

# Air Quality Conformity Overview

Travel Forecasting Subcommittee  
January 25, 2013



# The Clean Air Act

- ❖ Requires EPA to set National Ambient Air Quality Standards (NAAQS) for 6 common air pollutants
- ❖ Requires EPA to review those standards at least every 5 years considering new scientific data and public health
- ❖ Requires EPA to designate areas as meeting (attainment) or not meeting (non-attainment) the standards
- ❖ Allows EPA to define boundaries of “non-attainment” areas

# The Clean Air Act

- ❖ Requires states to establish a network of air monitoring stations to monitor and report on pollutant levels
- ❖ Requires states to develop State Implementation Plans (SIPs)
  - a specific plan to attain the air quality standards for each area designated nonattainment
- ❖ Requires Transportation Conformity in non-attainment areas
  - a process which ensures that transportation plans and programs are consistent with the purpose of the SIP

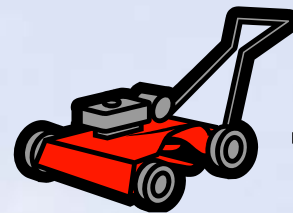
# 4 Sources of Air Pollution



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+



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Point  
Source

Mobile  
Source

Area  
Source

Non-road  
source

# Transportation Conformity

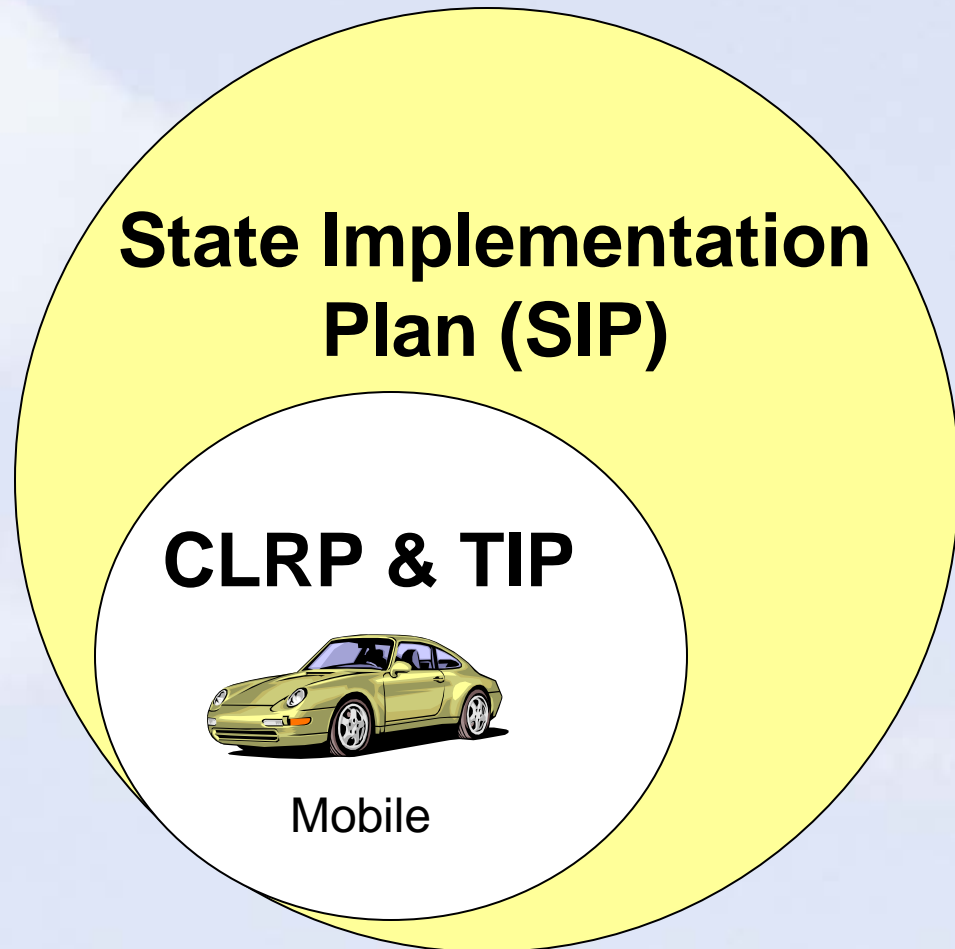
- ❖ Transportation Conformity only addresses mobile source pollution



- ❖ EPA's Transportation Conformity Rule establishes the criteria procedures for determining whether metropolitan transportation plans and programs conform to the SIP

# Mobile Budgets

- ❖ The SIP sets the *mobile budget*, the maximum allowable emissions from vehicles.
- ❖ TPB must ensure that the regional transportation plan (CLRP) and program (TIP) do not result in emissions above this level.



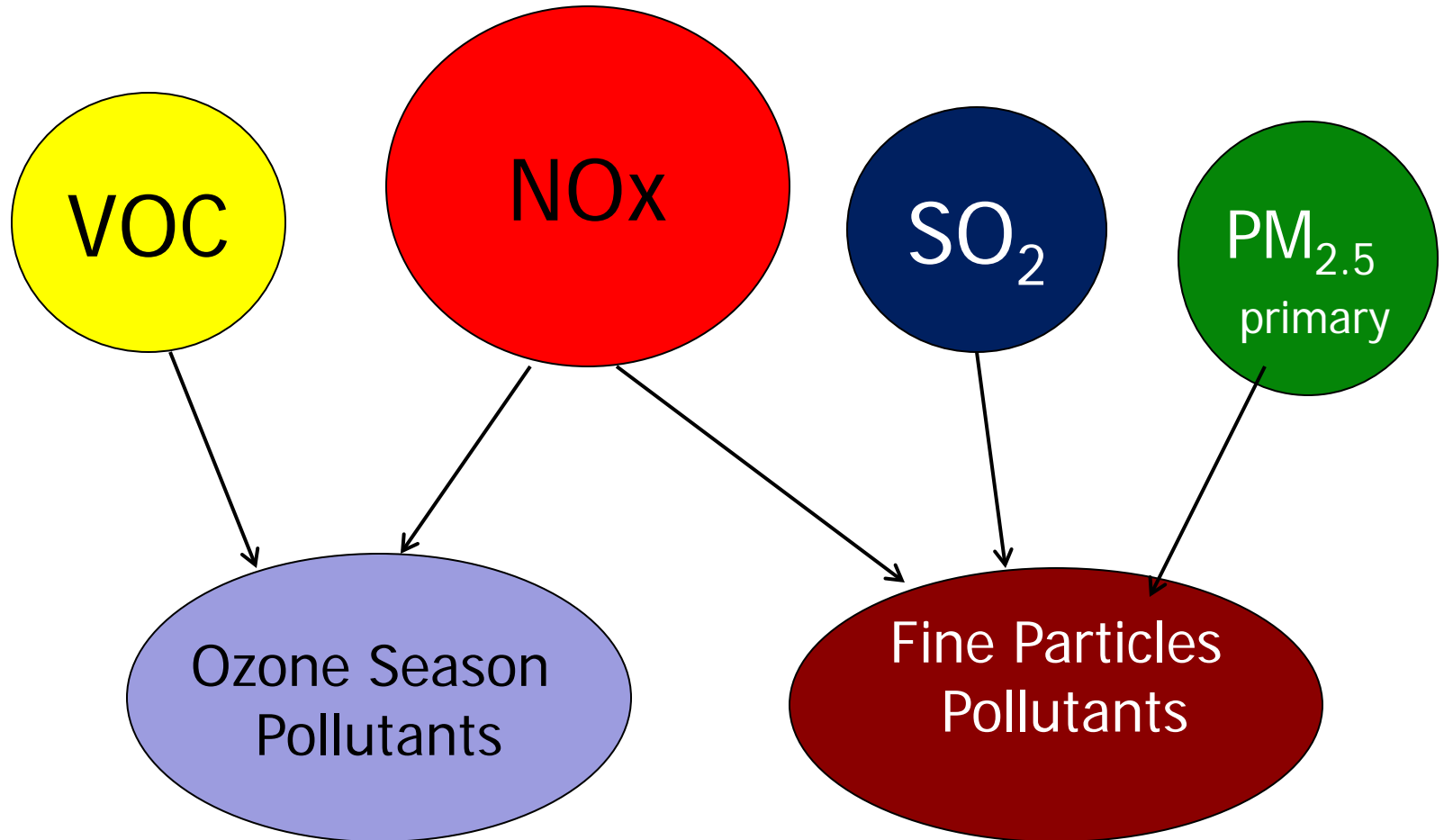
# Washington DC-MD-VA

Our region is in “non-attainment” for:

❖ Ozone Season Pollutants

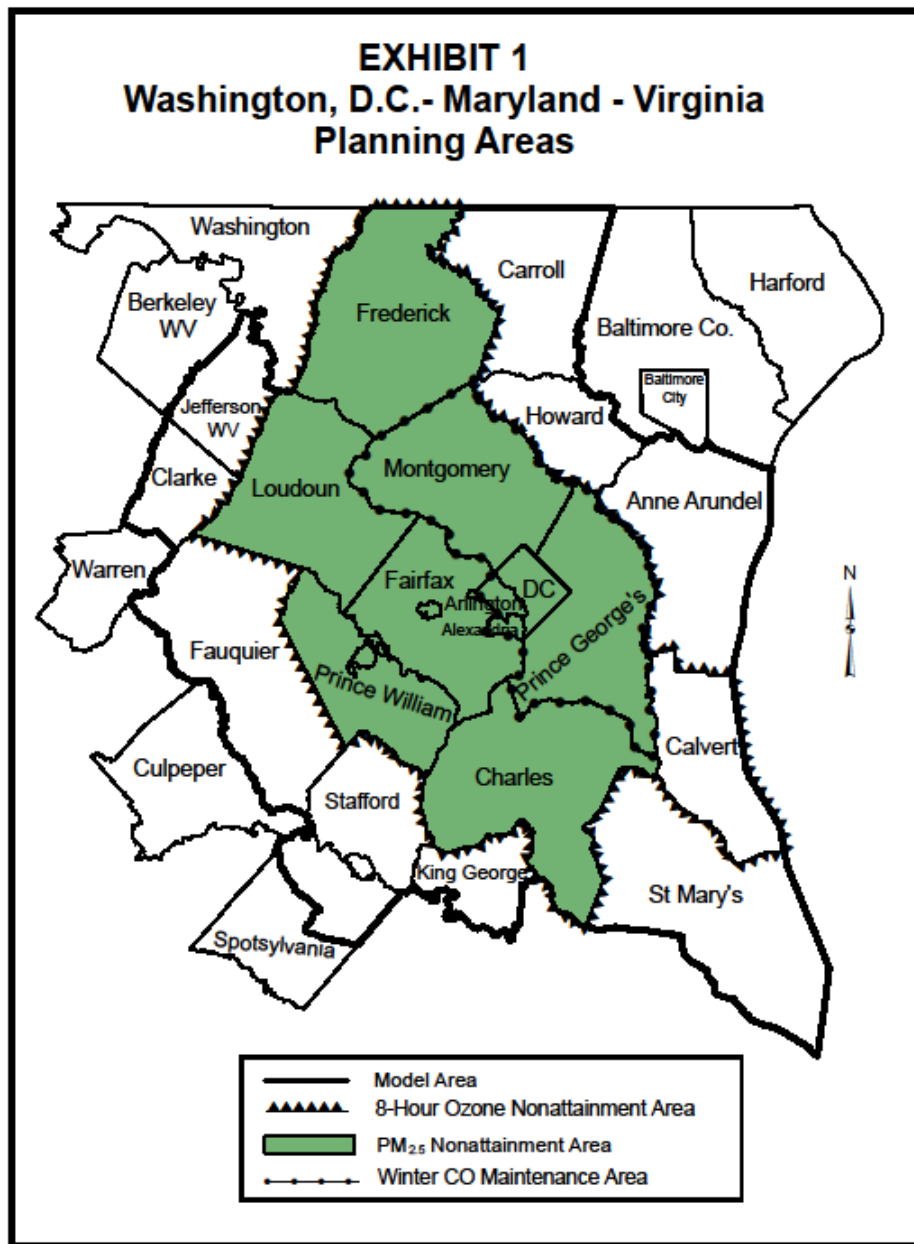
❖ Fine Particles Pollutants (PM<sub>2.5</sub>)

# Precursors for Ozone and Fine Particles





# Washington DC-MD-VA Ozone and Fine Particles Pollutants Non-Attainment Areas



# Air Quality Conformity Schedule

## 2013 CLRP & FY2013-2018 TIP

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### 2013 CLRP FY2013-2018 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility				Under Const. or ROW acquired?	Compt. Date or Status
						Lanes					
						from	to	from	to		
VDOT	VI2r	Widen / Revise Operations	I-395/I-95 HOV/ BUS/ HOT Lanes	Approx. 2 mi. N. of I-495	VA 294 (Prince William Pkwy)	1	1	2	3	No	2015
VDOT	VI2r	Revise Operations	I-395/I-95 HOV/ BUS/ HOT Lanes	VA 294 (Prince William Parkway)	S. of VA 234 (Dumfries Rd.)	1	1	2	2	No	2015
VDOT	VI2s	Construct	I-395 (Auxiliary lane)	Northbound Duke St. on ramp	Seminary Rd off ramp	1	1	3	4	No	2015
VDOT		Expand	I-395 Southbound	North of Duke Street	South of Edsall Rd.	1	1	3	4	No	2018
VDOT	VI2r	Construct	I-395/I-95 HOV/ BUS/ HOT Lanes	S. of VA 234 (Dumfries Rd.)	VA 610 (Garrisonville Rd.) in Stafford Co.	1	1	0	2	No	2015
VDOT	nrs	Construct	Boundary Chanel Drive Intersection Modifications	Boundary Chanel Drive	Old Jefferson Davis Highway (off of I-395 Boundary Chanel Inter.					No	
VDOT	BRAC	Construct	I-95 NB Off Ramp @ Newington	NB I-95	NB Fairfax County Parkway	1	1	0	1	No	2020
VDOT	VI2r11	Construct	I 95: HOV / Bus / HOT Lanes Ramp: Between VA 648 (Edsall) and Turkeycock Run	NB I-395 HOV/HOT lanes	NB I-395 GP	-	1	0	1	No	2015
VDOT	VI2r24	Construct	I 95: HOV / Bus / HOT Reversible Ramp:	NB HOV/Bus/HOT Lanes	VA 7100 (Fairfax Co. Pkwy) (Alban Rd.)	-	1	0	1	No	2015
VDOT	VI2r24	Construct	I 95: HOV / Bus / HOT Reversible Ramp:	VA 7100 (Fairfax Co. Pkwy) (Alban Rd.)	SB HOV/Bus/HOT Lanes	-	1	0	1	No	2015
VDOT	BRAC0004 / VI2ra	Construct	I-95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	NB HOV/BUS/HOT Lanes - Located N of Rte. 7100/I 95 I/C <b>Phase II DAR</b>	EPG Southern Loop Road. - AM Only	1	1	0	1	No	
VDOT	BRAC0004 / VI2rb	Construct	I-95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	EPG Southern Loop Road. - PM Only <b>Phase I DAR</b>	SB HOV/BUS/HOT Lanes - N of Rte. 7100/I 95 I/C	1	1	0	1	No	2013
VDOT	BRAC0004/ VI2rc	Construct	I-95 Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	EPG Southern Loop Road. - PM Only <b>Phase I DAR</b>	NB I 95 GP Lanes	1	1	0	1	No	2013
VDOT	VI2r31	Construct	I 95: HOV / Bus / HOT Ramp:	SB Gen Purpose Lanes to SB HOV/Bus/HOT lanes	Between US 1 & VA 123	-	1	0	1	No	2015

# Air Quality Conformity Analysis

2013 CLRP & FY2013-2018 TIP

## Summary of Technical Approach

	Ozone	Wintertime CO	PM <sub>2.5</sub>
<b>Pollutant:</b>	VOC, NOx	CO	Direct particles, Precursor NOx
<b>Mobile Model:</b> <b>NEW!</b>	MOVES 2010a	MOVES 2010a	MOVES 2010a
<b>Conformity Test:</b>	<u>Budget Test:</u> Using mobile budgets most recently approved by EPA. 2008 RFP budgets found adequate in September 2009; or 2009 attainment or 2010 contingency budgets expected to be approved by EPA in January 2013. All budgets were set using Mobile6 emissions model and submitted to EPA in 2007.	<u>Budget Test:</u> Using mobile budgets established with the Wintertime CO maintenance plan. All budgets set using Mobile6 emissions model and submitted to EPA in 2007.	<u>Reductions From Base (2002 inventory) Test &amp; Budget Test:</u> With no approved budgets, reduction from base test will be needed; if EPA approves the PM maintenance plan budgets, those budgets must be used.
<b>Emissions Analysis Time-frame:</b>	Daily	Daily	Annual
<b>Vehicle Fleet Data:</b>	2011 vehicle registration data for all jurisdictions		
<b>Geography:</b>	8-hour ozone non-attainment area	DC, Arl., Alex., Mont., Pr. Geo.	8-hr. area less Calvert County
<b>Network Inputs:</b>	Regionally significant projects		
<b>Land Activity:</b>	<b>NEW!</b> Round 8.2		
<b>Modeled Area:</b>	3722 TAZ SYSTEM		
<b>Travel Demand Model:</b>	Version 2.3		

# Air Quality Conformity Analysis

2013 CLRP & FY2013-2018

## Analysis Years:

2015, 2017, 2020, 2025, 2030, 2040

# Air Quality Conformity Analysis

## 2013 CLRP & FY2013-2018

### EXHIBIT 9A

AIR QUALITY CONFORMITY UPDATE  
2012 CLRP AND FY2013-2018 TIP AIR QUALITY CONFORMITY  
DAILY REGIONAL HOME BASED WORK PURPOSE MODE ANALYSIS BY YEAR  
(Based on Mode Choice Output - 4th Iteration)

YEAR	HBW MOTORIZED PERSON	TOTAL HBW AUTO PSN	HBW SINGLE OCCUPANT AUTO PSN	HBW MULTIPLE OCCUPANT AUTO PSN	TOTAL HBW AUTO DRV	HBW CAR OCC.	HBW TRANSIT	HBW TRANSIT (%)
2002	3,416,996	2,691,684	2,298,111	393,573	2,474,699	1.09	725,312	21.23%
2007	3,682,678	2,905,495	2,473,577	431,918	2,665,811	1.09	777,183	21.10%
2015	4,051,525	3,189,858	2,710,305	479,554	2,923,179	1.09	861,667	21.27%
2017	4,142,685	3,238,699	2,747,237	491,462	2,964,235	1.09	903,986	21.82%
2020	4,294,186	3,347,371	2,806,187	541,184	3,032,472	1.10	946,815	22.05%
2030	4,740,736	3,719,511	3,061,110	658,401	3,325,405	1.12	1,021,225	21.54%
2040	5,078,626	3,995,829	3,265,604	730,225	3,555,167	1.12	1,082,797	21.32%

### EXHIBIT 9B

AIR QUALITY CONFORMITY UPDATE  
2012 CLRP AND FY2013-2018 TIP AIR QUALITY CONFORMITY  
DAILY REGIONAL ANALYSIS BY YEAR FOR ALL TRIP PURPOSES  
(Based on Mode Choice Output - 4th Iteration)

YEAR	TOTAL MOTORIZED PERSON	TOTAL AUTO PSN	SINGLE OCCUPANT AUTO PSN	MULTIPLE OCCUPANT AUTO PSN	TOTAL AUTO DRV	TOTAL CAR OCC.	TOTAL TRANSIT	TRANSIT (%)
2002	16,937,747	15,845,227	8,292,091	7,553,136	11,348,559	1.40	1,092,489	6.45%
2007	18,212,604	17,054,094	8,856,865	8,197,228	12,166,176	1.40	1,158,511	6.36%
2015	19,937,253	18,642,165	9,584,802	9,057,363	13,230,175	1.41	1,295,088	6.50%
2017	20,335,124	18,973,340	9,709,773	9,263,567	13,433,832	1.41	1,361,783	6.70%
2020	21,021,763	19,596,023	9,950,620	9,645,403	13,812,197	1.42	1,425,740	6.78%
2030	23,038,223	21,496,262	10,749,719	10,746,544	15,027,601	1.43	1,541,961	6.69%
2040	24,525,805	22,895,452	11,340,941	11,554,511	15,925,990	1.44	1,630,353	6.65%

### EXHIBIT 10

AIR QUALITY CONFORMITY UPDATE  
2012 CLRP / FY2013-2018 TIP AIR QUALITY CONFORMITY  
MODELED AREA TRIPS AND VEHICLE MILES TRAVELED  
AVERAGE WEEKDAY TRAFFIC (AAWDT)  
(Based on Final Iteration)

YEAR	WORK AND NON-WORK AUTO DRV	TRUCKS (Med + Hvy)	MISC + THRU TRIPS	COMMERCIAL VEHICLES	TOTAL VEH. TRIPS	TOTAL VMT
2002	12,189,746	656,922	724,160	1,252,029	14,822,857	149,388,892
2007	13,114,895	680,047	787,938	1,284,895	15,867,775	159,299,027
2015	14,217,566	734,842	873,058	1,400,166	17,225,632	171,523,126
2017	14,451,910	751,257	901,404	1,435,256	17,539,827	174,806,093
2020	14,878,275	777,165	944,030	1,488,447	18,087,917	180,153,736
2030	16,265,356	851,208	1,075,062	1,638,390	19,830,016	200,136,351
2040	17,269,784	907,616	1,186,909	1,752,243	21,116,552	212,923,598

# Air Quality Conformity Analysis

2013 CLRP & FY2013-2018

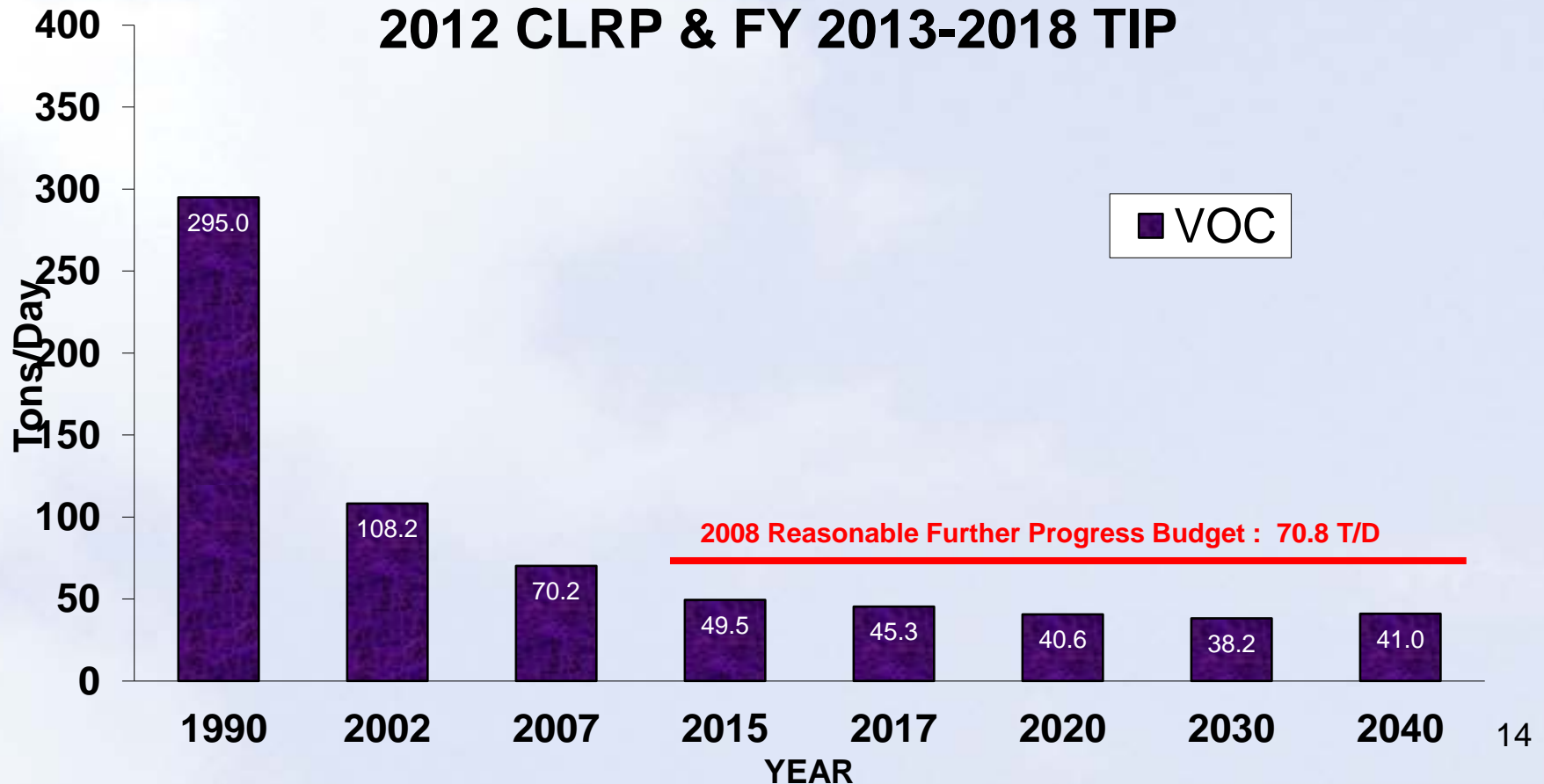
## EXHIBIT 20

### AIR QUALITY CONFORMITY **UPDATE**

#### Mobile Source VOC Emissions

#### for the 8-Hour Ozone Nonattainment Area

#### 2012 CLRP & FY 2013-2018 TIP





# Air Quality Conformity Schedule

## 2013 CLRP & FY2013-2018 TIP



Schedule for the 2013 Financially Constrained Long-Range Transportation Plan (CLRP)  
and the FY2013-2018 Transportation Improvement Program (TIP)

*September 19, 2012	TPB is Briefed on Draft Call for Projects
*October 17, 2012	TPB Releases Final Call for Projects - Transportation Agencies Begin Submitting Project Information through On-Line Database
December 14, 2012	<b><u>DEADLINE:</u></b> Transportation Agencies Complete On-Line Submission of Draft Project Inputs.
January 11, 2013	Technical Committee Reviews Draft CLRP & TIP Project Submissions and Draft Scope of Work for the Air Quality Conformity Assessment
January 17, 2013	CLRP & TIP Project Submissions and Draft Scope of Work Released for Public Comment
*January 23, 2013	TPB is Briefed on Project Submissions and Draft Scope of Work
February 16, 2013	Public Comment Period Ends
*February 20, 2013	TPB Reviews Public Comments and is asked to Approve Project Submissions and Draft Scope of Work
May 3, 2013	<b><u>DEADLINE:</u></b> Transportation Agencies Finalize Congestion Management Documentation Forms (where needed) and CLRP & TIP Forms <sup>1</sup> . (Submissions must not impact conformity inputs; note that the deadline for changes affecting conformity inputs was February 20, 2013).
June 13, 2013	Draft CLRP & TIP and Conformity Assessment Released for Public Comment at Citizens Advisory Committee (CAC)
*June 19, 2013	TPB Briefed on the Draft CLRP & TIP and Conformity Assessment
July 13, 2013	Public Comment Period Ends
*July 17, 2013	TPB Reviews Public Comments and Responses to Comments, and is Presented the Draft CLRP & TIP and Conformity Assessment for Adoption
*TPB Meeting	