National Capital Region Transportation Planning Board

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Memorandum **DRAFT**

June 13, 2007

To: Transportation Planning Board

From: Michael J. Clifford
Systems Planning Applications Director

Subject: Draft Results of the Air Quality Conformity Assessment of the Proposed US 15 / 340 Interchange at Jefferson Technology Park – Amendment to the 2006 Constrained Long Range Plan (CLRP) and the FY2007-2012 Transportation Improvement Program (TIP)

Introduction

This memo transmits draft summary results of the air quality conformity assessment of the 2006 CLRP and the FY2007-2012 TIP, amended with the addition of an interchange on US 15 / 340 at Jefferson Technology Park in Frederick County, Maryland. Because this amendment is not exempt from air quality conformity requirements, a conformity analysis is necessary.

Methods

The scope of work for this analysis, approved by the TPB at its May 16, 2007 meeting, contains all of the work tasks required to address the technical and consultation requirements associated with the proposed plan and program amendment. The analytical approach involves incorporating the proposed interchange into the transportation networks for the plan and program (forecast years 2010, 2020 and 2030), and performing travel demand and emissions analyses to assess conformity. The study effort utilizes the same land activity assumptions (Round 7.0a Cooperative Forecasts), travel demand model (TPB's Version 2.1D model), and emissions factor model (EPA's Mobile6.2) as applied in the original conformity assessment of the plan and program, which was approved by the TPB on October 18, 2006.

Conformity assessment criteria for each analysis year of the CLRP and TIP include: (1) for ozone: adherence to existing mobile source emissions budgets for volatile organic compounds (VOC) and nitrogen oxides (NOx); and (2) for PM2.5: a demonstration that PM2.5 emissions (including both direct PM2.5 and NOx precursors) are not greater than base year 2002 emissions.

Results

The conformity assessment includes the estimation of emissions for the 2002, 2010, 2020 and 2030 analysis years. The following exhibits present these emissions for each milestone year. The exhibits show that mobile emissions are well within the mobile budgets for VOC and NOx, and are well below the 2002 base year levels for the PM2.5 pollutants. Therefore, the analytical results described in this air quality assessment provide a basis for a determination by the TPB of conformity of the 2006 CLRP and the FY2007-2012 TIP as amended to include the addition of the US 15 / 340 interchange at Jefferson Technology Park in Frederick County, Maryland.

Next Steps

Staff will brief the TPB on these results at its June 20, 2007 meeting. Following a 30 day public comment period from June 14th through July 14th, and response to comments, TPB approval action is scheduled for July 18, 2007.

Following: Exhibits 1 - 6

EXHIBIT 1
US 15/340 Interchange at Jefferson Technology Park
Air Quality Conformity Assessment
One Hour Ozone Nonattainment Area
Mobile Source Emissions Inventories
for 2006 CLRP and FY2007-2012 TIP Amendment
(Tons/Day)

	2002		2010		2020		2030 (new)	
	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
I Network								
Start	25.78	14.06	11.55	6.85	7.31	3.20	7.09	2.58
Running	57.35	243.96	28.31	119.16	19.99	41.18	20.79	31.98
Soak	11.49		9.63	---	5.35	---	4.35	---
II Off-Network								
Diurnal	3.18	---	2.15	---	1.17	---	0.81	---
Resting Loss	12.12	---	8.36	---	3.72	---	2.43	---
Local Roads	9.61	12.10	4.66	6.35	3.21	2.79	3.29	2.48
School Buses	0.43	6.09	0.28	3.76	0.22	0.70	0.17	0.27
Transit Buses	0.38	6.59	0.17	3.76	0.12	1.01	0.12	0.30
Auto Access	1.34	1.65	0.67	0.82	0.46	0.42	0.44	0.38
Total	121.66	284.45	65.78	140.68	41.55	49.30	39.49	38.00

EXHIBIT 2
US 15/340 Interchange at Jefferson Technology Park
Air Quality Conformity Assessment
One Hour Ozone Nonattainment Area
Mobile Source VOC Emissions
for 2006 CLRP and FY2007-2012 TIP Amendment
(Tons/Day)

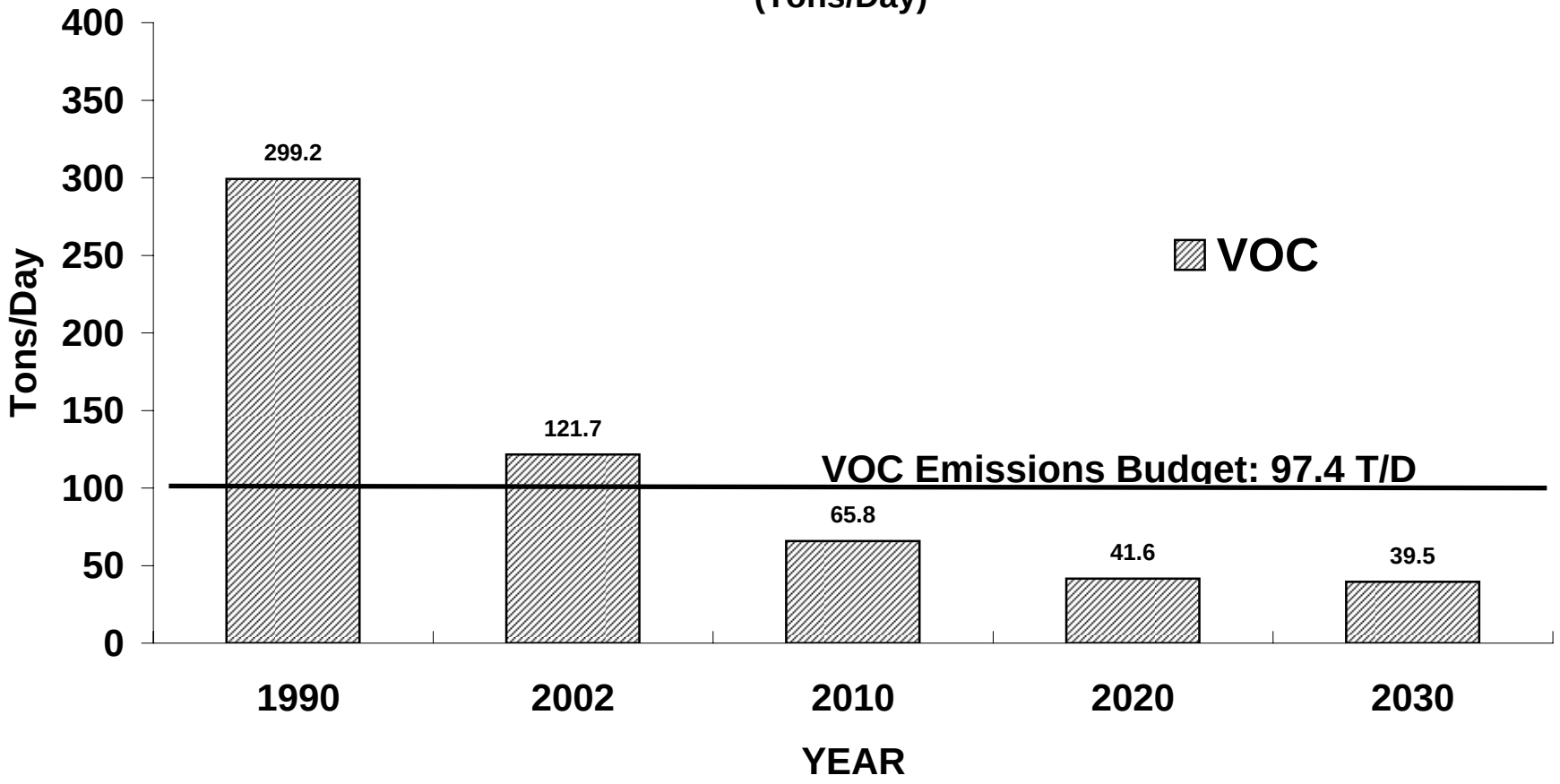
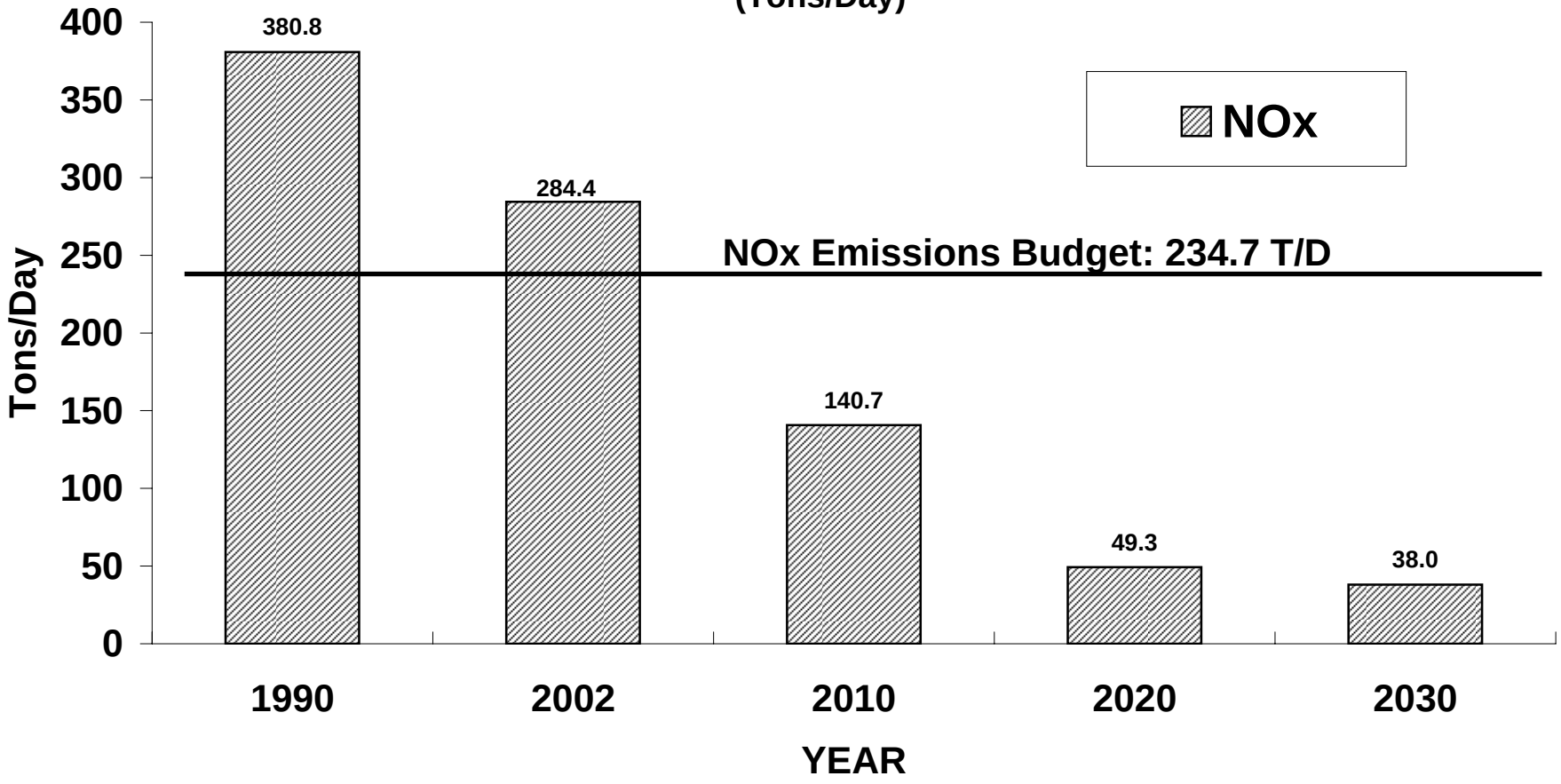


EXHIBIT 3
US 15/340 Interchange at Jefferson Technology Park
Air Quality Conformity Assessment
One Hour Ozone Nonattainment Area
Mobile Source NOx Emissions
for 2006 CLRP and FY2007-2012 TIP Amendment
(Tons/Day)



NOTE: TCM emissions benefits applied in 2010

EXHIBIT 4
US 15/340 Interchange at Jefferson Technology Park
Air Quality Conformity Assessment
PM2.5 Nonattainment Area
Direct PM2.5 Emissions
for 2006 CLRP and FY2007-2012 TIP Amendment
(Tons)

			Direct PM2.5							
			2002		2010		2020		2030	
		Days	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
SEASON 1 (JAN-APR)	Major Roads	120	4.01	480.60	2.59	311.16	1.82	218.40	1.86	222.72
	Local Roads	120	0.21	25.08	0.15	18.48	0.15	18.24	0.16	19.32
	School Buses	76	0.32	24.17	0.05	4.07	0.02	1.35	0.01	1.03
	Transit Buses	120	0.24	29.35	0.04	4.69	0.01	1.74	0.01	1.09
	Auto Access	120	0.01	1.45	0.01	1.14	0.01	1.34	0.01	1.46
	Total (Daily)		4.79		2.85		2.02		2.05	
	SEASON TOTAL			560.65		339.55		241.08		245.62

			Direct PM2.5							
			2002		2010		2020		2030	
		Days	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
SEASON 2 (MAY-SEP)	Major Roads	153	3.94	602.82	2.59	396.12	1.93	295.75	1.99	305.08
	Local Roads	153	0.20	30.75	0.16	24.94	0.16	24.63	0.17	26.32
	School Buses	83	0.30	25.24	0.05	4.21	0.02	1.46	0.01	1.12
	Transit Buses	153	0.24	36.05	0.04	5.68	0.01	2.22	0.01	1.39
	Auto Access	153	0.01	1.74	0.01	1.55	0.01	1.84	0.01	2.00
	Total (Daily)		4.69		2.85		2.14		2.20	
	SEASON TOTAL			696.60		432.49		325.90		335.91

			Direct PM2.5							
			2002		2010		2020		2030	
		Days	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
SEASON 3 (OCT-DEC)	Major Roads	92	3.55	326.88	2.41	221.72	1.82	167.44	1.85	170.02
	Local Roads	92	0.18	16.65	0.15	13.98	0.15	13.98	0.16	14.81
	School Buses	55	0.26	14.14	0.05	2.56	0.02	0.86	0.01	0.74
	Transit Buses	92	0.21	19.66	0.03	3.11	0.01	1.33	0.01	0.84
	Auto Access	92	0.01	0.97	0.01	0.86	0.01	1.04	0.01	1.13
	Total (Daily)		4.22		2.65		2.01		2.04	
	SEASON TOTAL			378.29		242.24		184.66		187.54

ANNUAL TOTAL				**1,635.55**		**1,014.28**		**751.63**		**769.08**

EXHIBIT 5
US 15/340 Interchange at Jefferson Technology Park
Air Quality Conformity Assessment
PM2.5 Nonattainment Area
PM2.5 Precursor Emissions: Nox
for 2006 CLRP and FY2007-2012 TIP Amendment
(Tons)

SEASON 1 (JAN-APR)

		Precursor NOx							
		2002		2010		2020		2030	
	Days	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
Major Roads-Starts	120	20.85	2502.24	9.15	1097.88	4.15	498.36	3.28	393.00
Major Roads-VMT	120	243.17	29,180.52	122.45	14693.40	40.43	4852.08	30.44	3653.16
Local Roads	120	12.48	1497.48	6.50	779.64	2.65	318.36	2.27	272.50
School Buses	76	4.86	369.44	3.12	236.98	0.57	43.43	0.21	16.31
Transit Buses	120	6.04	724.74	3.93	471.98	0.96	114.64	0.25	30.38
Auto Access	83	2.09	173.69	0.95	78.52	0.28	22.93	0.25	20.35
Total (Daily)		289.50		146.09		49.04		36.70	
SEASON 1 TOTAL			34,448.10		17,358.41		5,849.80		4,385.71

SEASON 2 (MAY-SEP)

		Precursor NOx							
		2002		2010		2020		2030	
	Days	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
Major Roads-Starts	153	13.74	2101.91	6.43	983.03	3.00	458.39	2.41	369.34
Major Roads-VMT	153	211.76	32398.52	103.17	15784.55	34.96	5348.57	26.68	4081.58
Local Roads	153	9.94	1520.97	5.22	798.51	2.25	344.25	1.97	302.02
School Buses	83	4.81	399.47	2.97	246.28	0.55	45.90	0.21	17.81
Transit Buses	153	5.99	915.81	3.90	596.06	0.93	141.88	0.25	38.71
Auto Access	107	1.48	158.45	0.70	75.03	0.22	23.25	0.20	21.22
Total (Daily)		247.71		122.38		41.90		31.73	
SEASON 2 TOTAL			37,495.14		18,483.45		6,362.24		4,830.68

SEASON 3 (OCT-DEC)

		Precursor NOx							
		2002		2010		2020		2030	
	Days	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
Major Roads-Starts	92	19.27	1773.12	7.82	719.72	3.81	350.43	3.09	284.65
Major Roads-VMT	92	228.24	20998.36	104.08	9575.45	37.06	3409.61	29.13	2679.78
Local Roads	92	11.87	1092.32	5.52	507.56	2.44	224.66	2.18	200.10
School Buses	55	4.77	262.16	2.74	150.47	0.46	25.44	0.21	11.80
Transit Buses	92	5.78	531.39	3.66	336.34	0.86	79.45	0.25	23.28
Auto Access	61	1.97	120.37	0.80	48.83	0.26	15.88	0.23	14.30
Total (Daily)		271.90		124.61		44.90		35.10	
SEASON 3 TOTAL			24,777.71		11,338.38		4,105.47		3,213.91

ANNUAL TOTAL			96,720.95		47,180.23		16,317.51		12,430.30

Exhibit 6
US 15/340 Interchange at Jefferson Technology Park
Air Qualitiy Conformity Assessment
PM2.5 Nonattainment Area
PM2.5 Direct and Precursor NOx Emissions
for 2006 CLRP and FY2007-2012 TIP Amendment
(Tons/Year)