REGION 4 OZONE MONITORING SEASON

EVALUATION & PROPOSED REVISIONS

EPA AIR MONITORING MEETING

September 9-11, 2003

EPA GUIDANCE CRITERIA

- Consider all SLAMS/NAMS data for the most recent 6 years (1996-2001)
- Include months with at least 1 ‘hit’ (daily maximum 8-hour average $\geq$ 80 ppb)
- Include adjacent months if hits occur at the ‘ends’ of months bounding the ozone season
- Lengthen other State ozone seasons as needed to ensure consistency in areas of transport or within Regions

REGION 4 PROPOSED CRITERIA

- In evaluating Ozone Monitoring Season length:
  - Include months with numerous hits
  - Exclude months with no hits
  - Further evaluate months with few hits & exceedences
- Determine the impact of boundary month exceedences on:
  - Regulatory Decision Making
  - AQI Reporting
- Include months needed to accomplish these monitoring objectives, with a margin of safety

RESULTS OF OZONE SEASON EVALUATION PER REGION 4 PROPOSED CRITERIA

STATE	CURRENT SEASON		REVISED PER GUIDANCE		REVISED PER R4 CRITERIA	
	BEGIN	END	BEGIN	END	BEGIN	END
Alabama	March	October	March	November	May	September
Florida	March	October	February	November	March	October
Georgia	March	October	March	November	May	September
Kentucky	March	October	March	November	May	September
Mississippi	March	October	March	November	May	September
North Carolina	April	October	March	November	May	September
South Carolina	April	October	March	November	May	September
Tennessee	March	October	March	November	May	September
Additional Monitoring Requirements:	(None)		(None)		Year-Round Operation of a small subset of O_3 monitors (approx. 10% of the network or 2 per State)	

TOTAL DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS ≥ 80 ppb

(1996-2001)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
STATE												
AL	-	-	1	8	67	66	128	247	104	3	-	-
FL	0	4	24	111	315	102	103	150	90	45	7	0
GA	-	-	1	4	94	112	217	288	126	2	-	-
KY	-	-	0	3	127	207	217	271	176	6	-	-
MS	-	-	3	16	79	28	57	167	59	16	-	-
NC	-	-	-	14	302	521	526	566	215	28	-	-
SC	0	0	1	12	175	184	187	285	101	10	0	0
TN	-	-	1	10	181	294	285	400	253	15	-	-
TOTAL		4	31	178	1340	1514	1720	2374	1124	125	7	

= Current Ozone Monitoring Season

TOTAL DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS ≥ 85 ppb

(1996 - 2001)

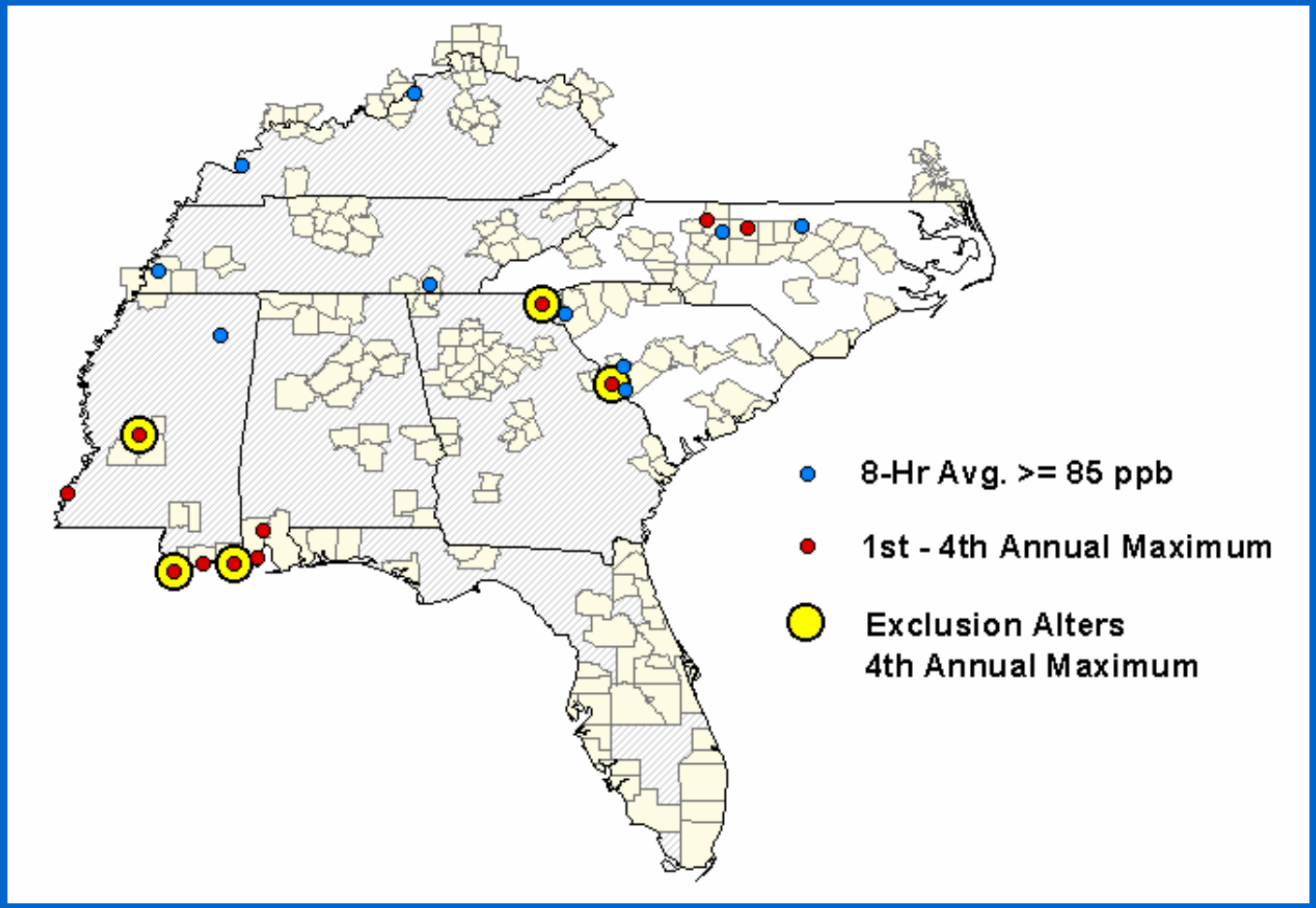
REGION 4 STATES EXCEPT FLORIDA

	MARCH	APRIL			OCTOBER	
STATE*		Apr 1-14	Apr 15-30		Oct 1-14	Oct 15-31
Alabama	0	0	3		0	0
Georgia	0	0	1		0	1
Kentucky	0	0	1		0	1
Mississippi	1	0	3		1	2
North Carolina	--	1	2		1	1
South Carolina	1	0	2		0	1
Tennessee	0	0	1		2	1
TOTAL	**2**	**1**	**13**		**4**	**7**

FLORIDA

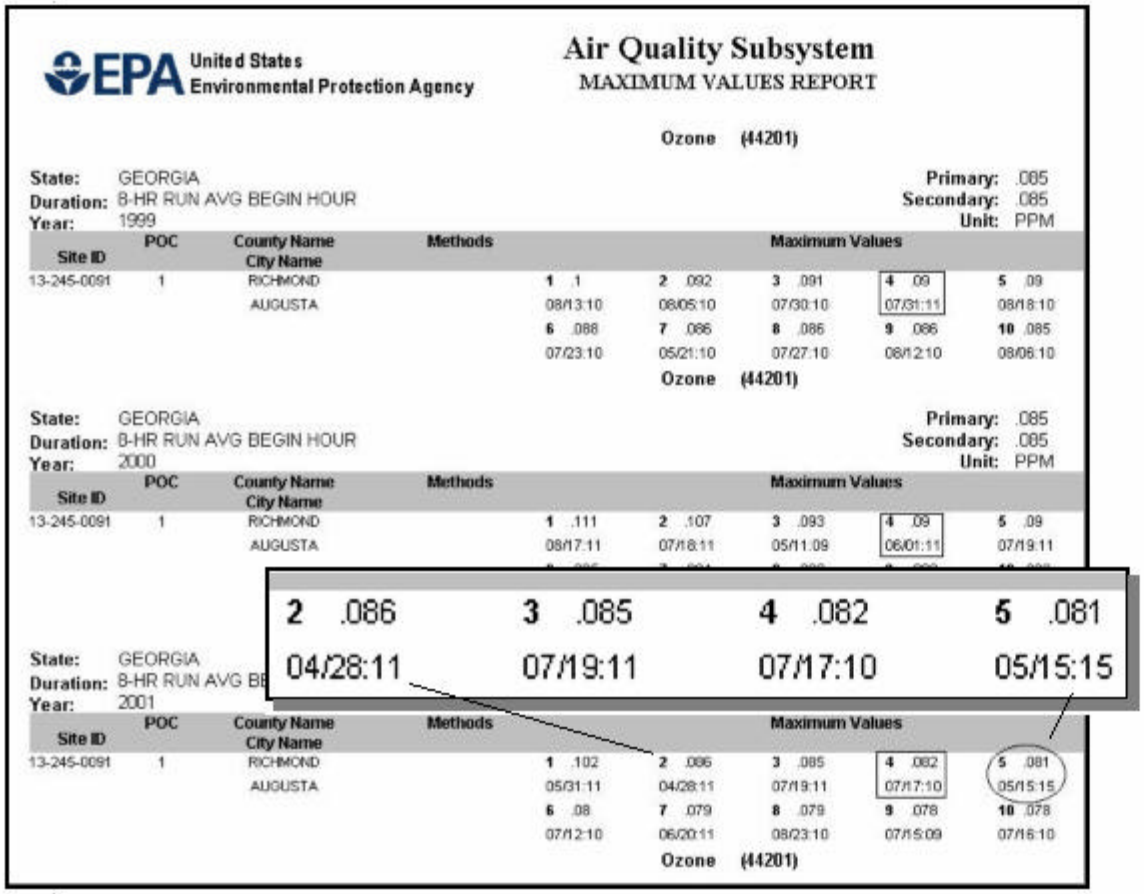
FEBRUARY	MARCH		OCTOBER		NOVEMBER
			Oct 1-14	Oct 15-31	
0	**7**		**2**	**16**	**1**

DAILY PEAK 8-HR OZONE CONCENTRATIONS ≥ 85 ppb
MARCH - APRIL - OCTOBER
IMPACTS ON 4th ANNUAL MAX. CONCENTRATION



IMPACT OF BOUNDARY MONTH EXCEEDENCE ON 4th ANNUAL MAX CONC. & DESIGN VALUE

EXAMPLE : 13-245-0091 (Augusta, GA)



EPA United States Environmental Protection Agency

Air Quality Subsystem
MAXIMUM VALUES REPORT

Ozone (44201)

State: GEORGIA
Duration: 8-HR RUN AVG BEGIN HOUR
Year: 1999
Primary: .085
Secondary: .085
Unit: PPM

Site ID	POC	County Name / City Name	Methods	Maximum Values				
13-245-0091	1	RICHMOND		1 .1	2 .092	3 .091	4 .09	5 .09
		AUGUSTA		08/13:10	08/05:10	07/30:10	07/31:11	08/18:10
				6 .088	7 .086	8 .086	9 .086	10 .085
				07/23:10	05/21:10	07/27:10	08/12:10	08/06:10

Ozone (44201)

State: GEORGIA
Duration: 8-HR RUN AVG BEGIN HOUR
Year: 2000
Primary: .085
Secondary: .085
Unit: PPM

Site ID	POC	County Name / City Name	Methods	Maximum Values				
13-245-0091	1	RICHMOND		1 .111	2 .107	3 .093	4 .09	5 .09
		AUGUSTA		08/17:11	07/18:11	05/11:09	06/01:11	07/19:11

State: GEORGIA
Duration: 8-HR RUN AVG BE
Year: 2001

Site ID	POC	County Name / City Name	Methods	Maximum Values				
13-245-0091	1	RICHMOND		1 .102	2 .086	3 .085	4 .082	5 .081
		AUGUSTA		05/31:11	04/28:11	07/19:11	07/17:10	05/15:15
				6 .08	7 .079	8 .079	9 .078	10 .078
				07/12:10	06/20:11	08/23:10	07/15:09	07/16:10

Ozone (44201)

2 .086	3 .085	4 .082	5 .081
04/28:11	07/19:11	07/17:10	05/15:15

1999 - 2001 DESIGN VALUE

2001 2nd MAX VALUE INCLUDED:

1999	4th MAX:	90 ppb
2000	4th MAX:	90 ppb
2001	4th MAX:	82 ppb
	262	

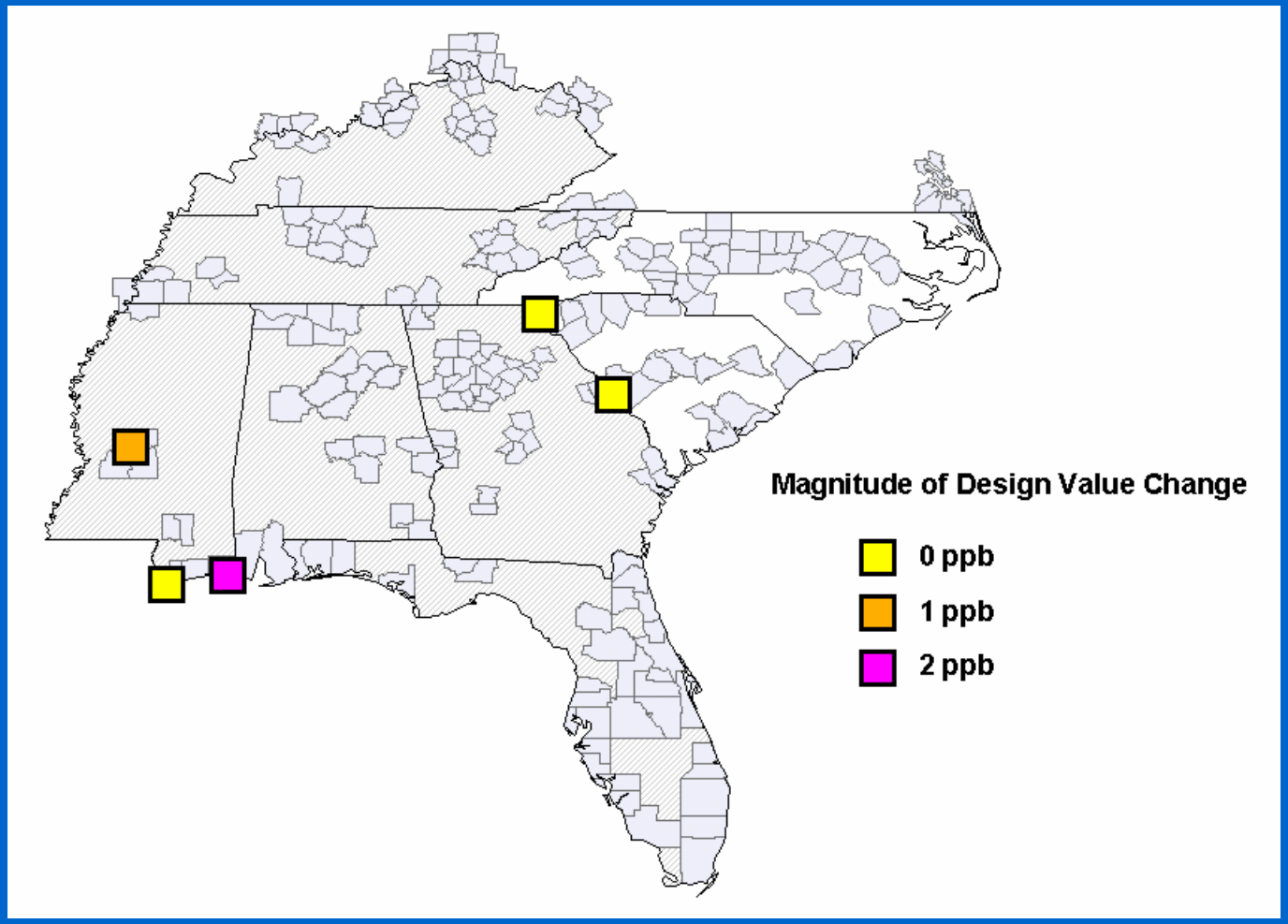
/ 3 = 87.33 -> **87**

2001 2nd MAX VALUE EXCLUDED:

1999	4th MAX:	90 ppb
2000	4th MAX:	90 ppb
2001	4th MAX:	81 ppb
	261	

/ 3 = 87.00 -> **87**

DAILY PEAK 8-HR OZONE CONCENTRATIONS ≥ 85 ppb
MARCH -APRIL - OCTOBER
IMPACTS ON DESIGN VALUE

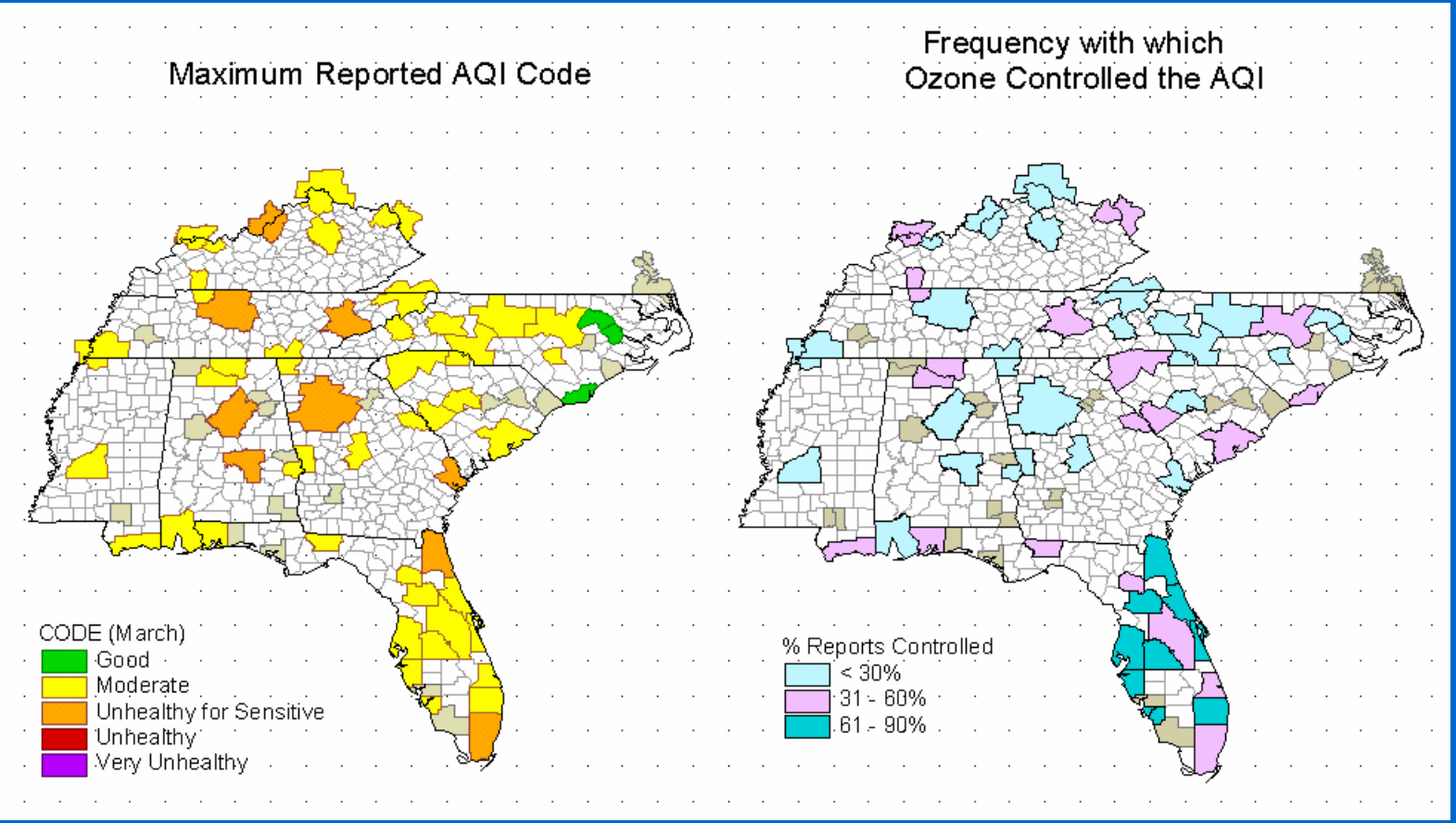


MSA OZONE MONITORS

IMPACT ON AIR QUALITY INDEX

MARCH

(1996 - 2001)

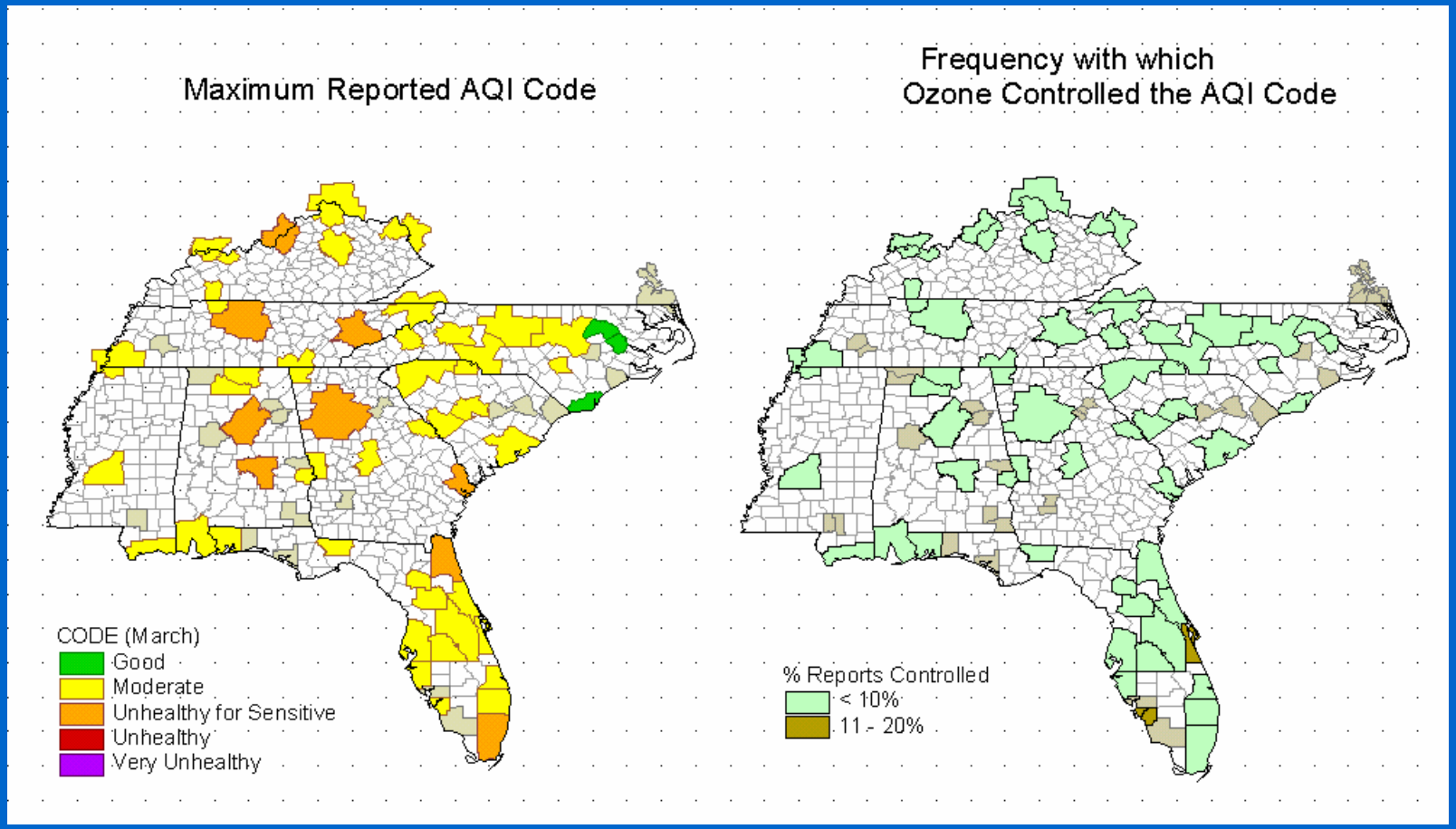


MSA OZONE MONITORS

IMPACT ON AQI CODE

MARCH

(1996 - 2001)

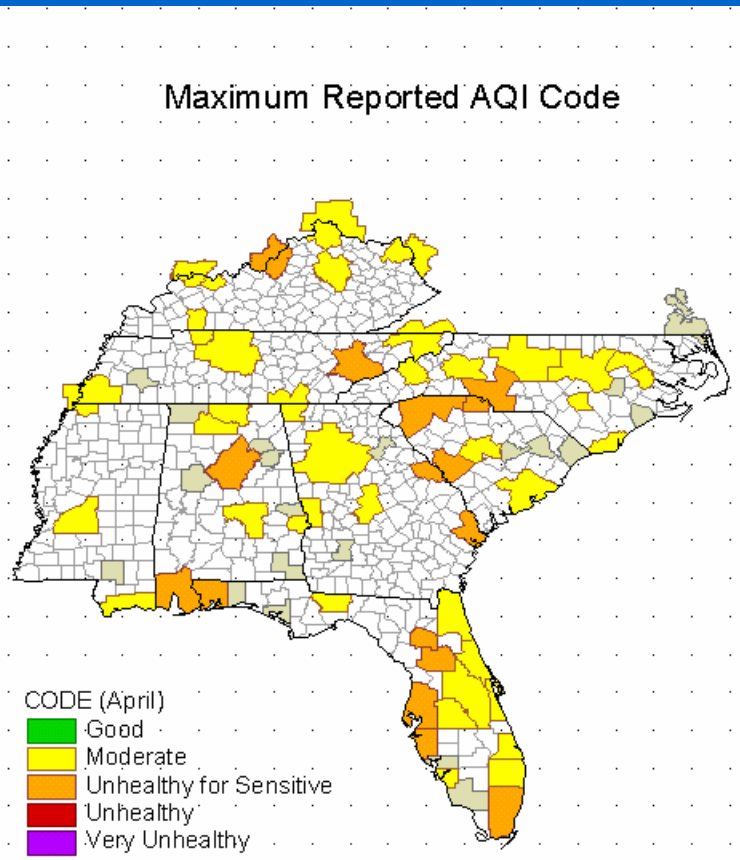


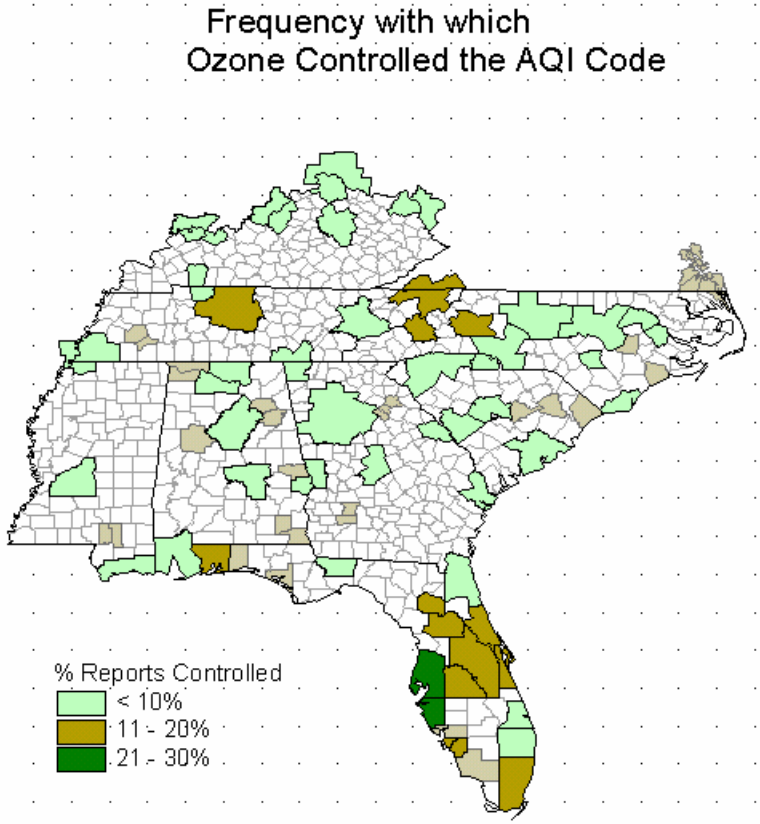
MSA OZONE MONITORS

IMPACT ON AQI CODE

APRIL

(1996 - 2001)



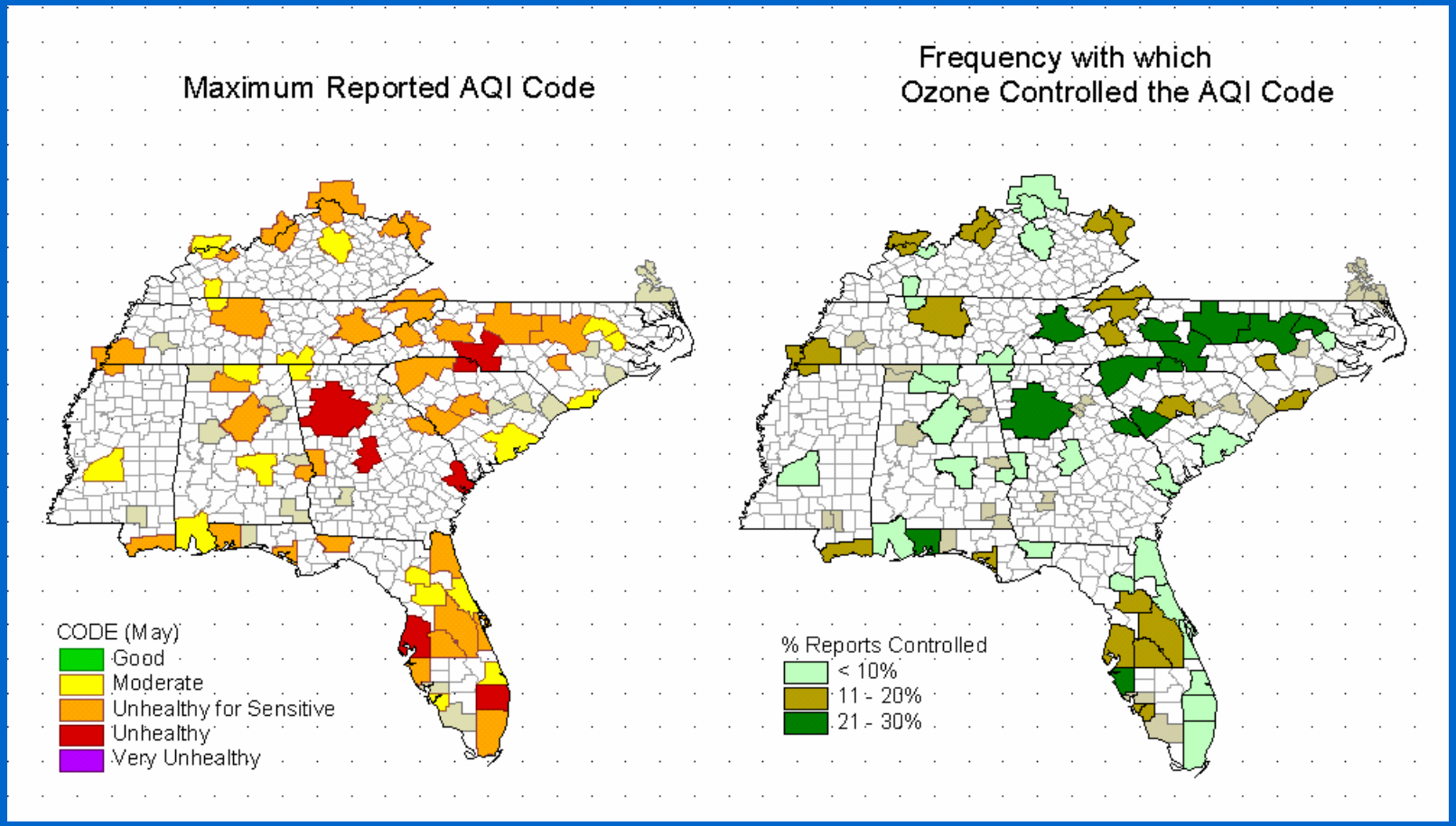


MSA OZONE MONITORS

IMPACT ON AQI CODE

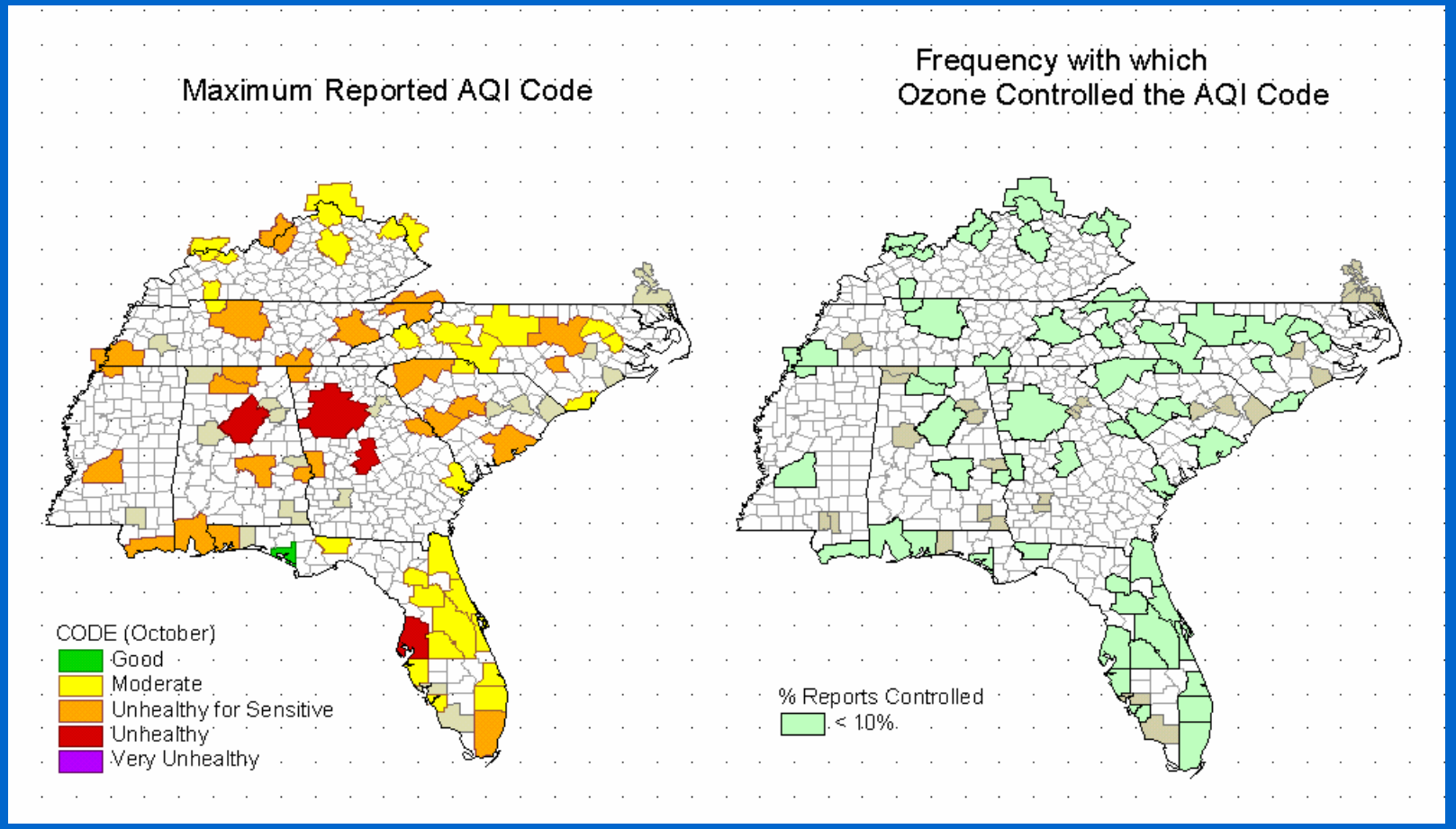
MAY

(1996 - 2001)



MSA OZONE MONITORS
IMPACT ON AQI CODE
OCTOBER

(1996 - 2001)



ORANGE/RED/PURPLE AQI CODES CONTROLLED BY OZONE

MARCH – APRIL – MAY – SEPTEMBER – OCTOBER

1996 - 2001

MONTH	# RECORDS	# CODE			# O_3-controlled INDEX (R4)			# O_3-controlled INDEX (R4 outside FL)			# O_3-controlled CODE (R4)			# O_3-controlled CODE (R4 outside FL)		
March	2174	17	-	-	1	-	-	1	-	-	-	-	-	-	-	-
April	2597	24	-	-	17	-	-	3	-	-	17	-	-	3	-	-
May	2722	144	7	-	115	2	-	100	1	-	113	2	-	98	1	-
September	2700	105	15	1	92	11	-	80	11	-	85	11	-	73	11	-
October	2835	85	5	-	14	-	-	10	-	-	11	-	-	9	-	-

MSAs WHERE OZONE CONTROLLED AQI and/or AQI CODE

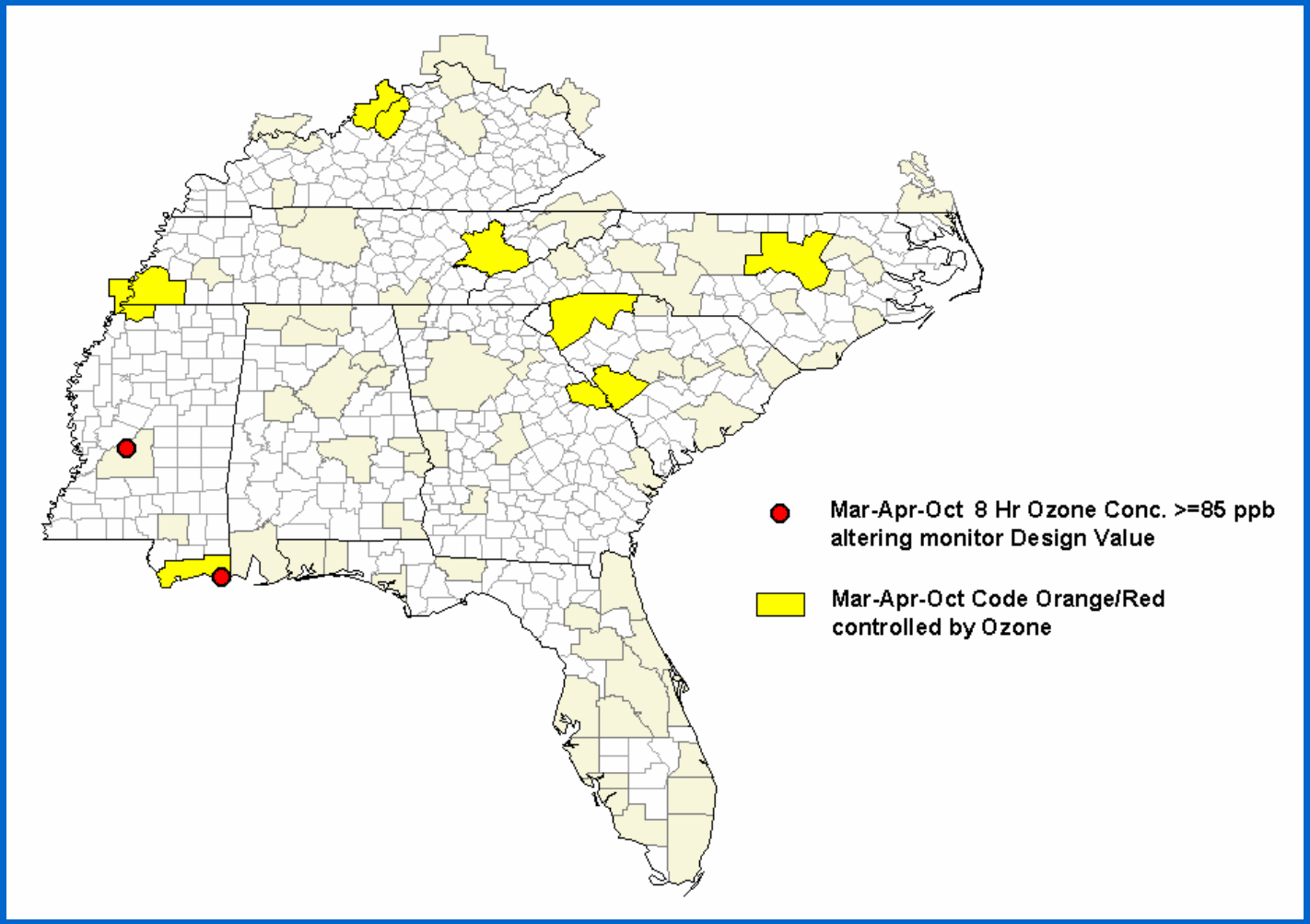
MARCH – APRIL – OCTOBER

1996 - 2001

MSA	DATE	O_3 AQI	$PM_{2.5}$ AQI	O_3-Controlled CODE
MARCH				
Knoxville, TN	March 8, 2000	129	109	No
APRIL				
Augusta-Aiken, GA-SC	April 28, 2001	104	71	Yes
Greenville-Spartanburg, SC	April 26, 1998	114	67	Yes
Louisville, KY	April 30, 2000	101	66	Yes
OCTOBER				
Augusta-Aiken, SC	October 17, 2000	101	63	Yes
Biloxi-Gulfport, MS	October 29, 2000	104	96	Yes
Greenville-Spartanburg, SC	October 5, 2000	111	104	No
Knoxville, TN	October 4, 2000	111	88	Yes
Knoxville, TN	October 15, 2000	109	81	Yes
Knoxville, TN	October 16, 2000	106	77	Yes
Knoxville, TN	October 4, 2001	106	87	Yes
Memphis, TN	October 2, 1999	106	63	Yes
Memphis, TN	October 27, 1999	114	94	Yes
Raleigh-Durham, NC	October 16, 2000	106	90	Yes

POTENTIALLY CRITICAL OZONE MONITORING LOCATIONS

MARCH - APRIL - OCTOBER



BENEFITS OF YEAR-ROUND OZONE MONITORING AT A SUBSET OF REGION 4 MONITORS

- Monitor potentially critical areas during March - April - October
- Supplement NCORE Level 2 Site Data
- Contribute to research and modeling needs
- Improve the quality of future ozone season evaluations