

APPENDIX E

Montgomery County Emissions Analysis

Appendix E
Montgomery County - Capital Program of Transportation Projects

Non-Exempt Project Emissions Analysis Summary - 9/5/2007
PIN 2044.61

Year / Scenario	kg/day VOC	kg/day NOx	
2002 Base	69	83	
2012 No Build	30	36	
2012 Build	27	34	2012 RESULTS
Delta (No Build - Build)	3	2	PASS Build ≤ No Build
Delta (2002 - Build)	42	49	PASS < 2002 Test
2015 No Build	27	28	
2015 Build	24	27	2015 RESULTS
Delta (No Build - Build)	3	1	PASS Build ≤ No Build
Delta (2002 - Build)	45	56	PASS < 2002 Test
2025 No Build	25	18	
2025 Build	17	15	2025 RESULTS
Delta (No Build - Build)	8	3	PASS Build ≤ No Build
Delta (2002 - Build)	52	68	PASS < 2002 Test
2030 No Build	34	18	
2030 Build	18	13	2025 RESULTS
Delta (No Build - Build)	16	5	PASS Build ≤ No Build
Delta (2002 - Build)	51	70	PASS < 2002 Test

Appendix E
 PIN 2044.61 Emissions Analysis for Transportation/Air Quality Conformity 9/5/2007

Base Year 2002

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	50	0.65	4,894	3,181	1.28	1.90	37.83	4,072	6,044	120,341
		14	28	0.65	18,290	11,889	1.55	1.81	35.20	18,427	21,516	418,475
		14	40	0.36	5,763	2,075	1.36	1.78	35.81	2,822	3,693	74,294
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	28	0.36	20,393	7,338	1.55	1.81	35.20	11,374	13,282	258,293	
	14	45	1.15	3,895	4,479	1.32	1.83	36.79	5,913	8,197	164,792	
	14	28	1.15	14,557	16,741	1.55	1.81	35.20	25,948	30,300	589,267	
							2002 Baseline Total g/day			68,555	83,834	1,625,463

Year 2012 No Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	49	0.65	5,492	3,570	0.45	0.69	14.64	1,606	2,463	52,262
		14	21	0.65	20,525	13,341	0.81	0.70	14.09	8,138	9,339	187,978
		14	40	0.36	6,463	2,327	0.47	0.65	13.94	1,094	1,512	32,434
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	21	0.36	24,152	8,695	0.81	0.70	14.09	5,304	6,086	122,509	
	14	44	1.15	4,357	5,011	0.46	0.67	14.24	2,305	3,357	71,350	
	14	21	1.15	16,284	18,727	0.61	0.70	14.09	11,423	13,109	263,858	
							2012 No Build Total g/day			29,870	35,886	730,391

Year 2012 Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	45	0.65	5,492	3,570	0.46	0.67	14.32	1,642	2,392	51,120
		14	27	0.65	20,525	13,341	0.54	0.66	13.66	7,204	8,605	182,241
		14	45	0.36	6,463	2,327	0.46	0.67	14.32	1,070	1,559	33,318
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	27	0.36	24,152	8,695	0.54	0.66	13.66	4,695	5,739	118,770	
	14	45	1.15	4,357	5,011	0.46	0.67	14.32	2,305	3,357	71,751	
	14	27	1.15	16,284	18,727	0.54	0.66	13.66	10,112	12,360	256,805	
							2012 Build Total g/day			27,029	34,211	713,065

Year 2015 No Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	43	0.65	5,885	3,825	0.36	0.49	13.37	1,377	1,874	51,144
		14	19	0.65	21,994	14,296	0.51	0.52	13.13	7,281	7,434	187,703
		14	40	0.36	6,924	2,493	0.38	0.47	12.80	947	1,172	31,908
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	19	0.36	25,875	9,315	0.51	0.52	13.13	4,751	4,844	122,306	
	14	43	1.15	4,669	5,369	0.37	0.48	13.01	1,987	2,577	69,855	
	14	19	1.15	17,449	20,066	0.51	0.52	13.13	10,234	10,435	263,471	
							2015 No Build Total g/day			26,588	28,335	726,390

Year 2015 Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	45	0.65	5,885	3,825	0.37	0.48	13.15	1,415	1,836	50,302
		14	26	0.65	21,994	14,296	0.44	0.48	12.57	6,290	6,862	179,732
		14	45	0.36	6,924	2,493	0.37	0.48	13.15	922	1,196	32,778
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	26	0.36	25,875	9,315	0.44	0.48	12.57	4,099	4,471	117,990	
	14	45	1.15	4,669	5,369	0.37	0.48	13.15	1,987	2,577	70,607	
	14	26	1.15	17,449	20,066	0.44	0.48	12.57	8,829	9,632	252,234	
							2015 Build Total g/day			23,542	26,575	702,713

Year 2025 No Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	45	0.65	6,672	4,337	0.21	0.23	11.72	911	997	50,827
		14	12	0.65	24,932	16,206	0.45	0.30	12.81	7,293	4,862	207,596
		14	40	0.36	7,846	2,825	0.22	0.22	11.41	621	621	32,228
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	12	0.36	29,321	10,556	0.45	0.30	12.81	4,750	3,167	135,217	
	14	40	1.15	5,293	6,087	0.22	0.22	11.41	1,339	1,339	69,452	
	14	12	1.15	19,780	22,747	0.45	0.30	12.81	10,236	6,824	291,369	
							2025 No Build Total g/day			25,150	17,811	786,710

Year 2025 Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	45	0.65	6,672	4,337	0.21	0.23	11.72	911	997	50,827
		14	23	0.65	24,932	16,206	0.28	0.24	11.38	4,538	3,889	194,098
		14	45	0.36	7,846	2,825	0.21	0.23	11.72	593	650	33,104
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	23	0.36	29,321	10,556	0.28	0.24	11.38	2,956	2,533	119,911	
	14	45	1.15	5,293	6,087	0.21	0.23	11.72	1,278	1,400	71,339	
	14	23	1.15	19,780	22,747	0.28	0.24	11.38	6,369	5,459	258,406	
							2025 Build Total g/day			16,644	14,929	717,895

Year 2030 No Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	44	0.65	7,065	4,592	0.20	0.19	11.56	918	873	53,086
		14	8	0.65	26,401	17,161	0.60	0.29	14.63	10,296	4,977	240,764
		14	40	0.36	8,307	2,991	0.21	0.18	11.32	628	538	33,853
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	8	0.36	31,044	11,176	0.60	0.29	14.63	6,708	3,241	156,797	
	14	39	1.15	5,605	6,446	0.21	0.18	11.26	1,354	1,160	72,579	
	14	8	1.15	20,945	24,087	0.60	0.29	14.63	14,452	6,985	337,937	
							2030 No Build Total g/day			34,354	17,774	895,016

Year 2030 Build

PIN	Link	FC	Speed	Length	ADT	DVMT	EF - VOC	EF - NOx	EF - CO	SUM VOC	SUM NOx	SUM CO
2044.61	#1 Rt. 30: Northampton Rd to Miami Ave - Off Peak	14	44	0.65	7,065	4,592	0.20	0.19	11.56	918	873	53,086
		14	22	0.65	26,401	17,161	0.28	0.20	11.33	4,805	3,432	194,430
		14	40	0.36	8,307	2,991	0.21	0.18	11.32	628	538	33,853
#2 Rt. 30: Miami Ave to Wallins Corners Rd - Off Peak	14	22	0.36	31,044	11,176	0.28	0.20	11.33	3,129	2,235	126,622	
	14	39	1.15	5,605	6,446	0.21	0.18	11.26	1,354	1,160	72,579	
	14	22	1.15	20,945	24,087	0.28	0.20	11.33	6,744	4,817	272,903	
							2030 Build Total g/day			17,579	13,556	753,474

Notes
 FC = Roadway Functions Class / 14=Urban Principal Arterial
 Speed unit = miles/hour
 Length unit = miles
 ADT = Average Daily Traffic, seasonally adjusted for summer, 1, 12
 DVMT = Daily Vehicle Miles Traveled
 EF = MOBILE 6.2 Emission Factor in grams/mile

Appendix E
 PIN 2044.61 Emissions Analysis for Transportation/Air Quality Conformity 9/5/2007

PIN 2044.61 - Rt. 30 Amsterdam
 AADT ESTIMATES

Comments	date1*	aadt1	date2*	aadt2	date3	aadt3	Seasonally				
							Adjusted	Off-Peak	Peak		
* Source = AADT screenline counts and growth factors from Region 2 traffic study, 2004	Link #1	2005	21,600	2006	21,900	2002	20,700	20,700	23,184	4,894	18,290
	Northampton to Miami	2006	21,900	2026	28,550	2012	23,895	23,230	26,018	5,492	20,525
		2006	21,900	2026	28,550	2015	24,893	24,893	27,880	5,885	21,994
		2006	21,900	2026	28,550	2025	28,218	28,218	31,604	6,672	24,932
		2006	21,900	2026	28,550	2030	29,880	29,880	33,466	7,065	26,401
Seasonal AADT Adjustment FG30 = 1.12	Link #2	2005	25,425	2006	25,775	2002	24,375	24,375	27,300	5,763	21,537
	Miami to Wallins Cms	2006	25,775	2026	33,575	2012	28,115	27,335	30,615	6,463	24,152
		2006	25,775	2026	33,575	2015	29,285	29,285	32,799	6,924	25,875
		2006	25,775	2026	33,575	2025	33,185	33,185	37,167	7,846	29,321
		2006	25,775	2026	33,575	2030	35,135	35,135	39,351	8,307	31,044
	Link #3 Wallins Cms to Fulton Co	2005	17,150	2006	17,375	2002	16,475	16,475	18,452	3,895	14,557
		2006	17,375	2026	22,650	2012	18,958	18,430	20,642	4,357	16,284
		2006	17,375	2026	22,650	2015	19,749	19,749	22,119	4,669	17,449
		2006	17,375	2026	22,650	2025	22,386	22,386	25,073	5,293	19,780
		2006	17,375	2026	22,650	2030	23,705	23,705	26,550	5,605	20,945

Per NYSDEC MVEB SIP Documentation: Montgomery County 6AM-6PM = 79% DVMT, 6PM-6AM = 21% DVMT
 This split methodology is used to split DVMT between the peak and off-peak period on each link in the regional emissions analysis

PIN 2044.61 - Rt. 30 Amsterdam
 DESIGN HOUR SPEED ESTIMATES

Comments	date1**	sp1	date2**	sp2	date3	sp3	
** Source: Arterial Performance Average speeds results for design volumes based on Sim Traffic Analysis performed by Region 2	No-Build	2006	25	2026	11	2002	28
		2006	25	2026	11	2012	21
		2006	25	2026	11	2015	19
		2006	25	2026	11	2025	12
		2006	25	2026	11	2030	8
Per Region 2 planning. These average speed estimates are reasonable estimates for the 6AM - 6PM period.	Build	2006	29	2026	23	2012	27
		2006	29	2026	23	2015	26
		2006	29	2026	23	2025	23
		2006	29	2026	23	2030	22

NO-BUILD FREE FLOW SPEED ESTIMATES

No-Build Free flow speeds For 6PM - 6AM Period	Link #	date	speed	date	speed	date	speed
	Link #1 No Build	2002	50				
		2006	50	2026	45	2012	49
		2006	50	2026	45	2015	48
		2006	50	2026	45	2025	45
		2006	50	2026	45	2030	44
	Link #2 No Build	2006	40	2026	40	2002	40
		2006	40	2026	40	2012	40
		2006	40	2026	40	2015	40
		2006	40	2026	40	2025	40
		2006	40	2026	40	2030	40
	Link #3 No Build	2002	45				
		2006	45	2026	40	2012	44
2006		45	2026	40	2015	43	
2006		45	2026	40	2025	40	
2006		45	2026	40	2030	39	

Design Build condition free flow speeds = 45 mph throughout the entire project area