TCEQ

2006/2012 DFW Attainment Demonstration Modeling Update Using MOVES On-Road Emissions

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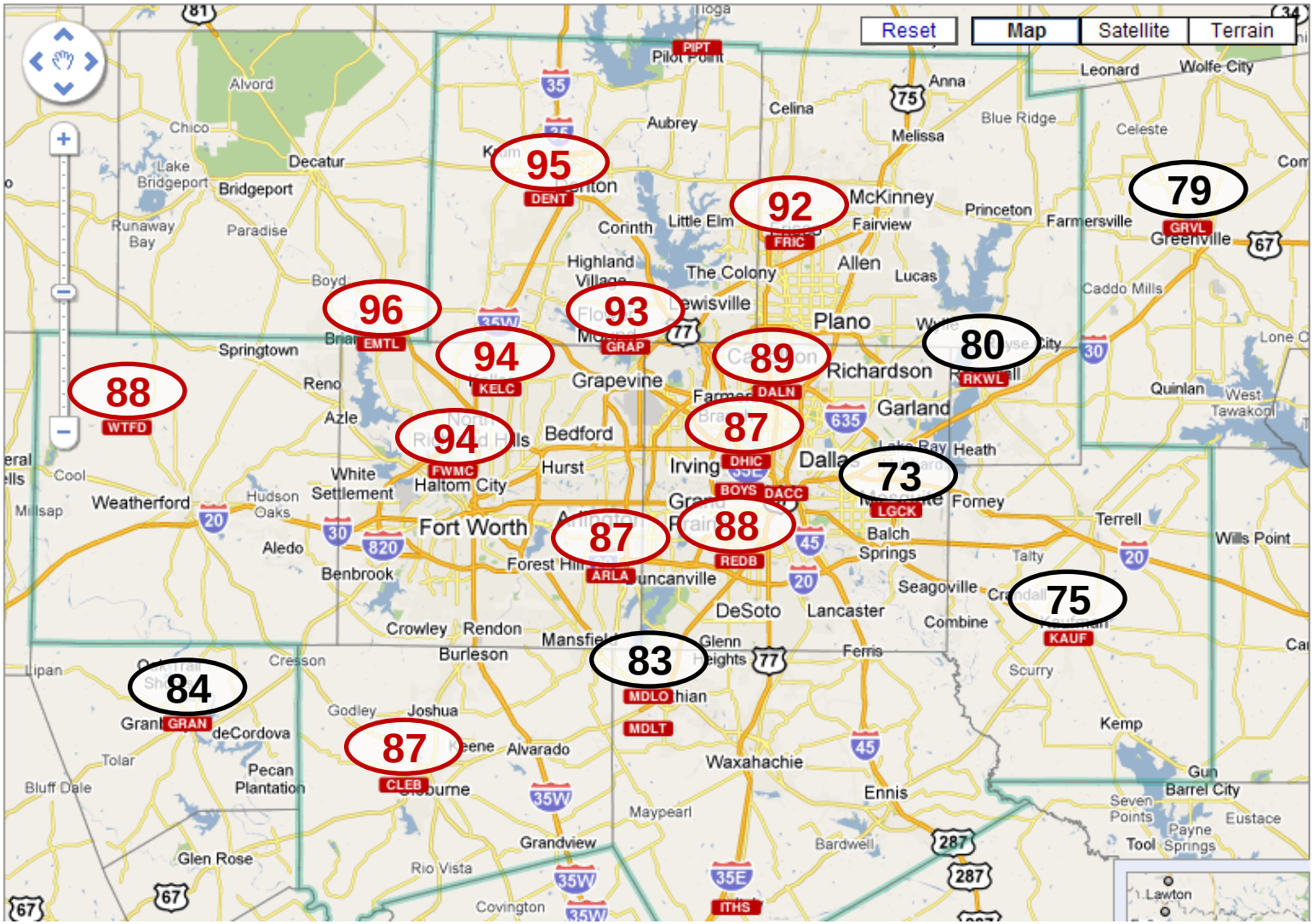
Air Modeling & Data Analysis
Air Quality Division

Presented to the
DFW Photochemical Modeling Technical Committee
North Central Texas Council of Governments (NCTCOG) Offices
July 7, 2011

2006 Design Values

30 days ≥ 85 ppb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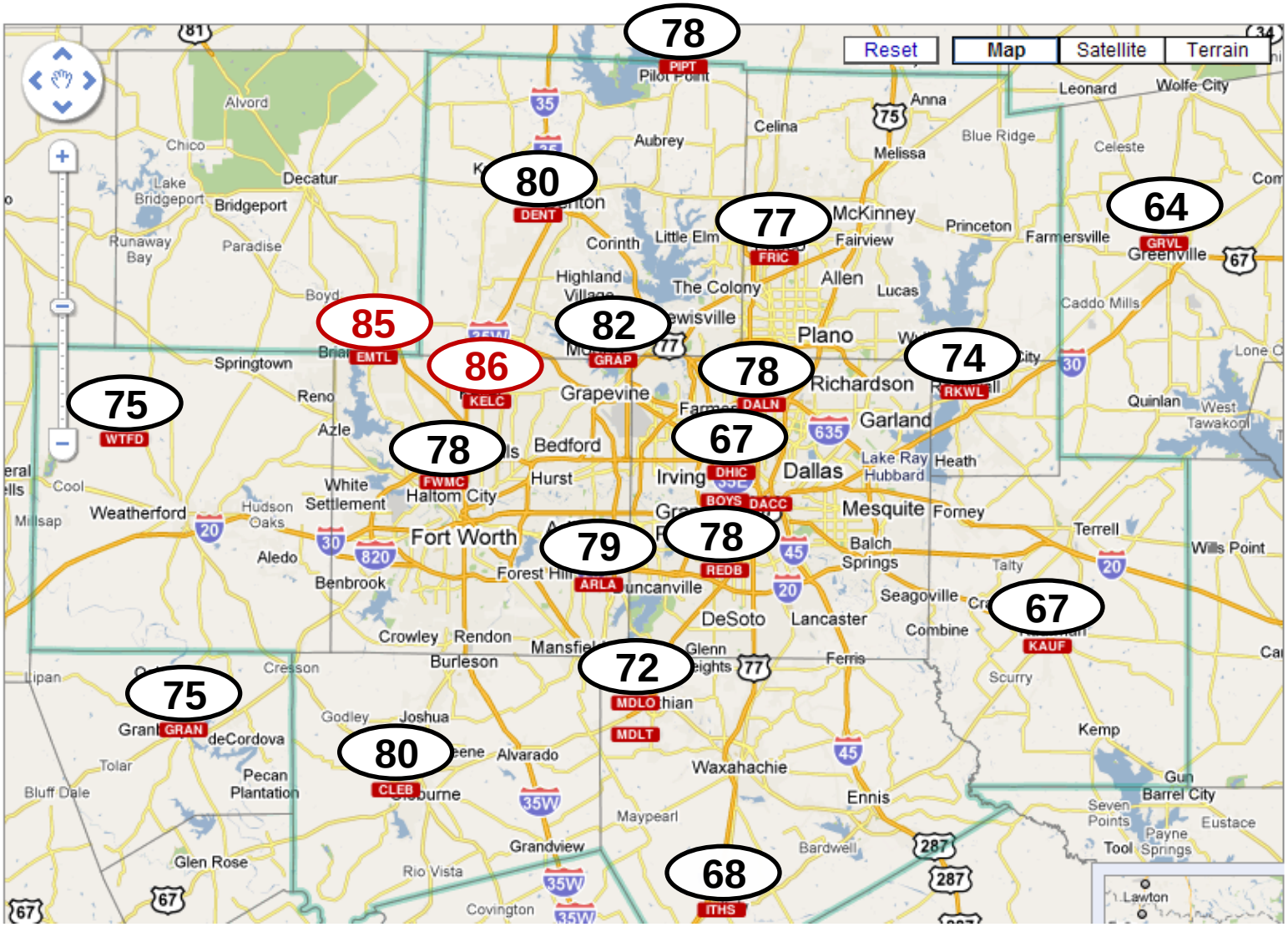
2010 Design Values

8 days ≥ 85 ppb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Ovilla
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Lone Oak
Cedar Creek Lake
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Lake Ray Hubbard
Lake Bridgeport
Lake Ray Roberts
Lake Lewisville
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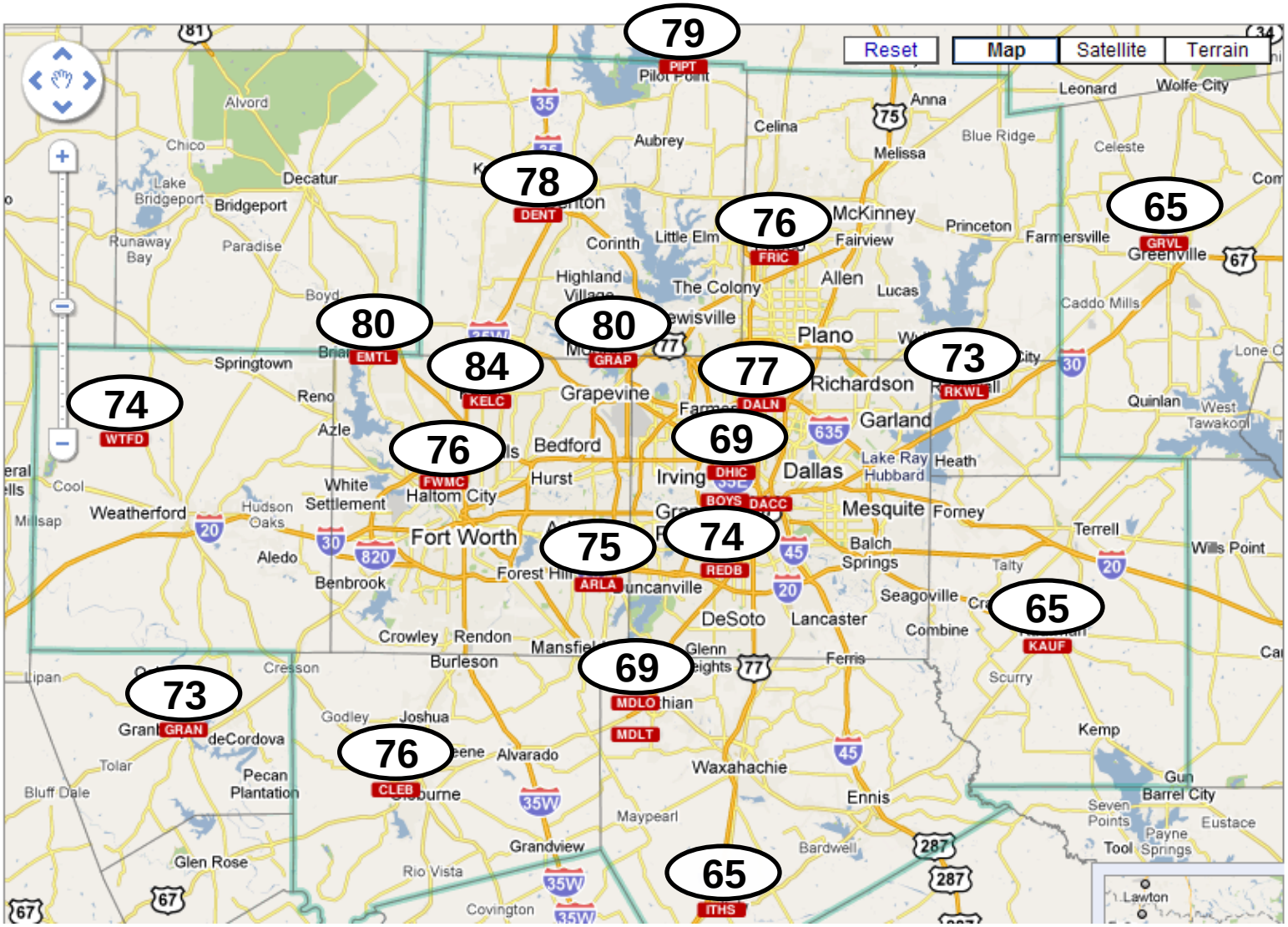
2011 Design Values*

2 days ≥ 85 ppb



*2011 Design Values as of July 5, 2011 and are subject to change

Modeling in SIP Development
The Big Picture

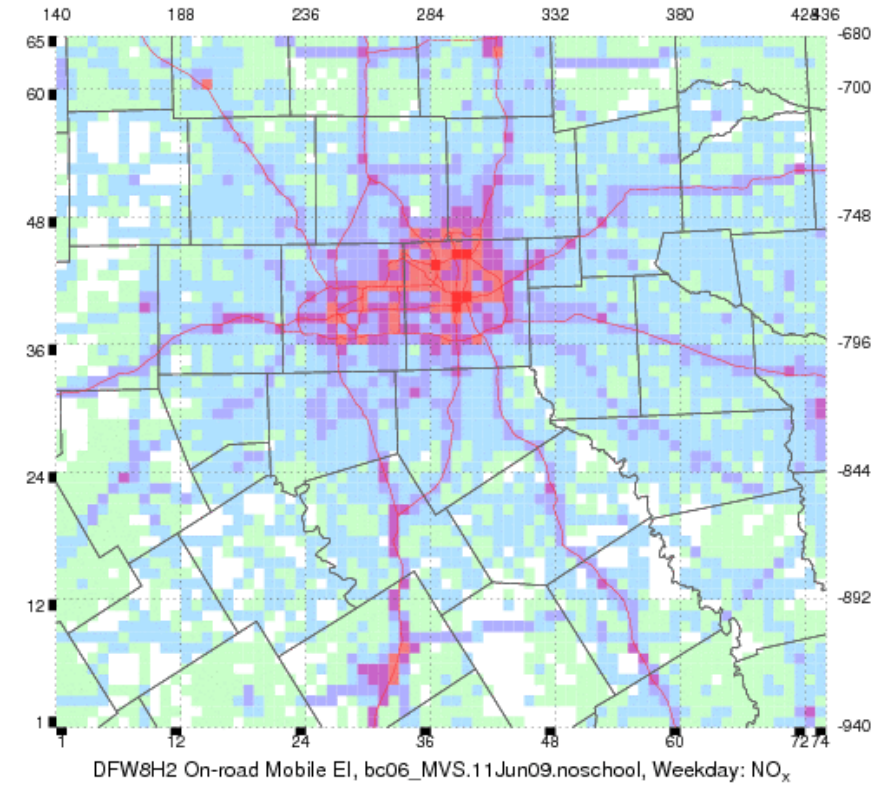
Base Case	Day-specific emissions; replicate what actually happened
Baseline Case	Typical emissions; used in Relative Response Factor (RRF) to predict future design values
Future Base Case	Apply future growth + on-the-books controls to estimate future ozone
Control Strategy Testing	Determine control strategies that will effectively reduce ozone
SIP	Document modeling procedures

2006 Baseline with MOVES

Category	2006 NO_X Tons/day	%	2006 VOC Tons/day	%
On-road Mobile*	259 (+34)	50%	111 (+6)	22%
Area w/o Oil/Gas	16	3%	213	42%
Points	51	10%	41	8%
Non-Road	85	16%	60	12%
Off-Road	40	8%	7	1%
Oil & Gas Production	50	10%	72	14%
Oil & Gas Drilling	18	4%	1	0%
9-County Total	519		505	

Weekday Reg2 emissions w/ MOVES (rounded);
()= diff from 2006 MOBILE6.2 emissions

2006 On-Road NO_X

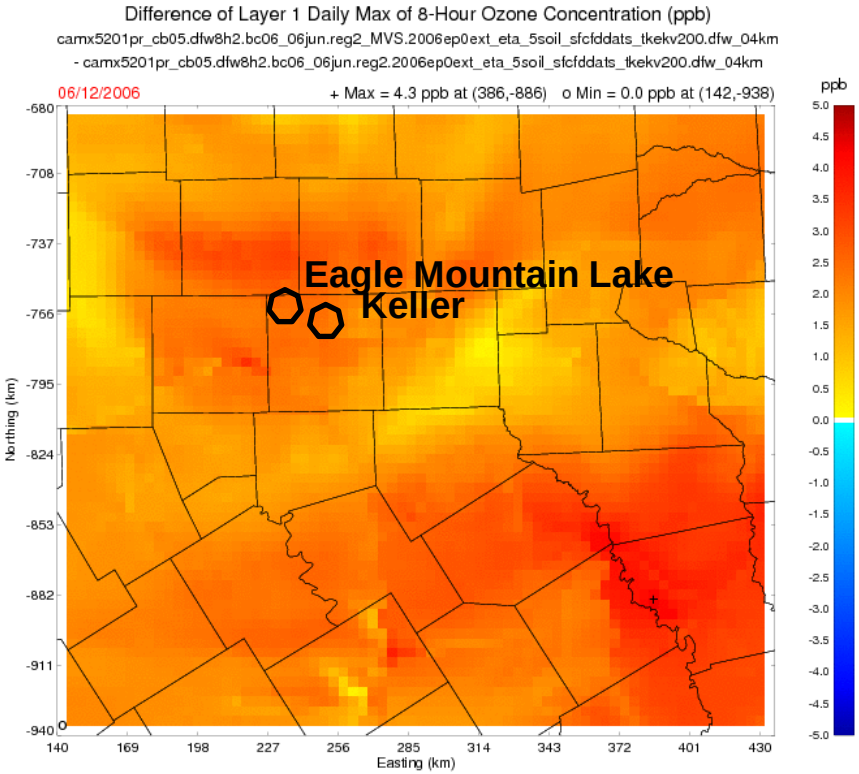


*** 2006 Baseline MOBILE6.2 On-road Mobile emissions: NO_X = 225 tpd; VOC = 105 tpd**

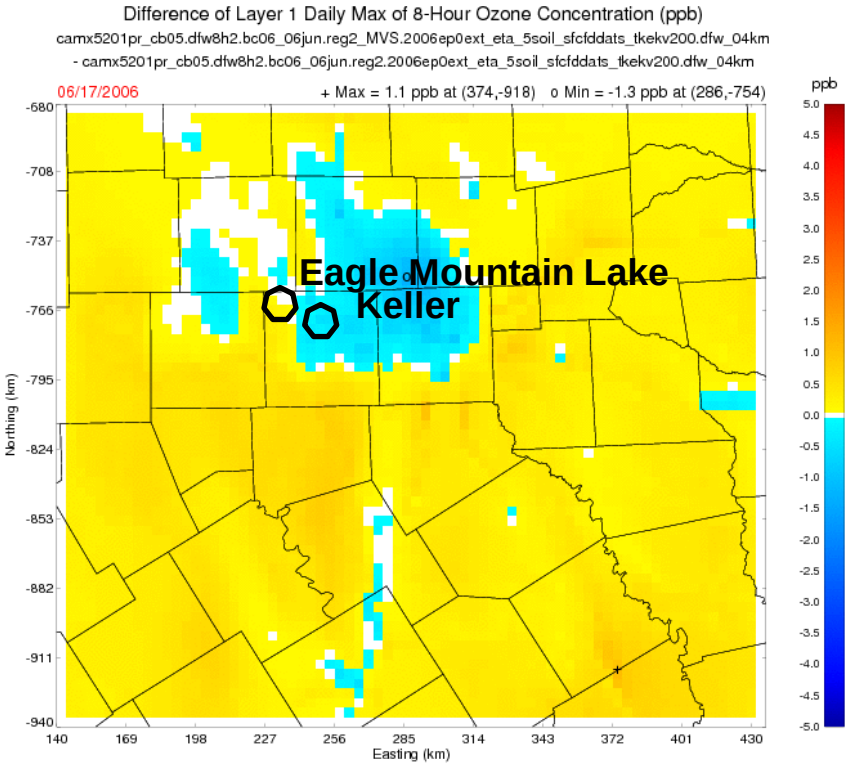
2006: Impact of MOVES

Difference of eight-hour daily maxima between 2006 MOVES and MOBILE6.2 On-road emissions

Increases of 0-5 ppb throughout the nine-county area during the episode (4.3 ppb increase shown)



Decreases of 0 – 1.3 ppb on cloudy days (non-exceedance days)

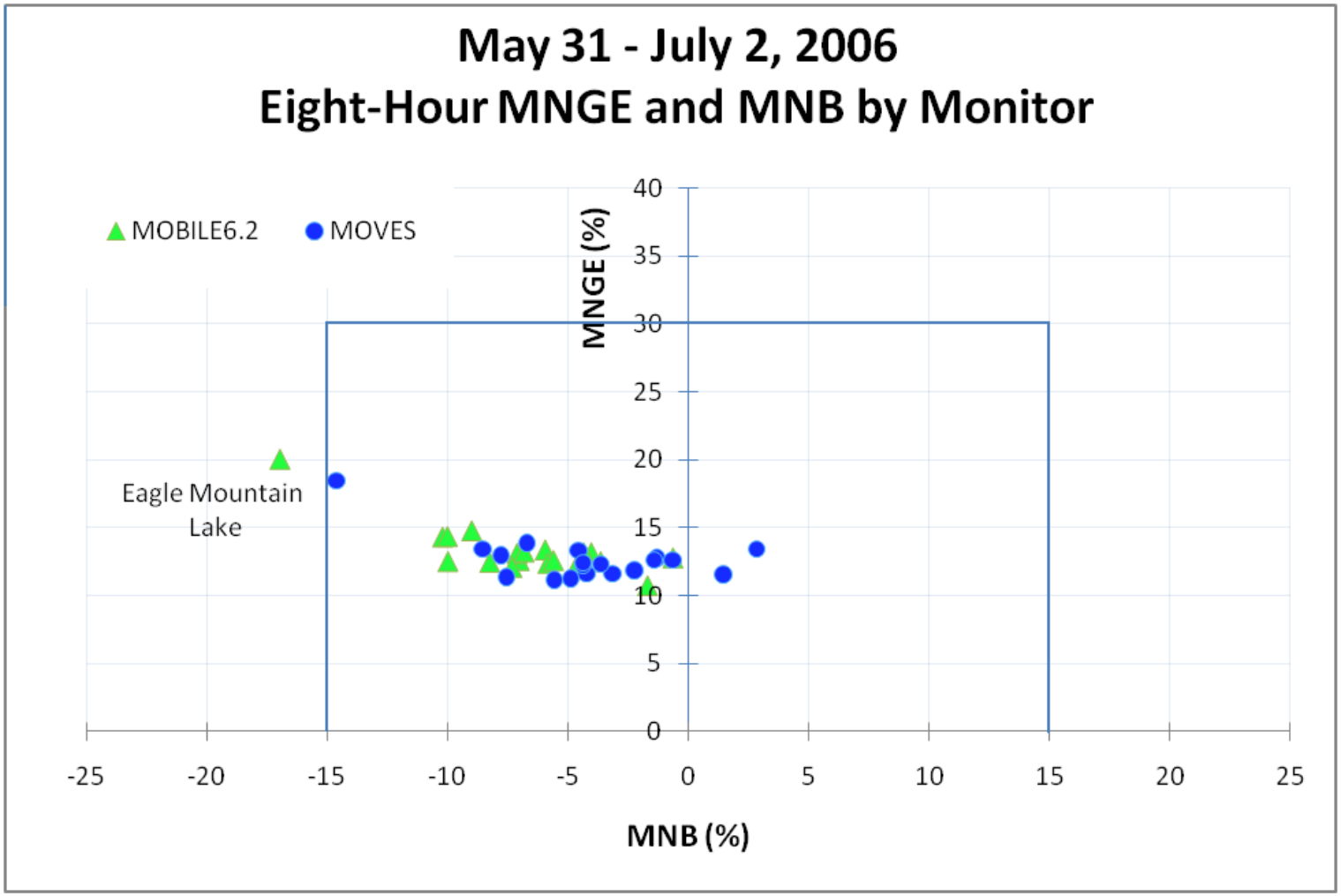


2006 Base Case Evaluation

MOVES **MOBILE6.2**

☆ **Stars show high ozone days.**

2006 Base Case Evaluation



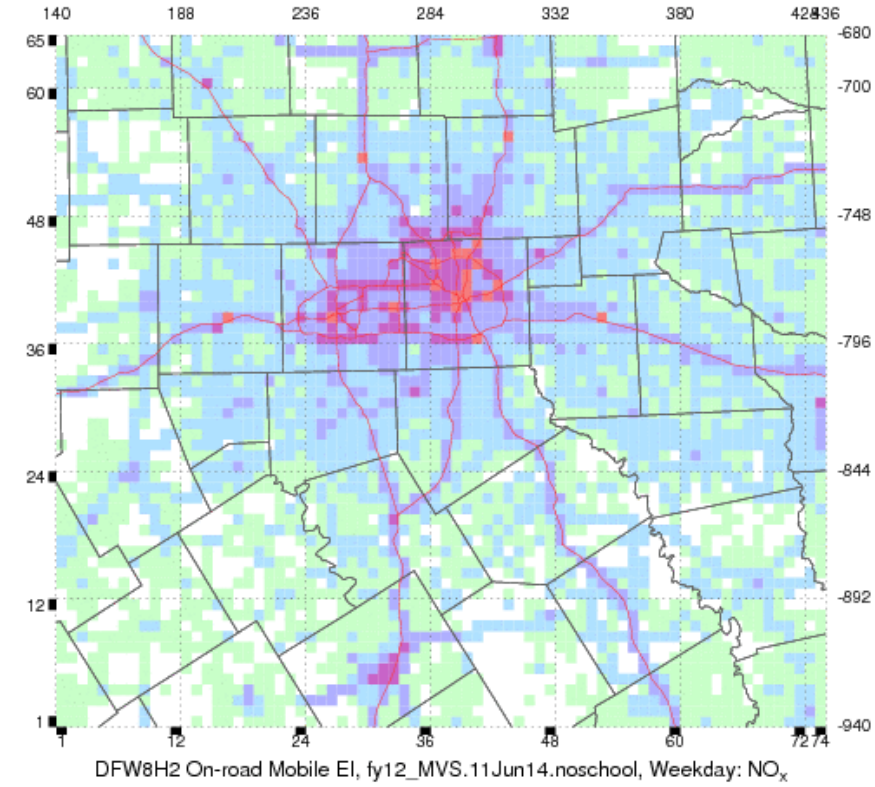
MOVES **MOBILE6.2**

2012 Baseline with MOVES

Category	2012 NO_X Tons/day	%	2012 VOC Tons/day	%
On-road Mobile*	181 (+59)	49%	80 (+1)	15%
Area w/o Oil/Gas	18	5%	240	46%
Points	51	14%	39	7%
Non-Road	64	17%	43	8%
Off-Road	37	10%	6	1%
Oil & Gas Production	10	3%	113	22%
Oil & Gas Drilling	9	2%	1	0%
9-County Total	370		522	

Weekday cs03a emissions with MOVES (rounded);
()= diff from 2012 MOBILE6.2 emissions

2012 On-Road NO_X

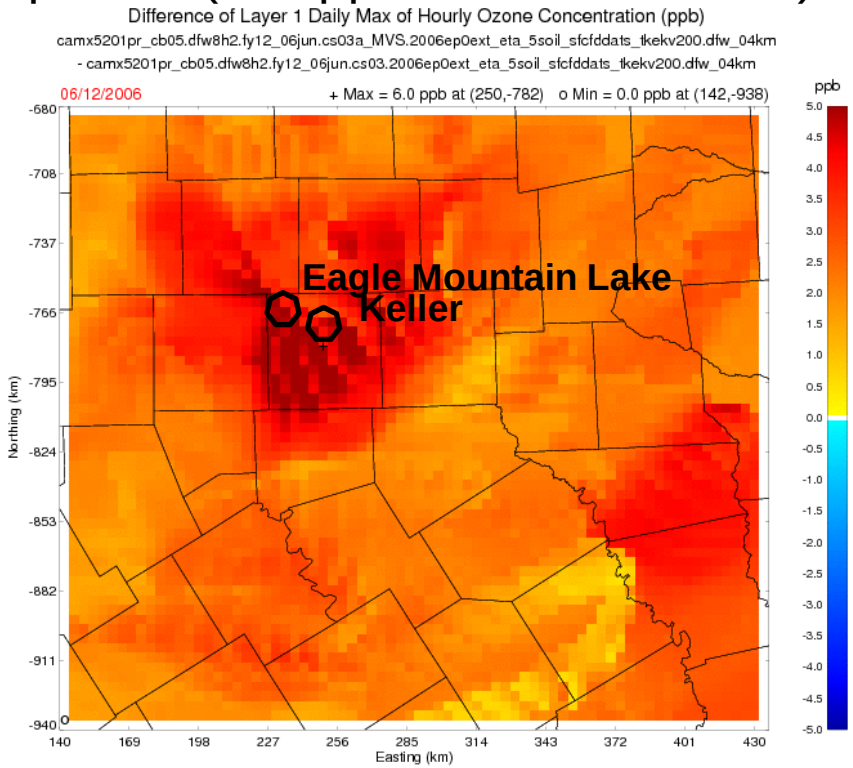


*** 2012 Baseline MOBILE6.2 On-road Mobile emissions: NO_X = 122 tpd; VOC = 80 tpd**

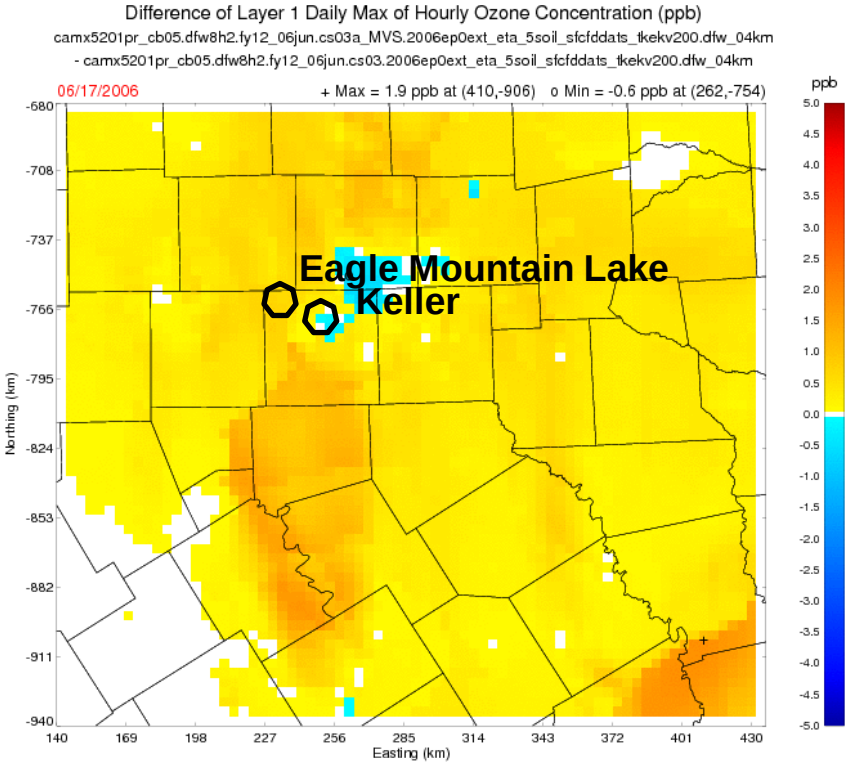
2012: Impact of MOVES

Difference of eight-hour daily maxima between 2012 MOVES and MOBILE6.2 On-road emissions

Increases of 0-7 ppb throughout the nine-county area during the episode (6.0 ppb increase shown)



Decreases of 0 – 0.6 ppb on cloudy days (non-exceedance days)



2012 Future Design Values (in ppb)

Monitor	MOBILE6.2 2012 Future Design Value	MOVES 2012 Future Design Value	Difference (ppb)
Denton	75.37	77.03	1.66
Eagle Mountain Lake	**76.05**	**78.06**	2.01
Keller	74.83	76.45	1.62
Grapevine Fairway	74.67	76.17	1.50
Fort Worth Northwest	73.78	75.36	1.58
Frisco	72.93	74.45	1.52
Parker County	71.3	72.71	1.41
Dallas North	69.64	71.15	1.51
Dallas Exec Airport	69.4	70.58	1.18
Cleburne	70.26	70.85	0.59
Arlington	68.95	70.32	1.37
Dallas Hinton	66.52	67.89	1.37
Pilot Point	65.97	67.35	1.38
Midlothian Tower	65.31	66.63	1.32
Rockwall Heath	62.47	63.27	0.80
Midlothian OFW	61.09	62.24	1.15
Kaufman	59.27	60.42	1.15
Granbury	68.18	69.66	1.48
Greenville	58.97	59.96	0.99
	FY2012 cs03	FY2012 cs03a_MVS	

Opportunity for Input on the DFW SIPs

- July 14, 2011: Arlington Public Hearings
  - Formal comments: 10:00 a.m. and 6:30 p.m.
  - Talk with staff: 9:30 a.m. and 6:00 p.m.
  - Arlington City Council Chambers, 101 W. Abram St., Arlington, Texas
- July 22, 2011: Austin Public Hearing
  - Formal comments: 2:00 p.m.
  - Talk with staff: 1:30 p.m.
  - TCEQ Headquarters, 12100 Park 35 Circle, Bldg E, Room 201, Austin, TX
- July 25, 2011: Public Comment Period Closes
  - Electronic comments may be submitted through the eComments system

DFW Modeling Web Sites

- Proposed DFW SIPs for the 1997 Eight-Hour Ozone Standard (6/8/11)
  http://www.tceq.texas.gov/airquality/sip/dfw/dfw-latest-ozone
  - MOVES Supplement to the DFW Attainment Demonstration to be posted here

- DFW Eight-Hour Ozone SIP Modeling Web Site
  http://www.tceq.state.tx.us/implementation/air/airmod/data/dfw8h2

- DFW Modeling File FTP Site
  ftp://amdaftp.tceq.texas.gov/pub/DFW8H2/

Questions?

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512 239-1523

The Air Modeling & Data Analysis Section contributed to these results.

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air modeling data analysis