

**When hands are tied:  
Monitoring the air quality to  
move policies forward in NC**



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# Problem/Objective

In a state limited by a preemptive law and stymied by a culture where tobacco once ruled, tobacco control advocates often find their message falling on deaf ears.

# Methods

- Roswell Park model
- Used SidePak to monitor PM 2.5 (an accepted marker for SHS levels)
- Monitored air in local restaurants, bars, bowling alleys, bingo halls, and a large county airport.



# The Simple Science Lesson

- ◆ The SidePak Personal Aerosol Monitor measures respirable suspended particles (RSP).
- ◆ Specifically, the concentration of particulate matter in the air smaller than 2.5 microns in diameter.  
(Particulate Matter (PM)<sub>2.5</sub> - 100 times smaller than a human hair)

# EPA Recommendations

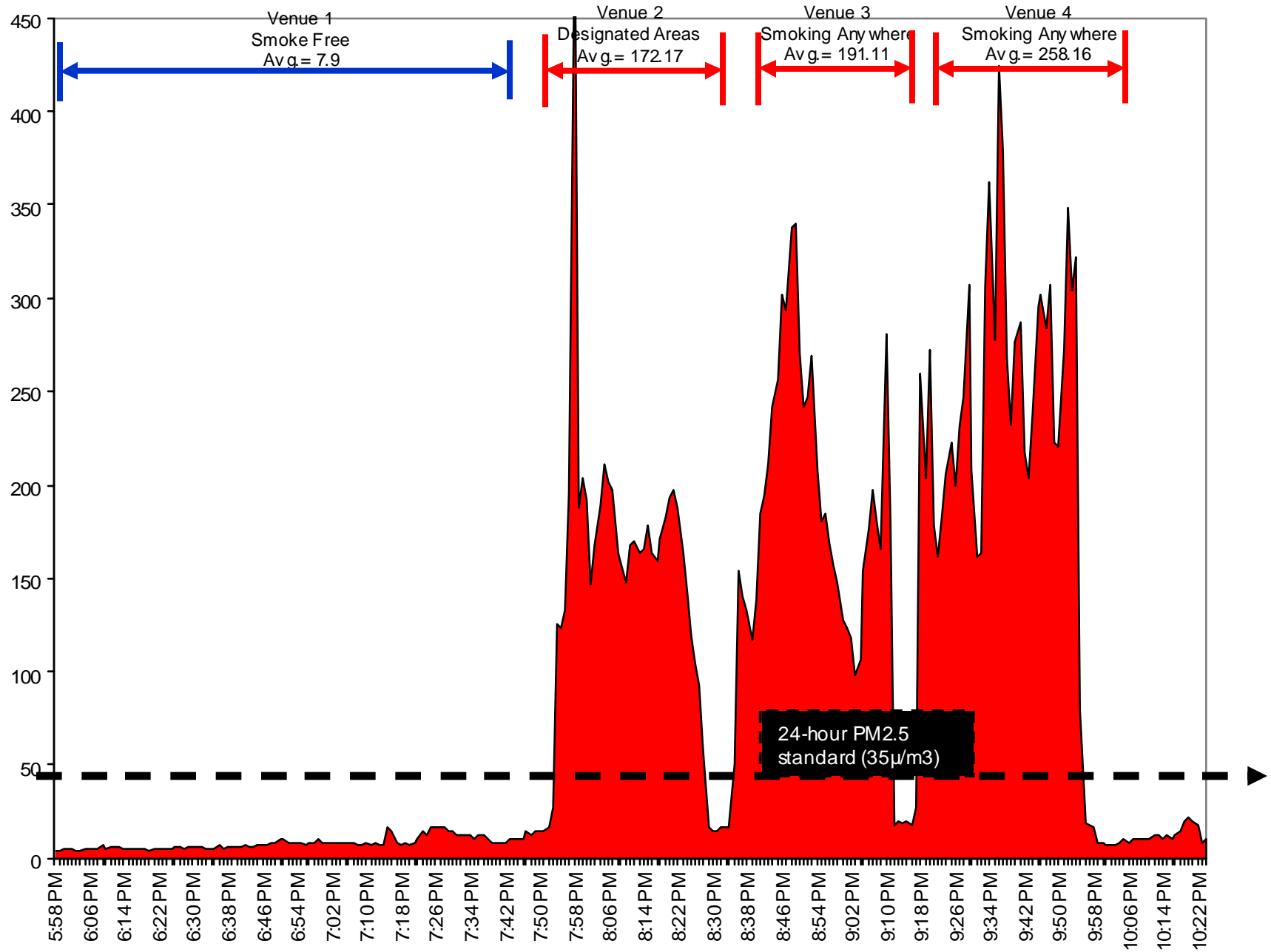
*In order to protect the public health, the EPA has set the following limits:*

- ◆ 15  $\mu\text{g}/\text{m}^3$  as the average annual level of  $\text{PM}_{2.5}$  exposure
- ◆ 35  $\mu\text{g}/\text{m}^3$  24-hour level of  $\text{PM}_{2.5}$  exposure (65 before Nov 2006)

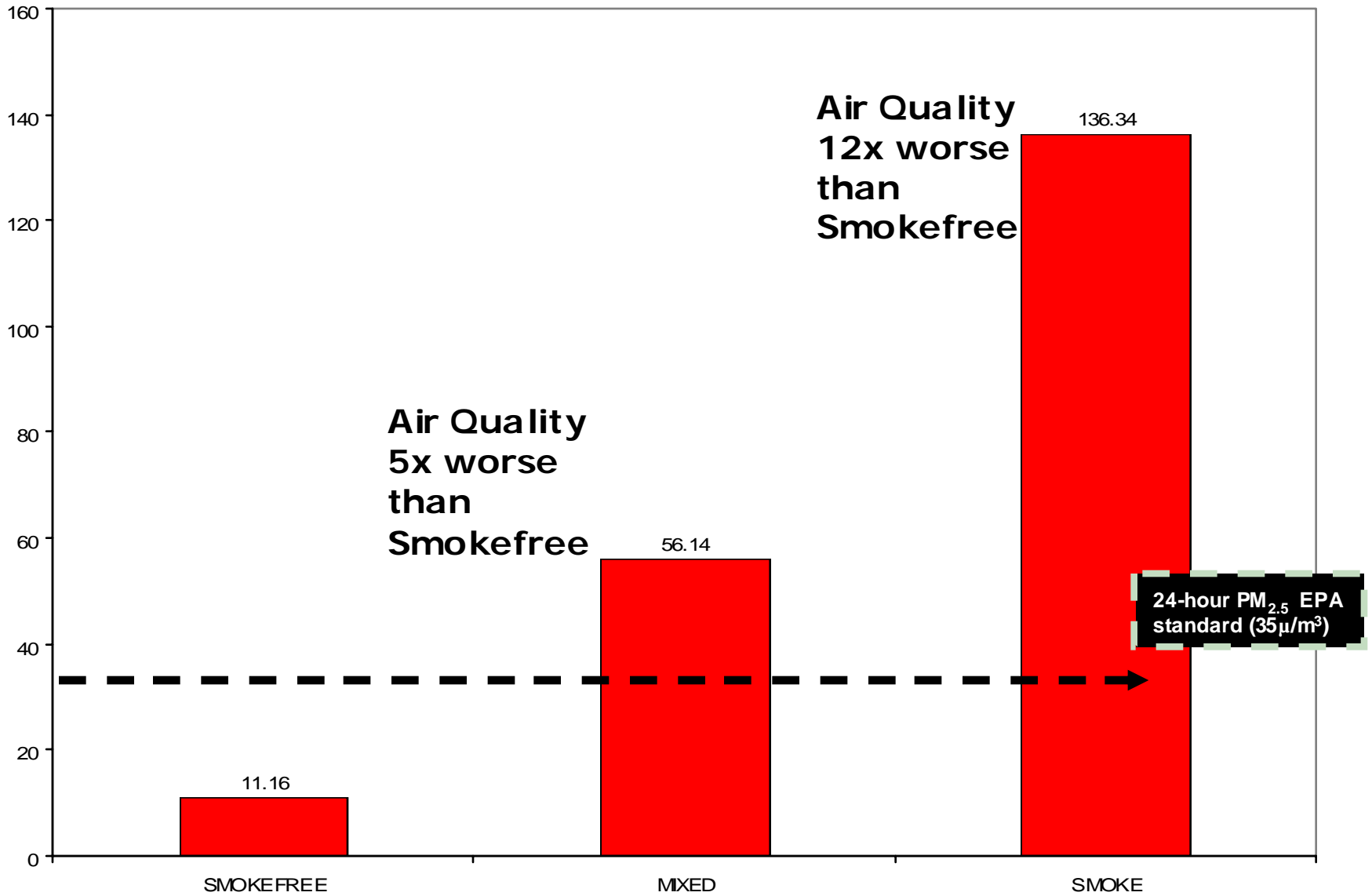
# US EPA Air Quality Index

Air Quality	Air Quality Index	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Health Advisory
Hazardous	=301	=251	
Very Unhealthy (alert)	201-300	151-250	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.
Unhealthy	151-200	66-150	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
Unhealthy for sensitive groups	101-150	41-65	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
Moderate	51-100	16-40	Unusually sensitive people should consider reducing prolonged or heavy exertion
Good	0-50	=15	None

# Restaurant example: 1 smoke free restaurant, 3 smoke filled, Mecklenburg, NC, 2006



# Summary of Restaurant/Bar Indoor Air Data, Mecklenburg, NC, 2006





# The Charlotte Observer

WEDNESDAY, OCTOBER 18, 2006 +

www.charlotte.com

C D E F • | Price varies by county | 50

## INSIDE

Business | 1D

### Springs to cut 465 jobs in Lancaster

Carolina's textiles took another hit Tuesday when Springs Global announced it will cut 465 jobs in Lancaster County as it moves more work to South America.



Business | 1D

### Spinoff projects boost revitalization

Small, innovative projects in close-in older neighborhoods are a Next Big Thing, business columnist Doug Smith says.

## Study: Nonsmoking sections carry risk



1ST DECREASE SINCE APRIL 2003

## Home sales slip a sign? Wait and see

*Agents unfazed yet, cite slowdown in other cities for 2.3% dip here*

BY ALLEN NORWOOD  
Home Editor

Following slowing sales and falling prices in cities across the country, monthly home sales in the Charlotte area were down in September - the first drop in more than three years.

Closings, the most-often cited measure of home sales, fell 2.3 percent from September a year ago. It's a small drop, but the decline contrasts sharply with August, when closings on homes, condos and townhouses sold through Carolina Multiple Listing Services were up 17 percent.

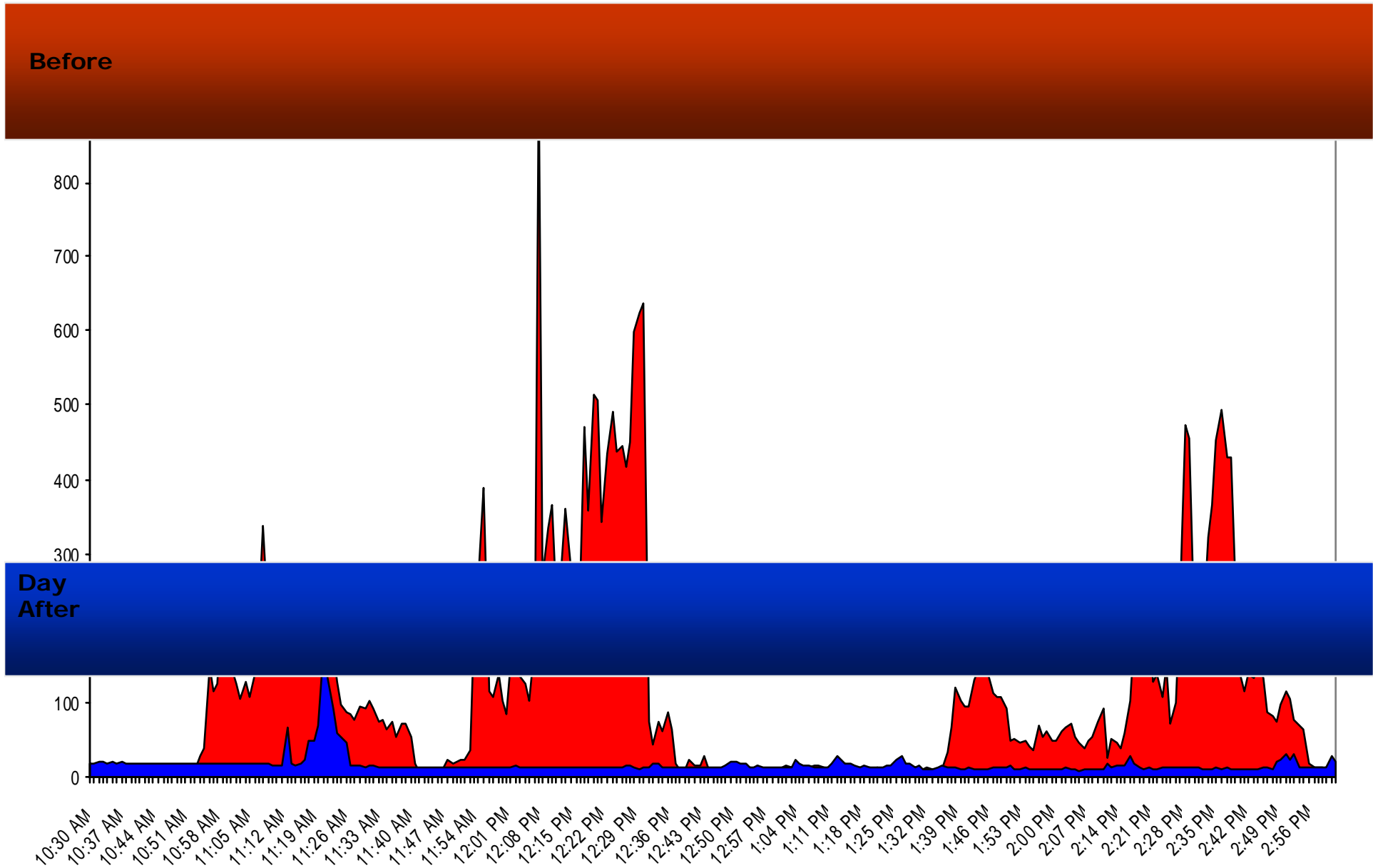
Veteran real estate agents say they'll wait to see whether the September drop is a monthly blip or signals a deeper decline. Either way, they agree that buyers and sellers must adapt to new market demands. Sales of the most expensive homes have been especially hard hit.

Agents say slower sales in other cities have stalled business in Charlotte. Their clients can't

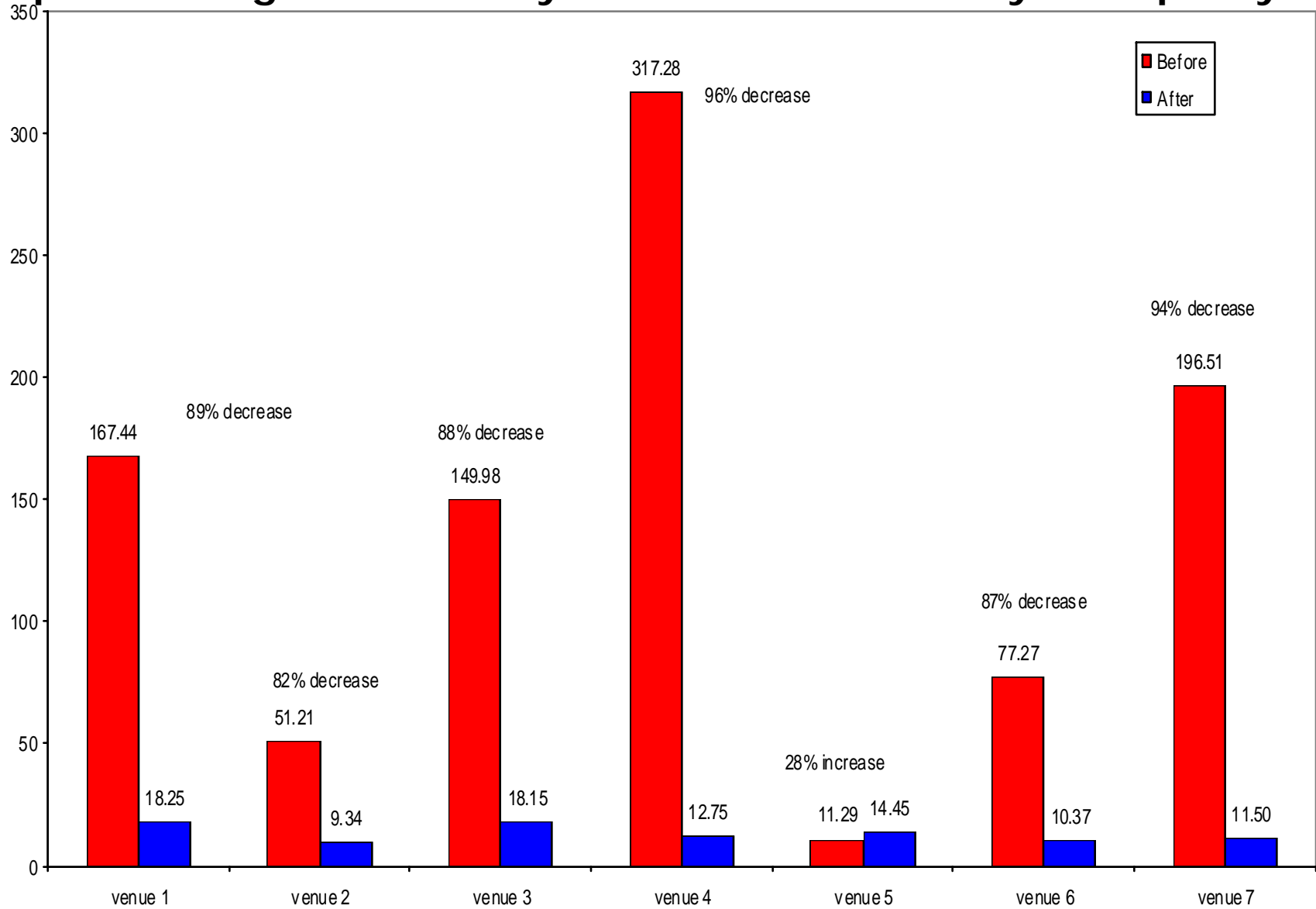
# Airport Information

- Large County International Airport has over 28 million passengers passing through every year.
- One of the busiest airports in the nation.
- Serves commercial, corporate, private and military operations and employs approximately 18,000 on site.

# Airport: Particulate Matter (PM2.5) by venue before and after policy change, Mecklenburg, North Carolina, 2007



# Airport: Change in PM2.5 by Venue before and day after policy change



# Summary of Results

- ◆ Average PM 2.5 levels dropped 90% from before policy was implemented to the day of the change
- ◆ No statistical reductions were found among areas that were already smoke free

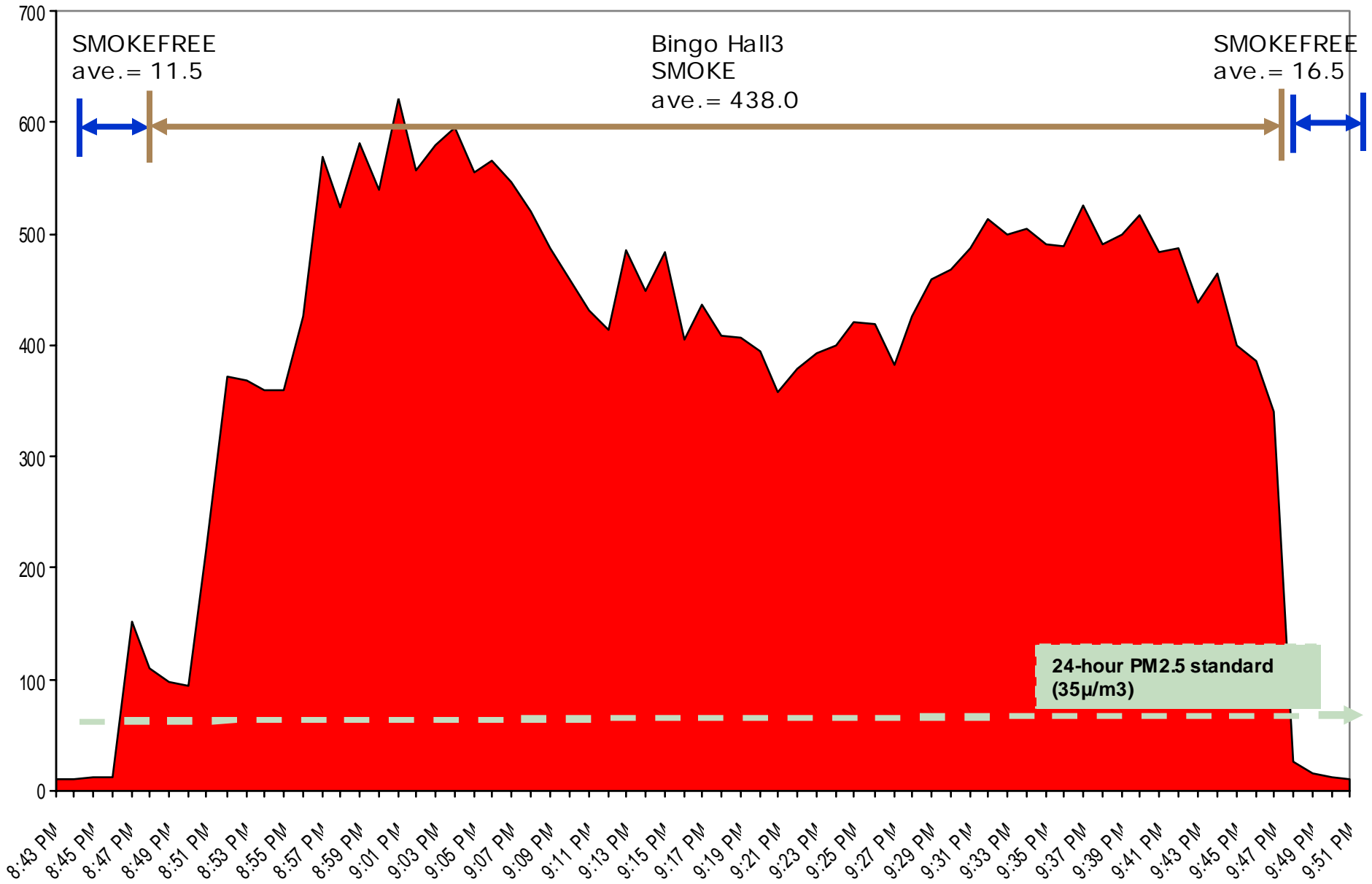


# **Study to Assess Indoor Air Quality in Bingo Halls-Mecklenburg Jan - July, 2007**

# Summary of Results

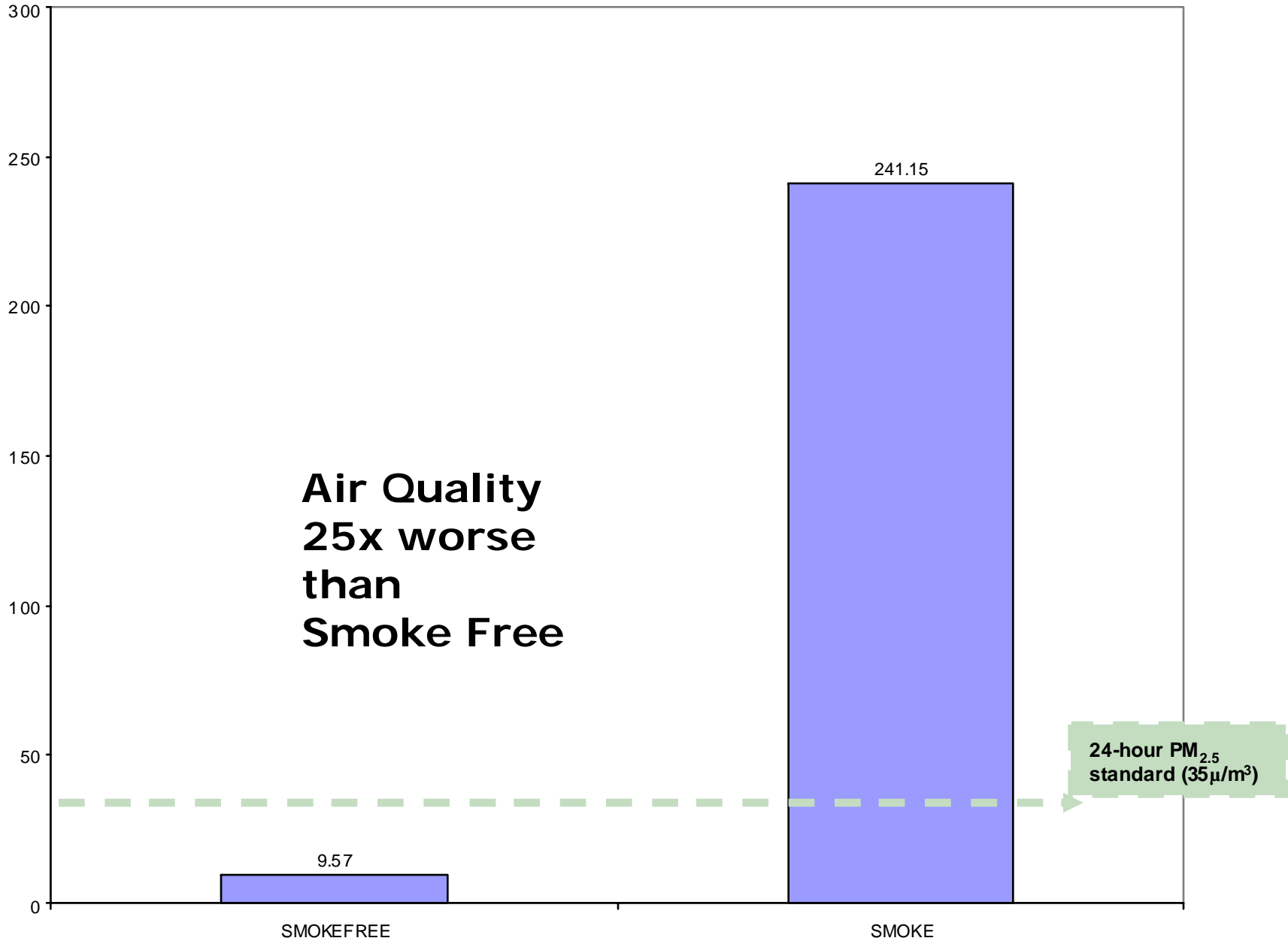
- ◆ Average PM 2.5 levels in smoke free bingo venue was  $11.31\mu\text{g}/\text{m}^3$
- ◆ Average PM 2.5 levels in smoking bingo venues was  $241.15\mu\text{g}/\text{m}^3$
- ◆ Air quality inside one smoking bingo venue was 38.7 times worse than smoke free bingo venue

# Bingo Hall 3-Mecklenburg County- July 30, 2007





# Bingo Halls Mecklenburg County by Policy Type- 2007



# Outcomes

- ◆ Initial release of restaurant/bar data in October, 2006, led to vast amount of newspaper, TV news, radio coverage. There were numerous letters to the editor as well as blog posts. Hits to our local smoke-free dining website were 10 times higher than the previous month.
- ◆ Data was picked up in media outlets across the state.

# Outcomes, cont.

- ◆ Data was shared with public policy makers across the county, leading to 4 of 6 town councils, 1 city council, and 1 Board of County Commissioners to vote in support of local authority to pass regulations on smoking in public places.
- ◆ After collecting the bingo hall data it was shared with one fraternal organization who ran a bingo hall. They voted at that time to pass a smoke-free policy. However, a change of leadership since that time has put the issue on hold.

# Take Home Messages

- ◆ Smoke free locations have consistently and significantly cleaner air
- ◆ Workers and customers in non smoke-free venues are still exposed to dangerous levels of indoor air
- ◆ Indoor air monitoring offers new perspective, quantifies danger, gives raw data to decision makers to support policy changes, and creates earned media opportunities