

Appendix D

Air Quality and Noise

Air Quality

* MOBILE6.2.03 (24-Sep-2003) *
* Input file: MA17_NA.INP (file 1, run 1). *

*** Summer 2017 ***

* Reading Registration Distributions from the following external
* data file: 2005_REG.D

- M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 0.998 MYR sum not = 1. (will normalize)
M 49 Warning: 0.998 MYR sum not = 1. (will normalize)
M 49 Warning: 0.998 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 0.999 MYR sum not = 1. (will normalize)
M 49 Warning: 0.998 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 0.999 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)
M 49 Warning: 1.00 MYR sum not = 1. (will normalize)

* Reading I/M program description records from the following external
* data file: MA17_IM.D
* I/M program inputs for 2017 calendar year model run
* MA31 Exhaust I/M program for Light Duty pre-1996 MY vehicles <=10,000 lb GVWR

* Reading non-default I/M CUTPOINTS from the following external
* data file: MA17_CUT.D
* Two-Speed Idle Exhaust I/M program for Heavy Duty vehicles >10,000 lb GVWR
* OBD Exhaust I/M program for Light Duty MY 1996+ vehicles <=10,000 lb GVWR
* Gas Cap Evap I/M program thru CY 2003 for all Light Duty vehicles <=8,500 lb GVWR
* Gas Cap Evap I/M program for all MY Heavy Duty vehicles >8,500 lb GVWR
* OBD + Gas Cap Evap I/M program for MY 1996 - 2003 Light Duty vehicles <=8,500 lb GVWR starting
2004
* OBD Evap I/M program for MY 2004+
M601 Comment:
User has enabled STAGE II REFUELING.

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: MA_LEV2.D

Reading User Supplied Tier2 Exhaust bin phase-in fractions
Data read from file: LEV2EXH.D

Reading User Supplied Tier2 EVAP phase-in fractions
Data read from file: LEV2EVAP.D

Reading User Supplied Tier2 50K certification standards

Data read from file: LEV2CERT.D

M616 Comment:

User has supplied post-1999 sulfur levels.

M614 Comment:

User supplied diesel sale fractions.

* #####

* 2017 Idle Scenario - Summer (multiply g/mi by 2.5 mph to get g/hr)

* File 1, Run 1, Scenario 1.

* #####

M583 Warning:

The user supplied arterial average speed of 2.5 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

*** I/M credits for Tech1&2 vehicles were read from the following external data file: TECH12.D

HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: July
Altitude: Low
Minimum Temperature: 68.0 (F)
Maximum Temperature: 94.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with 9 columns: HDDV, Vehicle Type, MC, AI, Veh, LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Row 1: VMT Distribution: 0.0867, 0.0037, 1.0000, 0.2720, 0.4301, 0.1689, 0.0362, 0.0006, 0.0018.

Table with 9 columns: Composite Emission Factors (g/mi): Composite VOC, Composite CO, Composite NOX. Values range from 0.819 to 11.89.

* #####

* 2017 - 10 mph - Summer

* File 1, Run 1, Scenario 2.

* #####

M583 Warning:

The user supplied arterial average speed of 10.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: July
Altitude: Low
Minimum Temperature: 68.0 (F)
Maximum Temperature: 94.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with columns: HDDV, Vehicle Type, LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Includes VMT Distribution data.

Table with columns: Composite Emission Factors (g/mi), Composite VOC, Composite CO, Composite NOX. Includes numerical values for each category.

* #####
* 2017 - 15 mph - Summer

* File 1, Run 1, Scenario 3.

* #####

M583 Warning:

The user supplied arterial average speed of 15.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: July
Altitude: Low
Minimum Temperature: 68.0 (F)
Maximum Temperature: 94.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with columns: HDDV, Vehicle Type, LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Includes VMT Distribution data.

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0.300	0.275	0.322	0.288	0.475	0.280	0.270
0.453 4.37 0.327							
Composi te CO :	4.03	4.17	4.37	4.22	10.63	1.452	0.701
0.899 25.21 4.185							
Composi te NOX :	0.216	0.204	0.287	0.228	0.431	0.403	0.223
2.142 1.01 0.401							

* #####
 * 2017 - 20 mph - Summer

* File 1, Run 1, Scenario 4.
 * #####
 M583 Warning:

The user supplied arterial average speed of 20.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: July
 Altitude: Low
 Minimum Temperature: 68.0 (F)
 Maximum Temperature: 94.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm
 Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT
	MC All Veh		<6000	>6000	(All)			
	GVWR:							
VMT Distribution:	0.2720	0.4301	0.1689			0.0362	0.0006	0.0018
0.0867	0.0037	1.0000						

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0.260	0.234	0.275	0.246	0.384	0.245	0.235
0.372 3.93 0.279							
Composi te CO :	3.67	3.80	3.99	3.85	7.89	1.212	0.578
0.679 20.06 3.726							
Composi te NOX :	0.191	0.186	0.262	0.207	0.451	0.361	0.200
1.928 1.06 0.364							

* #####
 * 2017 - 25 mph - Summer

* File 1, Run 1, Scenario 5.
 * #####
 M583 Warning:

The user supplied arterial average speed of 25.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway

type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: July
 Altitude: Low
 Minimum Temperature: 68.0 (F)
 Maximum Temperature: 94.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type: MC	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT
	AI I Veh GVWR:		<6000	>6000	(AI I)			
-----	-----	-----	-----	-----	-----	-----	-----	-----
VMT	Di stri buti on:	0. 2720	0. 4301	0. 1689		0. 0362	0. 0006	0. 0018
0. 0867	0. 0037	1. 0000						

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0. 239	0. 215	0. 253	0. 226	0. 331	0. 220	0. 209
0. 312	3. 65	0. 253					
Composi te CO :	3. 50	3. 63	3. 83	3. 69	6. 19	1. 057	0. 498
0. 537	16. 90	3. 495					
Composi te NOX :	0. 175	0. 174	0. 247	0. 195	0. 471	0. 335	0. 185
1. 793	1. 12	0. 341					

* #####
 * 2017 - 30 mph - Summer

* File 1, Run 1, Scenario 6.

* #####
 M583 Warni ng:

The user supplied arterial average speed of 30.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: July
 Altitude: Low
 Minimum Temperature: 68.0 (F)
 Maximum Temperature: 94.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type: MC	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT
	AI I Veh GVWR:		<6000	>6000	(AI I)			
-----	-----	-----	-----	-----	-----	-----	-----	-----
VMT	Di stri buti on:	0. 2720	0. 4301	0. 1689		0. 0362	0. 0006	0. 0018

0.0867 0.0037 1.0000

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0.225	0.202	0.239	0.213	0.295	0.201	0.190
0.267 3.45 0.236							
Composi te CO :	3.45	3.58	3.78	3.64	5.13	0.956	0.446
0.444 14.61 3.397							
Composi te NOX :	0.164	0.167	0.236	0.186	0.491	0.322	0.178
1.723 1.18 0.328							

* #####
 * 2017 - 35 mph - Summer

* File 1, Run 1, Scenario 7.
 * #####
 M583 Warning:

The user supplied arterial average speed of 35.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: July
 Altitude: Low
 Minimum Temperature: 68.0 (F)
 Maximum Temperature: 94.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm
 Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type: MC	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT
	AI I Veh GVWR:		<6000	>6000	(AI I)			
		-----	-----	-----	-----	-----	-----	-----
VMT Di stri buti on:		0.2720	0.4301	0.1689		0.0362	0.0006	0.0018
0.0867	0.0037	1.0000						

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0.214	0.194	0.229	0.204	0.269	0.187	0.175
0.234 3.29 0.223							
Composi te CO :	3.48	3.62	3.81	3.67	4.50	0.891	0.413
0.384 12.92 3.392							
Composi te NOX :	0.158	0.163	0.231	0.182	0.510	0.319	0.176
1.709 1.22 0.324							

* #####
 * 2017 - 40 mph - Summer

* File 1, Run 1, Scenario 8.
 * #####
 M583 Warning:

The user supplied arterial average speed of 40.0 will be used for all hours of the day. 100% of VMT

has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: July
Altitude: Low
Minimum Temperature: 68.0 (F)
Maximum Temperature: 94.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with columns: HDDV, Vehicle Type (MC, AI, Veh), LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Row 1: 0.0867, 0.0037, 1.0000, 0.2720, 0.4301, 0.1689, 0.0362, 0.0006, 0.0018.

Table with columns: Composite Emission Factors (g/mi), Composite VOC, Composite CO, Composite NOX. Values: 0.210, 0.348, 1.749, 3.17, 11.74, 1.25, 0.215, 3.68, 3.548, 0.207, 3.82, 0.166, 0.189, 3.82, 0.166, 0.224, 4.02, 0.234, 0.199, 3.88, 0.185, 0.250, 4.16, 0.530, 0.177, 0.852, 0.327, 0.165, 0.393, 0.181.

* #####
* 2017 - 45 mph - Summer

* File 1, Run 1, Scenario 9.
* #####
M583 Warning:

The user supplied arterial average speed of 45.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: July
Altitude: Low
Minimum Temperature: 68.0 (F)
Maximum Temperature: 94.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with columns: HDDV, Vehicle Type (MC, AI, Veh), LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Row 1: <6000, >6000, (AI).

VMT Di stri buti on: 0. 2720 0. 4301 MA17_NA. TXT 0. 1689 0. 0362 0. 0006 0. 0018
 0. 0867 0. 0037 1. 0000

Composit e Emi ssi on Factors (g/mi):
 Composit e VOC : 0. 201 0. 185 0. 220 0. 195 0. 236 0. 169 0. 157
 0. 192 3. 11 0. 208
 Composit e CO : 3. 88 4. 02 4. 24 4. 08 4. 07 0. 832 0. 382
 0. 330 11. 00 3. 717
 Composit e NOX : 0. 162 0. 169 0. 238 0. 189 0. 550 0. 346 0. 191
 1. 849 1. 27 0. 343

* MOBI LE6. 2. 03 (24-Sep-2003) *
 * Input file: MA17_NA. INP (file 1, run 2). *

 * *** Winter 2017 ***

* Reading Regi strati on Di stri buti ons from the follo wi ng external
 * data file: 2005_REG. D
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 0. 998 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 0. 998 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 0. 998 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 0. 999 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 0. 998 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 0. 999 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)
 M 49 Warni ng:
 1. 00 MYR sum not = 1. (wi ll normal i ze)

* Reading I/M program descri pti on records from the follo wi ng external
 * data file: MA17_IM. D
 * I/M program inputs for 2017 calendar year model run
 * MA31 Exhaust I/M program for Light Duty pre-1996 MY vehi cles <=10,000 lb GVWR

* Reading non-default I/M CUTPOINTS from the follo wi ng external
 * data file: MA17_CUT. D
 * Two-Speed Idle Exhaust I/M program for Heavy Duty vehi cles >10,000 lb GVWR
 * OBD Exhaust I/M program for Light Duty MY 1996+ vehi cles <=10,000 lb GVWR
 * Gas Cap Evap I/M program thru CY 2003 for all Light Duty vehi cles <=8,500 lb GVWR
 * Gas Cap Evap I/M program for all MY Heavy Duty vehi cles >8,500 lb GVWR
 * OBD + Gas Cap Evap I/M program for MY 1996 - 2003 Light Duty vehi cles <=8,500 lb GVWR starting
 2004
 * OBD Evap I/M program for MY 2004+
 M601 Comment:
 User has enabl ed STAGE II REFUELING.

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external data file: MA_LEV2.D

Reading User Supplied Tier2 Exhaust bin phase-in fractions
Data read from file: LEV2EXH.D

Reading User Supplied Tier2 EVAP phase-in fractions
Data read from file: LEV2EVAP.D

Reading User Supplied Tier2 50K certification standards
Data read from file: LEV2CERT.D

M616 Comment: User has supplied post-1999 sulfur levels.
M614 Comment: User supplied diesel sale fractions.

* #####
* 2017 Idle Scenario - Winter (multiply g/mi by 2.5 mph to get g/hr)

* File 1, Run 2, Scenario 1.
* #####
M583 Warning: The user supplied arterial average speed of 2.5 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning: Wintertime Reformulated Gasoline Rules Apply

*** I/M credits for Tech1&2 vehicles were read from the following external data file: TECH12.D
HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: Jan.
Altitude: Low
Minimum Temperature: 35.0 (F)
Maximum Temperature: 45.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with 10 columns: HDDV, Vehicle Type, LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Row 1: VMT Distribution: 0.0864, 0.0036, 1.0000, 0.2749, 0.4288, 0.1682, 0.0356, 0.0006, 0.0019.

Table with 8 columns: Composite VOC, Composite CO, and other factors. Row 1: Composite VOC: 0.827, 11.21, 1.592, 1.824, 1.445, 1.602, 1.489, 2.478, 0.427, 0.431. Row 2: Composite CO: 18.69, 17.16, 17.96, 17.38, 34.79, 2.843, 1.438.

MA17_NA.TXT

2.326	100.99	17.328							
Composi te NOX :			0.318	0.345	0.507	0.390	0.437	0.611	0.352
3.458	1.48	0.641							

* #####

* 2017 - 10 mph - Winter

* File 1, Run 2, Scenario 2.

* #####

M583 Warning:
 The user supplied arterial average speed of 10.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:
 Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year:	2017
Month:	Jan.
Altitude:	Low
Minimum Temperature:	35.0 (F)
Maximum Temperature:	45.0 (F)
Absolute Humidity:	75. grains/lb
Fuel Sulfur Content:	30. ppm
Exhaust I/M Program:	Yes
Evap I/M Program:	Yes
ATP Program:	Yes
Reformulated Gas:	Yes

HDDV	Vehi cl e MC	Type: AI I Veh GVWR:	LDGV	LDGT12	LDGT34	LDGT (AI I)	HDGV	LDDV	LDDT
-----	-----	-----	-----	<6000	>6000	-----	-----	-----	-----
	VMT Di stri buti on:		0.2749	0.4288	0.1682		0.0356	0.0006	0.0019
0.0864	0.0036	1.0000							

Composi te Emi ssi on Factors (g/mi):

0.570	Composi te VOC :	0.374	0.336	0.423	0.360	0.706	0.321	0.320
	4.88	0.411						
1.309	Composi te CO :	10.50	9.50	9.62	9.53	18.50	1.800	0.894
	31.83	9.468						
2.630	Composi te NOX :	0.231	0.250	0.367	0.283	0.471	0.462	0.266
	1.32	0.482						

* #####

* 2017 - 15 mph - Winter

* File 1, Run 2, Scenario 3.

* #####

M583 Warning:
 The user supplied arterial average speed of 15.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:
 Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 35.0 (F)
 Maximum Temperature: 45.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm
 Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type: MC	AI I Veh	LDGV	LDGT12	LDGT34	LDGT (AI I)	HDGV	LDDV	LDDT
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
0.0864	0.0036	1.0000	0.2749	0.4288	0.1682		0.0356	0.0006	0.0019

Composi te Emi ssi on Factors (g/mi):

0.458	Composi te VOC :	0.298	0.271	0.344	0.292	0.516	0.275	0.272
0.945	Composi te CO :	9.74	8.73	8.80	8.75	13.00	1.426	0.699
2.289	Composi te NOX :	0.197	0.214	0.316	0.243	0.494	0.400	0.230

* #####
 * 2017 - 20 mph - Winter

* File 1, Run 2, Scenario 4.
 * #####
 M583 Warning:

The user supplied arterial average speed of 20.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:
 Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 35.0 (F)
 Maximum Temperature: 45.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm
 Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type: MC	AI I Veh	LDGV	LDGT12	LDGT34	LDGT (AI I)	HDGV	LDDV	LDDT
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
0.0864	0.0036	1.0000	0.2749	0.4288	0.1682		0.0356	0.0006	0.0019

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0.256	0.237	0.302	0.256	0.400	0.240	0.236
0.375 3.52 0.283							
Composi te CO :	9.36	8.35	8.38	8.36	9.66	1.189	0.576
0.714 18.29 8.038							
Composi te NOX :	0.180	0.197	0.291	0.223	0.517	0.359	0.206
2.061 1.40 0.385							

* #####
* 2017 - 25 mph - Winter

* File 1, Run 2, Scenario 5.
* #####

M583 Warning:
The user supplied arterial average speed of 25.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:
Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: Jan.
Altitude: Low
Minimum Temperature: 35.0 (F)
Maximum Temperature: 45.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

HDDV	Vehicle Type: MC AI Veh GVWR:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT
		<6000	>6000	(AI I)				
VMT Di stri buti on:	0.2749	0.4288	0.1682		0.0356	0.0006	0.0019	
0.0864 0.0036 1.0000								

Composi te Emi ssi on Factors (g/mi):

Composi te VOC :	0.235	0.219	0.280	0.236	0.333	0.215	0.210
0.315 3.26 0.257							
Composi te CO :	9.14	8.14	8.15	8.14	7.58	1.035	0.496
0.564 15.67 7.751							
Composi te NOX :	0.170	0.186	0.276	0.211	0.540	0.333	0.191
1.917 1.48 0.364							

* #####
* 2017 - 30 mph - Winter

* File 1, Run 2, Scenario 6.
* #####

M583 Warning:
The user supplied arterial average speed of 30.0

will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:

Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: Jan.
Altitude: Low
Minimum Temperature: 35.0 (F)
Maximum Temperature: 45.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Table with columns: HDDV, Vehicle Type, LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT. Row 1: VMT Distribution: 0.0864, 0.0036, 1.0000, 0.2749, 0.4288, 0.1682, 0.0356, 0.0006, 0.0019.

Table with columns: Composite Emission Factors (g/mi): Composite VOC, Composite CO, Composite NOX. Values range from 0.270 to 1.842 across various categories.

* #####
* 2017 - 35 mph - Winter

* File 1, Run 2, Scenario 7.

* #####
M583 Warning:

The user supplied arterial average speed of 35.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:

Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
Month: Jan.
Altitude: Low
Minimum Temperature: 35.0 (F)
Maximum Temperature: 45.0 (F)
Absolute Humidity: 75. grains/lb
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

HDDV	Vehicle Type:		LDGV	LDGT12	MA17_NA.TXT	LDGT	HDGV	LDDV	LDDT
	MC	AI I			LDGT34				
		Veh GVWR:	<6000	>6000	(AI I)				
VMT	Di stri buti on:		0.2749	0.4288	0.1682	0.0356	0.0006	0.0019	
0.0864	0.0036	1.0000							

Composi te Emi ssi on Factors (g/mi):									
0.237	Composi te VOC :		0.214	0.202	0.258	0.218	0.258	0.183	0.176
0.404	Composi te CO :		9.12	8.13	8.14	8.13	5.50	0.871	0.410
1.827	Composi te NOX :		0.160	0.176	0.262	0.200	0.585	0.316	0.182

* #
* 2017 - 40 mph - Winter

* File 1, Run 2, Scenari o 8.
* #

M583 Warni ng:
The user suppli ed arteri al average speed of 40.0
will be used for all hours of the day. 100% of VMT
has been assi gned to the arteri al/colle ctor roadway
type for all hours of the day and all vehi cle types.
M112 Warni ng:
Wi nterti me Reformul ated Gasol i ne Rules Appl y

LEV phase-in data read from file MA_LEV2.D

Cal endar Year: 2017
Month: Jan.
Al ti tude: Low
Mi ni mum Temperature: 35.0 (F)
Maxi mum Temperature: 45.0 (F)
Absol ute Humi di ty: 75. grai ns/I b
Fuel Sul fur Content: 30. ppm
Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformul ated Gas: Yes

HDDV	Vehicle Type:		LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT
	MC	AI I			LDGT34				
		Veh GVWR:	<6000	>6000	(AI I)				
VMT	Di stri buti on:		0.2749	0.4288	0.1682	0.0356	0.0006	0.0019	
0.0864	0.0036	1.0000							

Composi te Emi ssi on Factors (g/mi):									
0.212	Composi te VOC :		0.209	0.200	0.256	0.216	0.237	0.173	0.166
0.366	Composi te CO :		9.38	8.40	8.43	8.41	5.09	0.832	0.390
1.870	Composi te NOX :		0.164	0.180	0.266	0.204	0.608	0.324	0.186

* #####
 * 2017 - 45 mph - Winter

* File 1, Run 2, Scenario 9.
 * #####

M583 Warning:
 The user supplied arterial average speed of 45.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M112 Warning:
 Wintertime Reformulated Gasoline Rules Apply

LEV phase-in data read from file MA_LEV2.D

Calendar Year: 2017
 Month: Jan.
 Altitude: Low
 Minimum Temperature: 35.0 (F)
 Maximum Temperature: 45.0 (F)
 Absolute Humidity: 75. grains/lb
 Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
 Evap I/M Program: Yes
 ATP Program: Yes
 Reformulated Gas: Yes

HDDV	Vehicle Type: MC All Veh GVWR:	LDGV	LDGT12	LDGT34	LDGT (All)	HDGV	LDDV	LDDT
-----	-----	-----	<6000	>6000	-----	-----	-----	-----
0.0864	0.0036	1.0000	0.2749	0.4288	0.1682	0.0356	0.0006	0.0019

Composite Emission Factors (g/mi):

0.194	Composite VOC :	0.205	0.199	0.254	0.214	0.222	0.165	0.158
0.347	Composite CO :	9.65	8.67	8.71	8.69	4.98	0.813	0.380
1.977	Composite NOX :	0.169	0.185	0.272	0.209	0.631	0.343	0.197

Noise

Appendix E Noise Model Input Volumes and Speeds

South Weymouth Naval Air Station Redevelopment Weymouth, Massachusetts														
Noise Analysis Links														
				Existing - 2006		No-Build - 2017				Build - 2017				
				PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
Community	Intersection	Approach	DIR	Speed	Volume	Speed	Volume	Speed	Volume	Speed	Volume	Speed	Volume	
Weymouth	Route 18/Parkway	Route 18 N of int	NB	35	893	34	1723	43	1127	35	1680	35	837	
Weymouth	Route 18/Parkway	Route 18 N of int	SB	35	1157	43	1001	29	1963	35	911	35	1551	
Weymouth	Route 18/Parkway	Route 18 S of int	NB	35	893	34	1723	43	1127	35	2102	35	1292	
Weymouth	Route 18/Parkway	Route 18 S of int	SB	35	1157	43	1001	29	1963	35	1397	35	2177	
Rockland	Weymouth Street/Reservoir Park Drive Departure lane	Weymouth Street	SB	35	778	35	192	10	1470	35	270	8	1575	
		Reservoir Park Drive	WB	25	655	22	897	26	796	16	1122	20	1029	
		Weymouth Street	NB	35	399	22	1040	33	550	21	1089	34	523	
		Parkway	EB	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	45	581	44	929	
		Reservoir Park Drive	EB	25	540	29	587	16	1110	26	811	11	1312	
		Weymouth Street	SB	35	968	35	378	18	1149	35	356	17	1203	
		Weymouth Street	NB	35	473	17	1164	34	557	18	1134	30	765	
		Parkway	WB	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	45	761	45	776	
Rockland		Abington Street/Weymouth Street	Abington Street	SB	30	306	35	99	32	656	35	140	31	704
			Abington Street	NB	30	268	34	446	35	226	34	477	35	343
Rockland	VFW Drive/Parmenter Road Departure lane	VFW Drive	WB	35	968	35	372	18	1113	35	350	17	1169	
		VFW Drive	EB	35	473	22	1001	33	543	21	1050	34	515	

N.A. - Not Applicable

All data are from Rizzo Associates, except for Existing Speeds, which were based on field observations made on August 4 , 2006