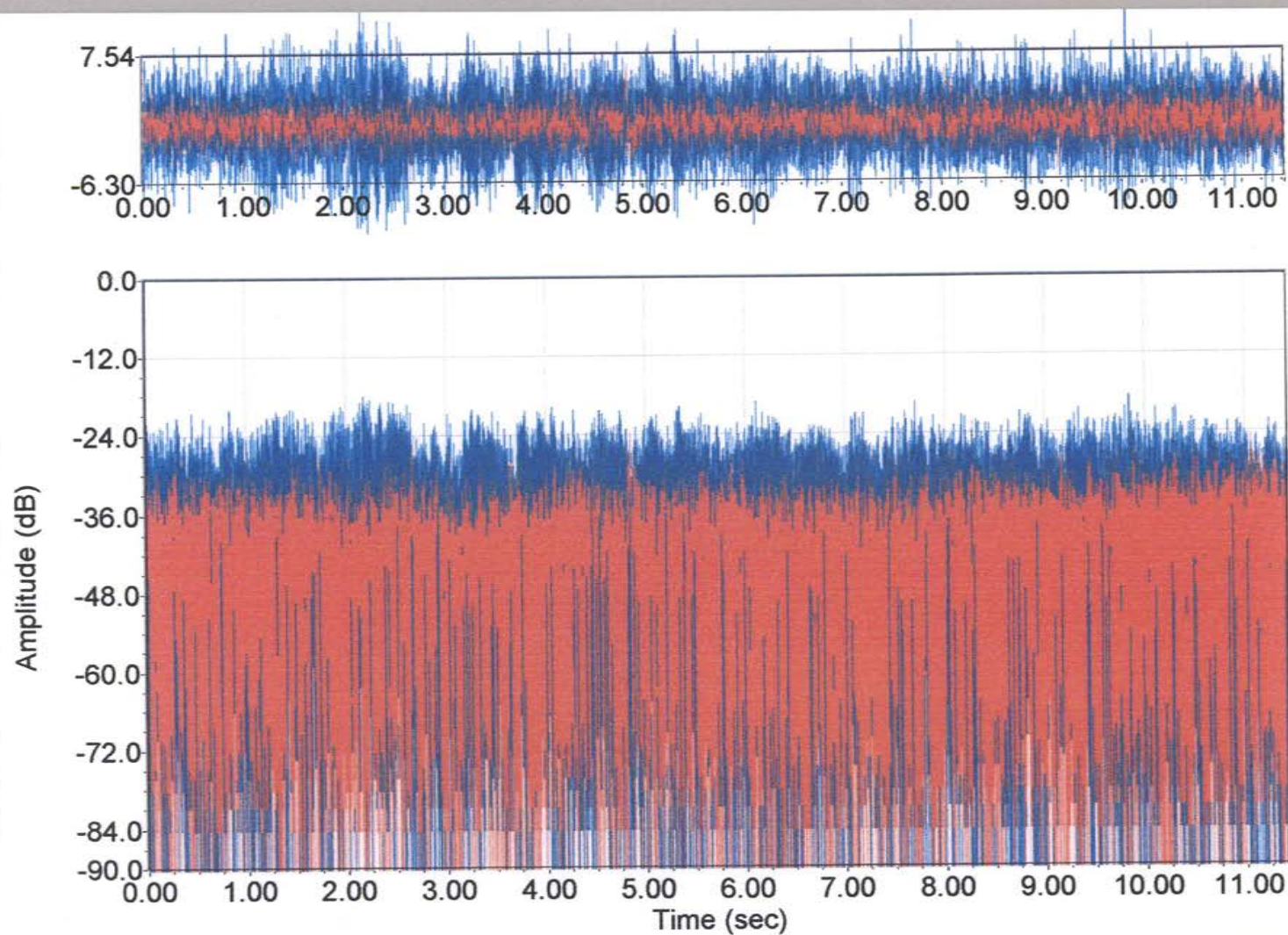
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Pink – Ambient traffic noise

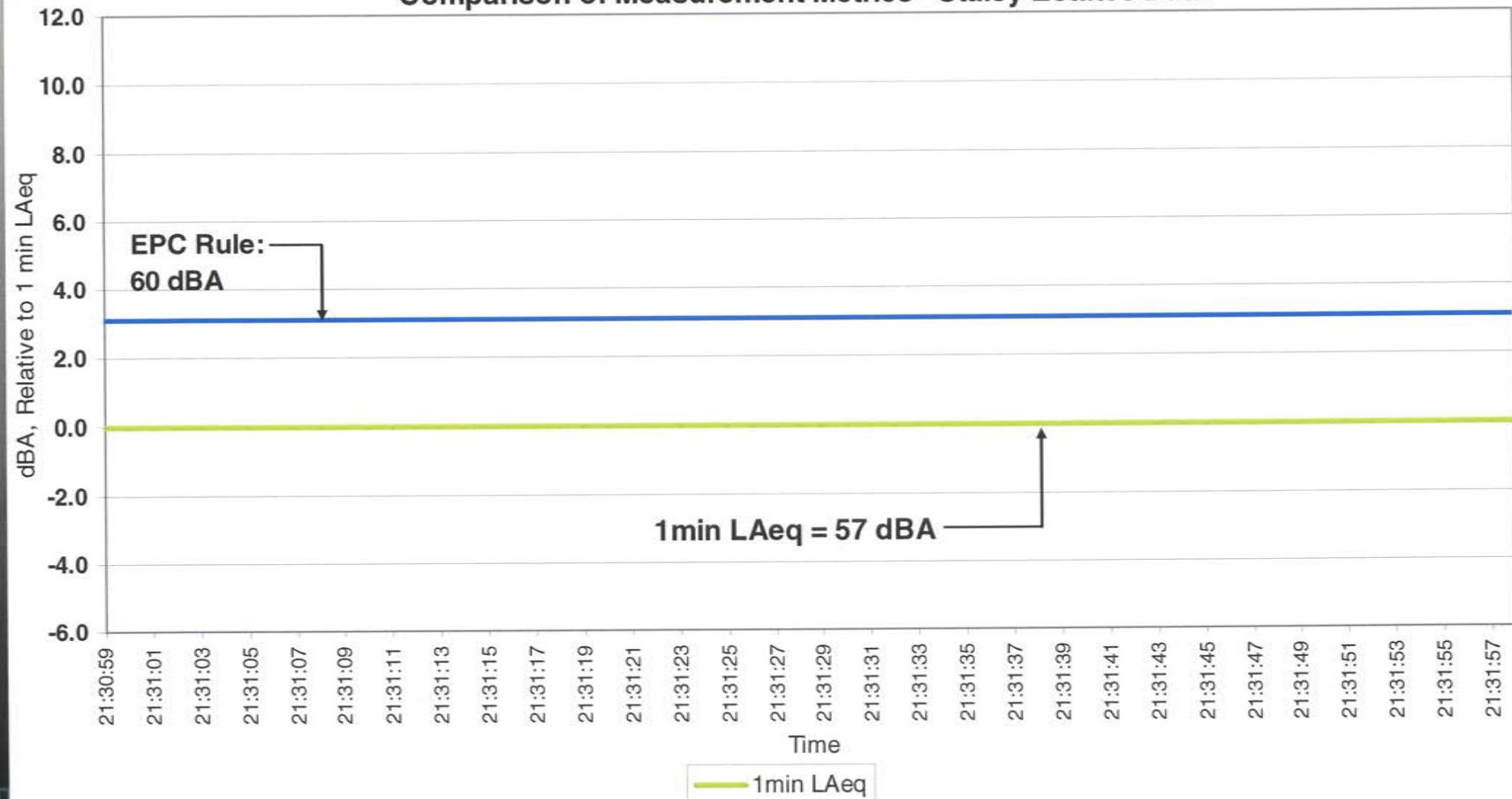
Blue – Concert music playing





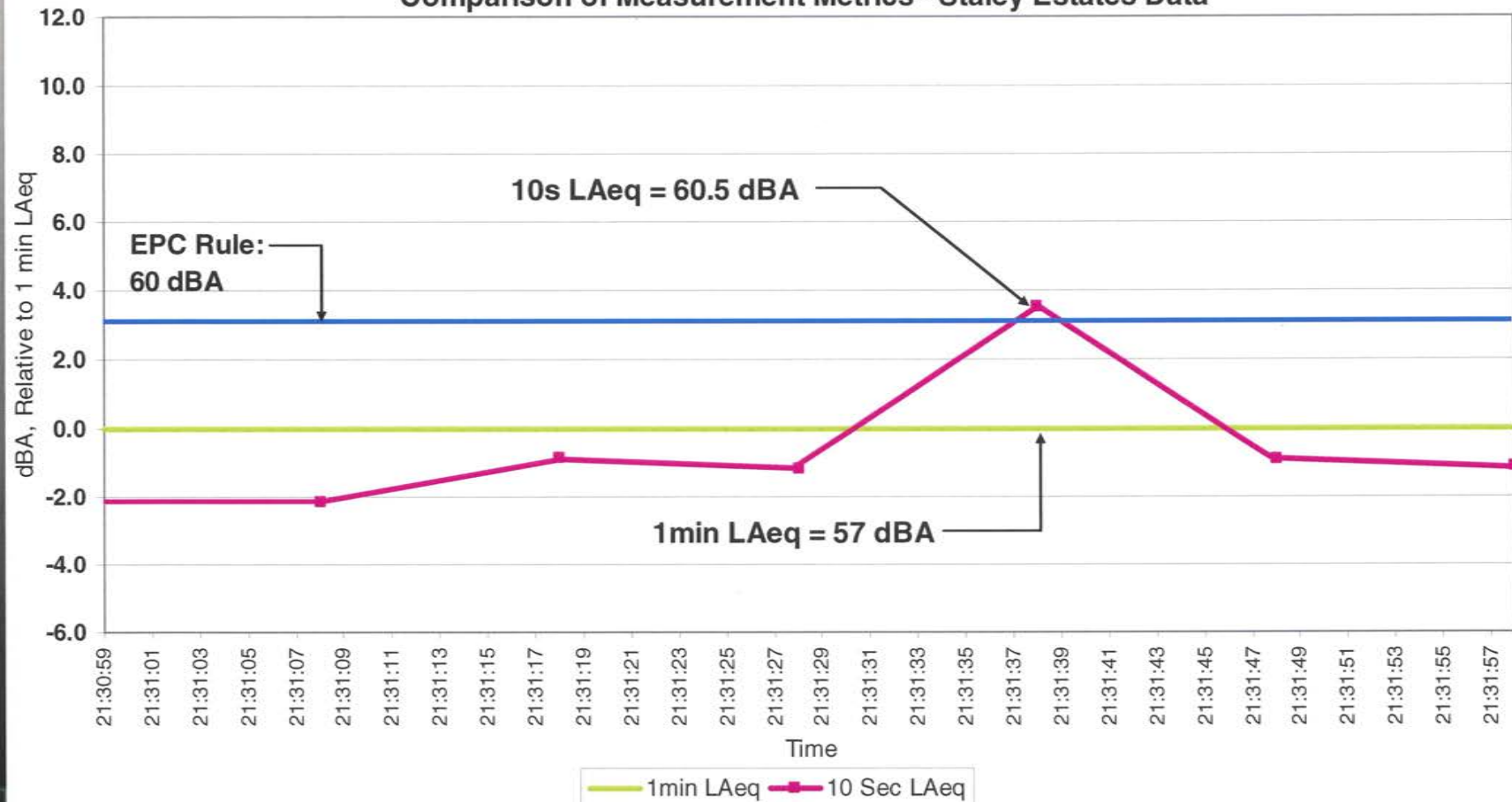
# NOT ALL dBA's ARE CREATED EQUAL

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Comparison of Measurement Metrics - Staley Estates Data



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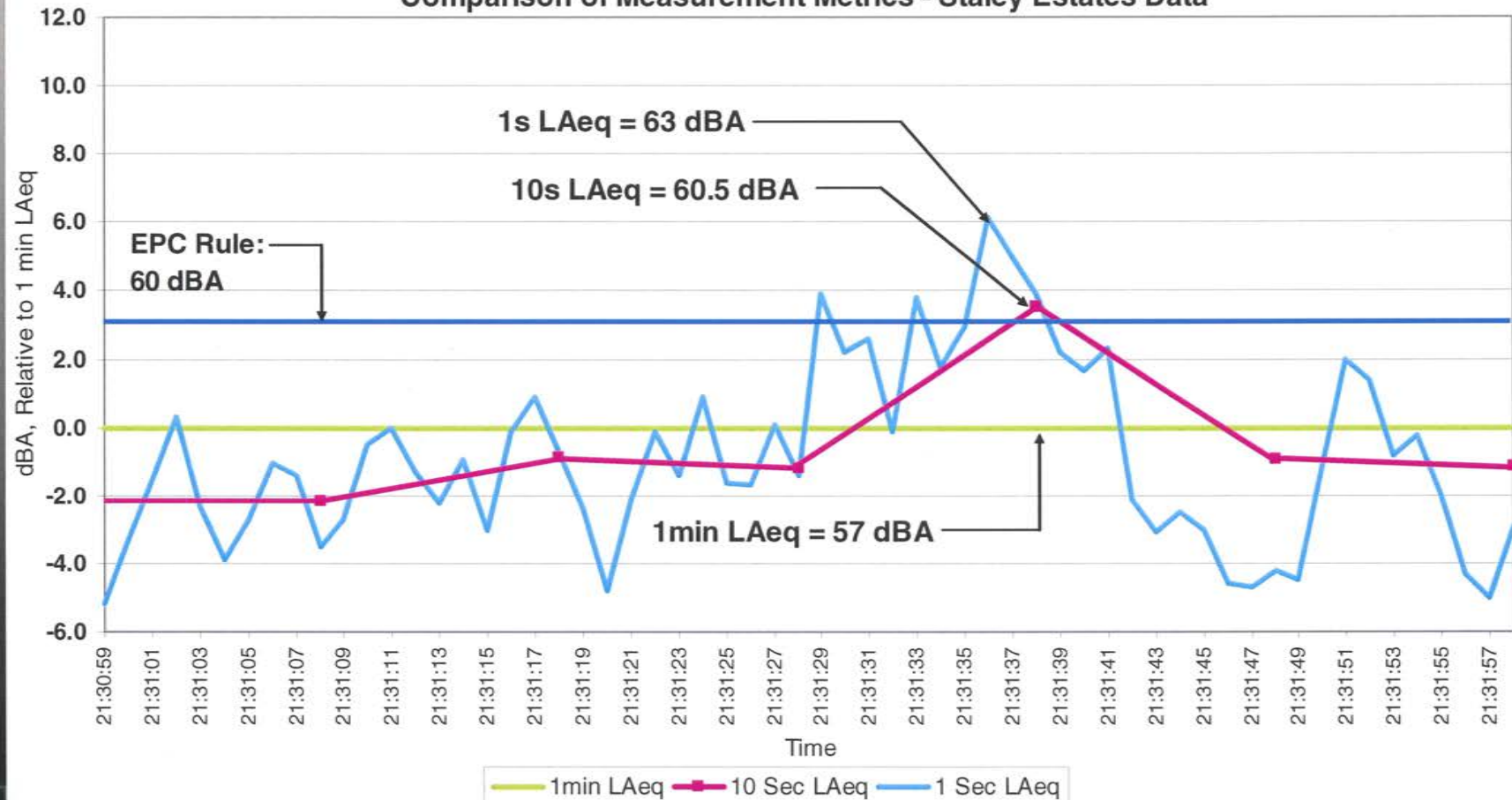
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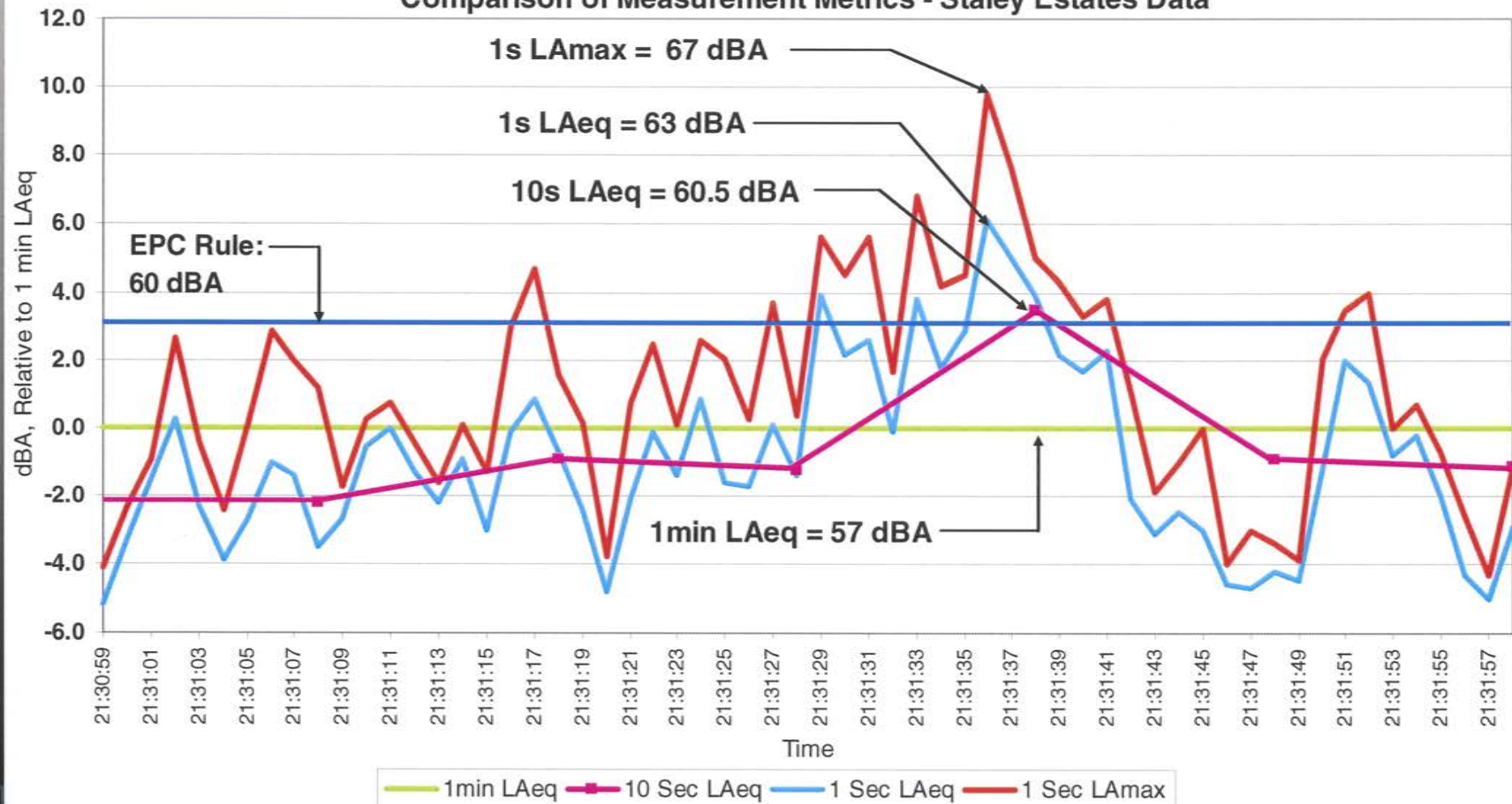
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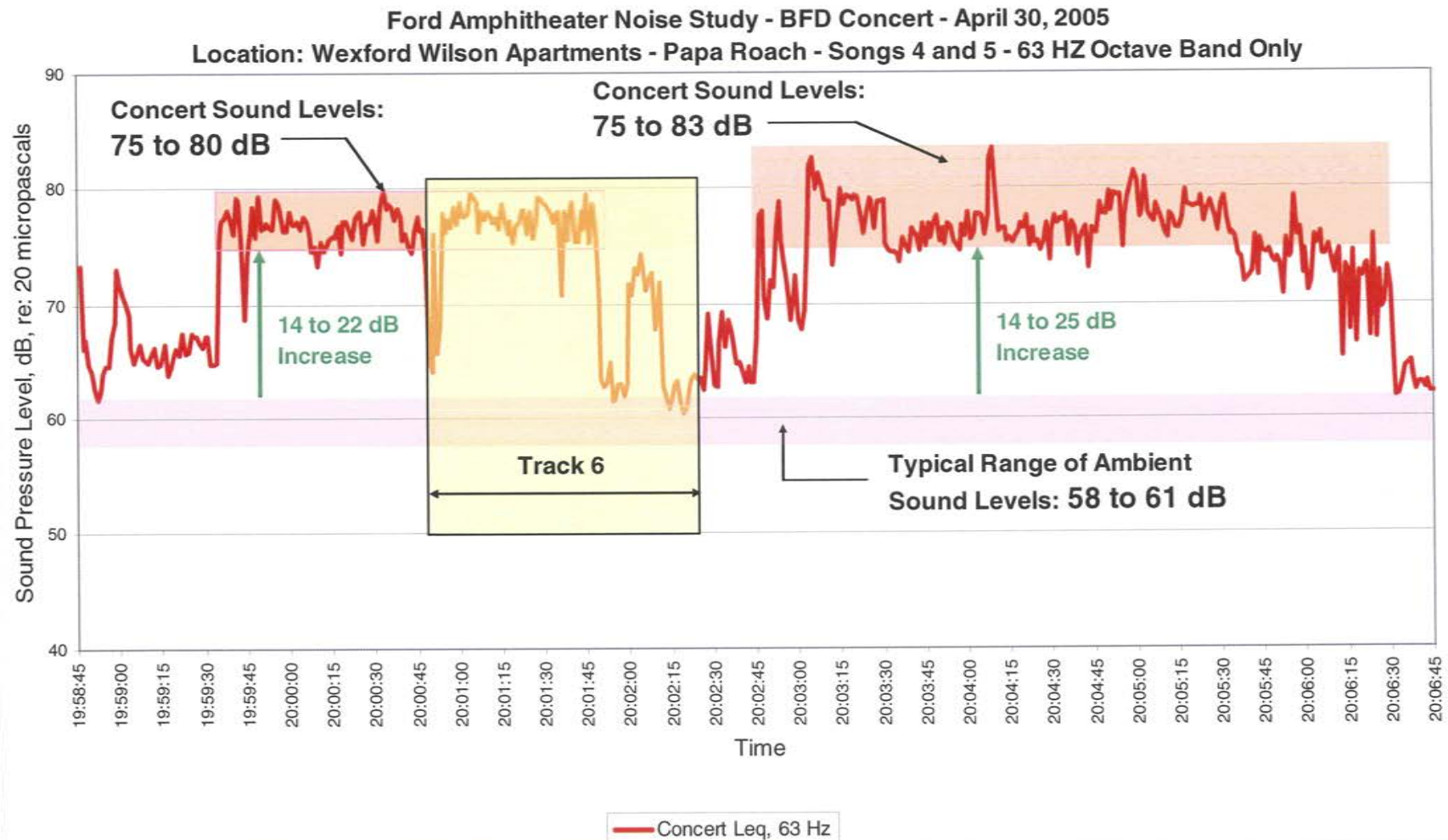


# NOISE RULE WAIVER REQUEST

## Requested Change in Metric and Sound Level

Standard	EPC Noise Rule	Waiver Request
Daytime Overall	1 sec Lmax = 60 dBA	5 min L10 = 65 dBA (Lmax = 70 to 73 dBA)
Nighttime Overall	1 sec Lmax = 55 dBA	5 min L10 = 65 dBA (Lmax = 70 to 73 dBA)
Octave Band (63 through 500 Hz)	1 sec Lmax = 65 dB	5 min L10 = 75 dB (Lmax = 80 to 83 dBA)

# THE BASS NOISE PROBLEM





Source:

Cars and Trucks on Nearby Interstate and Roads

Sound Level:

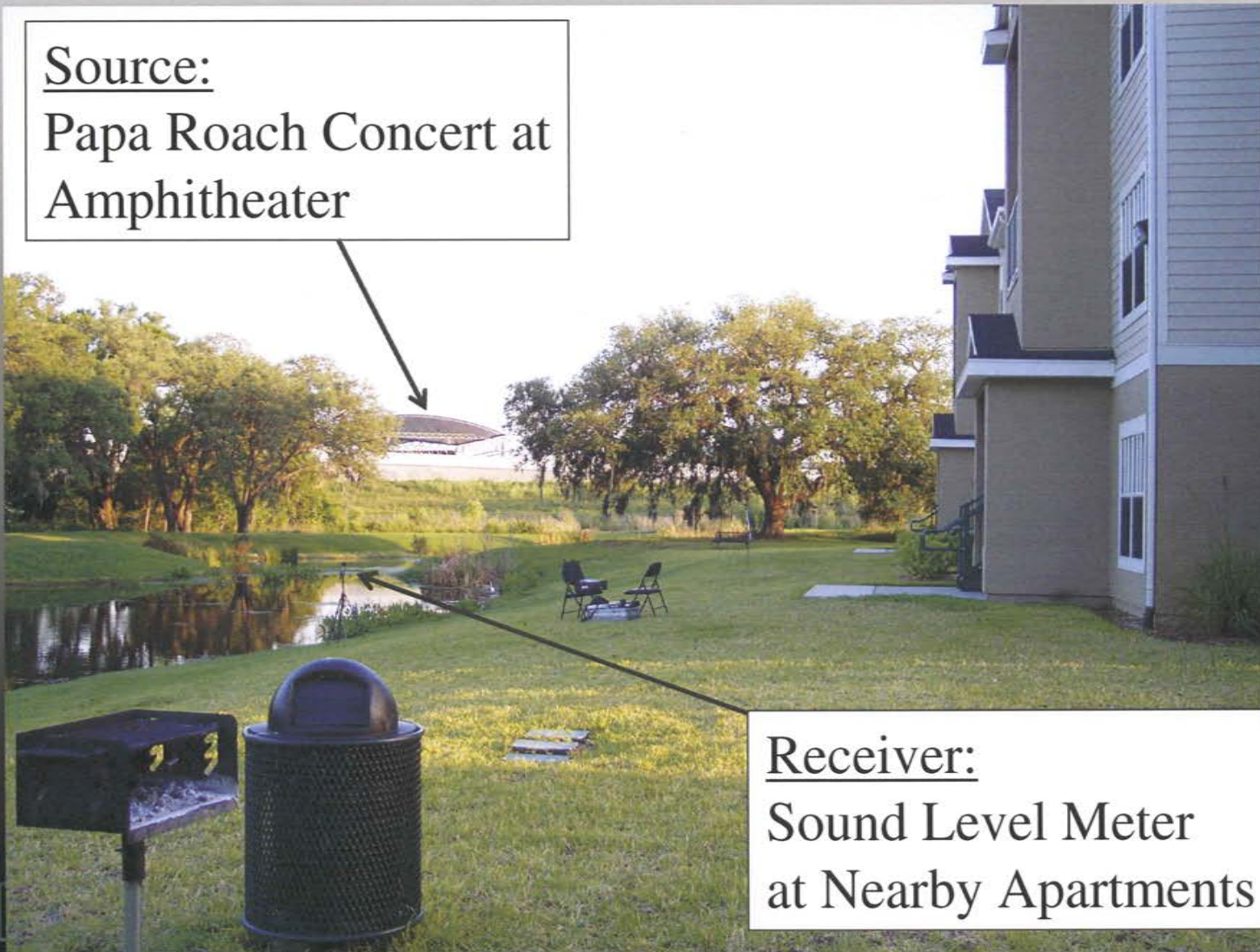
**Lmax Overall =**

**54 to 57 dBA** 📢



Source:

Papa Roach Concert at  
Amphitheater



Receiver:

Sound Level Meter  
at Nearby Apartments



# SO WHAT DOES IT SOUND LIKE?

## Audio Track Comparison of Sound Levels

Track	Overall Sound Level	63 Hz Octave Band Sound Level
1. One of Worst Cases Recorded 	L10 = 70 dBA	L10 = 83 dB

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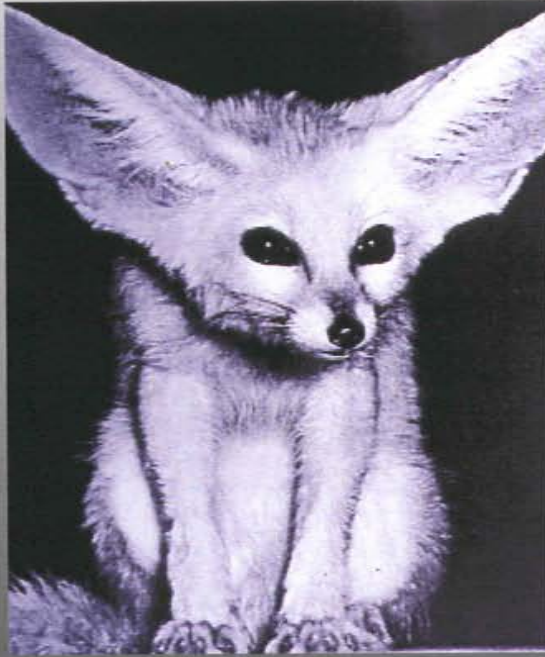
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4. EPC Noise Rule Daytime	Lmax=60 dBA	Lmax = 65 dB



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4. EPC Noise Rule Daytime	Lmax=60 dBA	Lmax = 65 dB
5. EPC Noise Rule Nighttime 📢	Lmax = 55 dBA	Lmax = 65 dB



#### 4 Standards to be applied

1. OSHA levels that cause hearing damage
2. Levels that cause health effects other than hearing loss
3. Levels that cause sleep disturbance
4. Annoyance

#### Annoyance

Complex physical  
and psycho social  
phenomenon

Level

Duration

Relation to noise





# YBOR CITY



# Ybor City

## EXISTING SOUND LEVELS

- 85-105 dBA and higher on street
- 85 dBA existing sound level limit at center of street



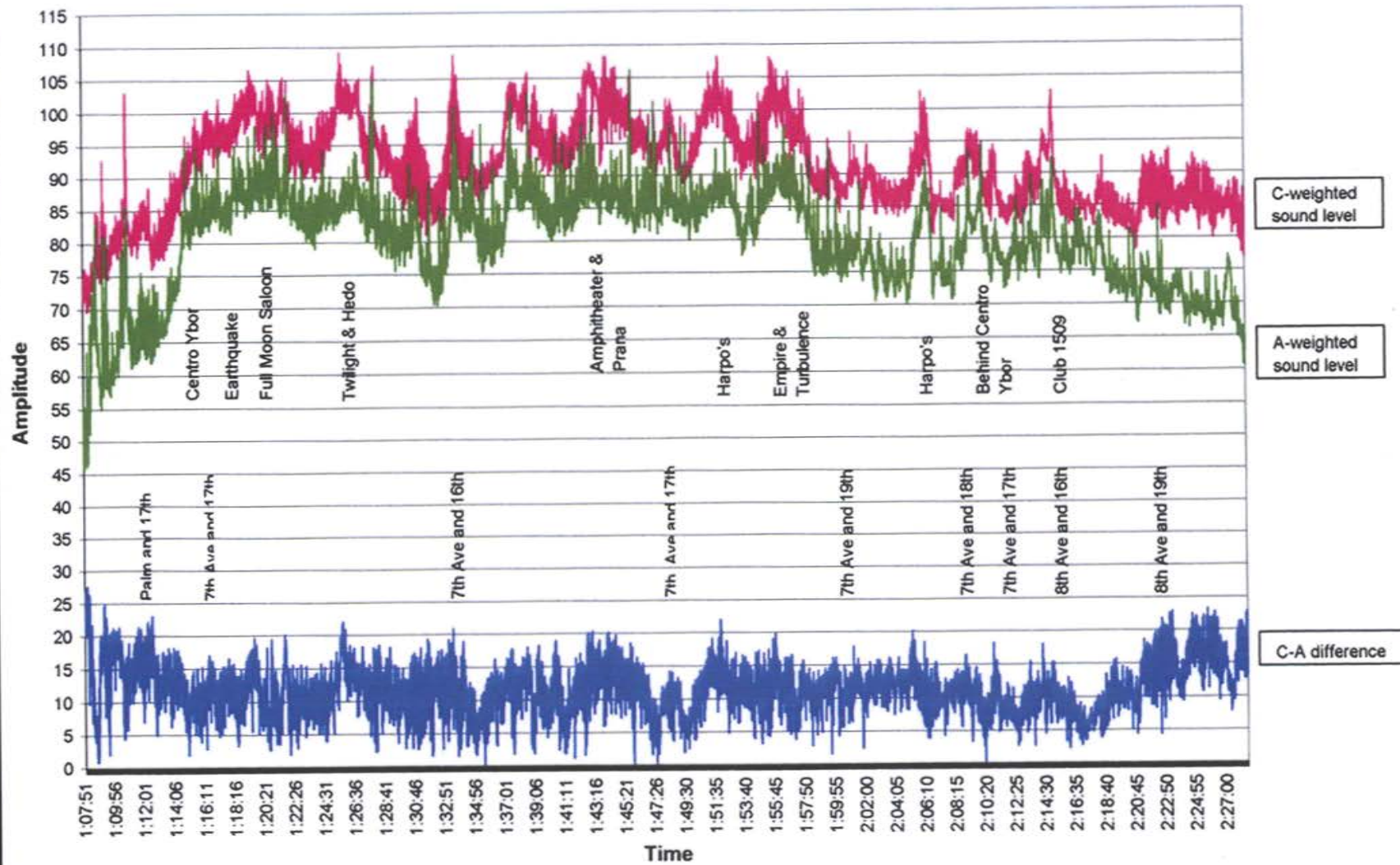
## DIFFICULT FOR OFFICERS TO ENFORCE

- Unsure of offender with measurement in center of street
- Operators turn down volume when they see officers approach with sound meters





# 7th Ave Walk Sunday 10/27/02 1:07

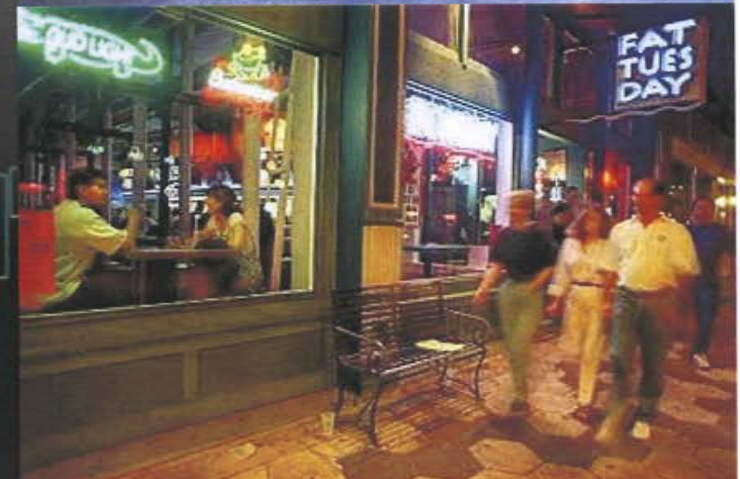
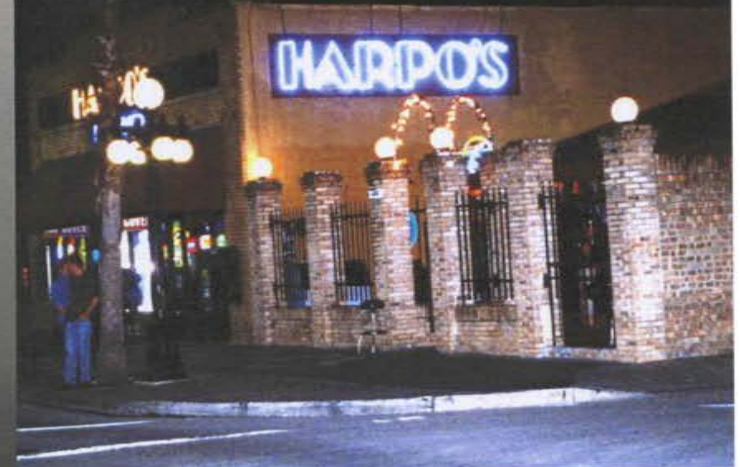


## ACHIEVE A BALANCE AMONG ACOUSTICAL ISSUES

- Maintain a lively, vibrant atmosphere essential for clubs and restaurants
- Control the propagation of music into neighborhoods to reduce disturbance to residents
- Provide a safe working environment for Law Enforcement Officers

## MUSICAL QUALITY

Maintain high quality audio in clubs not necessarily just loud





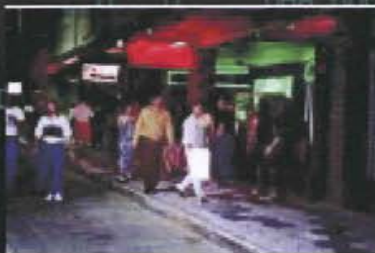
# Excessive Bass Or Low Frequency Sounds Propagate From Clubs

Comfort or annoyance issues

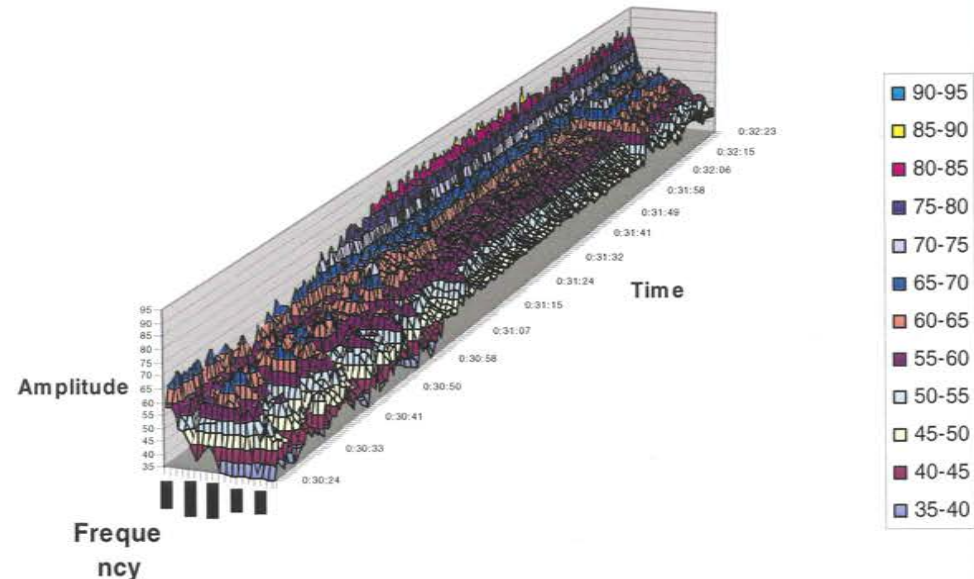
Outdoor venues with little opportunity for control

- Indoor venues

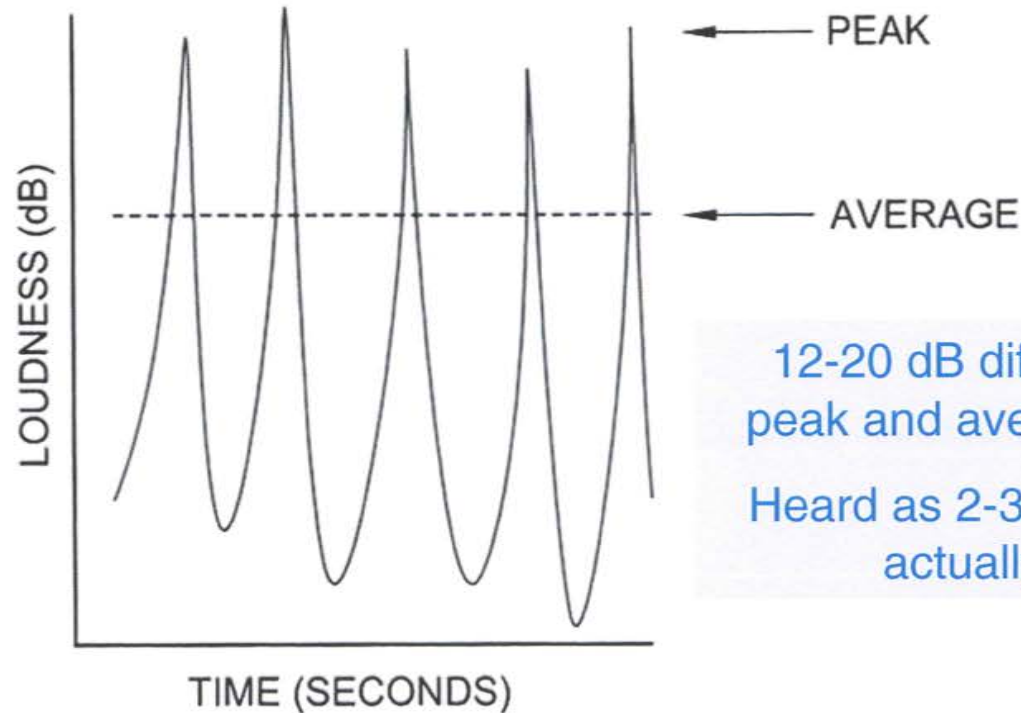
- speakers located outdoors, in windows
- windows and doors wide open
- walls and roof in poor repair
- band located poorly



Hersey Residence 1722 5th Ave Green Iguana, Carmines, Harpos  
Sunday 10/27/02 0:30



# PEAK VS. AVERAGE SOUND LEVELS

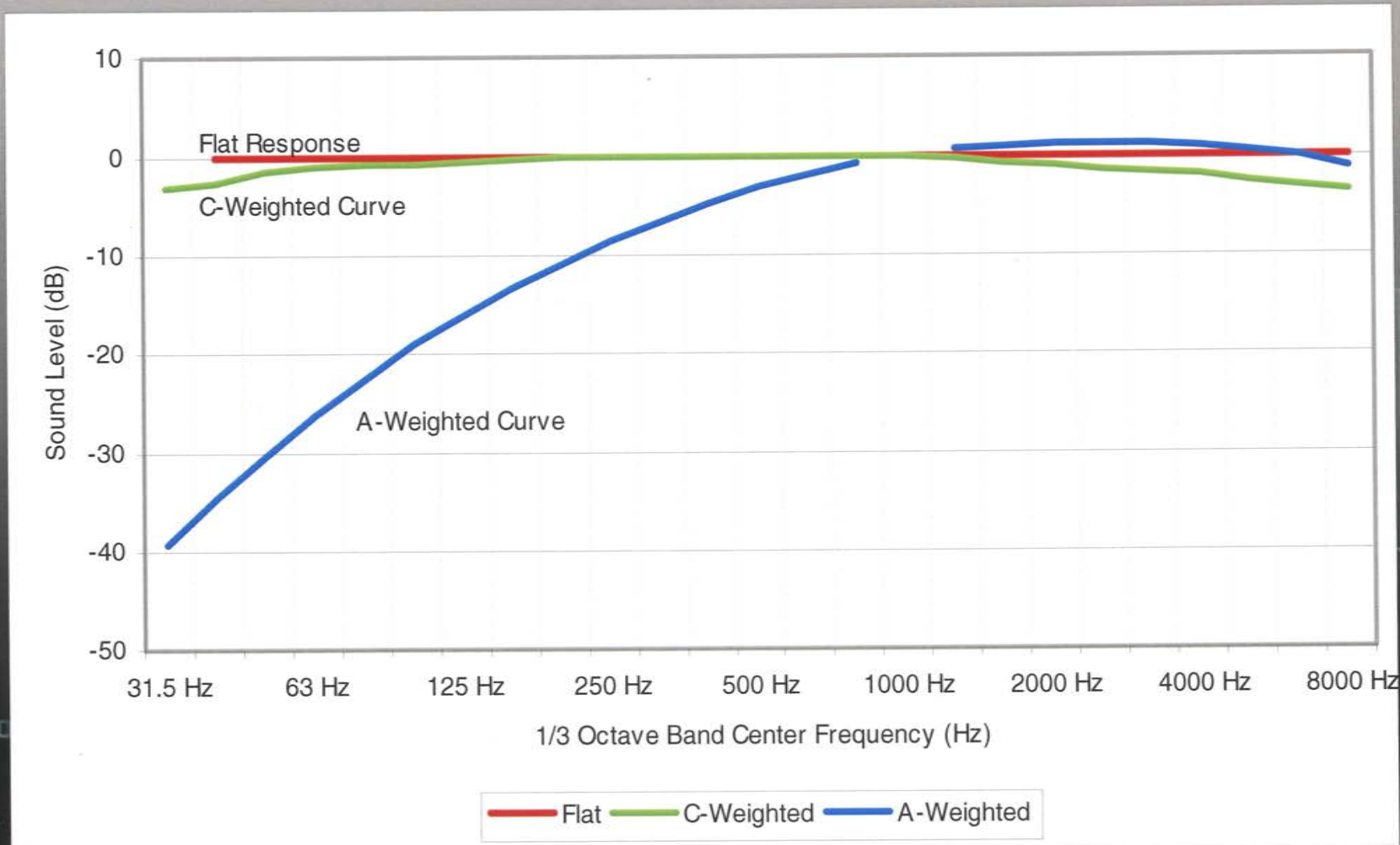


12-20 dB difference between  
peak and average sound levels

Heard as 2-3 times louder than  
actually measured

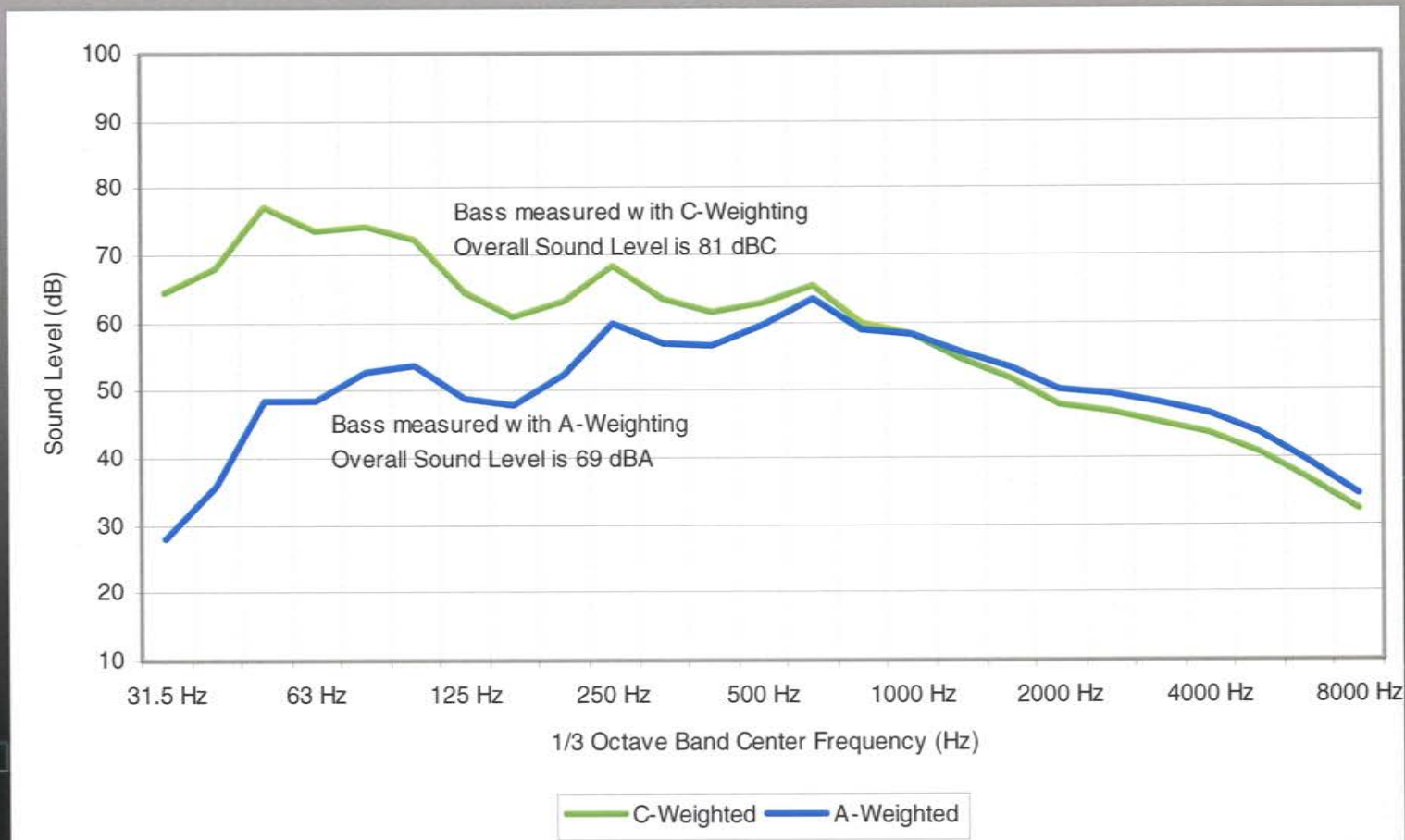


Comparison of A-Weighted, C-Weighted and Flat Weighted Sound Spectra. The A-weighted sound level reduces the low frequency sound energy.



# Comparison of A-Weighted and C-Weighted Sound Levels at the Hersey Residence -1722 5<sup>th</sup> Avenue.

The A-weighted levels deduct much of the bass or low frequency energy from the sound.





# HEALTH AND SAFETY ISSUES

## OCCUPATION SAFETY & HEALTH ADMINISTRATION (OSHA)

- Workers exposed to sound levels over 85 dBA for 8 hour shift
- Required Hearing Conservation Plan
- 90 dBA – Require Hearing Protection Devices

## OFFICERS IN YBOR CITY

All exceed 85 dBA  
Most exceed 90 dBA



**Maximum distances for just reliable communication shouting**

95 dBA	1' – 6'
90 dBA	2'
85 dBA	3'
80 dBA	5'
75 dBA	10'
70 dBA	16'

# CURRENT RECOMMENDATION

- 75 dBA
  - 87 dBC
  - Measure at source property line
  - Short Term Average Sound Level
  - Link to Zoning and Building Code for New and Renovated Construction
- Police Officer Communication & Safety
  - Limit Low Frequency Sound Propagation to neighborhood
- Allow source identification
- Measure actual disturbing sounds of music





## PRACTICAL ISSUES FOR IMPLEMENTATION

### 1. INDOOR VENUES

- Remove Speakers from street or play at lower levels
- Close windows & doors and other openings
- Acoustic treatment inside clubs or use distributed loudspeaker systems
- Control audio as needed

### 2. OUTDOOR VENUES

- Construct partial enclosures
- Speaker orientation
- Audio system control

### 3. 4 PART AUDIO SYSTEM CONTROL

- Equalization to reduce high bass emphasis
- Compression to limit transient bass peaks
- Volume control (manual)
- Automatic level detection and volume control

# CONCLUSIONS

## 1. Reasonable standard

- 75 dBA is higher than most communities in US
- 85 dBA is among highest allowable municipal sound level limits in US

## 2. Safe environment

- Control sound exposure for law enforcement officers, citizens and workers

## 3. Positive change

- Maintain historic character and urbane vitality
- Allow growth and diversification

## 4. Vision for future of Ybor City

- Vital mixed use urban district
- Full time residents in homes, apartments and condominiums
- Active shopping and restaurant district
- Exciting entertainment venues



# The Acoustics of the New Urbanism is a Potential Nightmare



- QUIET COMMUNITIES
- Meet existing laws
- Plan for and design community soundscape
- Provide for a better tomorrow





- Keynote Sounds
- Traffic
- Air conditioners
- Noise





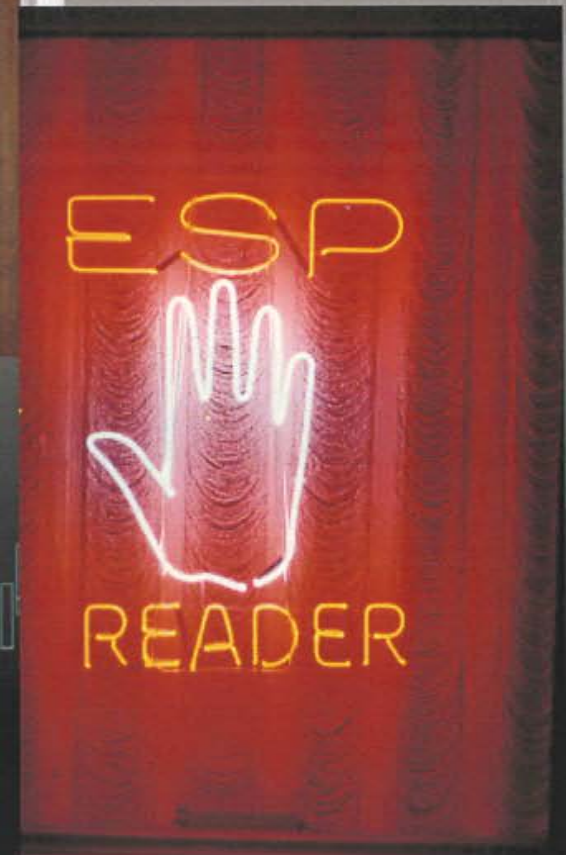
- QUIET COMMUNITIES
- Reduce, buffer mitigate noise
- Preserve and enhance desirable sounds
- Design for new sounds and social spaces





## Conclusions

- A decibel is not always a decibel
- Depends on
  - Sampling
  - Averaging
  - Frequency (pitch)
  - Instrumentation
  - Time period



# Make your buildings sing!



- Work with a well qualified acoustical consultant who is a member of a nationally accredited professional organization such as: the National Council of Acoustic Consultants (NCAC), the Institute of Noise Control Engineers (INCE), and the Acoustical Society of America (ASA)

**[www.siebeinacoustic.com](http://www.siebeinacoustic.com)**





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