

Denver 2010 8-Hour Ozone Design Value Projections and Results of 2010 Control Strategy Simulations

Ralph Morris, Ed Tai and Tanarit
Sakulyanontvittaya
ENVIRON International Corporation
Novato, California

Dennis McNally and Cyndi Loomis
Alpine Geophysics, LLC
Arvada, Colorado

August 20, 2008

Emissions Summary 2010 Control Strategy

Test	Description	Emissions (TPD)			% Anthro (%)		
		CO	VOC	NOx	CO	VOC	NOx
2006.a3	Current Year 8-Hour Ozone Design Value						
b1	2010 Base Case	-386.0	-42.2	-50.1	-10.2%	-5.3%	-5.6%
b1-cntl01	SIP Control Strategy	-40.0	-58.7	-6.2	-1.2%	-7.7%	-0.7%
b1-cntl02	SIP + State-Only Strategy	-69.7	-107.2	-10.5	-2.1%	-1.3%	-1.3%

2010 Base Case emission reductions from 2006 levels, all other emission reductions from 2010 Base Case.

Air Quality Summary 2010 Control Strategies

Test	Description	DV Ozone (PPB)		Grid DV Ozone (ppb)*		Grid Diff. Ozone (ppb)**	
		RFNO	FTCW	Max.	Min.	Max.	Min.
2006.a3	Current Year 8-Hour Ozone Design Value	85	86				
b1	2010 Base Case	84.9	84.9				
b1-cntl01	SIP Control Strategy	84.8	84.7	0.4	-1.0	1.3	-1.2
b1-cntl02	SIP + State-Only Strategy	84.7	84.5	0.3	-1.0	1.8	-1.7

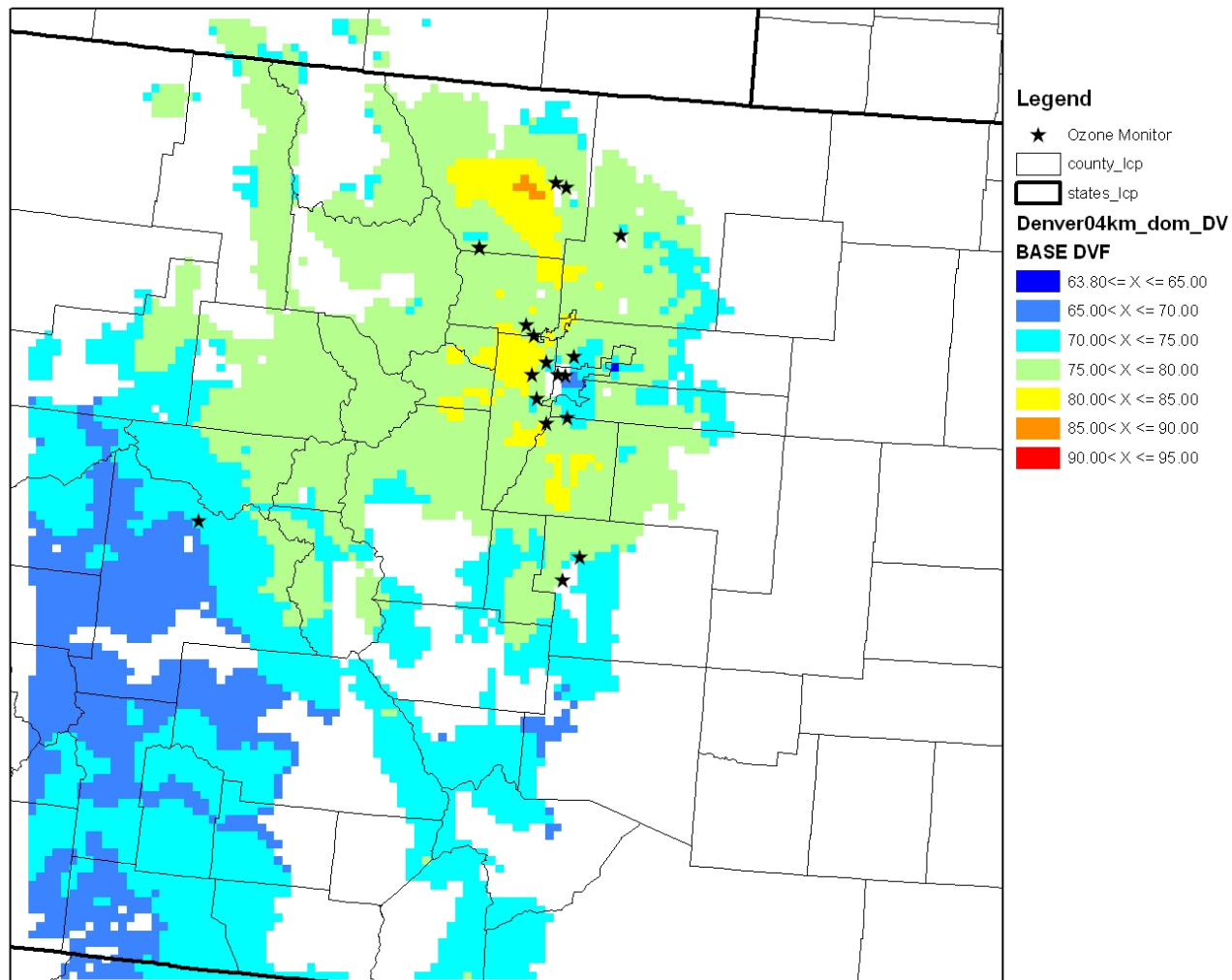
* Maximum difference in 2010 design value anywhere on the 4km grid.

**Maximum difference in daily maximum 8-hour ozone concentration anywhere on the 4km grid.

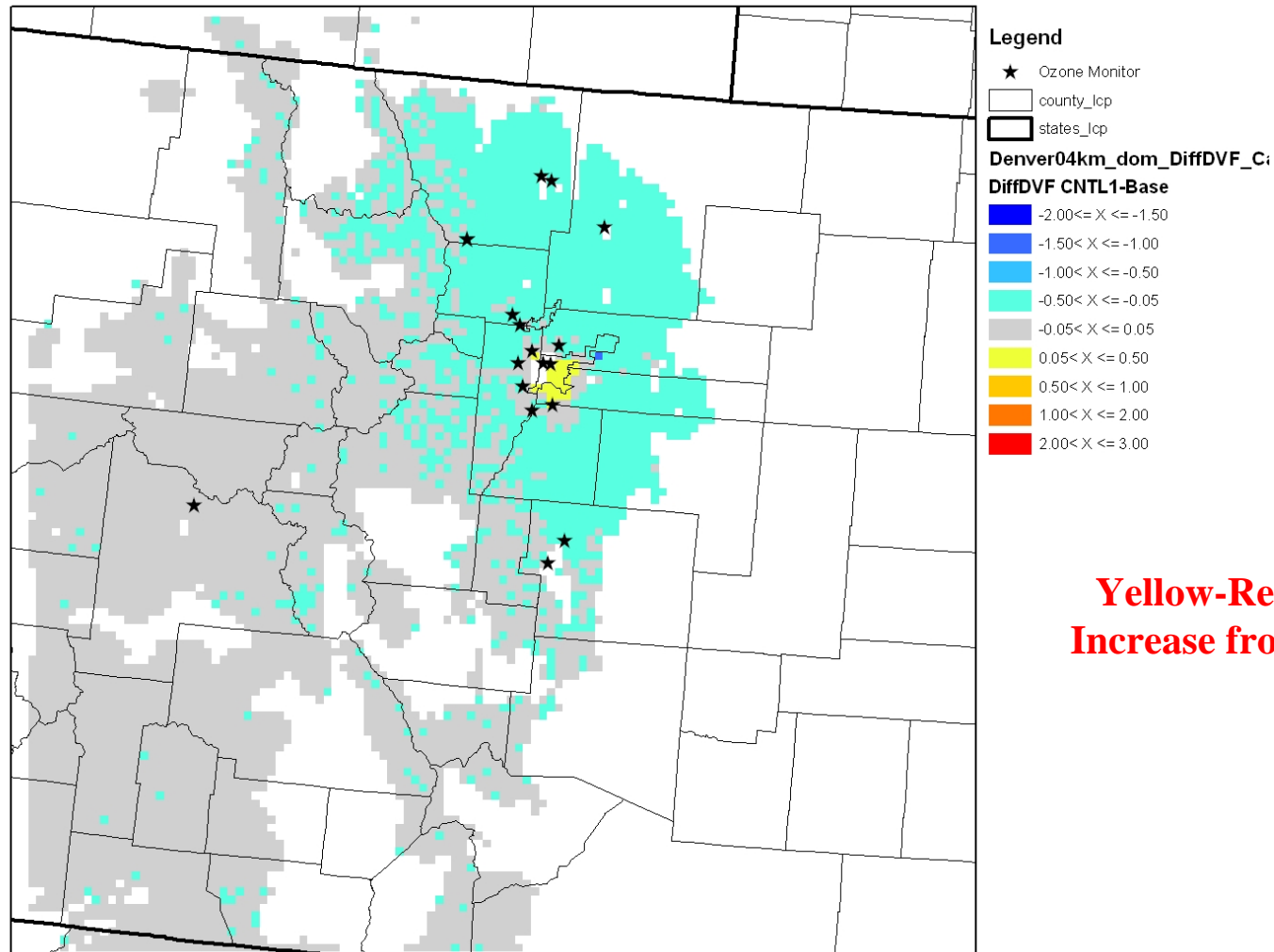
Air Quality Summary 2010 Control Strategies

Airs-ID	Monitor	DVC	Base	Cntl1	Cntl2
80013001	Welby	70.0	70.2	70.2	70.2
80050002	Highland	78.0	77.3	77.2	77.1
80130011	S. Boulder Creek	81.0	80.8	80.7	80.6
80310002	Denver - CAMP	56.0	56.0	56.0	55.9
80310014	Carriage	74.0	74.1	74.1	74.0
80350004	Chatfield	84.0	83.4	83.3	83.3
80410013	USAF Academy	73.0	72.0	71.9	71.9
80410016	Manitou Springs	74.0	73.7	73.7	73.7
80590002	Arvada	79.0	79.2	79.1	79.1
80590005	Welch	75.0	75.0	75.0	74.9
80590006	Rocky Flats North	85.0	84.9	84.8	84.7
80590011	NREL	82.0	82.3	82.2	82.1
80690011	Fort Collins - West	86.0	84.9	84.7	84.5
80691004	Fort Collins	74.0	73.0	72.9	72.7
81230009	Greeley - Weld Twr	78.0	77.7	77.4	77.0
GTH161	Gunnison	68.0	67.8	67.8	67.9
ROM206	Larimer	76.0	75.2	75.1	75.1
ROM406	Larimer	76.0	75.2	75.1	75.1

Denver 2010 Base Case Design Value (DVf)

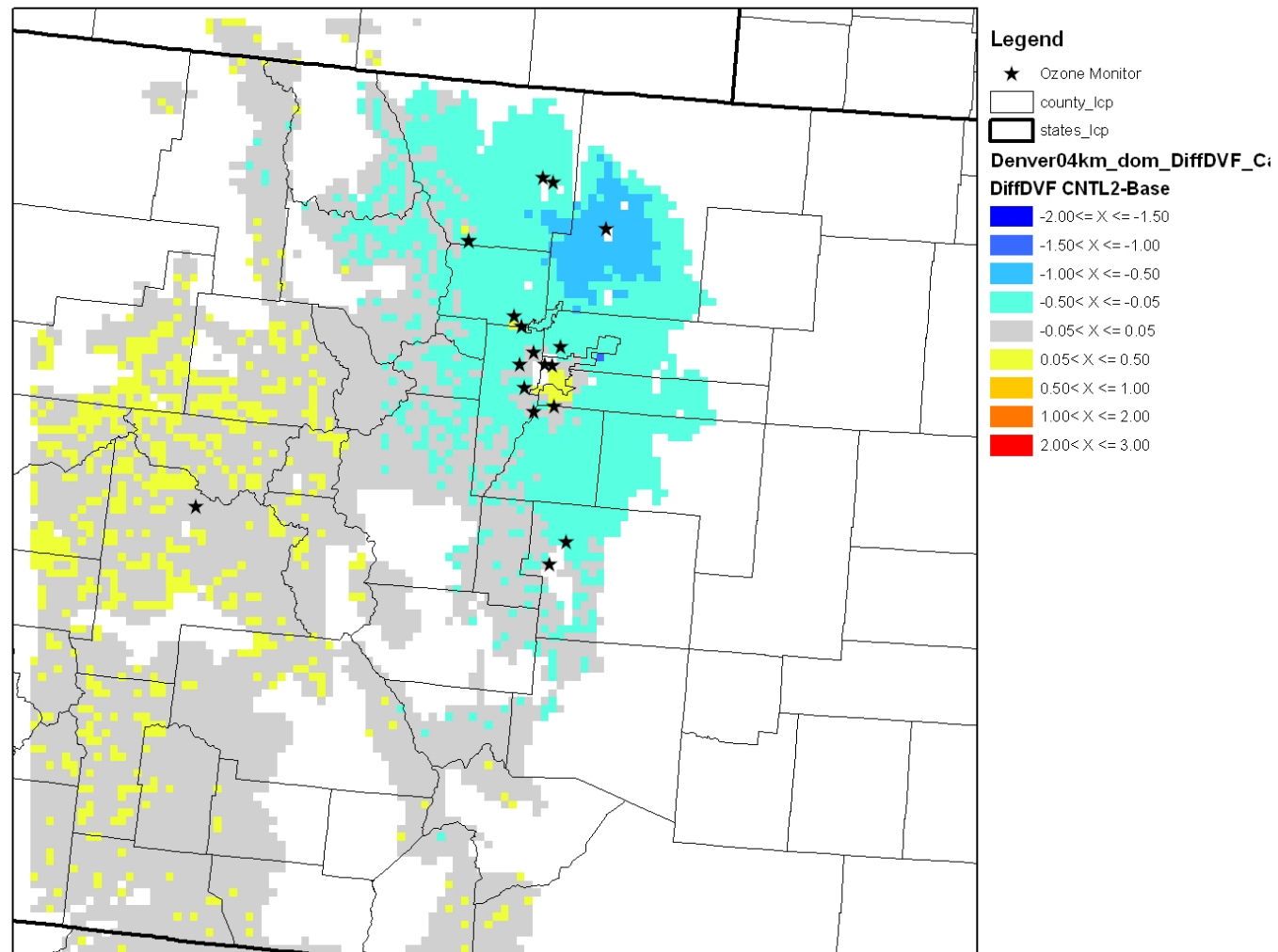


SIP Strategy DVf Difference



**Yellow-Red: Ozone
Increase from Control**

SIP + State Strategy DVf Difference



Preliminary Conclusions

- SIP Control Strategy reduces ozone at highest monitors (RFNO, FTCW)
- SIP+State Control Strategy has roughly twice the impact of SIP controls alone.
- Both Control Strategies have small local disbenefits in Denver, with wider spread benefits, especially in regions with higher ozone monitors.
- SIP+State Control Strategy shows small disbenefits in Western Slope where 2010 DVf's are below 75 ppb.