

# **The Mickey Leland National Urban Air Toxics Research Center (NUATRC)**

**Endicott House**

**Air Toxics Workshop Summary**

**August 15, 2006**



**Craig Beskid, President**

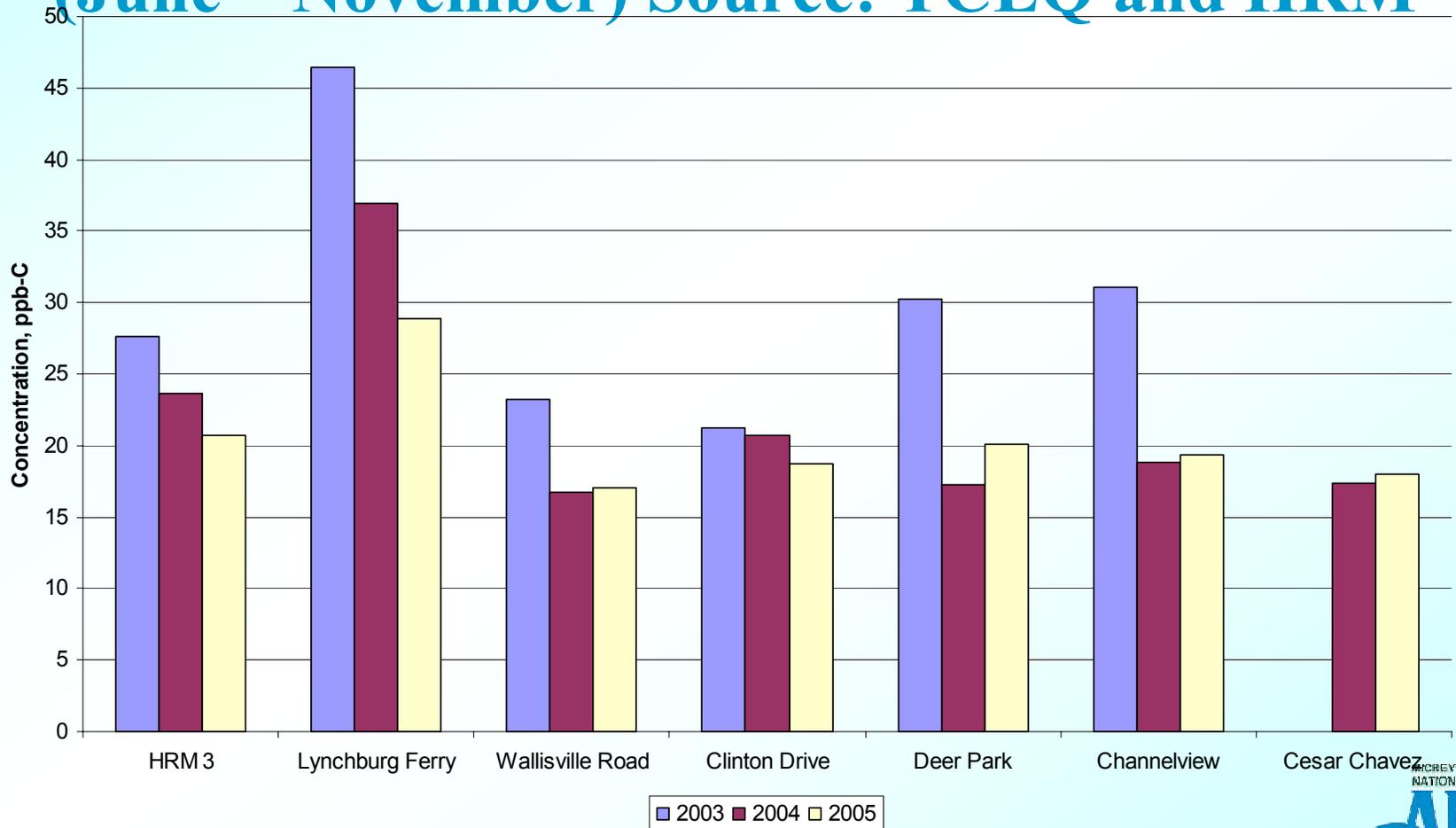
# *Why Sponsor an ATW in Houston?*

- ❖ Despite large population, significant industrial and mobile source emissions, a large quantity of air quality data, more Houston-specific research is needed
- ❖ Desire to focus attention on policy-relevant research

# *Why Sponsor an ATW in Houston?*

- ❖ Houston MSA population was 5,280,077 in 2005
- ❖ Houston MSA covers 10,062 square miles
- ❖ Houston Combined Statistical Area (CSA) has nearly 40 percent of the nation's base petrochemical capacity.
- ❖ Texas Gulf Coast has a crude operable capacity of 4.035 million barrels of refined petroleum products per calendar day — 87.0% of the Texas total and 24.5% of the U.S. total.
- ❖ Population, extreme meteorology, industrial base create potential for unique exposures

# Average HRVOC Concentrations at Houston Ship Channel PAMS GC Sites (June – November) Source: TCEQ and HRM





A Workshop for Researchers and Policymakers

**Air Toxics: What We Know,  
What We Don't Know,  
and What We Need to Know**

October 17-18, 2005

University of Houston Hilton - Houston, Texas



**Co-Sponsored by:** The Mickey Leland National Urban Air Toxics Research Center (NUATRC)  
The Texas Commission on Environmental Quality (TCEQ)  
The University of Houston (UH)  
The American Petroleum Institute (API)  
The Greater Houston Partnership (GHP)  
The U.S. Environmental Protection Agency (EPA)

**Workshop Goals:**

This workshop will be the first of its kind in Texas to bring together the air toxic research, technical, regulatory and policymaking communities to exchange information about the status of air toxics research. Participants will learn and discuss what we already know about air toxics in the Southeast Texas region, identify the top unresolved questions that need to be answered to make sound decisions on air toxics policies, and look for ways to work collaboratively to develop the answers to these questions.

**Sessions Include:**

- An overview of current and potential new air toxics regulatory and research programs in Houston
- Identification and discussion of important, unresolved questions in the fields of health effects, exposure assessment, monitoring, modeling, emissions inventories and emerging technology
- Discussions by leading researchers, regulators, and community leaders on existing policy relevant research and future research needs
- A special session on risk communication--advising policymakers and the public about risk
- Poster sessions presenting a broad cross section of cutting-edge research

**Who should attend?**

- Federal, State and Local air quality policymakers and regulators,
- Air quality researchers and professionals,
- Public health researchers, policymakers and professionals
- Stakeholders from the environmental, business, and civic communities

**Registration Fee:** \$99 (Includes breakfast and lunch both days. Fee is waived for NGO members.)  
Hotel reservations must be made separately.

**For hotel reservations contact:** UH Hilton (Rate is \$92)  
4800 Calhoun Road  
713.741.2447 (Mention special room rate for  
the Mickey Leland National Urban Air Toxics Conference.  
To receive the special room rate, reservations must be made by September 15th)

**For more registration information:**

Contact Elizabeth Hendler at [ehendler@austin.rr.com](mailto:ehendler@austin.rr.com)

Website: [http://www.sph.uth.tmc.edu/mieland/Pages/Workshop/ATW\\_Presentation.htm](http://www.sph.uth.tmc.edu/mieland/Pages/Workshop/ATW_Presentation.htm)

**Mark your calendar and plan to attend !**

**P L E A S E   P O S T**

# Agenda

## ❖ What We Know

- ❖ Monitoring
- ❖ Regulatory Programs
- ❖ Focus on Houston Research

## ❖ What We Need to Know

- ❖ Health Effects
- ❖ Exposure Analysis
- ❖ Modeling and EI
- ❖ Technology
- ❖ Risk Communication

## ❖ Learning What We Need to Know

# Air Toxics Workshop Sponsors

- ❖ Texas Commission on Environmental Quality
- ❖ University of Houston
- ❖ American Petroleum Institute
- ❖ Greater Houston Partnership
- ❖ U.S. EPA (HQ and Region 6)

# Summary

- ❖ Approximately 160 attendees.
- ❖ Attendees included researchers, regulators (federal, state, and local), NGOs, businesses, and the public.
- ❖ The two day workshop featured panel discussions and presentations regarding monitoring, exposure assessment, modeling, health effects, technology development and risk communication.

# Goals for the Air Toxics Workshop

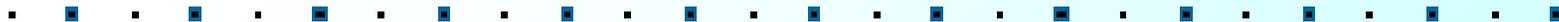
- ❖ *Gather* researchers, regulators, NGOs, businesses, and the public
- ❖ *Encourage* the use of need-based (relevant) questions to drive the inquiry and fill the knowledge gaps
- ❖ *Communicate* and make available the substantial and diverse air toxics research to reduce the fragmentation
- ❖ *Build* relationships that can help use existing science and fill identified knowledge gaps with sound science
- ❖ *Promote* the development of an integrated regional research approach to understanding air toxics issues

# Status of Air Toxics Research

❖ *Air Toxics Research is Substantial*

❖ *Air Toxics Research is Diverse*

❖ *Air Toxics Research is Fragmented*



# *Air Toxics Research is Substantial\** *(\*However, more is needed)*

- ❖ Greater than 20 different organizations in Houston currently working on AQ research and outreach projects
- ❖ Traditional academic institutions-focus increasing
- ❖ Environmental/NGOs winning grants for research
- ❖ Industry making substantial investment
- ❖ Government funding programs at all levels

# Selected Air Quality Research Organizations in Houston

- ❖ Texas Environmental Research Consortium (TERC)
- ❖ Houston Regional Monitoring (HRM), SETRPC and Texas City Monitoring Networks
- ❖ Texas Chemical Council (TCC) Industrial Health Committee
- ❖ Mayor's Task Force
- ❖ Texas Air Research Consortium (TARC)
- ❖ Houston Endowment
- ❖ Galveston-Houston Association for Smog Prevention (GHASP)
- ❖ American Lung Association (ALA)
- ❖ Citizen's Environmental Coalition
- ❖ Harris County Pollution Control
- ❖ Shell Sustainability Institute
- ❖ EPA Region VI
- ❖ Texas Dept of Health Services (DHHS)
- ❖ Mothers for Clean Air
- ❖ University of Texas
- ❖ Environmental Defense
- ❖ Mickey Leland National Urban Air Toxics Research Center (NUATRC)
- ❖ Greater Houston Partnership (GHP) Clean Air Committee
- ❖ UT-HHSC School of Public Health
- ❖ Rice University
- ❖ University of Houston

# *Air Toxics Research is Diverse*

## ❖ Projects such as:

❖ *Exposure Assessment*

❖ *Health Effects*

❖ *Acute*

❖ *Chronic*

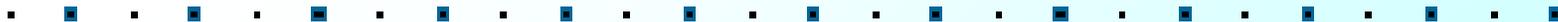
❖ *Nuisance/Odor*

❖ *Ambient Air Measurement*

❖ *Technology/Methodology Development*

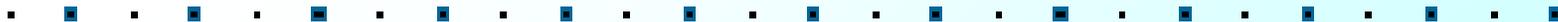
# *Air Toxics Research is Fragmented*

- ❖ Projects often planned to answer narrow questions
- ❖ Projects planned and funded with little outside coordination/communication



# *Fragmentation Impacts*

- ❖ Value of work not optimized
- ❖ Misguided conclusions and concern
- ❖ Often little coordination between air toxics and criteria pollutants, leads to potential gaps in public health protection and/or inefficiencies in regulation.



# Recommendations

- ❖ ***Develop*** an integrated regional research approach to understanding air toxics issues
- ❖ ***Continue to encourage*** collaboration as well as inform both the scientific, regulatory and non-scientific communities of the current air toxics research knowledge and findings
- ❖ ***Encourage the development*** of Houston specific exposure measurements such as the Houston Exposure to Air Toxics Study
- ❖ ***Promote and improve*** the use of the principles of risk communication for enhancing the understanding of air toxics issues
- ❖ ***Emphasize identifying*** direct links between air toxics exposure and health effects
- ❖ ***Continue to develop, identify and use*** new technology such as the IR Camera to improve the understanding of air toxics issues.
- ❖ ***Focus resources*** on only those few chemicals (acrolein, benzene, 1, 3 butadiene etc.) that are risk drivers in increasing the risk of adverse health effects.

# Coordination, Integration, Collaboration

- ❖ Better integration of research among AT, ozone, and particles would lead to increased understanding, more effective regulation (i.e. 1,3 butadiene)
- ❖ There should be effective coordination between parties doing AT research in the region to avoid duplication of effort and waste of public resources
- ❖ Collaboration among disciplines and organizations not traditionally used to working together can lead to insights and furthering the science (i.e. Houston Exposure to Air Toxics Study or HEATS)

# Risk Communication is Vital

- ❖ Workshop found disconnect between monitored AT levels and community perception
- ❖ Overall ambient AT concentrations are decreasing
- ❖ Community concern is increasing
- ❖ Workshop participants discussed possible reasons for disconnect
- ❖ Accurate, credible, useful information is needed to evaluate community concern and communicate to policymakers and the public

# New Technology Advances Science and Regulatory Response

- ❖ Advances in passive samplers enhance personal exposure monitoring
- ❖ New daily activity recording allows exposure monitoring and health effects surveys to be much more accurate and less burdensome
- ❖ New IR camera allows rapid and low cost detection of VOCs (and therefore many ATs) in business, residential and industrial applications

# More Information

❖ Presentations and webcasts from the **Air Toxics Workshop** are available on our website at:

**The Mickey Leland**

**National Urban Air Toxics Research Center**

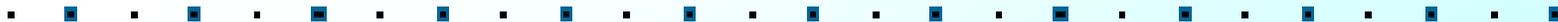
<http://www.sph.uth.tmc.edu/mleland/Pages/what.htm>

❖ **Next ATW: (ATW II) in Spring of 2007**

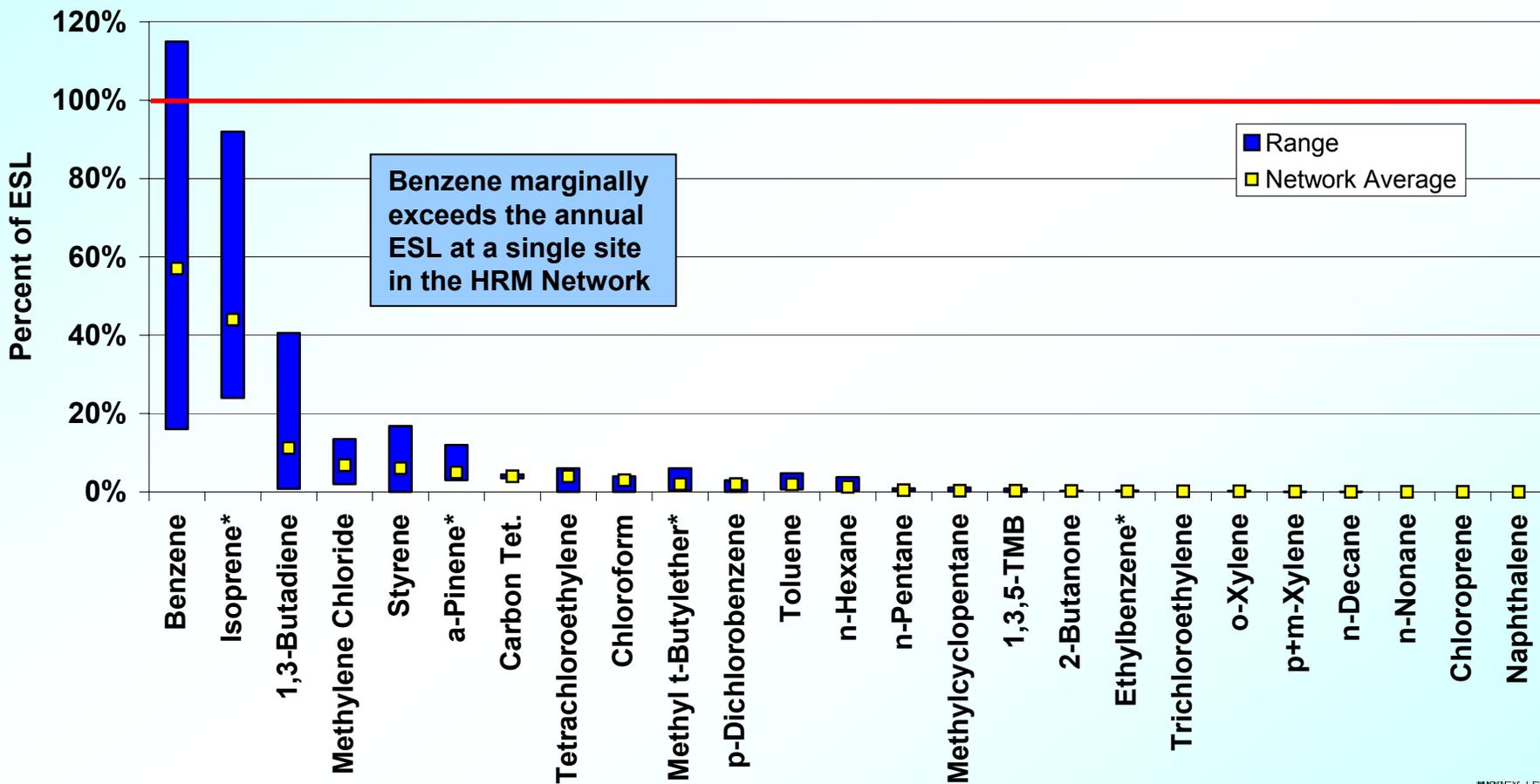


# End of Presentation

❖ Additional Material



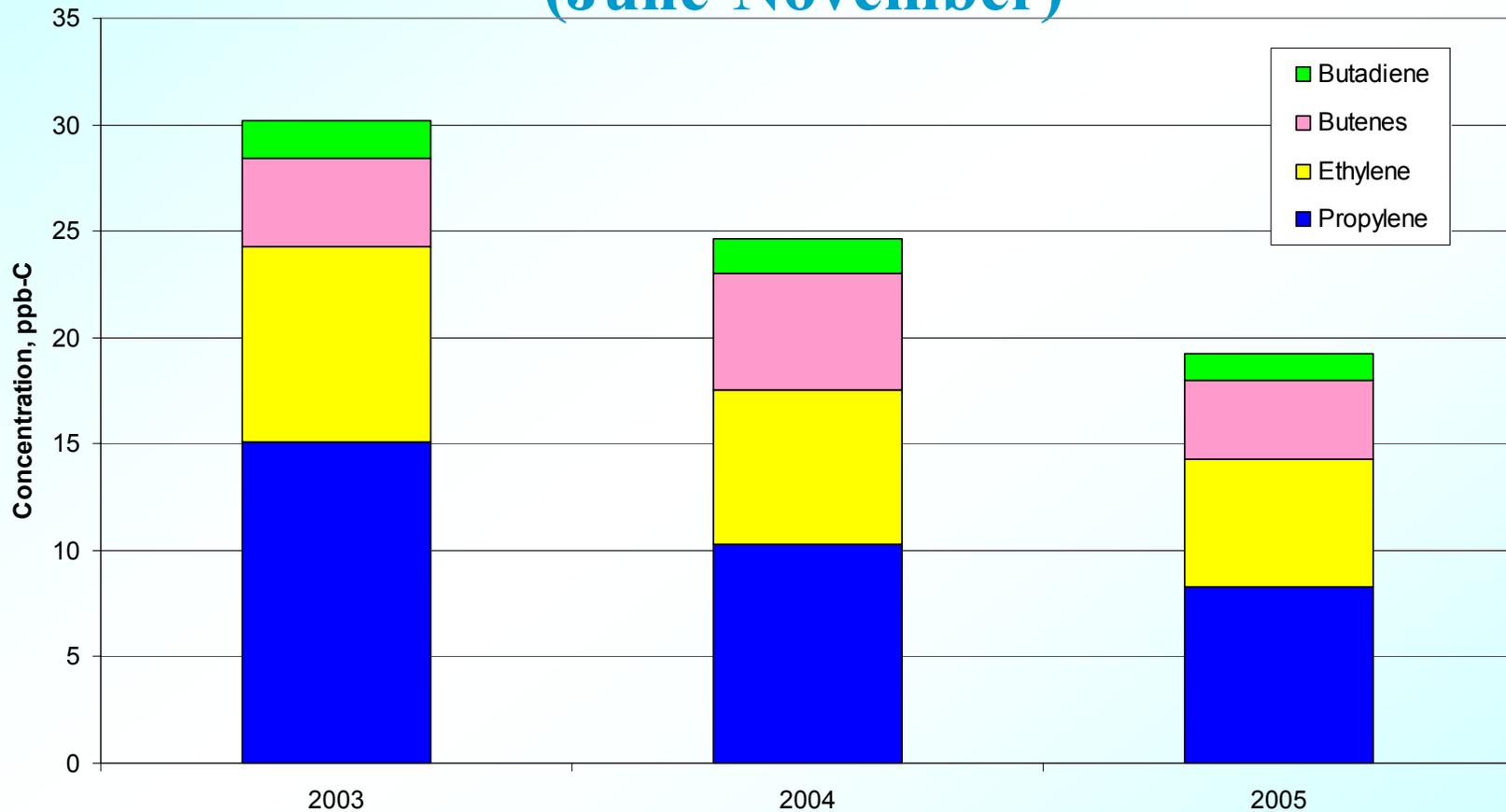
## Comparison of Selected VOCs in HRM Network (Range of Annual Site Averages) to TCEQ Annual Effects Screening Levels (ESLs) for 2004



\* ESL Based on Odor



# Total HRVOC Network Average Concentration at Houston Ship Channel PAMS-GC Sites (June-November)



# Annual Average Trends for BTEX for HRM Network from 1988 through 2004

