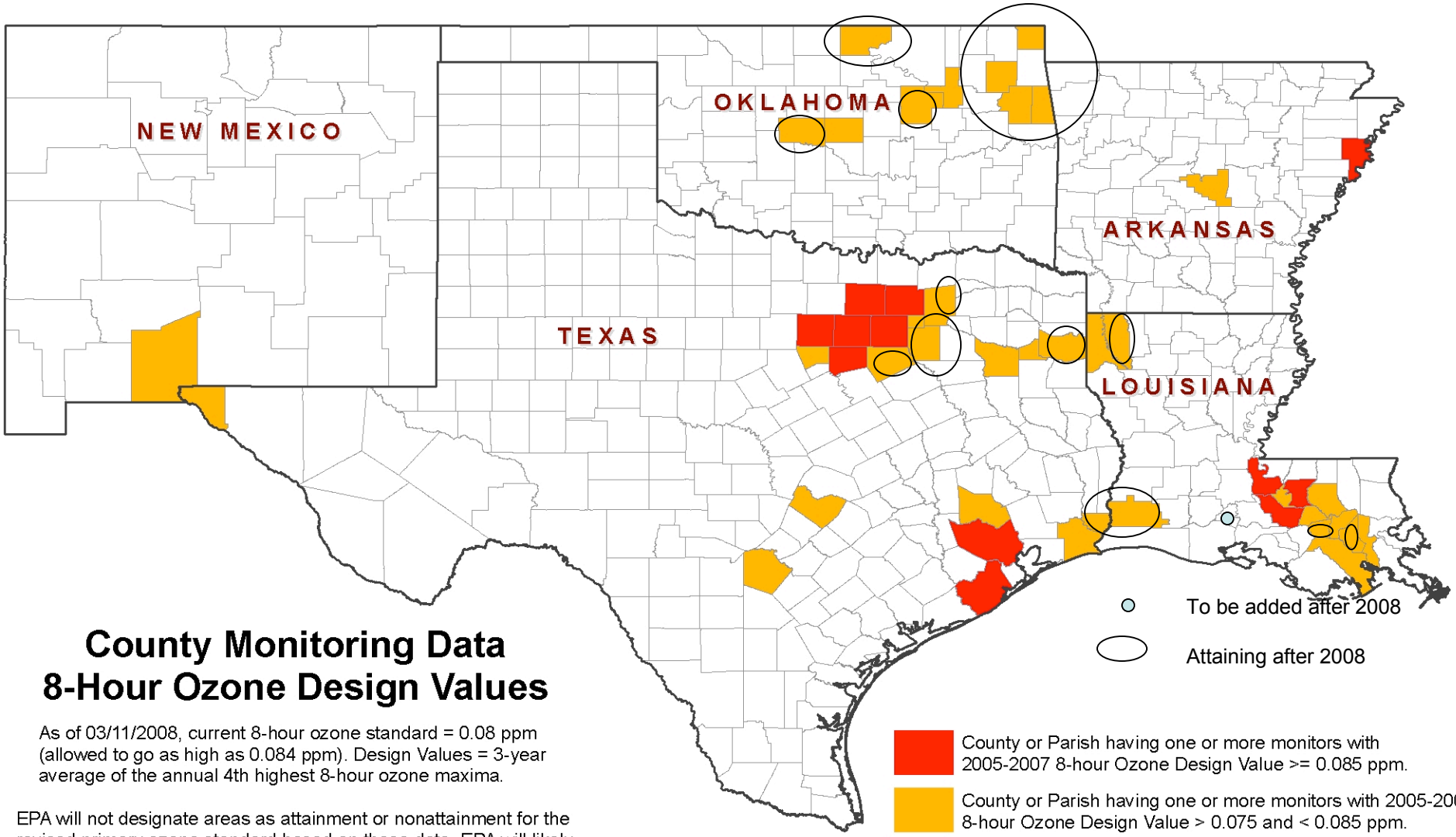
Region 6 “State of the Ozone” Report for 2008

- Presented at the SETPMTC 4-28-2009

- Mark Sather & Erik Snyder
- U.S. EPA Region 6,
- Dallas, Texas

Ground Level Ozone



County Monitoring Data
8-Hour Ozone Design Values

As of 03/11/2008, current 8-hour ozone standard = 0.08 ppm (allowed to go as high as 0.084 ppm). Design Values = 3-year average of the annual 4th highest 8-hour ozone maxima.

EPA will not designate areas as attainment or nonattainment for the revised primary ozone standard based on these data. EPA will likely base these designations on air quality data from 2006 through 2008 or later, which is expected to show air quality continuing to improve.

EPA Region 6
GIS Support Team
July 7, 2008

20080707ML04

LOCKHEED MARTIN

Sources:
US EPA AQS Dataset and State Agency Monitors.

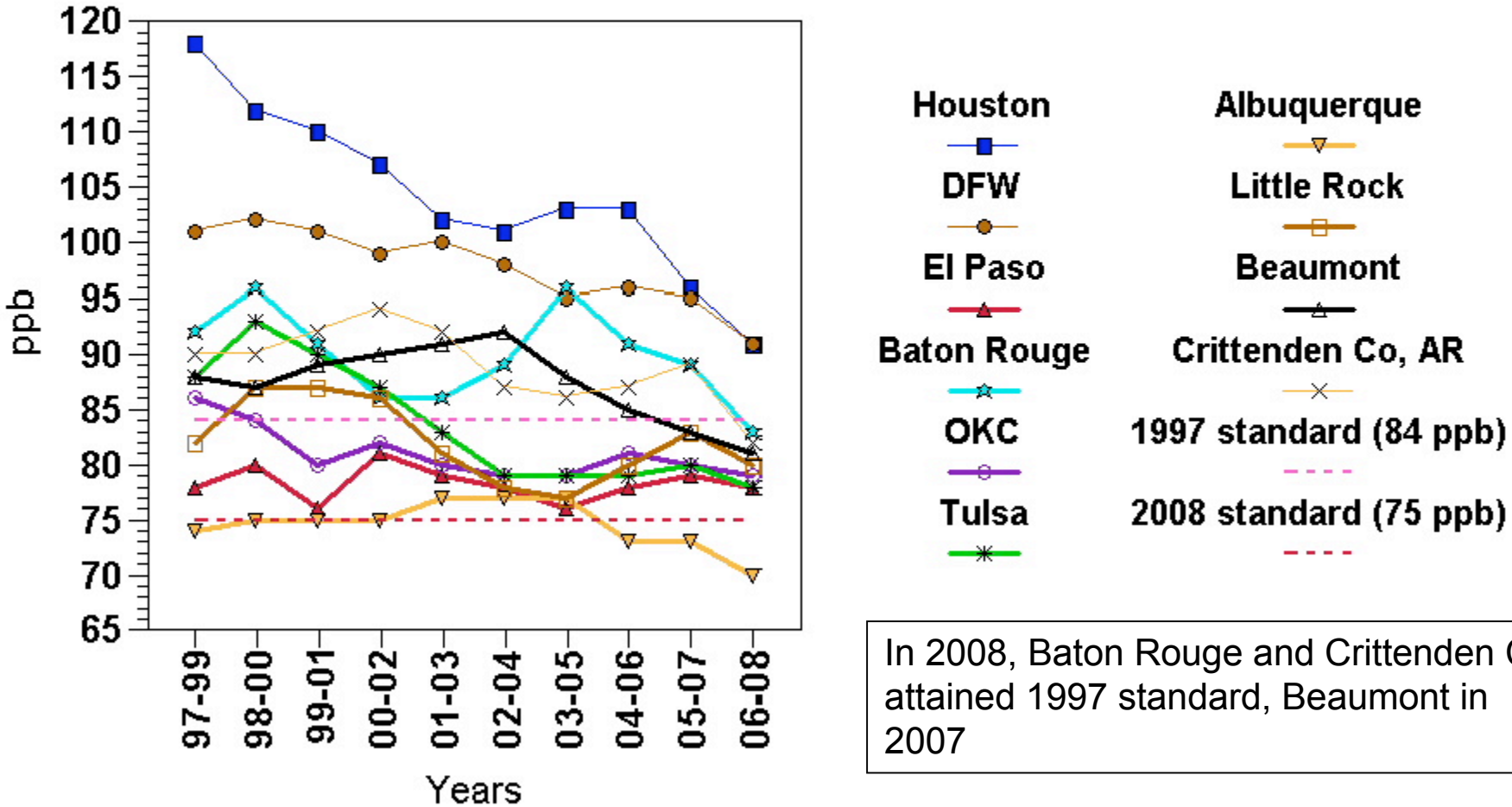
0 100 200 400
Miles

N W E S

8-hour Ozone Trends

Region 6 Cities

3-year running design values



In 2008, Baton Rouge and Crittenden Co. attained 1997 standard, Beaumont in 2007

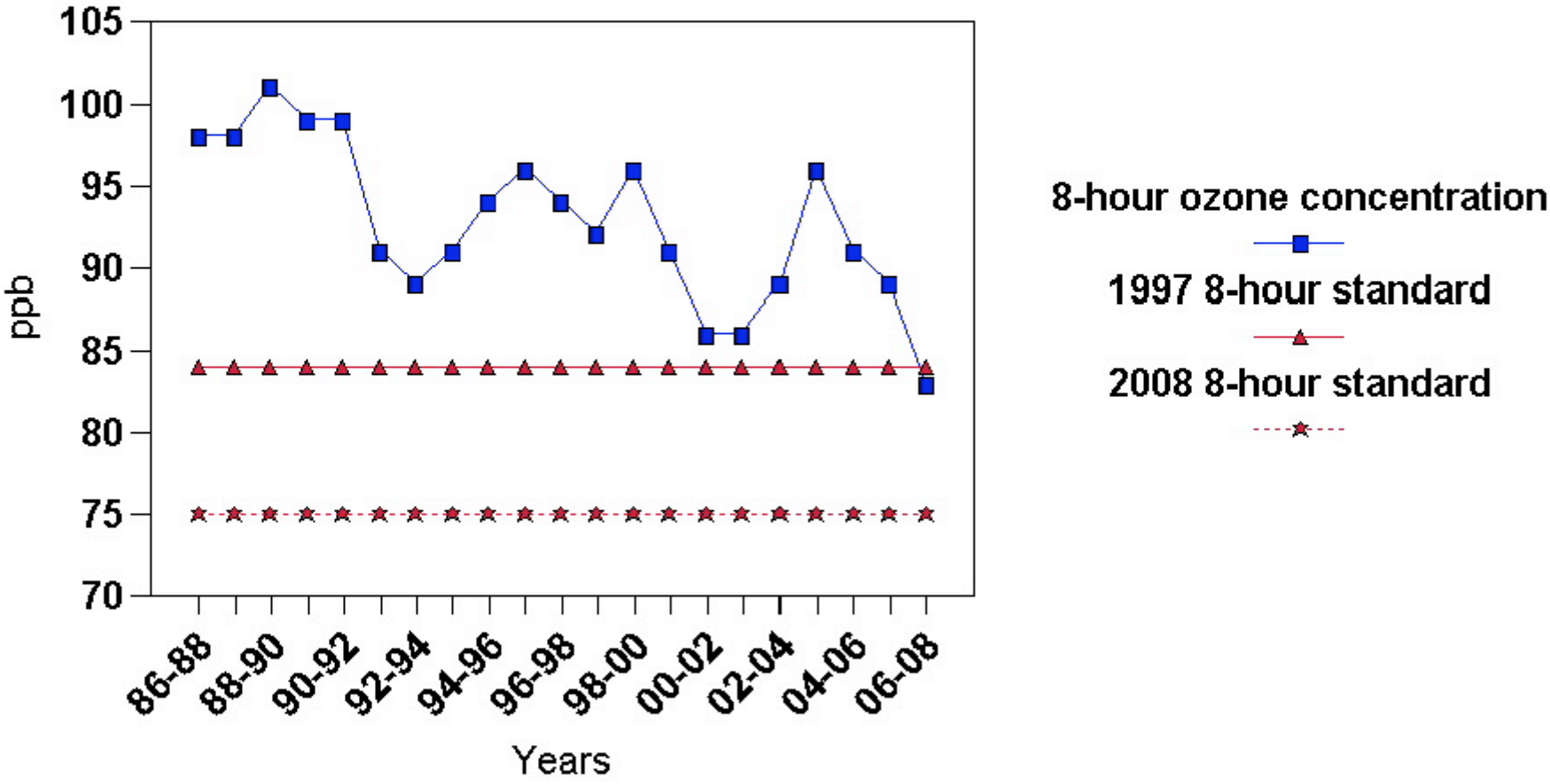
2008 data preliminary

Detailed City Analyses

Baton Rouge, DFW, Houston, El Paso

8-hour Ozone Trends

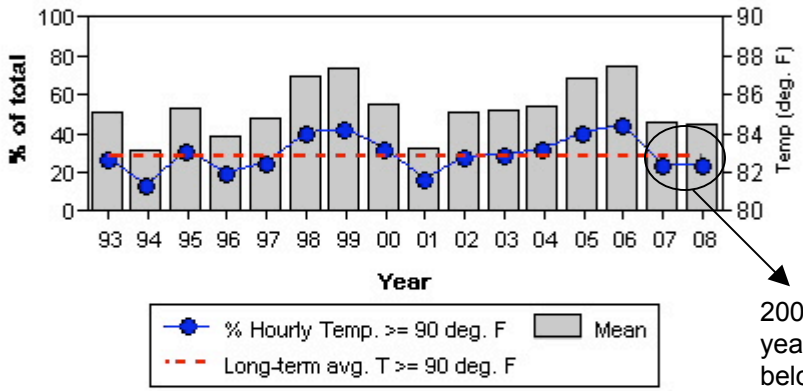
Baton Rouge, Louisiana



1997 8-hour standard = 84 ppb and 2008 8-hour standard = 75 ppb; 2008 data preliminary
8-hour ozone concentration = 3 year average of the annual 4th highest values, calculated site by site
8-hour ozone concentrations presented above are taken from the highest concentration site in the monitoring network for each 3 year period

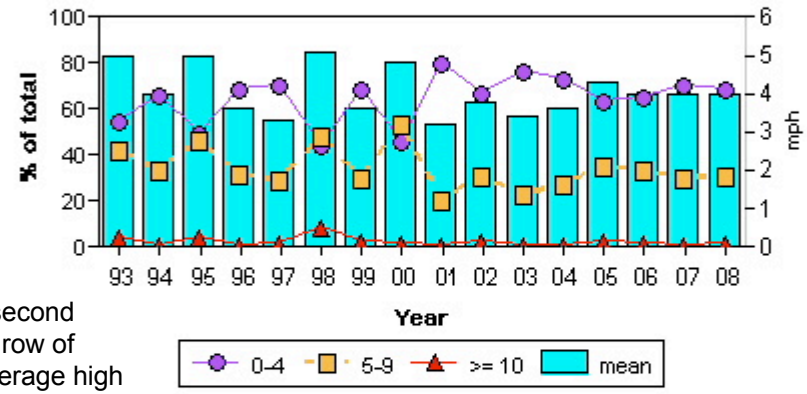
Baton Rouge Capitol Site Meteorological Data Trends
June-August; 0500-1900 LST
75% minimum data capture

Ambient Temperature

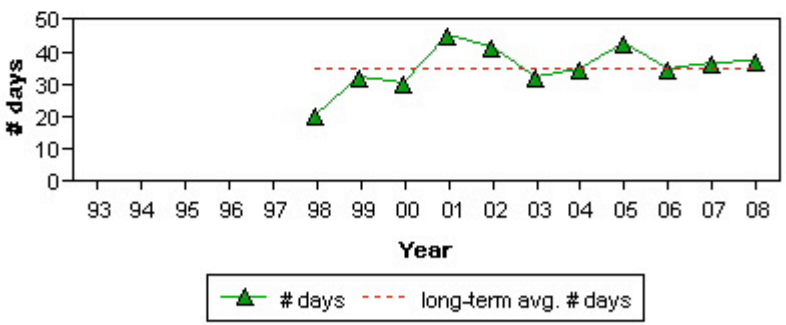


2008, a second year in a row of below average high temperatures

Hourly Resultant Wind Speed Profile (mph)

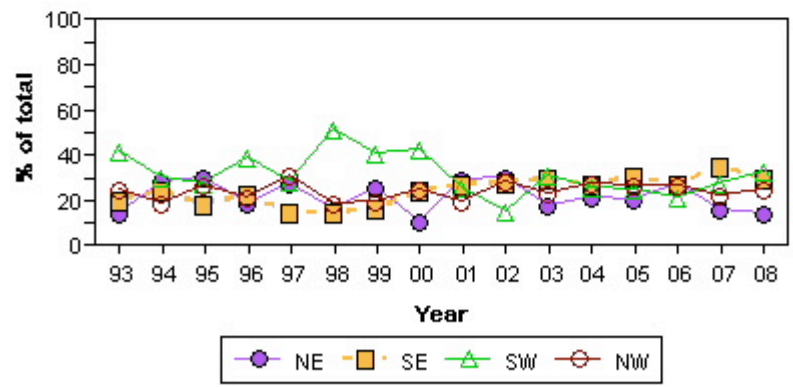


Precipitation



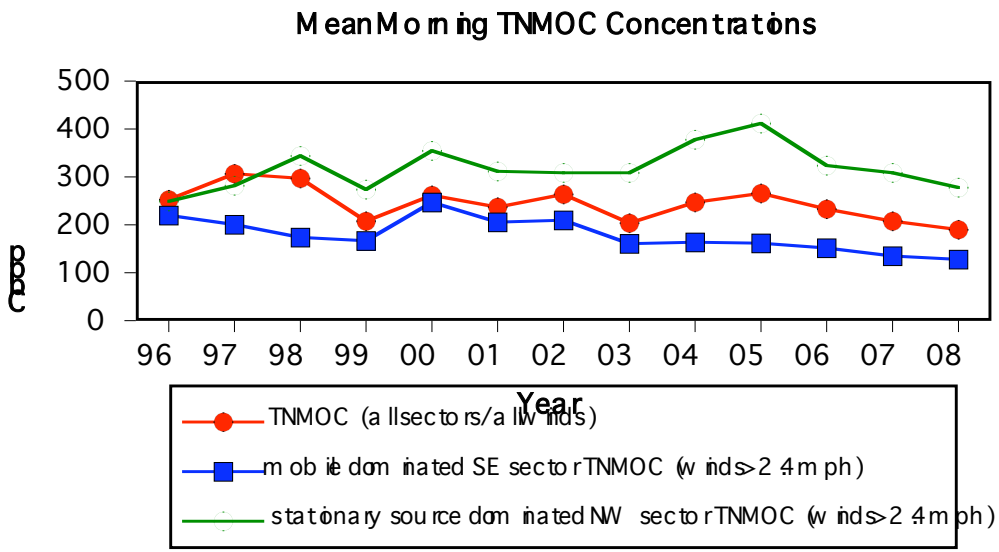
A day of precipitation is defined as having at least one hour with at least 0.01 inches
Precipitation monitoring did not begin until July 24, 1997

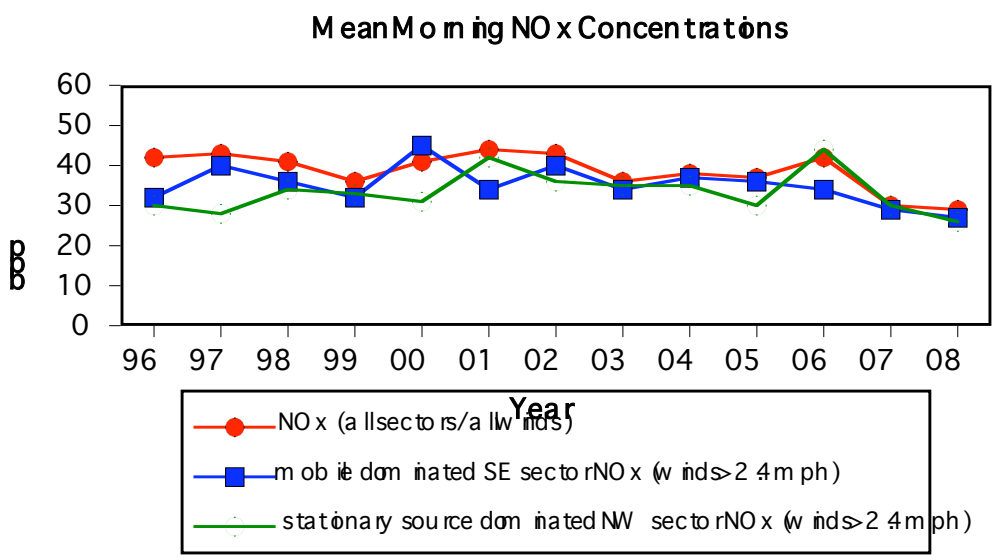
Hourly Resultant Wind Directions by Sector



Baton Rouge

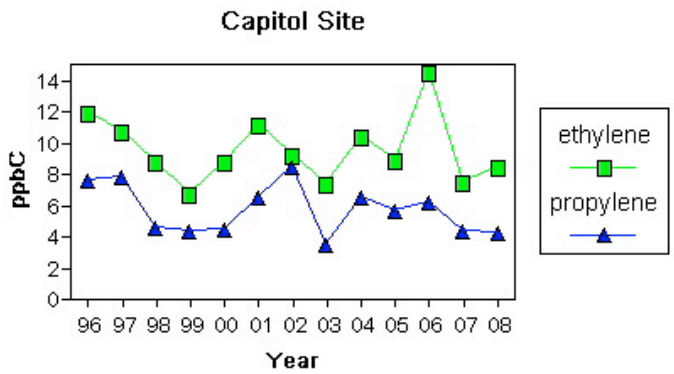
- 2008 saw the continuation of a decreasing trend in TNMOC and NOx precursor concentrations since 2005/2006.
- Summer (June-August) weekday morning 5-8 AM LST

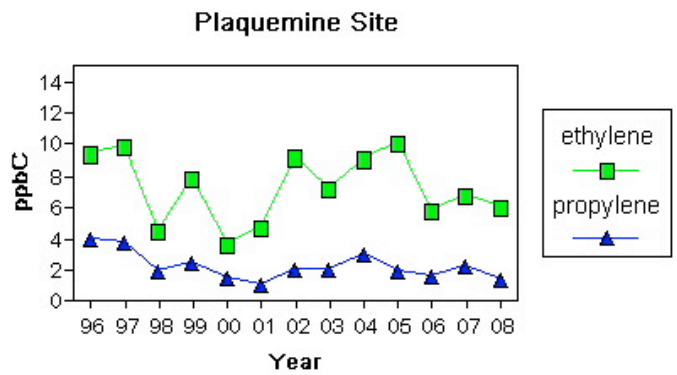


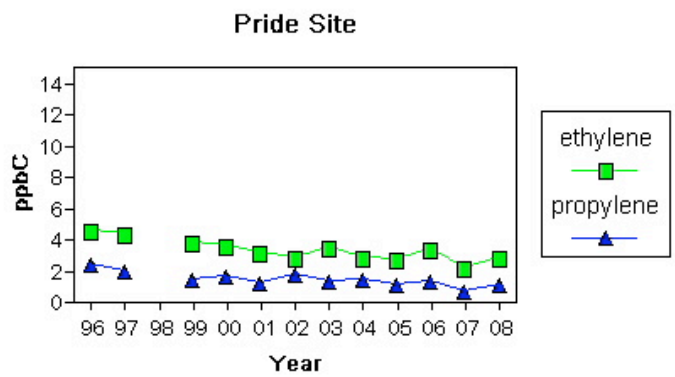


Baton Rouge

- No statistically significant increase in HRVOC (ethylene and propylene) concentrations in 2008.
- At Capitol and Pride for 2007 and 2008: ethylene and propylene concentrations lower than 2006.
- At Plaquemine: ethylene and propylene concentrations decreased in 2008.
- Summer (June-August) weekday morning 3-9 AM LST; 3-hour canister data.

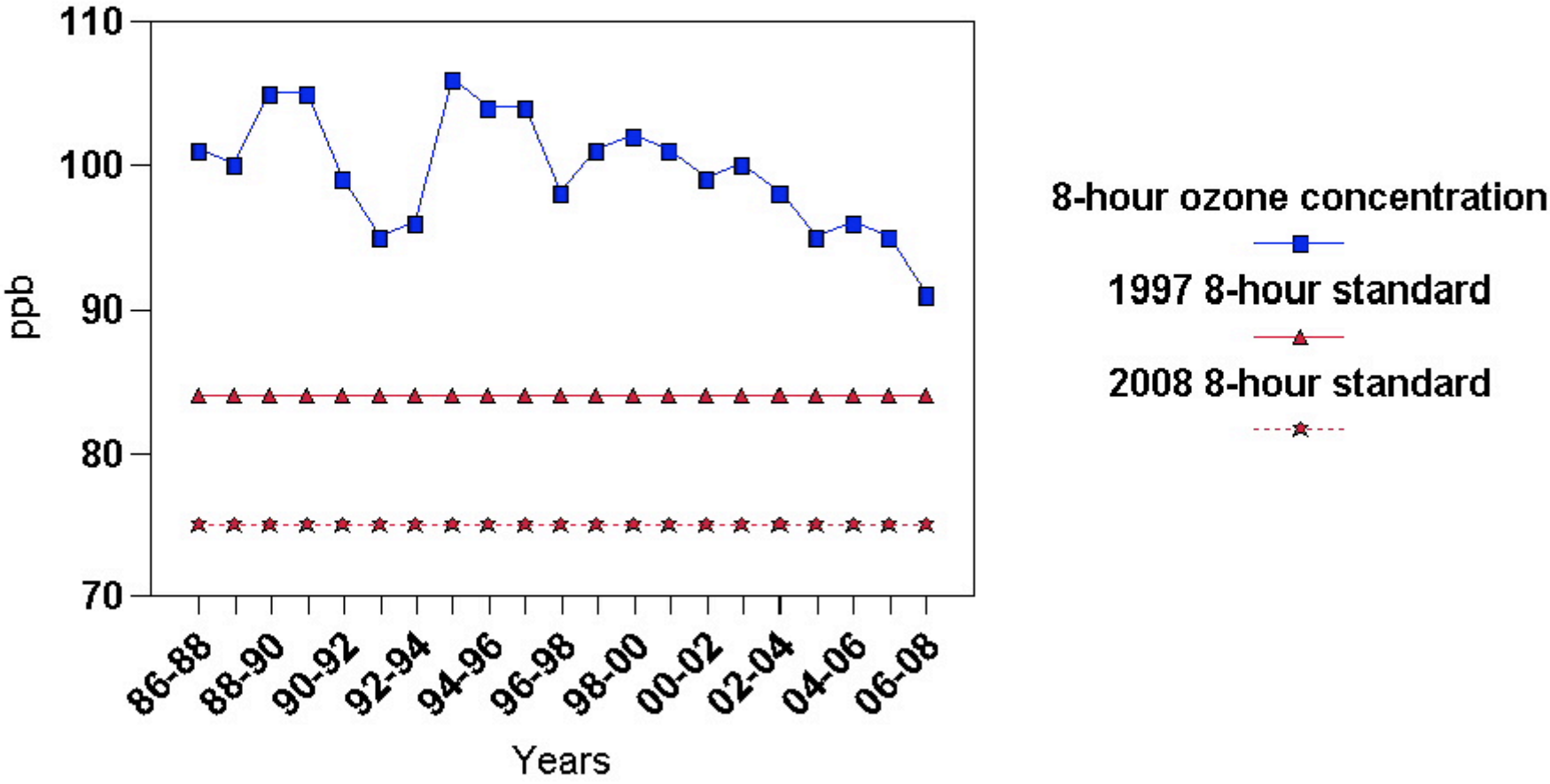






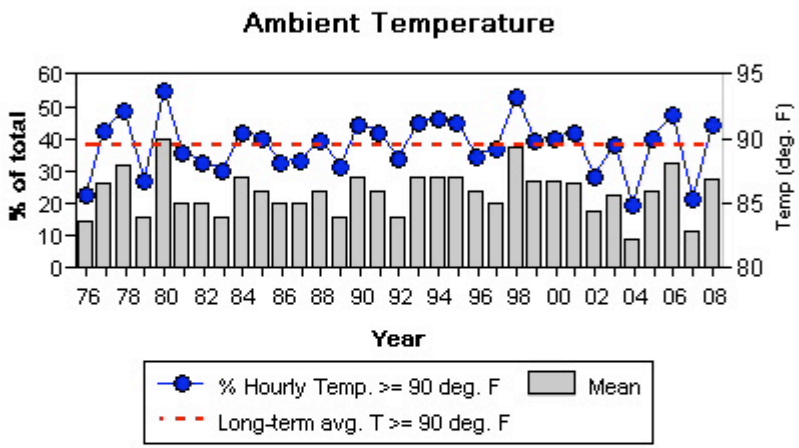
8-hour Ozone Trends

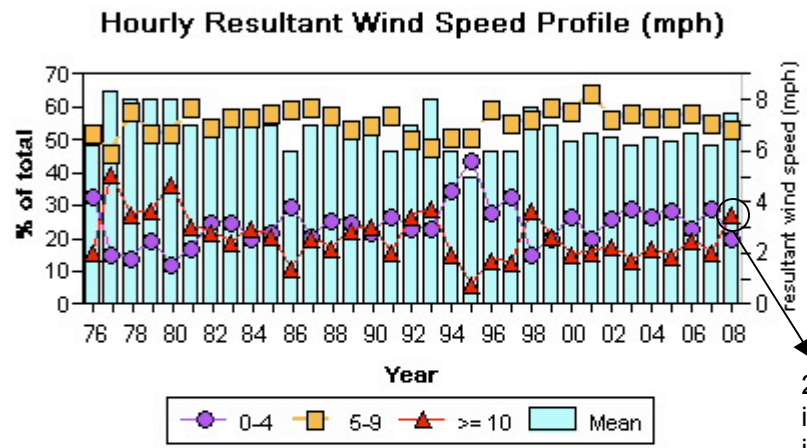
Dallas/Fort Worth, Texas



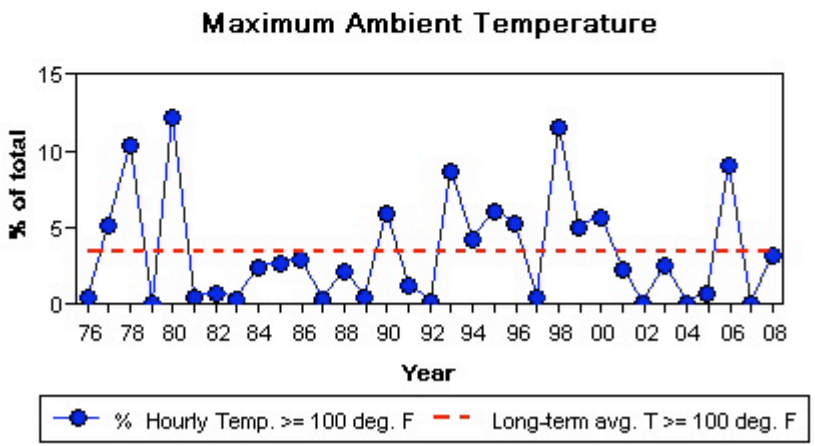
1997 8-hour standard = 84 ppb and 2008 8-hour standard = 75 ppb; 2008 data preliminary
8-hour ozone concentration = 3 year average of the annual 4th highest values, calculated site by site
8-hour ozone concentrations presented above are taken from the highest concentration site in the monitoring network for each 3 year period

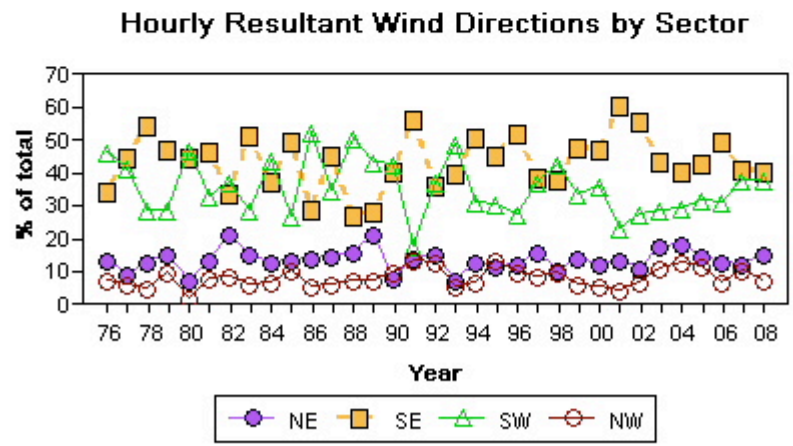
Fort Worth Meacham Field Site Meteorological Data Trends
June-August; 0500-1900 LST





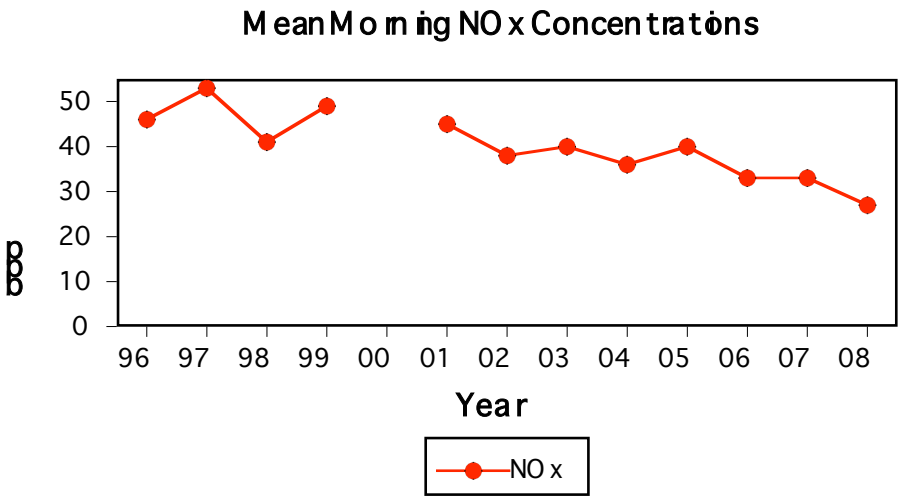
2008 increase in % of higher wind speeds

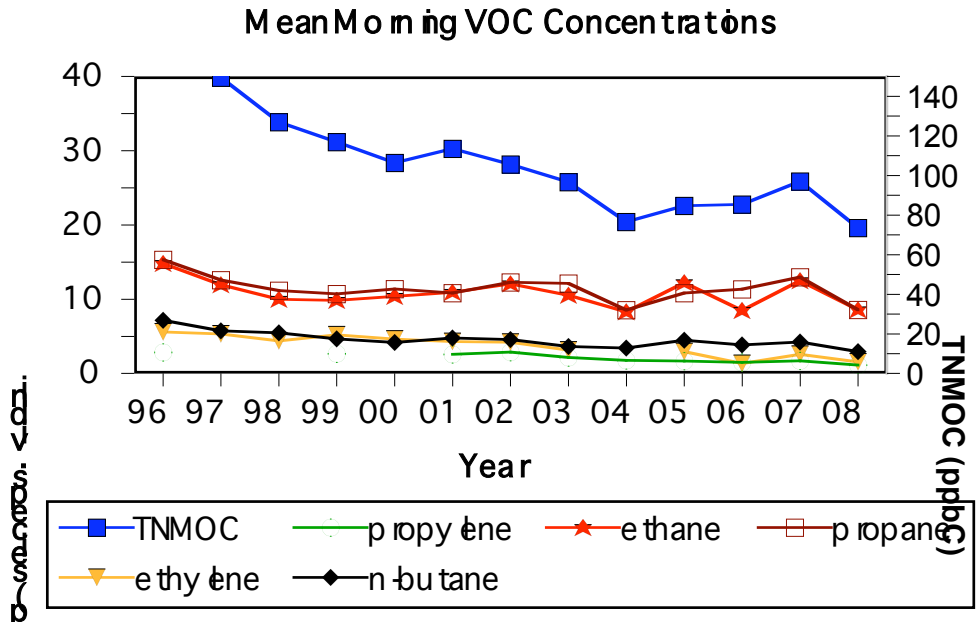




Dallas-Fort Worth

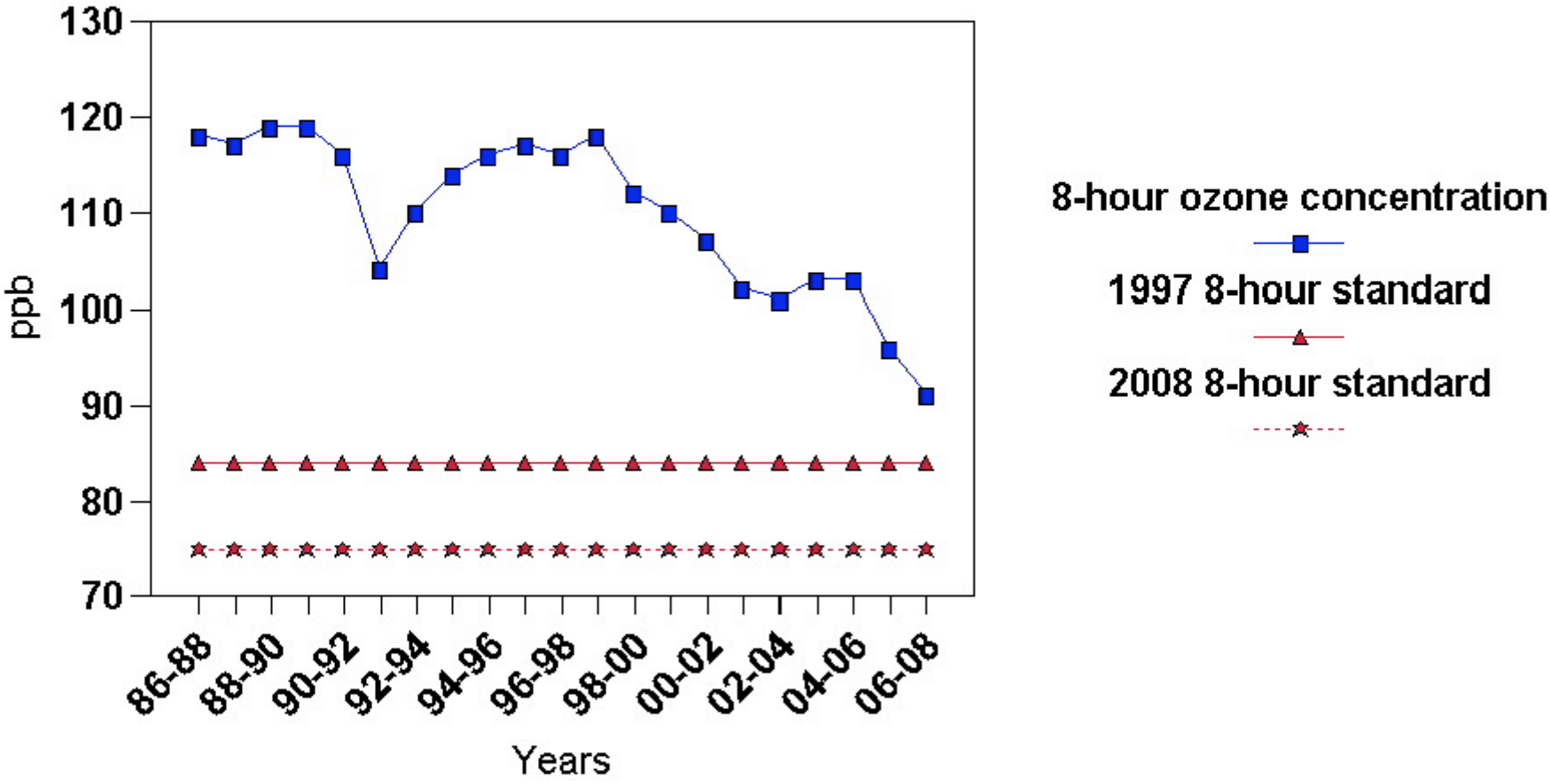
- 2008 saw the continuation of a decreasing trend in TNMOC and NOx precursor concentrations since the late 1990's.
- Summer (June-August) weekday morning 5-8 AM LST





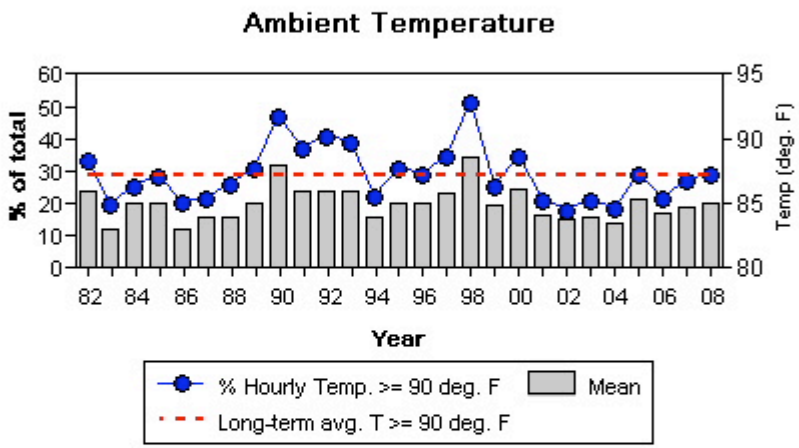
8-hour Ozone Trends

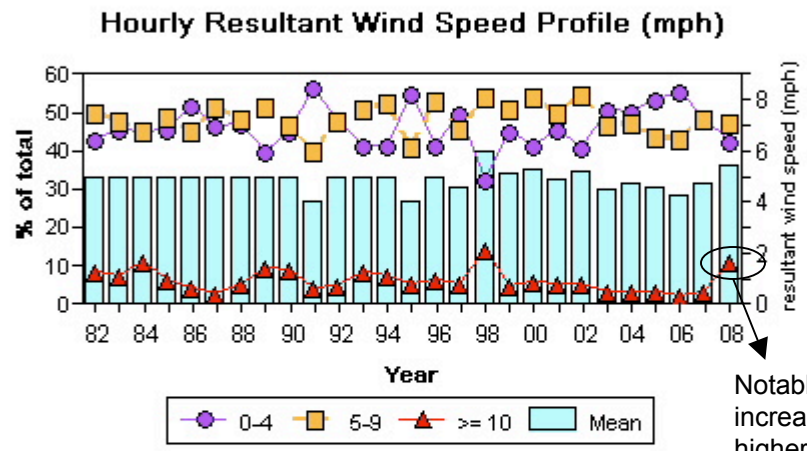
Houston, Texas



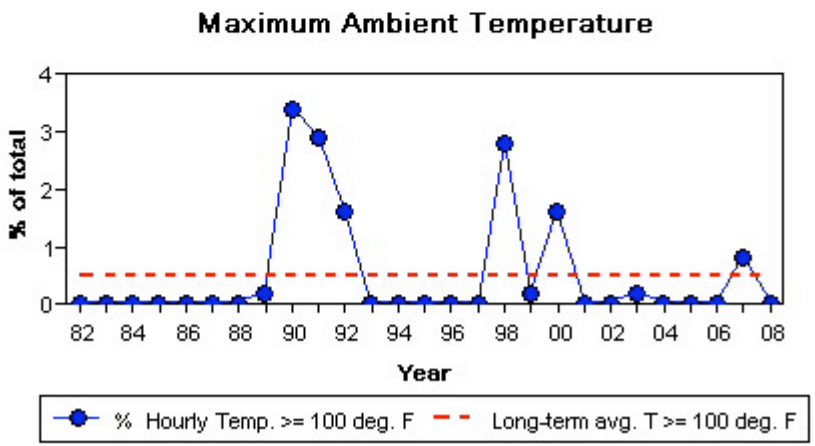
1997 8-hour standard = 84 ppb and 2008 8-hour standard = 75 ppb; 2008 data preliminary
8-hour ozone concentration = 3 year average of the annual 4th highest values, calculated site by site
8-hour ozone concentrations presented above are taken from the highest concentration site in the monitoring network for each 3 year period

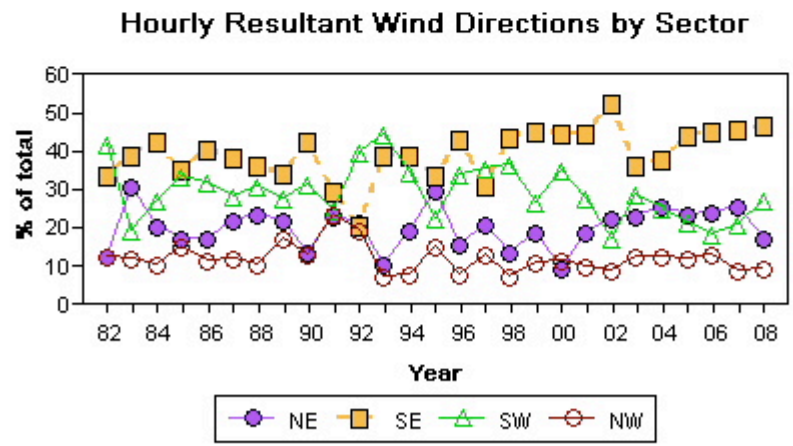
Houston Aldine Site Meteorological Data Trends
June-August; 0500-1900 LST
65% minimum data capture



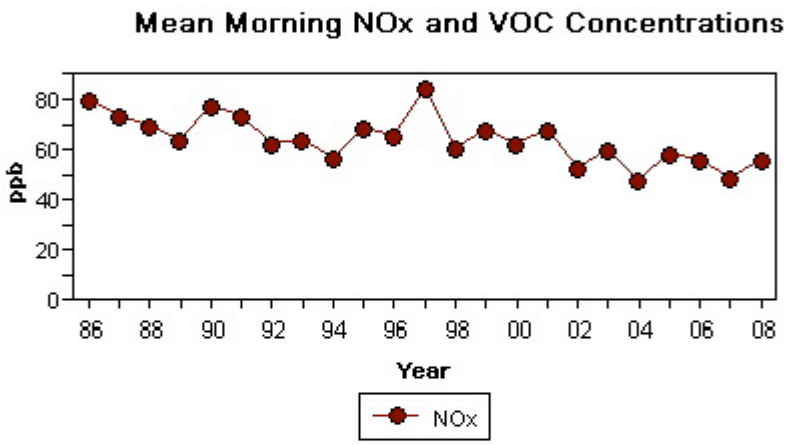


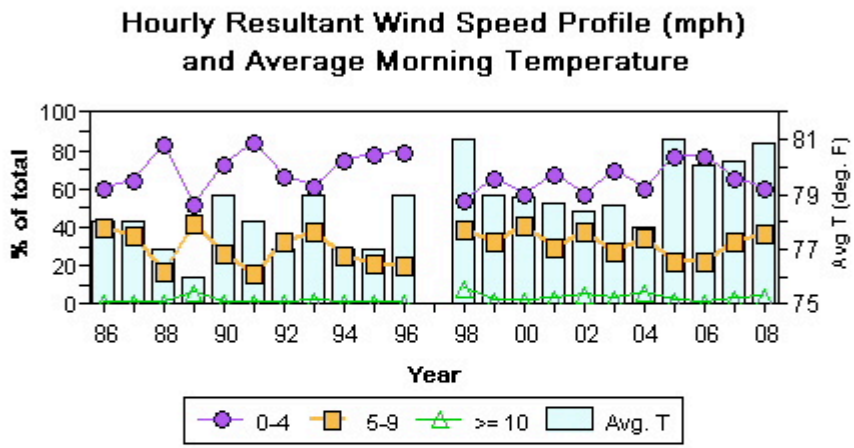
Notable increase in higher wind speeds

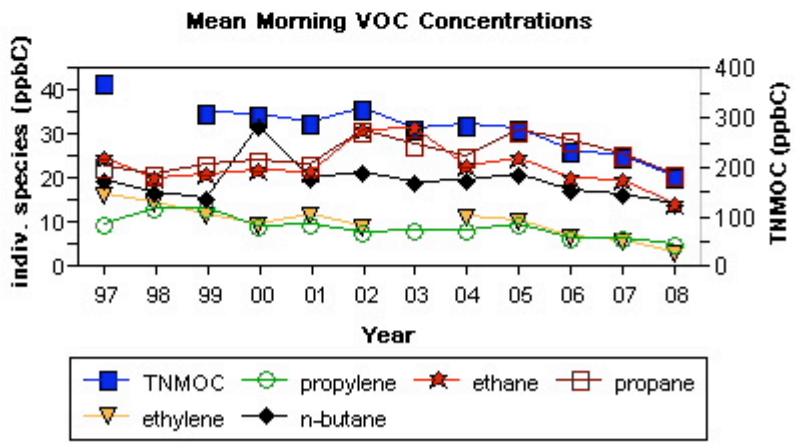


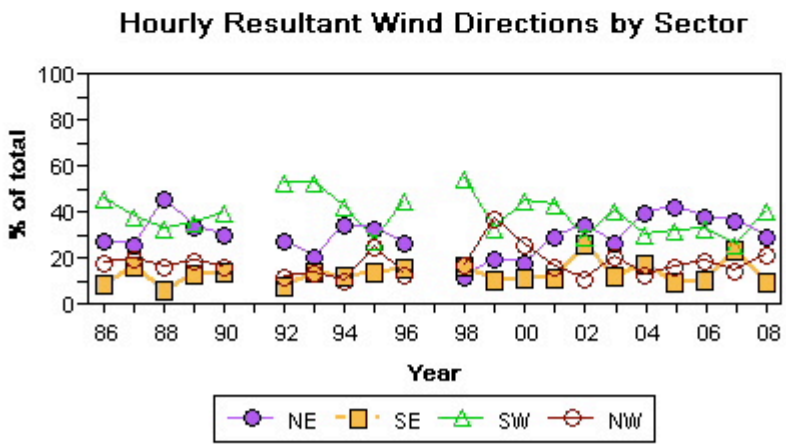


Houston Clinton Drive Site Meteorological/NOx/VOC Data Trends
June-August Weekday; 0500-0800 LST
70% minimum data capture

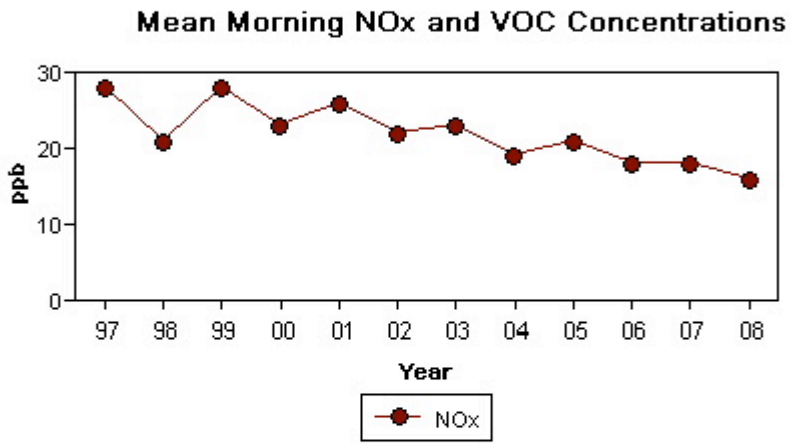


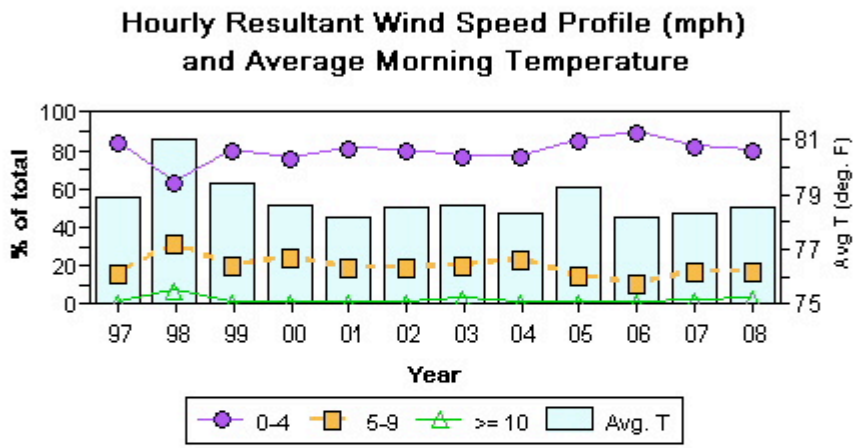


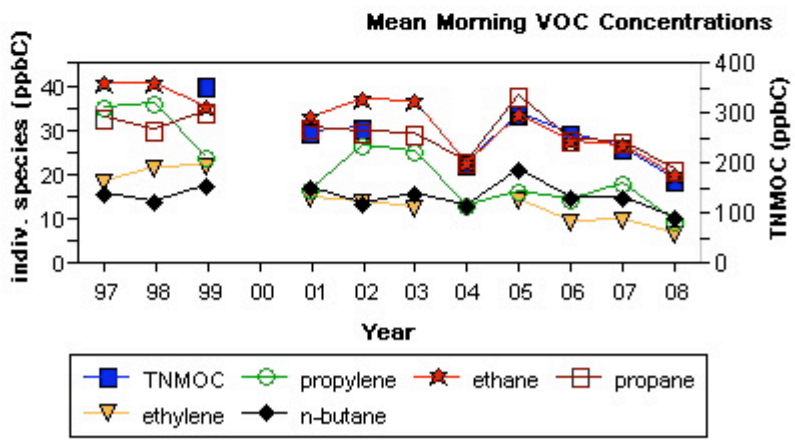


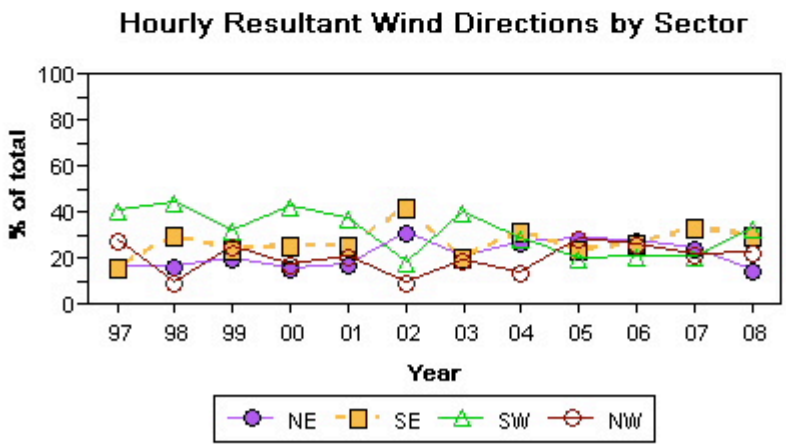


Houston Deer Park Site Meteorological/NOx/VOC Data Trends
June-August Weekday; 0500-0800 LST
69% minimum data capture



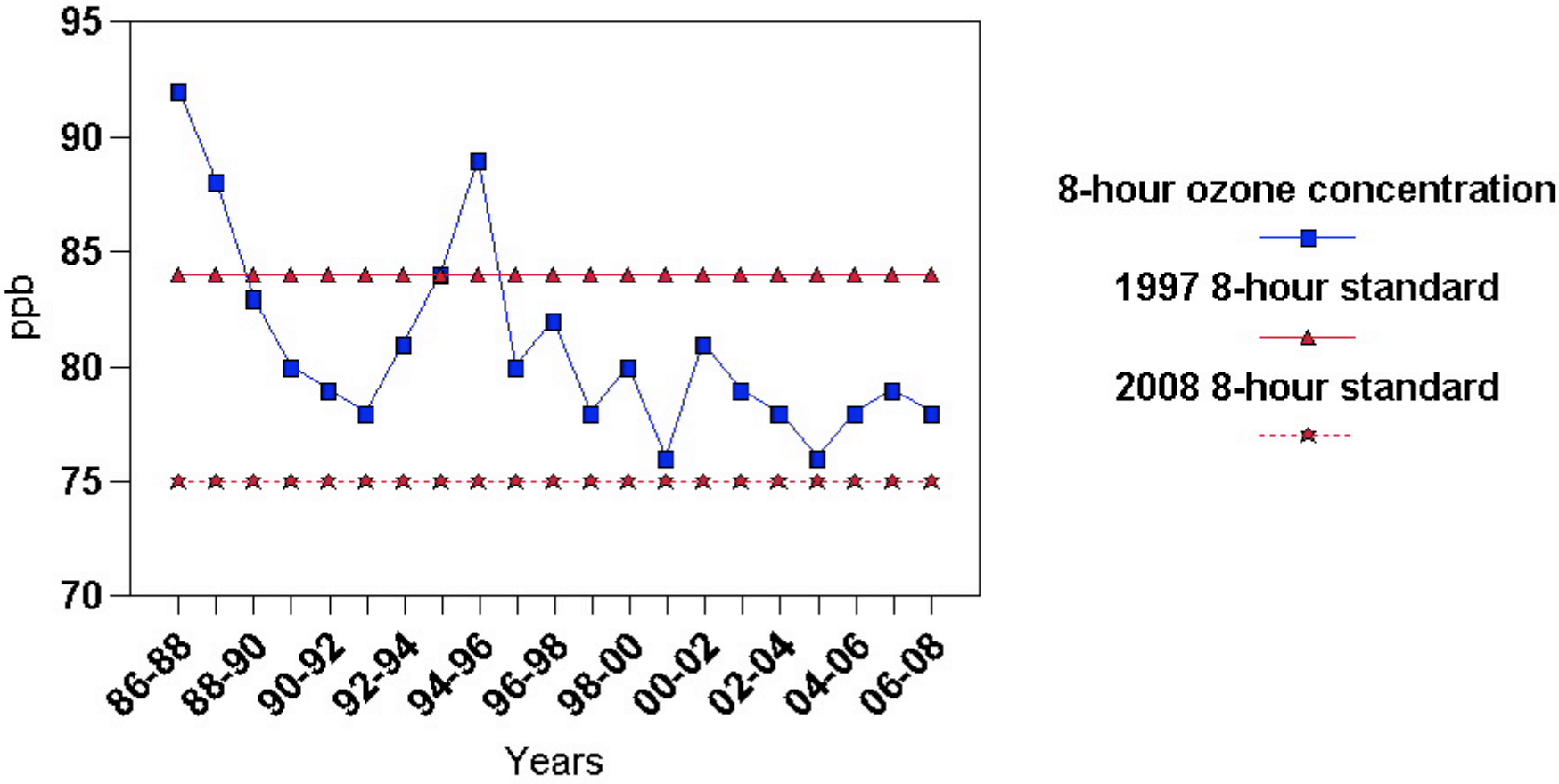






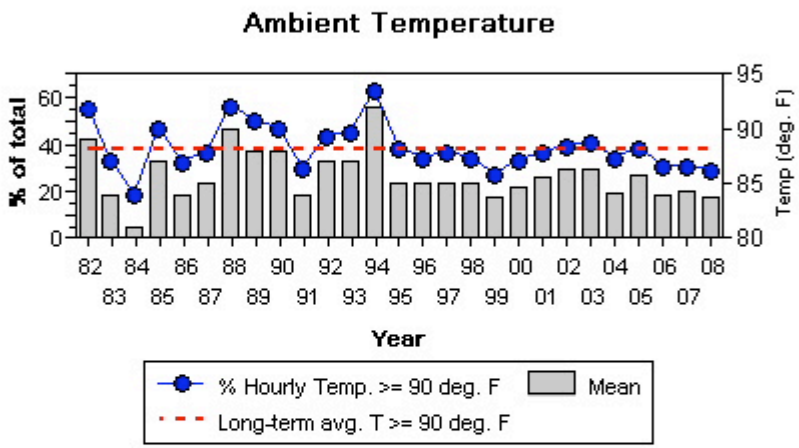
8-hour Ozone Trends

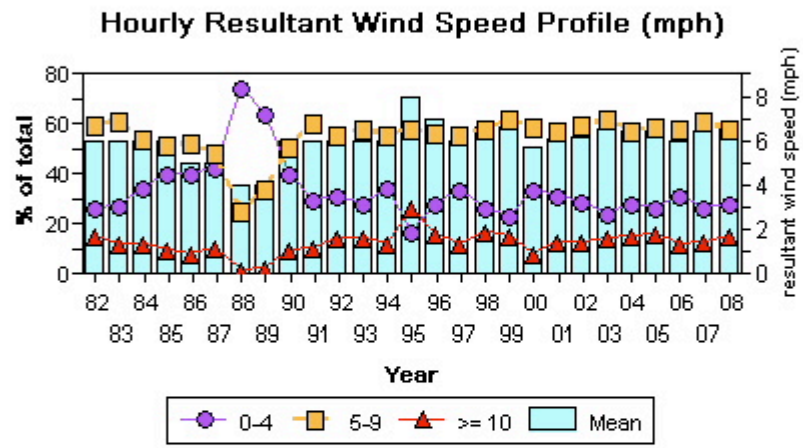
El Paso, Texas

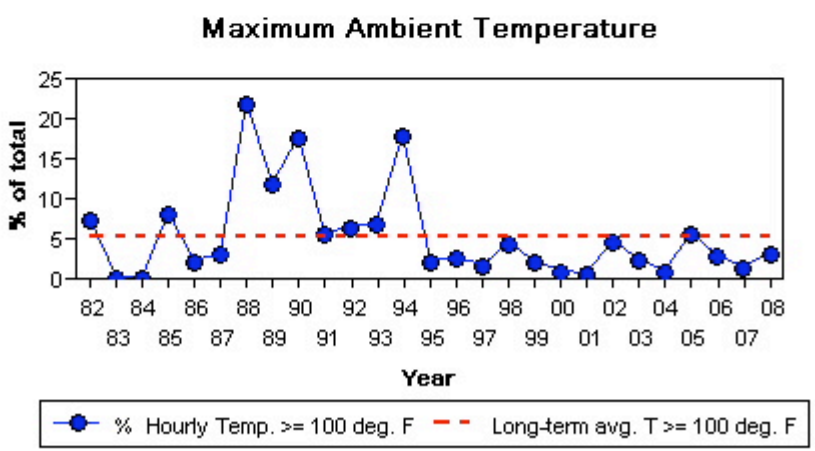


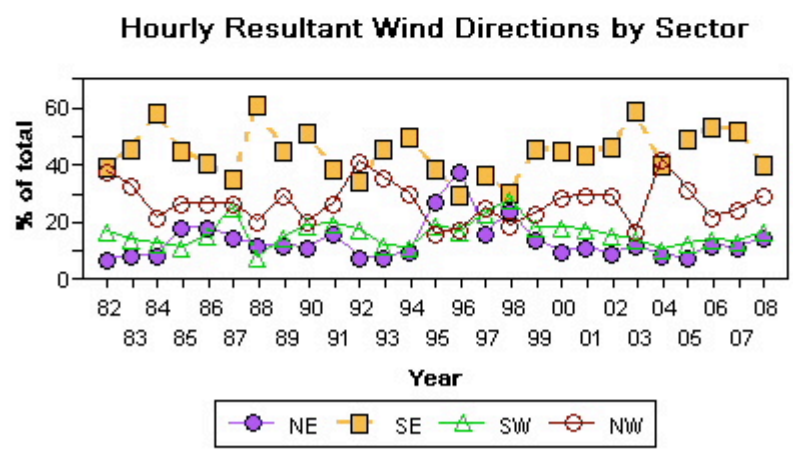
1997 8-hour standard = 84 ppb and 2008 8-hour standard = 75 ppb; 2008 data preliminary
8-hour ozone concentration = 3 year average of the annual 4th highest values, calculated site by site
8-hour ozone concentrations presented above are taken from the highest concentration site in the monitoring network for each 3 year period

El Paso UTEP Site Meteorological Data Trends
June-August; 0500-1900 LST
75% minimum data capture

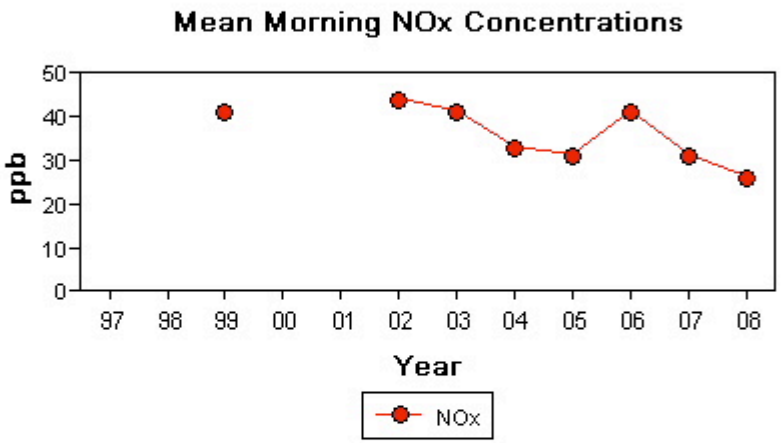


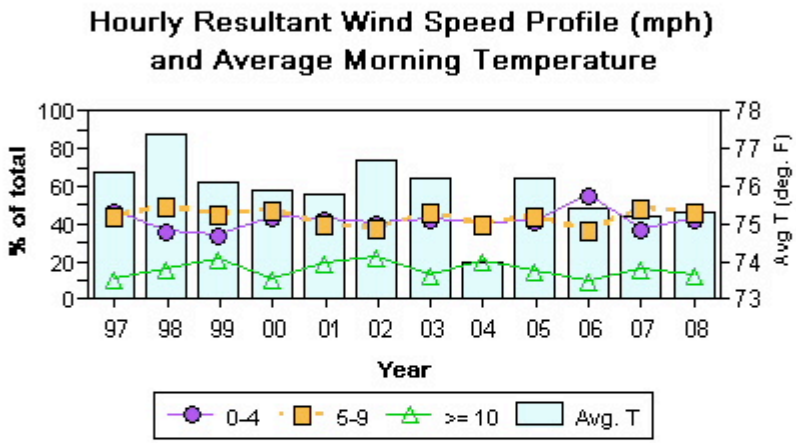


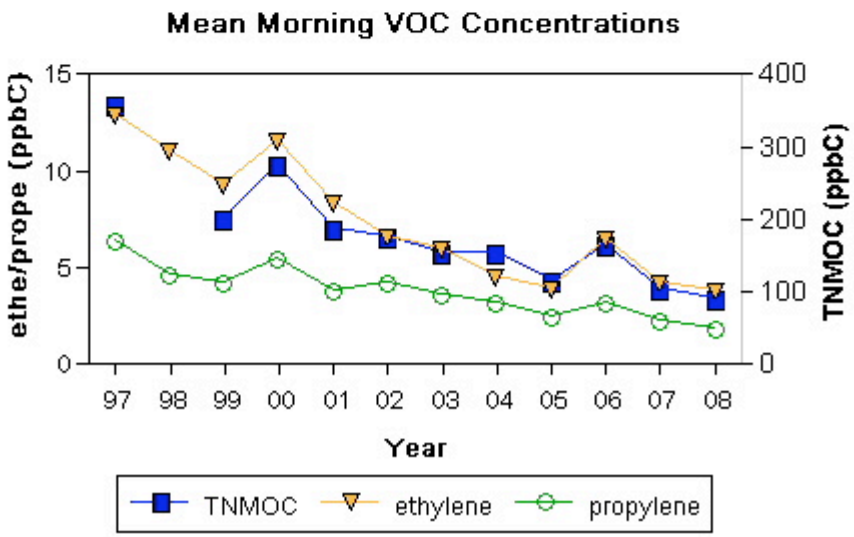


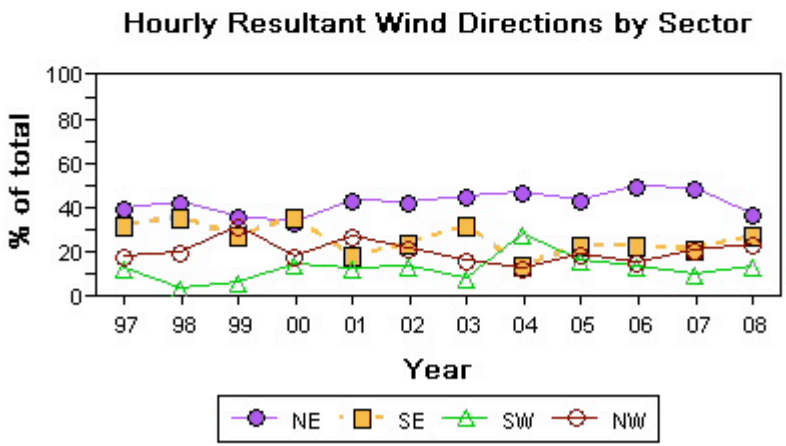


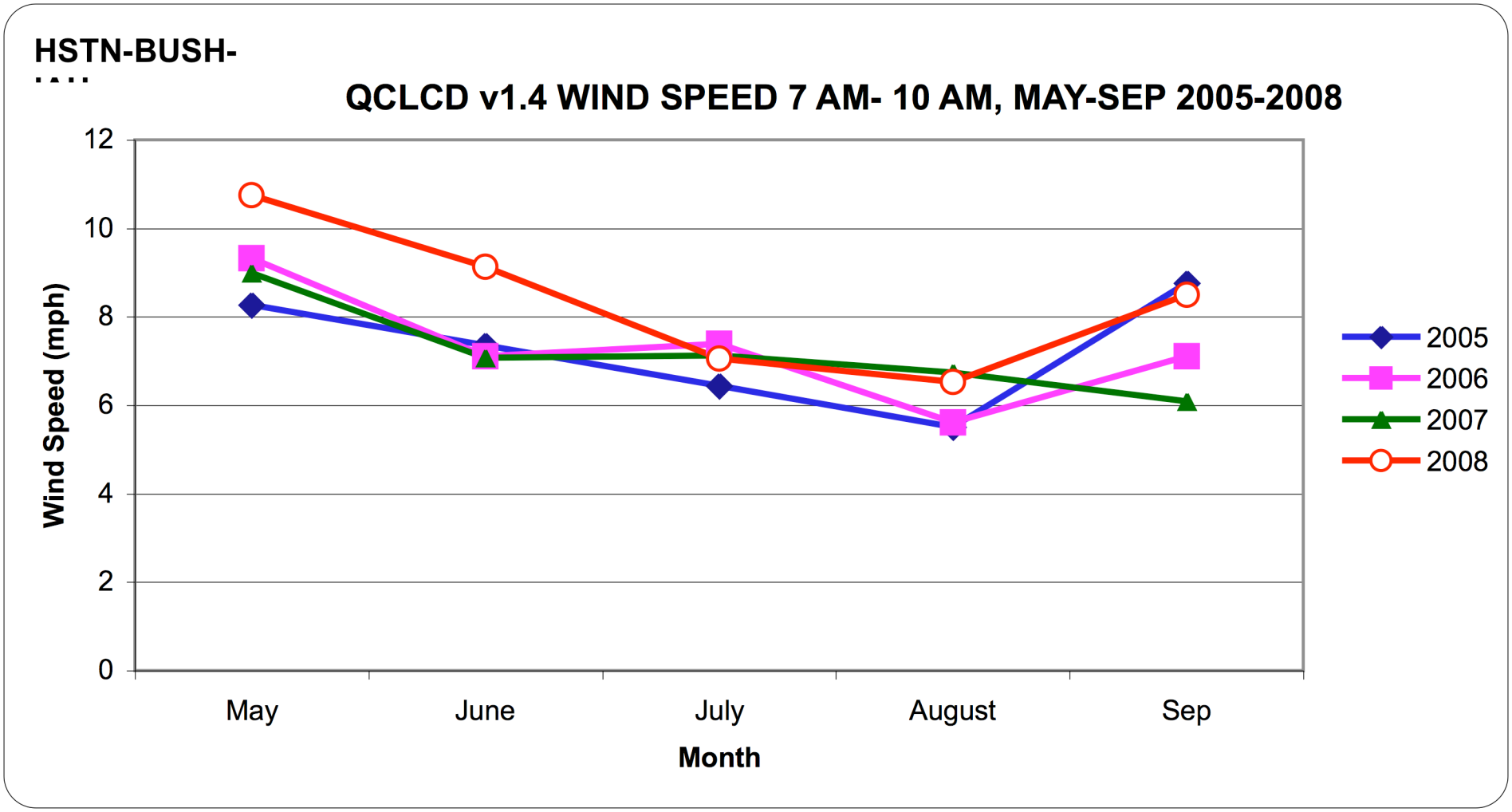
El Paso Chamizal Site Meteorological/NOx/VOC Data Trends
June-August Weekday; 0500-0800 LST
70% minimum data capture

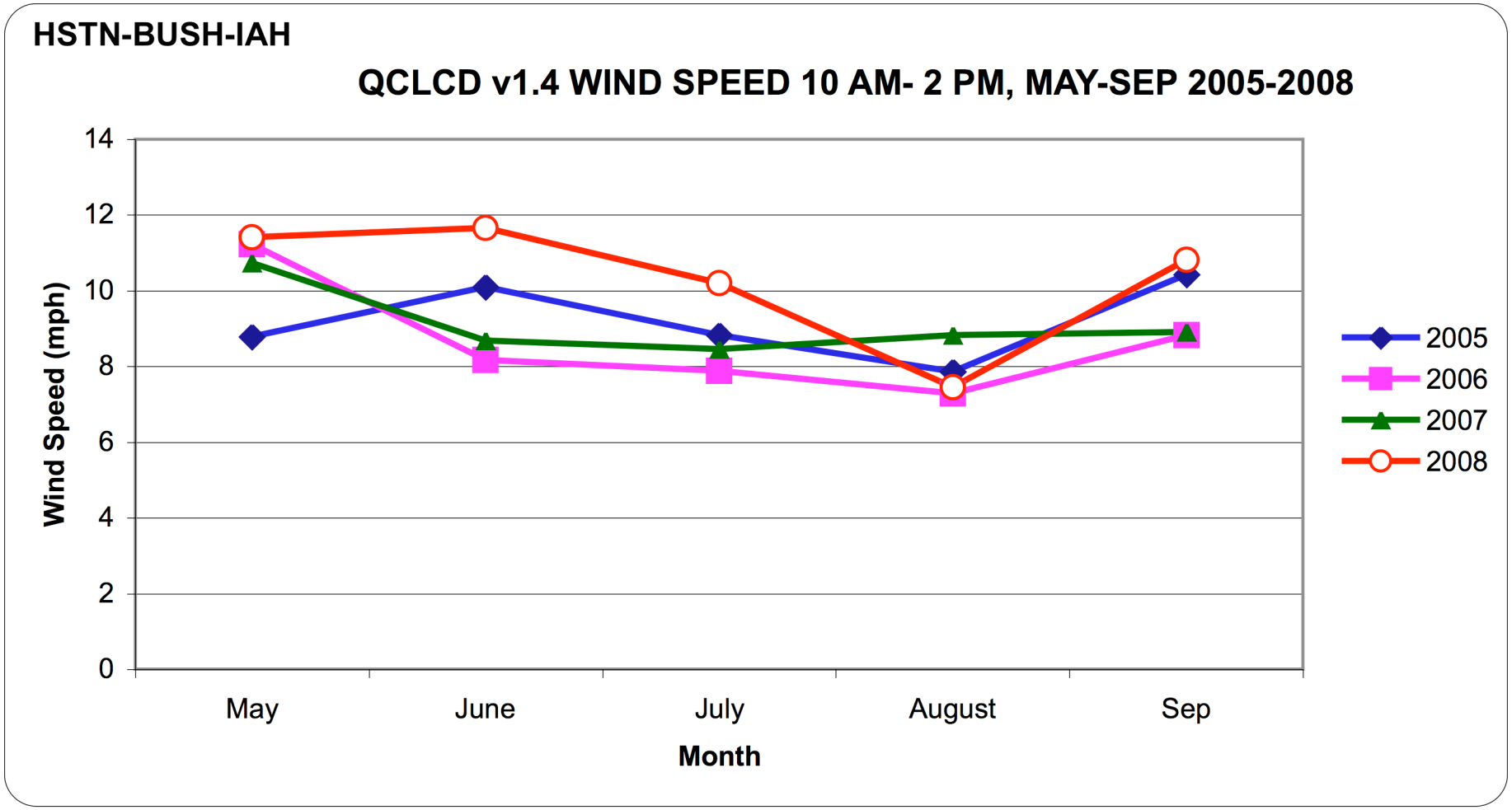









HSTN-BUSH-
QCLCD v1.4 WIND SPEED 7 AM- 10 AM, MAY-SEP 2005-2008
Wind Speed (mph)
12
10
8
6
4
2
0
May
June
July
August
Sep
Month
2005
2006
2007
2008


HSTN-BUSH-IAH
QCLCD v1.4 WIND SPEED 10 AM- 2 PM, MAY-SEP 2005-2008
Wind Speed (mph)
14
12
10
8
6
4
2
0
May
June
July
August
Sep
Month
2005
2006
2007
2008

State of the Ozone Report for Region 6, 2008 Highlights

- Baton Rouge and Crittenden Co. attain 1997 8-hour ozone standard in 2008, following Beaumont in 2007.

- 2007: 26 areas in Region 6 not attaining new 75 ppb 8-hour standard.
- 2008: 19 areas in Region 6 not attaining new 75 ppb 8-hour standard.

- Detailed analyses of four cities (Baton Rouge, DFW, Houston, El Paso) showed a combination of favorable meteorology (below average amount of high temperatures in Baton Rouge and El Paso, higher wind speeds in DFW and Houston) and continued lowering of VOC/NOx precursors in all four cities contributed to the lowering of ozone concentrations in 2008.