APPENDIX N:
AIR QUALITY

N.1 Representative Air Quality Technical Sheets
N.2 Technical Report for GBR Construction-Phase Air Quality Impact Analysis (March 2010)
N.3 NYCDEP Review of Construction-Phase Air Quality Analysis (May 14, 2010)
N.4 Draft General Conformity Determination

Appendix N.1
Representative Air Quality Technical Sheets

- **Representative CAL3QHCR 24-hr PM2.5 Input Files**
- **Representative CAL3QHCR 24-hr PM2.5 Output Files**
- **Representative CAL3QHCR Annual Neighborhood PM2.5 Input Files**
- **Representative CAL3QHCR Annual Neighborhood PM2.5 Output Files**
- **Representative 24-hr PM2.5 Emission Factors**
- **Representative CAL3QHCR 24-hr PM2.5 Input Matrix**
- **Representative Annual Neighborhood PM2.5 Emission Factors**
- **Representative CAL3QHCR Annual Neighborhood PM2.5 Input Matrix**
- **Representative Goethals Bridge Toll Plaza 24-hr PM2.5 Results**
- **Representative Verrazano Bridge Toll Plaza 24-hr PM2.5 Results**
- **Representative Goethals Bridge Toll Plaza Annual Neighborhood PM2.5 Results**
- **Representative Verrazano Bridge Toll Plaza Annual Neighborhood PM2.5 Results**
- **Representative CAL3QHC CO Input Files**
- **Representative CAL3QHC CO Output Files**
- **Representative NJ MOBILE 6.2 CO Emission Factors**
- **Representative NJ CAL3QHC CO Input Matrix**
- **Representative NY CAL3QHC CO Input Matrix**
- **Emission Burden Analysis**
- **Representative Figures**
    - **Goethals Bridge Toll Plaza**
    - **Verrazano Bridge Toll Plaza**

Representative CAL3QHCR 24-hr PM2.5 Input Files

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'REC   (CNR)         '    569462.    497423.        1.8
'REC   (CNR)         '    569475.    497401.        1.8
'REC 5 (S)           '    569487.    497379.        1.8
'REC 0 (S)           '    569499.    497357.        1.8
'RECID (S)           '    569512.    497328.        1.8
'REC34               '    569791.    497397.        1.8
'REC35               '    569887.    497337.        1.8
'REC36               '    569452.    497625.        1.8
'REC37               '    569320.    497722.        1.8
'REC38               '    569331.    497576.        1.8
'REC39               '    569237.    497653.        1.8
'REC40               '    569772.    497586.        1.8
'REC41               '    569792.    497624.        1.8
1 'p'
1 1 1 1 1 1 1
'GOETHALS TOLL 2014 24-hr BLD 9am PM25' 75
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'10136-10095  278wb  ' 'AG' 570204. 497065. 570016. 497090. 0   15
  3 1
'10136-10095  278wb  ' 'AG' 570016. 497090. 569928. 497117. 0   15
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'10136-10095  278wb  ' 'AG' 569825. 497170. 569743. 497234. 0   15
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'10136-10095  278wb  ' 'AG' 569743. 497234. 569676. 497307. 0   15
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'10136-10095  278wb  ' 'AG' 569676. 497307. 569557. 497454. 0   15
  8 1
'10095-10021  278wb-o' 'AG' 569557. 497454. 569447. 497579. 0   15
  9 1
'10021-33728  278wb-t' 'AG' 569446. 497579. 569359. 497648. 0   15
  10 1
'10021-33728  278wb-t' 'AG' 569359. 497648. 569035. 497879. 0   15
  11 1
'33367-10018  278eb-o' 'AG' 569021. 497864. 569307. 497651. 0   15
  12 1
'10018-10086  278eb-o' 'AG' 569307. 497651. 569443. 497541. 0   15
  13 1
'10018-10086  278ebRM' 'AG' 569444. 497540. 569518. 497464. 0   15
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'10018-10086  278ebRM' 'AG' 569518. 497464. 569588. 497373. 0   15
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'10086-10131  278ebDE' 'AG' 569589. 497372. 569699. 497244. 0   15
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'10086-10131  278ebDE' 'AG' 569699. 497244. 569794. 497164. 0   15
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'10086-10131  278ebDE' 'AG' 569794. 497164. 569859. 497124. 0   15
  18 1
'10086-10131  278ebDE' 'AG' 569859. 497124. 569959. 497081. 0   15
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'10086-10131  278ebDE' 'AG' 569959. 497081. 570026. 497066. 0   15
  20 1
'10086-10131  278ebDE' 'AG' 570026. 497066. 570243. 497034. 0   15
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'10131-33764  278ebDE' 'AG' 570243. 497034. 570304. 497019. 0   15
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'10136-10088  WBtoSB ' 'AG' 570268. 497052. 570114. 497120. 0    9
  23 1
'10136-10088  WBtoSB ' 'AG' 570114. 497120. 570071. 497130. 0    9
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'10136-10088  WBtoSB ' 'AG' 569818. 497056. 569751. 497007. 0    9
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'10136-10088  WBtoSB ' 'AG' 569751. 497007. 569710. 496964. 0    9
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'10097-10131  NBtoEB ' 'AG' 569870. 496949. 569920. 496977. 0    9
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'10097-10131  NBtoEB ' 'AG' 569920. 496977. 569993. 497011. 0    9
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'10097-10131  NBtoEB ' 'AG' 569993. 497011. 570058. 497029. 0    9
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'10097-10131  NBtoEB ' 'AG' 570058. 497029. 570116. 497038. 0    9
  35 1
'10097-10131  NBtoEB ' 'AG' 570116. 497038. 570181. 497040. 0    9
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'10097-10095  NBtoWB ' 'AG' 569744. 496938. 569758. 497003. 0    9
  37 1
'10097-10095  NBtoWB ' 'AG' 569758. 497003. 569766. 497100. 0    9
  38 1
'10097-10095  NBtoWB ' 'AG' 569766. 497100. 569765. 497179. 0    9
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'10097-10095  NBtoWB ' 'AG' 569756. 497240. 569742. 497285. 0    9
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'10097-10095  NBtoWB ' 'AG' 569742. 497285. 569715. 497333. 0    9
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'10097-10095  NBtoWB ' 'AG' 569715. 497333. 569685. 497370. 0    9
  43 1
'10097-10095  NBtoWB ' 'AG' 569685. 497370. 569648. 497398. 0    9
  44 1
'10097-10095  NBtoWB ' 'AG' 569648. 497398. 569562. 497449. 0    9
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'10086-10088  EBtoSB ' 'AG' 569588. 497370. 569622. 497290. 0    9
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'10086-10088  EBtoSB ' 'AG' 569622. 497290. 569641. 497224. 0    9
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'10086-10088  EBtoSB ' 'AG' 569641. 497224. 569652. 497151. 0    9
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'10086-10088  EBtoSB ' 'AG' 569652. 497151. 569652. 497081. 0    9
  49 1
'10086-10088  EBtoSB ' 'AG' 569652. 497081. 569643. 496994. 0    9
  50 1
'10166-10055  GoeWBap' 'AG' 570331. 497080. 569971. 497279. 0   15
  51 1
'10166-10055  GoeWBap' 'AG' 569971. 497279. 569728. 497427. 0   15
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'10166-10055  GoeWBap' 'AG' 569728. 497427. 569616. 497502. 0   15
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'10055-10033  GoeWBon' 'AG' 569616. 497502. 569552. 497543. 0   15
  55 1
'10033-33719  GoeWBof' 'AG' 569552. 497543. 569248. 497767. 0   15
  56 1
'33719-39913  GoeWBde' 'AG' 569248. 497767. 569136. 497850. 0   15
  57 1
'33719-39913  GoeWBde' 'AG' 569136. 497850. 569052. 497907. 0   15
  58 1
'10033-10021  WBon   ' 'AG' 569561. 497535. 569450. 497578. 0    9
  59 1
'10021-33719  WBoff  ' 'AG' 569318. 497680. 569249. 497763. 0    9
  60 1
'9909-33718   GulEB10' 'AG' 569005. 497835. 569277. 497635. 0   12
  61 1
'33718-10030  GulEB10' 'AG' 569277. 497635. 569328. 497593. 0   12
  62 1
'33718-10030  GulEB10' 'AG' 569328. 497593. 569394. 497527. 0   12
  63 1
'33718-10030  GulEB10' 'AG' 569394. 497527. 569456. 497449. 0   12
  64 1
'10030-173401 GulEB10' 'AG' 569456. 497449. 569476. 497416. 0   12
  65 1
'33718-10018  EBon   ' 'AG' 569164. 497720. 569306. 497650. 0    9
  66 1
'10018-10030  EBoff  ' 'AG' 569429. 497550. 569457. 497453. 0    9
  67 1
'10030-173401 GulEBde' 'AG' 569476. 497415. 569508. 497362. 0   12
  68 1
'10030-173401 GulEBde' 'AG' 569508. 497362. 569539. 497294. 0   12
  69 1
'10030-10055  ForNB17' 'AG' 569482. 497416. 569618. 497499. 0   12
  70 2
'10030-10055  ForNBQ ' 'AG' 569614. 497497. 569564. 497466. 0.    6 2
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'10055-10065  ForNBde' 'AG' 569620. 497500. 569990. 497730. 0   12
  72 1
'10065-10055  ForSB17' 'AG' 569975. 497730. 569613. 497505. 0   12
  73 2
'10065-10055  ForSBQ ' 'AG' 569620. 497509. 569685. 497550. 0.    6 2
  74 1
'10055-10030  ForSBde' 'AG' 569609. 497503. 569479. 497423. 0   12
  75 1
'10065-10055  MorWB  ' 'AG' 569706. 497567. 569521. 497572. 0    9
9  0.0
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  2 3145 0.03
  3 3145 0.03
  4 3145 0.03
  5 3145 0.03
  6 3145 0.03
  7 3145 0.03
  8 4255 0.03
  9 4635 0.03
  10 4635 0.03
  11 4030 0.028
  12 3275 0.028
  13 3275 0.028
  14 3275 0.028
  15 2800 0.028
  16 2800 0.028
  17 2800 0.028
  18 2800 0.028
  19 2800 0.028
  20 2800 0.028
  21 4695 0.028
  22 2120 0.03
  23 2120 0.03
  24 2120 0.03
  25 2120 0.03
  26 2120 0.03
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27 2120 0.03
28 2120 0.03
29 2120 0.03
30 1895 0.028
31 1895 0.028
32 1895 0.028
33 1895 0.028
34 1895 0.028
35 1895 0.028
36 1110 0.03
37 1110 0.03
38 1110 0.03
39 1110 0.03
40 1110 0.03
41 1110 0.03
42 1110 0.03
43 1110 0.03
44 1110 0.03
45 475 0.028
46 475 0.028
47 475 0.028
48 475 0.028
49 475 0.028
50 475 0.127
51 475 0.127
52 475 0.127
53 90 54 2 475 0.12 1559 1 3
54 1040 0.127
55 340 0.127
56 740 0.127
57 740 0.127
58 780 0.127
59 400 0.03
60 550 0.123
61 445 0.123
62 445 0.123
63 445 0.123
64 115 0.123
65 125 0.123
66 880 0.028
67 115 0.123
68 115 0.123
69 1250 0.124
70 90 36 2 1250 0.224 1112 1 3
71 805 0.124
72 280 0.12
73 90 36 2 280 0.115 1444 1 3
74 60 0.12
75 280 0.12

Representative CAL3QHCR 24-hr PM2.5 Output Files

DATE : 5/22/ 8
PAGE: 1
TIME : 10: 6:20

JOB: Goethals RUN: GOETHALS TOLL 2014 24-hr BLD 9am PM25

==========
General Information
==========

Run start date: 1/ 1/ 0 Julian: 1
end date: 12/31/ 0 Julian: 366

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to p for calculating PM averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 72502 0
Upper Air Sta. Id & Yr = 94703 0

Urban mixing heights were processed.

In 2000, Julian day 1 is a Saturday.

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				*	LINK COORDINATES (M)				*	LENGTH				
					*	X1	Y1	X2	Y2	*	(M)	BRG (DEG)	TYPE	H (M)	W (M) NLANES
1.	33763-10136	278wb			*	570318.0	497039.0	570204.0	497065.0	*	117.	283.	AG	0.0	15.0
2.	10136-10095	278wb			*	570204.0	497065.0	570016.0	497090.0	*	190.	278.	AG	0.0	15.0
3.	10136-10095	278wb			*	570016.0	497090.0	569928.0	497117.0	*	92.	287.	AG	0.0	15.0
4.	10136-10095	278wb			*	569928.0	497117.0	569825.0	497170.0	*	116.	297.	AG	0.0	15.0
5.	10136-10095	278wb			*	569825.0	497170.0	569743.0	497234.0	*	104.	308.	AG	0.0	15.0
6.	10136-10095	278wb			*	569743.0	497234.0	569676.0	497307.0	*	99.	317.	AG	0.0	15.0
7.	10136-10095	278wb			*	569676.0	497307.0	569557.0	497454.0	*	189.	321.	AG	0.0	15.0
8.	10095-10021	278wb	-o		*	569557.0	497454.0	569447.0	497579.0	*	167.	319.	AG	0.0	15.0
9.	10021-33728	278wb	-t		*	569446.0	497579.0	569359.0	497648.0	*	111.	308.	AG	0.0	15.0
10.	10021-33728	278wb	-t		*	569359.0	497648.0	569035.0	497879.0	*	398.	305.	AG	0.0	15.0
11.	33367-10018	278eb	-o		*	569021.0	497864.0	569307.0	497651.0	*	357.	127.	AG	0.0	15.0
12.	10018-10086	278eb	-o		*	569307.0	497651.0	569443.0	497541.0	*	175.	129.	AG	0.0	15.0
13.	10018-10086	278eb	RM		*	569444.0	497540.0	569518.0	497464.0	*	106.	136.	AG	0.0	15.0
14.	10018-10086	278eb	RM		*	569518.0	497464.0	569588.0	497373.0	*	115.	142.	AG	0.0	15.0
15.	10086-10131	278eb	DE		*	569589.0	497372.0	569699.0	497244.0	*	169.	139.	AG	0.0	15.0

JOB: Goethals RUN: GOETHALS TOLL 2014 24-hr BLD 9am PM25

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          16. 10086-10131  278ebDE* 569699.0  497244.0  569794.0  497164.0 *     124.
130.  AG    0.0  15.0
          17. 10086-10131  278ebDE* 569794.0  497164.0  569859.0  497124.0 *      76.
122.  AG    0.0  15.0
          18. 10086-10131  278ebDE* 569859.0  497124.0  569959.0  497081.0 *     109.
113.  AG    0.0  15.0
          19. 10086-10131  278ebDE* 569959.0  497081.0  570026.0  497066.0 *      69.
103.  AG    0.0  15.0
          20. 10086-10131  278ebDE* 570026.0  497066.0  570243.0  497034.0 *     219.
98.  AG    0.0  15.0
          21. 10131-33764  278ebDE* 570243.0  497034.0  570304.0  497019.0 *      63.
104.  AG    0.0  15.0
          22. 10136-10088  WBtoSB * 570268.0  497052.0  570114.0  497120.0 *     168.
294.  AG    0.0   9.0
          23. 10136-10088  WBtoSB * 570114.0  497120.0  570071.0  497130.0 *      44.
283.  AG    0.0   9.0
          24. 10136-10088  WBtoSB * 570071.0  497130.0  570028.0  497132.0 *      43.
273.  AG    0.0   9.0
          25. 10136-10088  WBtoSB * 570028.0  497132.0  569985.0  497126.0 *      43.
262.  AG    0.0   9.0
          26. 10136-10088  WBtoSB * 569985.0  497126.0  569895.0  497097.0 *      95.
252.  AG    0.0   9.0
          27. 10136-10088  WBtoSB * 569895.0  497097.0  569818.0  497056.0 *      87.
242.  AG    0.0   9.0
          28. 10136-10088  WBtoSB * 569818.0  497056.0  569751.0  497007.0 *      83.
234.  AG    0.0   9.0
          29. 10136-10088  WBtoSB * 569751.0  497007.0  569710.0  496964.0 *      59.
224.  AG    0.0   9.0
          30. 10097-10131  NBtoEB * 569806.0  496898.0  569870.0  496949.0 *      82.
51.  AG    0.0   9.0
          31. 10097-10131  NBtoEB * 569870.0  496949.0  569920.0  496977.0 *      57.
61.  AG    0.0   9.0
          32. 10097-10131  NBtoEB * 569920.0  496977.0  569993.0  497011.0 *      81.
65.  AG    0.0   9.0
          33. 10097-10131  NBtoEB * 569993.0  497011.0  570058.0  497029.0 *      67.
75.  AG    0.0   9.0
          34. 10097-10131  NBtoEB * 570058.0  497029.0  570116.0  497038.0 *      59.
81.  AG    0.0   9.0
          35. 10097-10131  NBtoEB * 570116.0  497038.0  570181.0  497040.0 *      65.
88.  AG    0.0   9.0
          36. 10097-10095  NBtoWB * 569744.0  496938.0  569758.0  497003.0 *      66.
12.  AG    0.0   9.0
          37. 10097-10095  NBtoWB * 569758.0  497003.0  569766.0  497100.0 *      97.
5.  AG    0.0   9.0
          38. 10097-10095  NBtoWB * 569766.0  497100.0  569765.0  497179.0 *      79.
359.  AG    0.0   9.0
          39. 10097-10095  NBtoWB * 569765.0  497179.0  569756.0  497240.0 *      62.
352.  AG    0.0   9.0
          40. 10097-10095  NBtoWB * 569756.0  497240.0  569742.0  497285.0 *      47.
343.  AG    0.0   9.0
          41. 10097-10095  NBtoWB * 569742.0  497285.0  569715.0  497333.0 *      55.
331.  AG    0.0   9.0
          42. 10097-10095  NBtoWB * 569715.0  497333.0  569685.0  497370.0 *      48.
321.  AG    0.0   9.0
          43. 10097-10095  NBtoWB * 569685.0  497370.0  569648.0  497398.0 *      46.
307.  AG    0.0   9.0
          44. 10097-10095  NBtoWB * 569648.0  497398.0  569562.0  497449.0 *     100.
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301.  AG    0.0   9.0
          45. 10086-10088  EBtoSB * 569588.0  497370.0  569622.0  497290.0 *      87.
157.  AG    0.0   9.0
          46. 10086-10088  EBtoSB * 569622.0  497290.0  569641.0  497224.0 *      69.
164.  AG    0.0   9.0
          47. 10086-10088  EBtoSB * 569641.0  497224.0  569652.0  497151.0 *      74.
171.  AG    0.0   9.0
          48. 10086-10088  EBtoSB * 569652.0  497151.0  569652.0  497081.0 *      70.
180.  AG    0.0   9.0
          49. 10086-10088  EBtoSB * 569652.0  497081.0  569643.0  496994.0 *      87.
186.  AG    0.0   9.0
          50. 10166-10055  GoeWBap* 570331.0  497080.0  569971.0  497279.0 *     411.
299.  AG    0.0  15.0
          51. 10166-10055  GoeWBap* 569971.0  497279.0  569728.0  497427.0 *     285.
301.  AG    0.0  15.0
          52. 10166-10055  GoeWBap* 569728.0  497427.0  569616.0  497502.0 *     135.
304.  AG    0.0  15.0
          53. 10166-10055  GoeWBQ * 569634.0  497490.0  569709.0  497440.0 *      90.
124.  AG    0.0   9.0    3
          54. 10055-10033  GoeWBon* 569616.0  497502.0  569552.0  497543.0 *      76.
303.  AG    0.0  15.0
          55. 10033-33719  GoeWBof* 569552.0  497543.0  569248.0  497767.0 *     378.
306.  AG    0.0  15.0
          56. 33719-39913  GoeWBde* 569248.0  497767.0  569136.0  497850.0 *     139.
307.  AG    0.0  15.0
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JOB: Goethals RUN: GOETHALS TOLL 2014 24-hr BLD 9am PM25

Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION				LINK COORDINATES (M)				LENGTH	BRG	TYPE	H	W	NLANES
				X1	Y1	X2	Y2	(M)	(DEG)		(M)	(M)	
57.	33719-39913	GoeWBde		569136.0	497850.0	569052.0	497907.0	102.	304.	AG	0.0	15.0	
58.	10033-10021	WBon		569561.0	497535.0	569450.0	497578.0	119.	291.	AG	0.0	9.0	
59.	10021-33719	WBoff		569318.0	497680.0	569249.0	497763.0	108.	320.	AG	0.0	9.0	
60.	9909-33718	GulEB10		569005.0	497835.0	569277.0	497635.0	338.	126.	AG	0.0	12.0	
61.	33718-10030	GulEB10		569277.0	497635.0	569328.0	497593.0	66.	129.	AG	0.0	12.0	
62.	33718-10030	GulEB10		569328.0	497593.0	569394.0	497527.0	93.	135.	AG	0.0	12.0	
63.	33718-10030	GulEB10		569394.0	497527.0	569456.0	497449.0	100.	142.	AG	0.0	12.0	
64.	10030-173401	GulEB10		569456.0	497449.0	569476.0	497416.0	39.	149.	AG	0.0	12.0	
65.	33718-10018	EBon		569164.0	497720.0	569306.0	497650.0	158.	116.	AG	0.0	9.0	
66.	10018-10030	EBoff		569429.0	497550.0	569457.0	497453.0	101.	164.	AG	0.0	9.0	
67.	10030-173401	GulEBde		569476.0	497415.0	569508.0	497362.0	62.	149.	AG	0.0	12.0	
68.	10030-173401	GulEBde		569508.0	497362.0	569539.0	497294.0	75.	155.	AG	0.0	12.0	
69.	10030-10055	ForNB17		569482.0	497416.0	569618.0	497499.0	159.	59.	AG	0.0	12.0	
70.	10030-10055	ForNBQ		569614.0	497497.0	569564.0	497466.0	59.	238.	AG	0.0	6.0	2
71.	10055-10065	ForNBde		569620.0	497500.0	569990.0	497730.0	436.	58.	AG	0.0	12.0	
72.	10065-10055	ForSB17		569975.0	497730.0	569613.0	497505.0	426.	238.	AG	0.0	12.0	
73.	10065-10055	ForSBQ		569620.0	497509.0	569685.0	497550.0	77.	58.	AG	0.0	6.0	2
74.	10055-10030	ForSBde		569609.0	497503.0	569479.0	497423.0	153.	238.	AG	0.0	12.0	
75.	10065-10055	MorWB		569706.0	497567.0	569521.0	497572.0	185.	272.	AG	0.0	9.0	

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC E (50 S)	569575.0	497466.0	1.8
2. REC E (25 S)	569596.0	497479.0	1.8
3. REC E (CNR)	569617.0	497491.0	1.8
4. REC E (25 E)	569639.0	497478.0	1.8
5. REC E (50 E)	569659.0	497464.0	1.8
6. REC E (MID E)	569695.0	497441.0	1.8
7. REC E (MID E)	569718.0	497443.0	1.8
8. REC E (50 E)	569684.0	497464.0	1.8
9. REC E (25 E)	569663.0	497479.0	1.8
10. REC E (CNR)	569642.0	497500.0	1.8
11. REC E (25 N)	569666.0	497521.0	1.8
12. REC E (50 N)	569688.0	497534.0	1.8

13. REC E (MID N)	*	569727.0	497546.0	1.8
14. REC W (50 N)	*	569656.0	497538.0	1.8
15. REC W (25 N)	*	569634.0	497525.0	1.8

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
16. REC W (CNR)	569613.0	497513.0	1.8
17. REC W (25 W)	569592.0	497527.0	1.8
18. REC W (50 W)	569572.0	497541.0	1.8
19. REC W (MID W)	569545.0	497559.0	1.8
20. REC W (MID W)	569520.0	497544.0	1.8
21. REC W (50 W)	569554.0	497532.0	1.8
22. REC W (25 W)	569576.0	497520.0	1.8
23. REC W (CNR)	569598.0	497504.0	1.8
24. REC W (25 S)	569577.0	497490.0	1.8
25. REC W (50 S)	569555.0	497477.0	1.8
26. RECID (N)	569411.0	497493.0	1.8
27. REC 0 (N)	569432.0	497463.0	1.8
28. REC 5 (N)	569447.0	497443.0	1.8
29. REC (CNR)	569462.0	497423.0	1.8
30. REC (CNR)	569475.0	497401.0	1.8
31. REC 5 (S)	569487.0	497379.0	1.8
32. REC 0 (S)	569499.0	497357.0	1.8
33. RECID (S)	569512.0	497328.0	1.8
34. REC34	569791.0	497397.0	1.8
35. REC35	569887.0	497337.0	1.8
36. REC36	569452.0	497625.0	1.8
37. REC37	569320.0	497722.0	1.8
38. REC38	569331.0	497576.0	1.8
39. REC39	569237.0	497653.0	1.8
40. REC40	569772.0	497586.0	1.8
41. REC41	569792.0	497624.0	1.8

JOB: Goethals RUN: GOETHALS TOLL 2014 24-hr BLD 9am PM25

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)

	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG	*	13.9	12.5	14.1	8.9	7.5	6.2	8.0	9.3	11.0	11.7
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	13.9	12.5	14.1	8.9	7.5	6.2	8.0	9.3	11.0	11.7
WIND DIR	*	289	289	318	318	318	304	289	289	289	289
JULIAN	*	273	273	176	176	176	145	273	273	273	273
HOUR	*	23	23	2	2	2	4	23	23	23	23

	*	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG	*	9.4	8.6	6.0	6.5	7.5	11.8	12.0	10.7	7.4	8.0
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	9.4	8.6	6.0	6.5	7.5	11.8	12.0	10.7	7.4	8.0
WIND DIR	*	285	282	282	227	224	289	289	282	289	289
JULIAN	*	314	314	314	144	163	273	273	314	273	273
HOUR	*	2	1	1	6	24	23	23	1	23	23

	*	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG	*	10.2	9.5	9.9	7.5	7.5	6.2	6.4	5.7	7.9	7.0
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	10.2	9.5	9.9	7.5	7.5	6.2	6.4	5.7	7.9	7.0
WIND DIR	*	318	318	68	75	75	75	75	75	66	49
JULIAN	*	176	176	142	106	106	106	106	106	142	2
HOUR	*	2	2	10	9	9	9	9	9	11	

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	*	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
MAX+BKG	*	4.9	4.6	4.3	7.2	6.6	7.2	7.2	6.3	7.5	6.7
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	4.9	4.6	4.3	7.2	6.6	7.2	7.2	6.3	7.5	6.7
WIND DIR	*	5	5	5	289	289	289	289	329	331	282
JULIAN	*	82	82	82	273	273	273	273	9	287	314
HOUR	*	24	24	24	23	23	23	23	21	5	1

JOB: Goethals RUN: GOETHALS TOLL 2014 24-hr BLD 9am PM25

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                 * MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND
CONCENTRATIONS (BKG) ADDED
                 *   (MICROGRAMS/M**3)
                 *    REC41
         --------*--------
         MAX+BKG *     5.4
         - BKG   *     0.0
         --------*--------
           MAX   *     5.4
         WIND DIR*     75
         JULIAN  *    106
         HOUR    *      9
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THE HIGHEST CONCENTRATION OF 14.10 UG/M**3 OCCURRED AT RECEPTOR REC3 .

JOB: Goethals RUN: GOETHALS TOLL 2014 24-hr BLD 9am PM25

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	5.910	(301,24)	C 4	5.410*	(346,24)	C 4	5.205	(237,24)	C 4	4.767	(239,24)	C 3	4.758	(329,24)	C 0
2	5.920*	(301,24)	C 4	5.180	(237,24)	C 4	4.910	(346,24)	C 4	4.696	(329,24)	C 0	4.639	(35,24)	C 6
3	4.825	(301,24)	C 4	4.525	(237,24)	C 4	4.441	(309,24)	C 2	4.409	(201,24)	C 2	4.390	(271,24)	C 3
4	2.960	(301,24)	C 4	2.765	(237,24)	C 4	2.555	(309,24)	C 2	2.450	(136,24)	C 0	2.425	(329,24)	C 0
5	1.913	(182,24)	C 0	1.896	(281,24)	C 0	1.890	(301,24)	C 4	1.882	(309,24)	C 2	1.840	(237,24)	C 4
6	1.621	(182,24)	C 0	1.600	(212,24)	C 3	1.590	(301,24)	C 4	1.558	(281,24)	C 0	1.556	(167,24)	C 6
7	1.859	(247,24)	C 2	1.846	(333,24)	C 0	1.779	(286,24)	C 0	1.765	(287,24)	C 1	1.750	(357,24)	C 0
8	2.168	(247,24)	C 2	2.163	(333,24)	C 0	2.142	(286,24)	C 0	2.091	(287,24)	C 1	2.019	(239,24)	C 3
9	2.625	(333,24)	C 0	2.567	(286,24)	C 0	2.426	(287,24)	C 1	2.395	(239,24)	C 3	2.391	(247,24)	C 2
10	3.413	(333,24)	C 0	3.281	(239,24)	C 3	3.208	(324,24)	C 0	3.192	(286,24)	C 0	3.145	(247,24)	C 2
11	3.260	(301,24)	C 4	3.175	(333,24)	C 0	3.154	(324,24)	C 0	3.143	(239,24)	C 3	3.086	(1,24)	C 3
12	3.035	(301,24)	C 4	2.896	(333,24)	C 0	2.821	(324,24)	C 0	2.805	(237,24)	C 4	2.800	(239,24)	C 3
13	1.804	(333,24)	C 0	1.704	(286,24)	C 0	1.690	(239,24)	C 3	1.683	(324,24)	C 0	1.591	(186,24)	C 1
14	3.240	(142,24)	C 4	2.661	(53,24)	C 7	2.658	(267,24)	C 5	2.642	(262,24)	C 0	2.637	(55,24)	C 5
15	3.520	(142,24)	C 4	3.076	(1,24)	C 3	3.063	(267,24)	C 5	3.047	(55,24)	C 5	3.046	(262,24)	C 0
16	5.085	(142,24)	C 4	4.637	(267,24)	C 5	4.390	(1,24)	C 3	4.377	(247,24)	C 2	4.348	(255,24)	C 3
17	4.270	(142,24)	C 4	4.095	(211,24)	C 4	3.980	(245,24)	C 4	3.937	(267,24)	C 5	3.876	(255,24)	C 3
18	3.875	(142,24)	C 4	3.820	(211,24)	C 4	3.676	(1,24)	C 3	3.675	(245,24)	C 4	3.586	(255,24)	C 3
19	3.485	(142,24)	C 4	3.380	(211,24)	C 4	3.350	(245,24)	C 4	3.163					

(267,24) C 5 3.095 (255,24) C 3
20 2.975 (301,24) C 4 2.890 (141,24) C 3 2.839 (167,24) C 6 2.810
(142,24) C 4 2.624 (212,24) C 3
21 4.510 (301,24) C 4 3.719 (141,24) C 3 3.694 (167,24) C 6 3.600
(212,24) C 3 3.555 (237,24) C 4
22 3.748 (212,24) C 3 3.660 (142,24) C 4 3.589 (167,24) C 6 3.310
(141,24) C 3 3.240 (301,24) C 4
23 4.645 (142,24) C 4 4.178 (167,24) C 6 3.948 (212,24) C 3 3.762
(141,24) C 3 3.620 (301,24) C 4
24 4.235 (142,24) C 4 3.547 (267,24) C 5 3.329 (255,24) C 3 3.289
(167,24) C 6 3.245 (245,24) C 4
25 4.900 (142,24) C 4 4.374 (267,24) C 5 4.157 (255,24) C 3 4.110
(245,24) C 4 4.105 (211,24) C 4
26 2.780 (301,24) C 4 2.538 (212,24) C 3 2.495 (141,24) C 3 2.129
(351,24) C 0 2.021 (214,24) C 0

JOB: Goethals RUN: GOETHALS TOLL
2014 24-hr BLD 9am PM25

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
27	2.725	(301,24)	C 4	2.405	(141,24)	C 3	2.252	(212,24)	C 3	2.075	(351,24)	C 0	2.013	(102,24)	C 1
28	2.505	(301,24)	C 4	2.043	(141,24)	C 3	1.896	(351,24)	C 0	1.850	(231,24)	C 0	1.845	(343,24)	C 2
29	2.415	(301,24)	C 4	2.371	(141,24)	C 3	2.083	(351,24)	C 0	1.917	(292,24)	C 0	1.862	(212,24)	C 3
30	3.555	(301,24)	C 4	2.615	(346,24)	C 4	2.595	(343,24)	C 2	2.448	(330,24)	C 1	2.355	(57,24)	C 2
31	2.400	(301,24)	C 4	1.895	(343,24)	C 2	1.788	(338,24)	C 0	1.696	(231,24)	C 0	1.606	(35,24)	C 6
32	1.895	(301,24)	C 4	1.486	(343,24)	C 2	1.471	(338,24)	C 0	1.363	(231,24)	C 0	1.313	(345,24)	C 0
33	1.565	(301,24)	C 4	1.250	(343,24)	C 2	1.192	(231,24)	C 0	1.192	(338,24)	C 0	1.100	(345,24)	C 0
34	1.685	(142,24)	C 4	1.650	(247,24)	C 2	1.600	(333,24)	C 0	1.585	(211,24)	C 4	1.558	(357,24)	C 0
35	1.765	(142,24)	C 4	1.660	(211,24)	C 4	1.609	(247,24)	C 2	1.570	(245,24)	C 4	1.483	(333,24)	C 0
36	2.900	(211,24)	C 4	2.700	(245,24)	C 4	2.650	(142,24)	C 4	2.532	(267,24)	C 5	2.490	(255,24)	C 3
37	2.655	(211,24)	C 4	2.640	(142,24)	C 4	2.425	(245,24)	C 4	2.410	(1,24)	C 3	2.379	(267,24)	C 5
38	2.450	(301,24)	C 4	2.333	(212,24)	C 3	2.267	(141,24)	C 3	1.900	(231,24)	C 0	1.865	(102,24)	C 1
39	3.010	(301,24)	C 4	2.581	(141,24)	C 3	2.524	(212,24)	C 3	2.317	(231,24)	C 0	2.248	(102,24)	C 1
40	2.875	(301,24)	C 4	2.575	(237,24)	C 4	2.471	(324,24)	C 0	2.415	(346,24)	C 4	2.410	(239,24)	C 3
41	2.605	(142,24)	C 4	1.984	(267,24)	C 5	1.967	(53,24)	C 7	1.900	(181,24)	C 3	1.850	(262,24)	C 0

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	2.727*	(366,24)	C 657
2	2.617	(366,24)	C 657
3	2.505	(366,24)	C 657
4	1.420	(366,24)	C 657
5	1.035	(366,24)	C 657
6	0.880	(366,24)	C 657
7	0.805	(366,24)	C 657
8	0.980	(366,24)	C 657
9	1.129	(366,24)	C 657
10	1.566	(366,24)	C 657
11	1.596	(366,24)	C 657
12	1.443	(366,24)	C 657
13	0.817	(366,24)	C 657
14	1.114	(366,24)	C 657
15	1.252	(366,24)	C 657
16	1.913	(366,24)	C 657
17	1.575	(366,24)	C 657
18	1.507	(366,24)	C 657
19	1.224	(366,24)	C 657

JOB: Goethals RUN: GOETHALS TOLL
2014 24-hr BLD 9am PM25

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
20	1.509	(366,24)	C 657
21	1.905	(366,24)	C 657
22	1.716	(366,24)	C 657
23	1.911	(366,24)	C 657
24	1.488	(366,24)	C 657
25	1.780	(366,24)	C 657
26	0.766	(366,24)	C 657
27	0.702	(366,24)	C 657
28	0.643	(366,24)	C 657
29	0.596	(366,24)	C 657
30	0.656	(366,24)	C 657
31	0.509	(366,24)	C 657
32	0.428	(366,24)	C 657
33	0.352	(366,24)	C 657
34	0.701	(366,24)	C 657
35	0.680	(366,24)	C 657
36	0.946	(366,24)	C 657
37	0.978	(366,24)	C 657
38	0.736	(366,24)	C 657
39	0.892	(366,24)	C 657
40	1.236	(366,24)	C 657
41	0.723	(366,24)	C 657

MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
1	5.910	(301,24)	0.00	5.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
				Links 10+	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.02	0.16	0.02	0.43	0.01	0.00	0.00	0.02	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.71	0.71
				Links 70+	0.45	0.18	0.00	0.06	0.07	0.00	0.00	0.00	0.00	0.00

JOB: Goethals RUN: GOETHALS TOLL
2014 24-hr BLD 9am PM25

LINK CONTRIBUTION TABLES

MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
2	5.920	(301,24)	0.00	5.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
				Links 10+	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.01	0.30	0.03	0.50	0.00	0.00	0.00	0.00	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	0.60
				Links 70+	0.75	0.28	0.01	0.04	0.08	0.00	0.00	0.00	0.00	0.00
3	4.825	(301,24)	0.00	4.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
				Links 10+	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	1.10	0.05	0.17	0.00	0.00	0.00	0.00	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.05
				Links 70+	1.80	0.43	0.03	0.00	0.08	0.00	0.00	0.00	0.00	0.00
4	2.960	(301,24)	0.00	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
				Links 10+	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.01	1.22	0.66	0.01	0.00	0.00	0.00	0.00	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
				Links 70+	0.73	0.20	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
5	1.913	(182,24)	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.03	0.05
				Links 10+	0.03	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CAL3QHCR
(Dated: 95221)

DATE : 5/22/ 8
PAGE: 1
TIME : 10:56:32

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

==========
General Information
==========

Run start date: 1/ 1/ 0 Julian: 1
end date: 12/31/ 0 Julian: 366

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to p for calculating PM averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM
ATIM = 60.

Met. Sfc. Sta. Id & Yr = 72502 0
Upper Air Sta. Id & Yr = 94703 0

Urban mixing heights were processed.

In 2000, Julian day 1 is a Saturday.

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)
*   LENGTH   BRG  TYPE    H     W  NLANES
                                 *     X1        Y1        X2        Y2
*     (M)   (DEG)        (M)   (M)
          ------------------------
*----------------------------------------
*----------------------------------------
           1. 33369-11750  278WBto* 579476.0  494992.0  579367.0
495008.0 *     110.   278.  AG    0.0  15.0
           2. 11750-11734  278WBto* 579367.0  495008.0  578990.0
495135.0 *     398.   289.  AG    0.0  15.0
           3. 11734-33708  278WB  * 578990.0  495135.0  578875.0
495174.0 *     121.   289.  AG    0.0  15.0
           4. 11734-33708  278WB  * 578875.0  495174.0  578680.0
495269.0 *     217.   296.  AG    0.0  15.0
           5. 11661-33706  278EBto* 578669.0  495245.0  578824.0
495167.0 *     174.   117.  AG    0.0  15.0
           6. 33706-11733  278EBto* 578824.0  495167.0  579041.0
495071.0 *     237.   114.  AG    0.0  15.0
```

```
           7. 33706-11733  278EB  * 579041.0  495070.0  579112.0
495017.0 *      89.   127.  AG    0.0  15.0
           8. 11733-11749  278EBto* 579112.0  495017.0  579208.0
494982.0 *     102.   110.  AG    0.0  15.0
           9. 11749-33751  278EB  * 579209.0  494981.0  579352.0
494953.0 *     146.   101.  AG    0.0  15.0
          10. 11749-33751  278EB  * 579352.0  494953.0  579464.0
494949.0 *     112.    92.  AG    0.0  15.0
          11. 11744-33711  Lly NB1* 579215.0  494669.0  579144.0
494797.0 *     146.   331.  AG    0.0  12.0
          12. 11744-33711  Lly NB3* 579144.0  494797.0  579121.0
494857.0 *      64.   339.  AG    0.0  12.0
          13. 11744-33711  Lly NB3* 579121.0  494857.0  579105.0
494918.0 *      63.   345.  AG    0.0  15.0
          14. 11744-33711  Lly NBQ* 579107.0  494911.0  579119.0
494862.0 *      50.   166.  AG    0.0   9.0    3
          15. 33711-11740  Lly NB1* 579105.0  494918.0  579049.0
495162.0 *     250.   347.  AG    0.0   9.0
```

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

Link Data Constants - (Variable data in *.LNK file)

```
             LINK DESCRIPTION     *         LINK COORDINATES (M)
*   LENGTH   BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2
*     (M)   (DEG)        (M)   (M)
          -------------------------
*----------------------------------------
*----------------------------------------
          16. 11731-33709  Lly NB1* 579049.0  495162.0  579042.0
495244.0 *      82.   355.  AG    0.0   9.0
          17. 33709-11723  Lly NB1* 579042.0  495244.0  579052.0
495294.0 *      51.    11.  AG    0.0  12.0
          18. 11723-11729  Lly NBd* 579053.0  495294.0  579073.0
495328.0 *      39.    30.  AG    0.0  12.0
          19. 11723-11729  Lly NBd* 579073.0  495328.0  579102.0
495356.0 *      40.    46.  AG    0.0  12.0
          20. 11723-11729  Lly NBd* 579102.0  495356.0  579265.0
495456.0 *     191.    58.  AG    0.0  12.0
          21. 11729-11723  Lly SB1* 579255.0  495461.0  579088.0
495360.0 *     195.   239.  AG    0.0  12.0
          22. 11729-11723  Lly SB1* 579088.0  495360.0  579050.0
495328.0 *      50.   230.  AG    0.0  12.0
          23. 33709-11731  Lly SB3* 579050.0  495328.0  579032.0
495270.0 *      61.   197.  AG    0.0  12.0
          24. 33709-11731  Lly SB3* 579032.0  495270.0  579029.0
495197.0 *      73.   182.  AG    0.0  12.0
          25. 11731-33747  Lly SB3* 579029.0  495197.0  579075.0
494994.0 *     208.   167.  AG    0.0  12.0
          26. 11740-33711  Lly SB3* 579075.0  494994.0  579095.0
494913.0 *      83.   166.  AG    0.0  12.0
          27. 11740-33711  Lly SBQ* 579092.0  494926.0  579081.0
494967.0 *      42.   345.  AG    0.0   6.0    2
          28. 11755-11769  Lly SB1* 579095.0  494912.0  579109.0
494855.0 *      59.   166.  AG    0.0  12.0
          29. 11755-11769  Lly SB1* 579109.0  494855.0  579134.0
494792.0 *      68.   158.  AG    0.0  12.0
          30. 11755-11769  Lly SB3* 579135.0  494792.0  579203.0
494665.0 *     144.   152.  AG    0.0  12.0
          31. 11755-11769  Lly SBQ* 579203.0  494667.0  579180.0
494709.0 *      48.   331.  AG    0.0   6.0    2
          32. 11744-11749  LlyNBon* 579133.0  494831.0  579128.0
494863.0 *      32.   351.  AG    0.0   9.0
          33. 11744-11749  LlyNBon* 579128.0  494863.0  579114.0
494925.0 *      64.   347.  AG    0.0   9.0
          34. 11744-11749  LlyNBon* 579114.0  494925.0  579117.0
494952.0 *      27.     6.  AG    0.0   9.0
          35. 11744-11749  LlyNBon* 579117.0  494952.0  579134.0
494970.0 *      25.    43.  AG    0.0   9.0
```

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          36. 11744-11749  LlyNBon* 579134.0  494970.0  579158.0
494978.0 *      25.    72.  AG    0.0   9.0
          37. 11744-11749  LlyNBon* 579158.0  494978.0  579204.0
494981.0 *      46.    86.  AG    0.0   9.0
          38. 11750-11723  LlyNBof* 579365.0  495011.0  579115.0
495152.0 *     287.   299.  AG    0.0   9.0
          39. 11750-11723  LlyNBof* 579115.0  495152.0  579087.0
495179.0 *      39.   314.  AG    0.0  12.0
          40. 11750-11723  LlyNBof* 579087.0  495179.0  579064.0
495211.0 *      39.   324.  AG    0.0   9.0
          41. 11750-11723  LlyNBof* 579064.0  495211.0  579055.0
495249.0 *      39.   347.  AG    0.0   9.0
          42. 11750-11723  LlyNBof* 579055.0  495249.0  579056.0
495295.0 *      46.     1.  AG    0.0   9.0
          43. 11734-11731  LlySBof* 578993.0  495136.0  578931.0
495187.0 *      80.   309.  AG    0.0   9.0
          44. 11734-11731  LlySBof* 578931.0  495187.0  578919.0
495213.0 *      29.   335.  AG    0.0   9.0
          45. 11734-11731  LlySBof* 578919.0  495213.0  578924.0
495243.0 *      30.     9.  AG    0.0   9.0
          46. 11734-11731  LlySBof* 578924.0  495243.0  578946.0
495264.0 *      30.    46.  AG    0.0   9.0
          47. 11734-11731  LlySBof* 578946.0  495264.0  578972.0
495269.0 *      26.    79.  AG    0.0   9.0
          48. 11734-11731  LlySBof* 578972.0  495269.0  578998.0
495261.0 *      27.   107.  AG    0.0  12.0
          49. 11734-11731  LlySBof* 578998.0  495261.0  579014.0
495239.0 *      27.   144.  AG    0.0   9.0
          50. 11734-11731  LlySBof* 579014.0  495239.0  579026.0
495201.0 *      40.   162.  AG    0.0   9.0
          51. 11740-11733  LlySBon* 579073.0  494988.0  579061.0
494964.0 *      27.   207.  AG    0.0   9.0
          52. 11740-11733  LlySBon* 579061.0  494964.0  579044.0
494949.0 *      23.   229.  AG    0.0   9.0
          53. 11740-11733  LlySBon* 579044.0  494949.0  579020.0
494944.0 *      25.   258.  AG    0.0   9.0
          54. 11740-11733  LlySBon* 579020.0  494944.0  578994.0
494950.0 *      27.   283.  AG    0.0  12.0
          55. 11740-11733  LlySBon* 578994.0  494950.0  578977.0
494969.0 *      25.   318.  AG    0.0   9.0
          56. 11740-11733  LlySBon* 578977.0  494969.0  578971.0
494997.0 *      29.   348.  AG    0.0   9.0
```

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)
*   LENGTH   BRG  TYPE    H     W  NLANES
                                 *     X1        Y1        X2        Y2
*     (M)   (DEG)        (M)   (M)
          -------------------------
*----------------------------------------
*----------------------------------------
          57. 11740-11733  LlySBon* 578971.0  494997.0  578978.0
495020.0 *      24.    17.  AG    0.0   9.0
          58. 11740-11733  LlySBon* 578978.0  495020.0  578997.0
495037.0 *      25.    48.  AG    0.0   9.0
          59. 11740-11733  LlySBon* 578997.0  495037.0  579020.0
495042.0 *      24.    78.  AG    0.0   9.0
          60. 11740-11733  LlySBon* 579020.0  495042.0  579105.0
495021.0 *      88.   104.  AG    0.0   9.0
          61. 33709-33708  LclnWBo* 579042.0  495333.0  578905.0
495249.0 *     161.   238.  AG    0.0  12.0
          62. 33709-33708  LclnWBo* 578905.0  495249.0  578865.0
495228.0 *      45.   242.  AG    0.0  12.0
          63. 33709-33708  LclnWBo* 578865.0  495228.0  578825.0
495220.0 *      41.   259.  AG    0.0  12.0
          64. 33709-33708  LclnWBo* 578825.0  495220.0  578798.0
495222.0 *      27.   274.  AG    0.0  12.0
          65. 33709-33708  LclnWBo* 578798.0  495222.0  578760.0
495233.0 *      40.   286.  AG    0.0  12.0
          66. 33706-33711  NrwsEBo* 578825.0  495164.0  578869.0
495127.0 *      57.   130.  AG    0.0  12.0
          67. 33706-33711  NrwsEBo* 578869.0  495127.0  578894.0
495096.0 *      40.   141.  AG    0.0  12.0
          68. 33706-33711  NrwsEBo* 578894.0  495096.0  578975.0
494958.0 *     160.   150.  AG    0.0  12.0
          69. 33706-33711  NrwsEBo* 578975.0  494958.0  578984.0
494946.0 *      15.   143.  AG    0.0  12.0
          70. 33706-33711  NrwsEBo* 578984.0  494946.0  579004.0
494929.0 *      26.   130.  AG    0.0  12.0
          71. 33706-33711  NrwsEBo* 579004.0  494929.0  579038.0
494917.0 *      36.   109.  AG    0.0  12.0
          72. 33706-33711  NrwsEBo* 579038.0  494917.0  579061.0
494916.0 *      23.    92.  AG    0.0  12.0
          73. 33706-33711  SIEEBof* 579061.0  494916.0  579098.0
494924.0 *      38.    78.  AG    0.0  12.0
          74. 33706-33711  NrwsEBQ* 579086.0  494921.0  579064.0
494917.0 *      22.   260.  AG    0.0   6.0    2
          75. 11652-11755  Nrw-soE* 578816.0  495139.0  578873.0
495100.0 *      69.   124.  AG    0.0  15.0
          76. 11652-11755  Nrw-soE* 578873.0  495100.0  578892.0
495078.0 *      29.   139.  AG    0.0  15.0
```

```
          77. 11652-11755  Nrw-soE* 578892.0  495078.0  578967.0
494948.0 *     150.   150.  AG    0.0  15.0
          78. 11652-11755  Nrw-soE* 578967.0  494948.0  578994.0
494922.0 *      37.   134.  AG    0.0  15.0
          79. 11652-11755  Nrw-soE* 578994.0  494922.0  579019.0
494911.0 *      27.   114.  AG    0.0  15.0
          80. 11652-11755  Nrw-soE* 579019.0  494911.0  579049.0
494905.0 *      31.   101.  AG    0.0  15.0
          81. 11652-11755  Nrw-soE* 579049.0  494905.0  579101.0
494908.0 *      52.    87.  AG    0.0  15.0
          82. 11652-11755  Nrw-soE* 579088.0  494907.0  579054.0
494905.0 *      34.   267.  AG    0.0   9.0    3
          83. 11734-11658  NrwsWB3* 578986.0  495138.0  578921.0
495177.0 *      76.   301.  AG    0.0  15.0
          84. 11734-11658  NrwsWB3* 578921.0  495177.0  578765.0
495259.0 *     176.   298.  AG    0.0  15.0
          85. 11734-11658  NrwsWBQ* 578773.0  495255.0  578817.0
495231.0 *      50.   119.  AG    0.0   9.0    3
          86. 11658-11610  NrwsWBd* 578766.0  495259.0  578692.0
495297.0 *      83.   297.  AG    0.0  15.0
          87. 11604-11652  NrwsEB3* 578658.0  495214.0  578741.0
495172.0 *      93.   117.  AG    0.0  12.0
          88. 11604-11652  NrwsEBQ* 578730.0  495178.0  578688.0
495198.0 *      47.   295.  AG    0.0   6.0    2
          89. 11652-11733  NrwsEBt* 578741.0  495172.0  578817.0
495139.0 *      83.   113.  AG    0.0  12.0
          90. 11652-11733  NrwsEBt* 578823.0  495137.0  579098.0
495024.0 *     297.   112.  AG    0.0  12.0
          91. 11587-11652  fb NB13* 578645.0  495003.0  578666.0
495004.0 *      21.    87.  AG    0.0   9.0
          92. 11587-11652  fb NB13* 578666.0  495004.0  578699.0
495023.0 *      38.    60.  AG    0.0   9.0
          93. 11587-11652  fb NB13* 578699.0  495023.0  578710.0
495053.0 *      32.    20.  AG    0.0   9.0
          94. 11587-11652  fb NB13* 578710.0  495053.0  578725.0
495105.0 *      54.    16.  AG    0.0   9.0
          95. 11587-11652  fb NB33* 578725.0  495105.0  578744.0
495171.0 *      69.    16.  AG    0.0   9.0
          96. 11587-11652  fb NBQ3* 578741.0  495163.0  578731.0
495128.0 *      36.   196.  AG    0.0   3.0    1
          97. 11652-11658  fb NB32* 578744.0  495173.0  578768.0
495257.0 *      87.    16.  AG    0.0  12.0
```

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

Link Data Constants - (Variable data in *.LNK file)

```
             LINK DESCRIPTION     *         LINK COORDINATES (M)
*   LENGTH   BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2
*     (M)   (DEG)        (M)   (M)
          -------------------------
*----------------------------------------
*----------------------------------------
          98. 11652-11658  fb NBQ3* 578766.0  495250.0  578757.0
495217.0 *      34.   195.  AG    0.0   6.0    2
          99. 11658-11692  fb NB13* 578769.0  495259.0  578783.0
495306.0 *      49.    17.  AG    0.0   9.0
         100. 11587-11652  fb NB13* 578784.0  495306.0  578796.0
495351.0 *      47.    15.  AG    0.0   9.0
         101. 11658-11692  fb NB13* 578796.0  495351.0  578831.0
495468.0 *     122.    17.  AG    0.0   9.0
         102. 11692-11658  fb SB13* 578826.0  495468.0  578793.0
495351.0 *     122.   196.  AG    0.0   9.0
         103. 11692-11658  fb SB13* 578792.0  495351.0  578780.0
495307.0 *      46.   195.  AG    0.0   9.0
         104. 11692-11658  fb SB32* 578780.0  495307.0  578763.0
495261.0 *      49.   200.  AG    0.0  12.0
         105. 11692-11658  fb SBQ3* 578766.0  495269.0  578773.0
495290.0 *      22.    18.  AG    0.0   6.0    2
         106. 11658-11652  fb SB33* 578762.0  495260.0  578739.0
495177.0 *      86.   195.  AG    0.0  12.0
         107. 11658-11652  fb SBQ3* 578740.0  495182.0  578749.0
495212.0 *      31.    17.  AG    0.0   6.0    2
         108. 11652-11587  fb SB13* 578739.0  495176.0  578733.0
495148.0 *      29.   192.  AG    0.0   9.0
         109. 11652-11587  fb SB13* 578733.0  495148.0  578721.0
495107.0 *      43.   196.  AG    0.0   9.0
         110. 11652-11587  fb SBde* 578721.0  495107.0  578702.0
495040.0 *      70.   196.  AG    0.0   9.0
         111. 11652-11587  fb SBde* 578702.0  495040.0  578688.0
495020.0 *      24.   215.  AG    0.0   9.0
         112. 11652-11587  fb SBde* 578688.0  495020.0  578665.0
495008.0 *      26.   242.  AG    0.0   9.0
         113. 11652-11587  fb SBde* 578665.0  495008.0  578646.0
495008.0 *      19.   270.  AG    0.0   9.0
```

Receptor Data

```
                                  *          COORDINATES (M)
             RECEPTOR             *         X          Y          Z
          -------------------------
*-------------------------------------
```

1.	REC E (MID S)	*	579137.0	494849.0	1.8
2.	REC E (50 S)	*	579128.0	494893.0	1.8
3.	REC E (25 S)	*	579123.0	494917.0	1.8
4.	REC E (CNR)	*	579134.0	494962.0	1.8
5.	REC E (25 E)	*	579178.0	494966.0	1.8
6.	REC E (50 E)	*	579202.0	494959.0	1.8
7.	REC E (MID E)	*	579242.0	494948.0	1.8
8.	REC E (MID E)	*	579152.0	495141.0	1.8
9.	REC E (50 E)	*	579110.0	495165.0	1.8
10.	REC E (25 E)	*	579092.0	495183.0	1.8
11.	REC E (CNR)	*	579060.0	495265.0	1.8
12.	REC E (25 N)	*	579082.0	495325.0	1.8
13.	REC E (50 N)	*	579099.0	495344.0	1.8
14.	REC E (MID N)	*	579134.0	495367.0	1.8
15.	REC W (MID N)	*	579140.0	495400.0	1.8
16.	REC W (50 N)	*	579095.0	495373.0	1.8
17.	REC W (25 N)	*	579074.0	495361.0	1.8
18.	REC W (CNR)	*	579052.0	495348.0	1.8

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
19. REC W (CNR)	579031.0	495335.0	1.8
20. REC W (25 S)	579009.0	495322.0	1.8
21. REC W (50 S)	578988.0	495309.0	1.8
22. REC W (MID S)	578958.0	495292.0	1.8
23. REC W (MID W)	579009.0	494906.0	1.8
24. REC W (50 W)	579037.0	494899.0	1.8
25. REC W (25 W)	579061.0	494898.0	1.8
26. REC W (CNR)	579087.0	494895.0	1.8
27. REC W (25 S)	579097.0	494871.0	1.8
28. REC W (50 S)	579103.0	494847.0	1.8
29. REC W (MID S)	579118.0	494808.0	1.8
30. REC E (MID S)	578726.0	495088.0	1.8
31. REC E (50 S)	578731.0	495112.0	1.8
32. REC E (25 S)	578738.0	495136.0	1.8
33. REC E (CNR)	578745.0	495161.0	1.8
34. REC E (25 E)	578768.0	495150.0	1.8
35. REC E (50 E)	578790.0	495137.0	1.8
36. REC E (MID E)	578828.0	495119.0	1.8
37. REC E (MID E)	578838.0	495229.0	1.8
38. REC E (50 E)	578820.0	495239.0	1.8
39. REC E (25 E)	578798.0	495250.0	1.8
40. REC E (CNR)	578776.0	495263.0	1.8
41. REC E (25 N)	578783.0	495287.0	1.8
42. REC E (50 N)	578790.0	495311.0	1.8
43. REC E (MID N)	578802.0	495353.0	1.8
44. REC W (MID N)	578788.0	495355.0	1.8
45. REC W (50 N)	578776.0	495314.0	1.8
46. REC W (25 N)	578769.0	495294.0	1.8
47. REC W (CNR)	578760.0	495271.0	1.8
48. REC W (25 W)	578737.0	495282.0	1.8
49. REC W (50 W)	578715.0	495293.0	1.8
50. REC W (MID W)	578698.0	495302.0	1.8
51. REC W (MID W)	578659.0	495205.0	1.8
52. REC W (50 W)	578688.0	495190.0	1.8
53. REC W (25 W)	578711.0	495179.0	1.8
54. REC W (CNR)	578733.0	495167.0	1.8
55. REC W (25 S)	578727.0	495143.0	1.8
56. REC W (50 S)	578720.0	495119.0	1.8
57. REC W (MID S)	578712.0	495091.0	1.8

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)

*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG *	35.7	32.7	28.5	29.4	21.9	18.4	13.4	6.7	7.5	7.1
- BKG *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX *	35.7	32.7	28.5	29.4	21.9	18.4	13.4	6.7	7.5	7.1
WIND DIR*	331	329	325	318	318	318	289	282	282	282
JULIAN *	287	9	43	176	176	176	273	314	314	314
HOUR *	5	21	22	2	2	2	23	1	1	1

*	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG *	8.0	7.6	8.9	8.3	11.0	11.3	10.2	9.8	9.6	8.3
- BKG *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX *	8.0	7.6	8.9	8.3	11.0	11.3	10.2	9.8	9.6	8.3
WIND DIR*	204	4	241	282	75	75	75	181	170	166
JULIAN *	276	132	288	314	106	106	106	348	245	206

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         HOUR    *     23      23       3       1       9       9
9      17       2      20

                 *    REC21   REC22   REC23   REC24   REC25   REC26
REC27   REC28   REC29   REC30
         --------
*-----------------------------------------------------------------------
---------
         MAX+BKG *     7.8     7.6    11.6    13.3    14.2    15.5
16.8    18.0    21.1    10.6
         - BKG   *     0.0     0.0     0.0     0.0     0.0     0.0
0.0     0.0     0.0     0.0
         --------
*-----------------------------------------------------------------------
---------
           MAX   *     7.8     7.6    11.6    13.3    14.2    15.5
16.8    18.0    21.1    10.6
         WIND DIR*    162     157      75      66      66      66
5       5       2       5
         JULIAN  *    299     211     106     142     142     142
82      82     300      82
         HOUR    *     17      23       9      11      11      11
24      24       8      24

                 *    REC31   REC32   REC33   REC34   REC35   REC36
REC37   REC38   REC39   REC40
         --------
*-----------------------------------------------------------------------
---------
         MAX+BKG *    13.2    14.4    20.0    17.3    15.1    16.2
11.8    10.9    10.6    10.6
         - BKG   *     0.0     0.0     0.0     0.0     0.0     0.0
0.0     0.0     0.0     0.0
         --------
*-----------------------------------------------------------------------
---------
           MAX   *    13.2    14.4    20.0    17.3    15.1    16.2
11.8    10.9    10.6    10.6
         WIND DIR*      5       5       5      75      75      75
136     135     136     136
         JULIAN  *     82      82      82     106     106     106
142     151     142     142
         HOUR    *     24      24      24       9       9       9
9      22       9       9
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JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

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                  * MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT
BACKGROUND CONCENTRATIONS (BKG) ADDED
                  *   (MICROGRAMS/M**3)
                  *    REC41   REC42   REC43   REC44   REC45   REC46
REC47   REC48   REC49   REC50
         --------
*-----------------------------------------------------------------------
---------
         MAX+BKG *     6.5     7.5     7.0     7.2     7.8     8.4
12.3    10.9    10.6    10.3
         - BKG   *     0.0     0.0     0.0     0.0     0.0     0.0
0.0     0.0     0.0     0.0
         --------
*-----------------------------------------------------------------------
---------
           MAX   *     6.5     7.5     7.0     7.2     7.8     8.4
12.3    10.9    10.6    10.3
         WIND DIR*    139     356     204     147     139     142
136     133     133     132
         JULIAN  *    197     354     276     215     197     142
142     106     106     180
         HOUR    *     22       7      23       8      22       3
9       8       8      22

                  *    REC51   REC52   REC53   REC54   REC55   REC56
REC57
         --------
*-------------------------------------------------------
         MAX+BKG *    16.0    17.2    17.8    19.7    13.8    11.8
10.0
         - BKG   *     0.0     0.0     0.0     0.0     0.0     0.0
0.0
         --------
*-------------------------------------------------------
           MAX   *    16.0    17.2    17.8    19.7    13.8    11.8
10.0
         WIND DIR*    105      75      75      75      66      66
68
         JULIAN  *     24     106     106     106     142     142
142
         HOUR    *     21       9       9       9      11      11
10


         THE HIGHEST CONCENTRATION OF   35.70 UG/M**3 OCCURRED AT
RECEPTOR REC1 .
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JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	9.055	(309,24)	C 2	8.891	(247,24)	C 2	8.317	(8,24)	C 0	8.305	(15,24)	C 2	8.228	(9,24)	C 6
2	10.173	(247,24)	C 2	9.332	(15,24)	C 2	9.052	(294,24)	C 3	8.891	(309,24)	C 2	8.765	(287,24)	C 1
3	10.141	(247,24)	C 2	9.457	(294,24)	C 3	9.143	(1,24)	C 3	8.741	(15,24)	C 2	8.488	(262,24)	C 0
4	11.035*	(301,24)	C 4	9.780*	(237,24)	C 4	9.741	(201,24)	C 2	9.312	(329,24)	C 0	9.206	(35,24)	C 6
5	7.660	(301,24)	C 4	6.595	(237,24)	C 4	6.122	(35,24)	C 6	6.046	(231,24)	C 0	6.009	(309,24)	C 2
6	4.667	(182,24)	C 0	4.614	(309,24)	C 2	4.550	(281,24)	C 0	4.329	(136,24)	C 0	4.308	(159,24)	C 0
7	3.535	(301,24)	C 4	3.196	(73,24)	C 0	3.185	(237,24)	C 4	3.158	(182,24)	C 0	3.017	(35,24)	C 6
8	3.343	(1,24)	C 3	3.042	(55,24)	C 5	2.942	(262,24)	C 0	2.900	(247,24)	C 2	2.796	(246,24)	C 1
9	3.619	(1,24)	C 3	3.305	(247,24)	C 2	3.279	(55,24)	C 5	3.214	(255,24)	C 3	3.158	(262,24)	C 0
10	3.624	(1,24)	C 3	3.391	(247,24)	C 2	3.389	(							

55,24) C 5   3.281 (255,24) C 3   3.271 (262,24) C 0
11   4.181 (1,24) C 3   4.110 (294,24) C 3   4.041
(247,24) C 2   3.942 (55,24) C 5   3.883 (262,24) C 0
12   3.614 (1,24) C 3   3.533 (294,24) C 3   3.421 (
55,24) C 5   3.400 (262,24) C 0   3.359 (247,24) C 2
13   4.150 (301,24) C 4   3.915 (346,24) C 4   3.881 (
1,24) C 3   3.760 (237,24) C 4   3.700 (201,24) C 2
14   4.170 (301,24) C 4   3.790 (346,24) C 4   3.770
(237,24) C 4   3.417 (35,24) C 6   3.408 (329,24) C 0
15   5.435 (142,24) C 4   4.458 (267,24) C 5   4.211 (
53,24) C 7   4.152 (255,24) C 3   4.038 (181,24) C 3
16   5.590 (142,24) C 4   4.568 (267,24) C 5   4.495
(255,24) C 3   4.276 (181,24) C 3   4.120 (245,24) C 4
17   5.140 (142,24) C 4   4.562 (255,24) C 3   4.189
(267,24) C 5   4.025 (245,24) C 4   3.986 (181,24) C 3
18   4.490 (255,24) C 3   4.480 (142,24) C 4   4.100
(245,24) C 4   4.026 (267,24) C 5   3.619 (181,24) C 3
19   4.695 (142,24) C 4   4.430 (245,24) C 4   4.195
(255,24) C 3   4.105 (267,24) C 5   3.855 (211,24) C 4
20   4.330 (142,24) C 4   3.840 (245,24) C 4   3.620
(211,24) C 4   3.595 (267,24) C 5   3.414 (255,24) C 3
21   4.260 (142,24) C 4   3.725 (245,24) C 4   3.545
(211,24) C 4   3.453 (267,24) C 5   3.186 (255,24) C 3
22   4.335 (142,24) C 4   3.540 (245,24) C 4   3.375
(211,24) C 4   3.368 (267,24) C 5   3.181 (255,24) C 3
23   4.965 (301,24) C 4   3.877 (343,24) C 2   3.867
(231,24) C 0   3.646 (351,24) C 0   3.590 (141,24) C 3
24   5.115 (301,24) C 4   3.825 (351,24) C 0   3.804
(231,24) C 0   3.736 (343,24) C 2   3.700 (141,24) C 3
25   6.165 (301,24) C 4   4.462 (141,24) C 3   4.346
(351,24) C 0   4.339 (102,24) C 1   4.227 (343,24) C 2
26   8.320 (301,24) C 4   6.182 (343,24) C 2   5.848
(330,24) C 1   5.786 (141,24) C 3   5.692 (351,24) C 0

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
27	8.030	(301,24)	C 4	6.573	(343,24)	C 2	6.046	(338,24)	C 0	5.946	(231,24)	C 0	5.792	(345,24)	C 0
28	7.465	(301,24)	C 4	6.036	(343,24)	C 2	5.875	(338,24)	C 0	5.542	(231,24)	C 0	5.387	(102,24)	C 1
29	5.287	(338,24)	C 0	5.040	(301,24)	C 4	4.427	(343,24)	C 2	4.308	(231,24)	C 0	4.183	(24,24)	C 6
30	3.345	(301,24)	C 4	2.671	(338,24)	C 0	2.581	(294,24)	C 3	2.450	(237,24)	C 4	2.446	(231,24)	C 0
31	4.245	(301,24)	C 4	3.558	(338,24)	C 0	3.258	(231,24)	C 0	3.217	(35,24)	C 6	3.141	(343,24)	C 2
32	5.260	(301,24)	C 4	4.158	(338,24)	C 0	4.013	(231,24)	C 0	3.867	(35,24)	C 6	3.855	(343,24)	C 2
33	9.100	(301,24)	C 4	7.586	(141,24)	C 3	6.996	(231,24)	C 0	6.790	(212,24)	C 3	6.733	(351,24)	C 0
34	8.160	(301,24)	C 4	7.143	(141,24)	C 3	6.314	(212,24)	C 3	6.213	(351,24)	C 0	6.079	(231,24)	C 0
35	7.310	(301,24)	C 4	6.271	(141,24)	C 3	5.471	(351,24)	C 0	5.329	(231,24)	C 0	5.319	(212,24)	C 3
36	7.985	(301,24)	C 4	6.700	(141,24)	C 3	5.954	(351,24)	C 0	5.796	(102,24)	C 1	5.695	(212,24)	C 3
37	6.590	(142,24)	C 4	5.395	(245,24)	C 4	5.240	(211,24)	C 4	4.968	(267,24)	C 5	4.900	(1,24)	C 3
38	5.595	(142,24)	C 4	4.765	(245,24)	C 4	4.700	(211,24)	C 4	4.389	(267,24)	C 5	4.324	(255,24)	C 3
39	5.295	(142,24)	C 4	4.575	(245,24)	C 4	4.480	(211,24)	C 4	4.276	(1,24)	C 3	4.205	(267,24)	C 5
40	5.520	(142,24)	C 4	4.880	(245,24)	C 4	4.775	(211,24)	C 4	4.662	(255,24)	C 3	4.616	(267,24)	C 5
41	3.390	(142,24)	C 4	2.990	(294,24)	C 3	2.989	(267,24)	C 5	2.910	(245,24)	C 4	2.889	(53,24)	C 7
42	3.352	(294,24)	C 3	3.005	(1,24)	C 3	2.985	(142,24)	C 4	2.979	(55,24)	C 5	2.896	(262,24)	C 0
43	2.548	(294,24)	C 3	2.532	(55,24)	C 5	2.478	(53,24)	C 7	2.408	(262,24)	C 0	2.400	(1,24)	C 3
44	3.985	(142,24)	C 4	3.790	(245,24)	C 4	3.662	(255,24)	C 3	3.263	(267,24)	C 5	3.240	(211,24)	C 4
45	4.550	(142,24)	C 4	3.770	(245,24)	C 4	3.643	(255,24)	C 3	3.442	(267,24)	C 5	3.267	(167,24)	C 6
46	4.865	(142,24)	C 4	4.440	(245,24)	C 4	4.257								

```
(255,24) C 3   4.037 (267,24) C 5   3.860 (211,24) C 4
             47   6.485 (142,24) C 4   5.660 (245,24) C 4   5.310
(255,24) C 3   5.135 (211,24) C 4   5.079 (267,24) C 5
             48   5.095 (142,24) C 4   4.420 (245,24) C 4   3.995
(211,24) C 4   3.895 (255,24) C 3   3.865 (197,24) C 1
             49   4.645 (142,24) C 4   4.080 (245,24) C 4   3.578
(197,24) C 1   3.560 (211,24) C 4   3.552 (255,24) C 3
             50   4.305 (142,24) C 4   3.850 (245,24) C 4   3.413
(197,24) C 1   3.305 (255,24) C 3   3.245 (211,24) C 4
             51   6.586 (212,24) C 3   6.543 (141,24) C 3   6.415
(301,24) C 4   5.204 (351,24) C 0   5.000 (166,24) C 0
             52   7.365 (301,24) C 4   6.976 (141,24) C 3   6.814
(212,24) C 3   5.808 (351,24) C 0   5.457 (102,24) C 1
             53   8.015 (301,24) C 4   7.529 (141,24) C 3   7.524
(212,24) C 3   6.296 (351,24) C 0   5.887 (102,24) C 1
             54   9.215 (301,24) C 4   8.443 (141,24) C 3   8.086
(212,24) C 3   7.121 (351,24) C 0   6.852 (102,24) C 1
             55   6.300 (301,24) C 4   5.271 (141,24) C 3   4.654
(351,24) C 0   4.545 (343,24) C 2   4.509 (330,24) C 1
             56   5.250 (301,24) C 4   4.305 (141,24) C 3   3.900
(343,24) C 2   3.875 (346,24) C 4   3.817 (351,24) C 0
             57   4.645 (301,24) C 4   3.738 (141,24) C 3   3.545
(346,24) C 4   3.495 (343,24) C 2   3.367 (351,24) C 0

         THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
                 IN MICROGRAMS/M**3
         INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

           Receptor      Maximum  Ending
            Number         Conc    Day Hr  Calm
               1           4.131  (366,24) C 657
               2           4.553  (366,24) C 657
               3           4.624  (366,24) C 657
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(Dated: 95221)

DATE : 5/22/ 8
PAGE: 10
TIME : 10:59:21

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
4	5.376*	(366,24)	C 657
5	3.136	(366,24)	C 657
6	2.143	(366,24)	C 657
7	1.552	(366,24)	C 657
8	1.099	(366,24)	C 657
9	1.300	(366,24)	C 657
10	1.343	(366,24)	C 657
11	1.791	(366,24)	C 657
12	1.823	(366,24)	C 657
13	2.040	(366,24)	C 657
14	1.893	(366,24)	C 657
15	1.415	(366,24)	C 657
16	1.384	(366,24)	C 657
17	1.151	(366,24)	C 657
18	0.975	(366,24)	C 657
19	0.996	(366,24)	C 657
20	0.937	(366,24)	C 657
21	0.936	(366,24)	C 657
22	0.921	(366,24)	C 657
23	1.287	(366,24)	C 657
24	1.388	(366,24)	C 657
25	1.630	(366,24)	C 657
26	2.127	(366,24)	C 657
27	2.006	(366,24)	C 657
28	1.764	(366,24)	C 657
29	1.357	(366,24)	C 657
30	1.297	(366,24)	C 657
31	1.627	(366,24)	C 657
32	1.925	(366,24)	C 657
33	3.221	(366,24)	C 657
34	2.514	(366,24)	C 657
35	2.118	(366,24)	C 657
36	2.163	(366,24)	C 657
37	2.005	(366,24)	C 657
38	1.678	(366,24)	C 657
39	1.700	(366,24)	C 657
40	1.790	(366,24)	C 657
41	1.222	(366,24)	C 657
42	1.411	(366,24)	C 657
43	0.937	(366,24)	C 657
44	0.770	(366,24)	C 657

JOB: Goethals
RUN: VERAZZANO BRIDGE TOLL 2014 24-hr BLD 9am

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
45	1.013	(366,24)	C 657
46	1.137	(366,24)	C 657
47	1.639	(366,24)	C 657
48	1.167	(366,24)	C 657
49	0.949	(366,24)	C 657
50	0.632	(366,24)	C 657
51	1.335	(366,24)	C 657
52	1.947	(366,24)	C 657
53	2.280	(366,24)	C 657
54	2.628	(366,24)	C 657
55	1.484	(366,24)	C 657
56	1.179	(366,24)	C 657
57	1.015	(366,24)	C 657

MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr Link No.	Total Link Conc	Ending Link Day Hr	Ambient Link Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
1	9.055	(309,24)	0.00	9.05	0.00	0.06	0.03	0.02	0.02	0.10	0.05	0.04	0.00	0.00
				Links 10+	0.00	0.36	0.65	0.05	0.20	0.01	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.12	0.04	0.00	0.23	0.11	0.00
				Links 30+	0.00	4.15	1.99	0.13	0.05	0.02	0.03	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.05
				Links 60+	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
				Links 70+	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00
				Links 80+	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.29
				Links 90+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 100+	0.00	0.00	0.00	0.00						

0.00	0.00	0.00	0.00	0.00	0.00	Links 110+	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00					

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     Program terminated normally
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Representative CAL3QHCR Annual Neighborhood PM2.5 Input Files

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90 2016 0.045
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110 200 0.023
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Representative CAL3QHCR Annual Neighborhood PM2.5 Output Files

DATE : 5/21/ 8
PAGE: 1
TIME : 13:22:31

JOB: Goethals RUN: GOETHALS TOLL 2014 BLD Annual 9am PM25

==========
General Information
==========

Run start date: 1/ 1/ 0 Julian: 1
end date: 12/31/ 0 Julian: 366

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to p for calculating PM averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 72502 0
Upper Air Sta. Id & Yr = 94703 0

Urban mixing heights were processed.

In 2000, Julian day 1 is a Saturday.

Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION				*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	H	W	NLANES
				*	X1	Y1	X2	Y2	*	(M)	(DEG)		(M)	(M)	
1.	33763-10136	278wb		*	570318.0	497039.0	570204.0	497065.0	*	117.	283.	AG	0.0	15.0	
2.	10136-10095	278wb		*	570204.0	497065.0	570016.0	497090.0	*	190.	278.	AG	0.0	15.0	
3.	10136-10095	278wb		*	570016.0	497090.0	569928.0	497117.0	*	92.	287.	AG	0.0	15.0	
4.	10136-10095	278wb		*	569928.0	497117.0	569825.0	497170.0	*	116.	297.	AG	0.0	15.0	
5.	10136-10095	278wb		*	569825.0	497170.0	569743.0	497234.0	*	104.	308.	AG	0.0	15.0	
6.	10136-10095	278wb		*	569743.0	497234.0	569676.0	497307.0	*	99.	317.	AG	0.0	15.0	
7.	10136-10095	278wb		*	569676.0	497307.0	569557.0	497454.0	*	189.	321.	AG	0.0	15.0	
8.	10095-10021	278wb	-o	*	569557.0	497454.0	569447.0	497579.0	*	167.	319.	AG	0.0	15.0	
9.	10021-33728	278wb	-t	*	569446.0	497579.0	569359.0	497648.0	*	111.	308.	AG	0.0	15.0	
10.	10021-33728	278wb	-t	*	569359.0	497648.0	569035.0	497879.0	*	398.	305.	AG	0.0	15.0	
11.	33367-10018	278eb	-o	*	569021.0	497864.0	569307.0	497651.0	*	357.	127.	AG	0.0	15.0	
12.	10018-10086	278eb	-o	*	569307.0	497651.0	569443.0	497541.0	*	175.	129.	AG	0.0	15.0	
13.	10018-10086	278ebRM		*	569444.0	497540.0	569518.0	497464.0	*	106.	136.	AG	0.0	15.0	
14.	10018-10086	278ebRM		*	569518.0	497464.0	569588.0	497373.0	*	115.	142.	AG	0.0	15.0	
15.	10086-10131	278ebDE		*	569589.0	497372.0	569699.0	497244.0	*	169.	139.	AG	0.0	15.0	

JOB: Goethals RUN: GOETHALS TOLL
2014 BLD Annual 9am PM25

Link Data Constants - (Variable data in *.LNK file)

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            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          16. 10086-10131  278ebDE* 569699.0  497244.0  569794.0  497164.0 *     124.
130.  AG    0.0  15.0
          17. 10086-10131  278ebDE* 569794.0  497164.0  569859.0  497124.0 *      76.
122.  AG    0.0  15.0
          18. 10086-10131  278ebDE* 569859.0  497124.0  569959.0  497081.0 *     109.
113.  AG    0.0  15.0
          19. 10086-10131  278ebDE* 569959.0  497081.0  570026.0  497066.0 *      69.
103.  AG    0.0  15.0
          20. 10086-10131  278ebDE* 570026.0  497066.0  570243.0  497034.0 *     219.
98.  AG    0.0  15.0
          21. 10131-33764  278ebDE* 570243.0  497034.0  570304.0  497019.0 *      63.
104.  AG    0.0  15.0
          22. 10136-10088  WBtoSB * 570268.0  497052.0  570114.0  497120.0 *     168.
294.  AG    0.0   9.0
          23. 10136-10088  WBtoSB * 570114.0  497120.0  570071.0  497130.0 *      44.
283.  AG    0.0   9.0
          24. 10136-10088  WBtoSB * 570071.0  497130.0  570028.0  497132.0 *      43.
273.  AG    0.0   9.0
          25. 10136-10088  WBtoSB * 570028.0  497132.0  569985.0  497126.0 *      43.
262.  AG    0.0   9.0
          26. 10136-10088  WBtoSB * 569985.0  497126.0  569895.0  497097.0 *      95.
252.  AG    0.0   9.0
          27. 10136-10088  WBtoSB * 569895.0  497097.0  569818.0  497056.0 *      87.
242.  AG    0.0   9.0
          28. 10136-10088  WBtoSB * 569818.0  497056.0  569751.0  497007.0 *      83.
234.  AG    0.0   9.0
          29. 10136-10088  WBtoSB * 569751.0  497007.0  569710.0  496964.0 *      59.
224.  AG    0.0   9.0
          30. 10097-10131  NBtoEB * 569806.0  496898.0  569870.0  496949.0 *      82.
51.  AG    0.0   9.0
          31. 10097-10131  NBtoEB * 569870.0  496949.0  569920.0  496977.0 *      57.
61.  AG    0.0   9.0
          32. 10097-10131  NBtoEB * 569920.0  496977.0  569993.0  497011.0 *      81.
65.  AG    0.0   9.0
          33. 10097-10131  NBtoEB * 569993.0  497011.0  570058.0  497029.0 *      67.
75.  AG    0.0   9.0
          34. 10097-10131  NBtoEB * 570058.0  497029.0  570116.0  497038.0 *      59.
81.  AG    0.0   9.0
          35. 10097-10131  NBtoEB * 570116.0  497038.0  570181.0  497040.0 *      65.
88.  AG    0.0   9.0
          36. 10097-10095  NBtoWB * 569744.0  496938.0  569758.0  497003.0 *      66.
12.  AG    0.0   9.0
          37. 10097-10095  NBtoWB * 569758.0  497003.0  569766.0  497100.0 *      97.
5.  AG    0.0   9.0
          38. 10097-10095  NBtoWB * 569766.0  497100.0  569765.0  497179.0 *      79.
359.  AG    0.0   9.0
          39. 10097-10095  NBtoWB * 569765.0  497179.0  569756.0  497240.0 *      62.
352.  AG    0.0   9.0
          40. 10097-10095  NBtoWB * 569756.0  497240.0  569742.0  497285.0 *      47.
343.  AG    0.0   9.0
          41. 10097-10095  NBtoWB * 569742.0  497285.0  569715.0  497333.0 *      55.
331.  AG    0.0   9.0
          42. 10097-10095  NBtoWB * 569715.0  497333.0  569685.0  497370.0 *      48.
321.  AG    0.0   9.0
          43. 10097-10095  NBtoWB * 569685.0  497370.0  569648.0  497398.0 *      46.
307.  AG    0.0   9.0
          44. 10097-10095  NBtoWB * 569648.0  497398.0  569562.0  497449.0 *     100.
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301.  AG    0.0   9.0
          45. 10086-10088  EBtoSB * 569588.0  497370.0  569622.0  497290.0 *      87.
157.  AG    0.0   9.0
          46. 10086-10088  EBtoSB * 569622.0  497290.0  569641.0  497224.0 *      69.
164.  AG    0.0   9.0
          47. 10086-10088  EBtoSB * 569641.0  497224.0  569652.0  497151.0 *      74.
171.  AG    0.0   9.0
          48. 10086-10088  EBtoSB * 569652.0  497151.0  569652.0  497081.0 *      70.
180.  AG    0.0   9.0
          49. 10086-10088  EBtoSB * 569652.0  497081.0  569643.0  496994.0 *      87.
186.  AG    0.0   9.0
          50. 10166-10055  GoeWBap* 570331.0  497080.0  569971.0  497279.0 *     411.
299.  AG    0.0  15.0
          51. 10166-10055  GoeWBap* 569971.0  497279.0  569728.0  497427.0 *     285.
301.  AG    0.0  15.0
          52. 10166-10055  GoeWBap* 569728.0  497427.0  569616.0  497502.0 *     135.
304.  AG    0.0  15.0
          53. 10166-10055  GoeWBQ * 569634.0  497490.0  569709.0  497440.0 *      90.
124.  AG    0.0   9.0    3
          54. 10055-10033  GoeWBon* 569616.0  497502.0  569552.0  497543.0 *      76.
303.  AG    0.0  15.0
          55. 10033-33719  GoeWBof* 569552.0  497543.0  569248.0  497767.0 *     378.
306.  AG    0.0  15.0
          56. 33719-39913  GoeWBde* 569248.0  497767.0  569136.0  497850.0 *     139.
307.  AG    0.0  15.0
```

JOB: Goethals RUN: GOETHALS TOLL 2014 BLD Annual 9am PM25

Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION				*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	H	W	NLANES
				*	X1	Y1	X2	Y2	*	(M)	(DEG)		(M)	(M)	
57.	33719-39913	GoeWBde		*	569136.0	497850.0	569052.0	497907.0	*	102.	304.	AG	0.0	15.0	
58.	10033-10021	WBon		*	569561.0	497535.0	569450.0	497578.0	*	119.	291.	AG	0.0	9.0	
59.	10021-33719	WBoff		*	569318.0	497680.0	569249.0	497763.0	*	108.	320.	AG	0.0	9.0	
60.	9909-33718	GulEB10		*	569005.0	497835.0	569277.0	497635.0	*	338.	126.	AG	0.0	12.0	
61.	33718-10030	GulEB10		*	569277.0	497635.0	569328.0	497593.0	*	66.	129.	AG	0.0	12.0	
62.	33718-10030	GulEB10		*	569328.0	497593.0	569394.0	497527.0	*	93.	135.	AG	0.0	12.0	
63.	33718-10030	GulEB10		*	569394.0	497527.0	569456.0	497449.0	*	100.	142.	AG	0.0	12.0	
64.	10030-173401	GulEB10		*	569456.0	497449.0	569476.0	497416.0	*	39.	149.	AG	0.0	12.0	
65.	33718-10018	EBon		*	569164.0	497720.0	569306.0	497650.0	*	158.	116.	AG	0.0	9.0	
66.	10018-10030	EBoff		*	569429.0	497550.0	569457.0	497453.0	*	101.	164.	AG	0.0	9.0	
67.	10030-173401	GulEBde		*	569476.0	497415.0	569508.0	497362.0	*	62.	149.	AG	0.0	12.0	
68.	10030-173401	GulEBde		*	569508.0	497362.0	569539.0	497294.0	*	75.	155.	AG	0.0	12.0	
69.	10030-10055	ForNB17		*	569482.0	497416.0	569618.0	497499.0	*	159.	59.	AG	0.0	12.0	
70.	10030-10055	ForNBQ		*	569614.0	497497.0	569564.0	497466.0	*	59.	238.	AG	0.0	6.0	2
71.	10055-10065	ForNBde		*	569620.0	497500.0	569990.0	497730.0	*	436.	58.	AG	0.0	12.0	
72.	10065-10055	ForSB17		*	569975.0	497730.0	569613.0	497505.0	*	426.	238.	AG	0.0	12.0	
73.	10065-10055	ForSBQ		*	569620.0	497509.0	569685.0	497550.0	*	77.	58.	AG	0.0	6.0	2
74.	10055-10030	ForSBde		*	569609.0	497503.0	569479.0	497423.0	*	153.	238.	AG	0.0	12.0	
75.	10065-10055	MorWB		*	569706.0	497567.0	569521.0	497572.0	*	185.	272.	AG	0.0	9.0	

Receptor Data

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. REC E (50 S)	*	569588.0	497456.0	1.8
2. REC E (25 S)	*	569604.0	497466.0	1.8
3. REC E (CNR)	*	569617.0	497474.0	1.8
4. REC E (25 E)	*	569631.0	497465.0	1.8
5. REC E (50 E)	*	569651.0	497452.0	1.8
6. REC E (MID E)	*	569687.0	497428.0	1.8
7. REC E (MID E)	*	569726.0	497455.0	1.8
8. REC E (50 E)	*	569692.0	497477.0	1.8
9. REC E (CNR)	*	569664.0	497499.0	1.8
10. REC E (50 N)	*	569696.0	497522.0	1.8
11. REC E (MID N)	*	569737.0	497535.0	1.8
12. REC W (50 N)	*	569648.0	497551.0	1.8

13. REC W (25 N)	*	569627.0	497538.0	1.8
14. REC W (CNR)	*	569613.0	497531.0	1.8
15. REC W (25 W)	*	569600.0	497539.0	1.8

JOB: Goethals RUN: GOETHALS TOLL 2014 BLD Annual 9am PM25

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
16. REC W (50 W)	569580.0	497553.0	1.8
17. REC W (MID W)	569528.0	497525.0	1.8
18. REC W (50 W)	569548.0	497518.0	1.8
19. REC W (CNR)	569572.0	497505.0	1.8
20. REC W (50 S)	569553.0	497493.0	1.8
21. RECID (N)	569398.0	497484.0	1.8
22. REC 0 (N)	569420.0	497454.0	1.8
23. REC 5 (N)	569435.0	497434.0	1.8
24. REC (CNR)	569450.0	497414.0	1.8
25. REC (CNR)	569462.0	497393.0	1.8
26. REC 5 (S)	569474.0	497372.0	1.8
27. REC 0 (S)	569485.0	497350.0	1.8
28. RECID (S)	569499.0	497322.0	1.8
29. REC34	569799.0	497409.0	1.8
30. REC35	569895.0	497349.0	1.8
31. REC36	569460.0	497637.0	1.8
32. REC37	569329.0	497734.0	1.8
33. REC38	569322.0	497565.0	1.8
34. REC39	569228.0	497641.0	1.8
35. REC40	569782.0	497574.0	1.8
36. REC41	569783.0	497637.0	1.8

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)

	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG	5.0	4.0	3.9	3.2	2.8	2.4	2.6	3.0	3.3	2.7
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	5.0	4.0	3.9	3.2	2.8	2.4	2.6	3.0	3.3	2.7
WIND DIR	289	289	289	289	289	289	289	289	282	282
JULIAN	273	273	273	273	273	273	273	273	314	314
HOUR	23	23	23	23	23	23	23	23	1	1

JOB: Goethals RUN: GOETHALS TOLL 2014 BLD Annual 9am PM25

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)

	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG	2.2	2.1	2.7	3.1	3.3	3.0	4.7	3.9	3.5	4.4
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	2.2	2.1	2.7	3.1	3.3	3.0	4.7	3.9	3.5	4.4
WIND DIR	282	289	289	285	289	289	289	289	289	289
JULIAN	314	273	273	314	273	273	273	273	273	273
HOUR	1	23	23	2	23	23	23	23	23	23

	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG	2.6	2.6	2.4	3.0	2.2	2.0	2.2	1.9	2.2	1.8
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	2.6	2.6	2.4	3.0	2.2	2.0	2.2	1.9	2.2	1.8
WIND DIR	75	68	5	68	66	1	1	356	289	285
JULIAN	106	142	82	142	142	30	30	354	273	314
HOUR	9	10	24	10	11	18	18	7	23	2

	REC31	REC32	REC33	REC34	REC35	REC36
MAX+BKG	3.2	3.2	2.8	3.0	1.7	1.0
- BKG	0.0	0.0	0.0	0.0	0.0	0.0
MAX	3.2	3.2	2.8	3.0	1.7	1.0
WIND DIR	285	285	329	335	282	235
JULIAN	314	314	9	7	314	41
HOUR	2	2	21	4	1	6

THE HIGHEST CONCENTRATION OF 5.00 UG/M**3 OCCURRED AT RECEPTOR REC1 .

JOB: Goethals RUN: GOETHALS TOLL 2014 BLD Annual 9am PM25

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	1.655	(247,24)	C 2	1.533	(1,24)	C 3	1.500	(333,24)	C 0	1.447	(267,24)	C 5	1.446	(324,24)	C 0
2	1.223	(247,24)	C 2	1.154	(333,24)	C 0	1.143	(1,24)	C 3	1.133	(239,24)	C 3	1.108	(324,24)	C 0
3	1.105	(247,24)	C 2	1.017	(324,24)	C 0	1.004	(333,24)	C 0	0.995	(239,24)	C 3	0.991	(287,24)	C 1
4	0.950	(247,24)	C 2	0.871	(1,24)	C 3	0.857	(239,24)	C 3	0.850	(333,24)	C 0	0.850	(324,24)	C 0
5	0.836	(247,24)	C 2	0.787	(333,24)	C 0	0.757	(1,24)	C 3	0.735	(287,24)	C 1	0.733	(357,24)	C 0
6	0.709	(247,24)	C 2	0.690	(1,24)	C 3	0.642	(333,24)	C 0	0.633	(294,24)	C 3	0.622	(356,24)	C 1
7	0.648	(1,24)	C 3	0.621	(333,24)	C 0	0.614	(247,24)	C 2	0.579	(324,24)	C 0	0.579	(357,24)	C 0
8	0.742	(333,24)	C 0	0.723	(247,24)	C 2	0.710	(1,24)	C 3	0.663	(357,24)	C 0	0.639	(246,24)	C 1
9	0.896	(333,24)	C 0	0.845	(247,24)	C 2	0.838	(1,24)	C 3	0.814	(239,24)	C 3	0.787	(324,24)	C 0
10	0.704	(333,24)	C 0	0.681	(1,24)	C 3	0.657	(239,24)	C 3	0.614	(247,24)	C 2	0.613	(324,24)	C 0
11	0.542	(333,24)	C 0	0.505	(1,24)	C 3	0.481	(239,24)	C 3	0.475	(324,24)	C 0	0.458	(286,24)	C 0
12	0.762	(1,24)	C 3	0.721	(55,24)	C 5	0.721	(267,24)	C 5	0.709	(247,24)	C 2	0.690	(142,24)	C 4
13	0.929	(1,24)	C 3	0.853	(55,24)	C 5	0.837	(267,24)	C 5	0.832	(247,24)	C 2	0.800	(262,24)	C 0
14	1.057	(1,24)	C 3	1.042	(55,24)	C 5	1.032	(247,24)	C 2	1.000	(267,24)	C 5	0.954	(262,24)	C 0
15	1.071	(1,24)	C 3	1.027	(247,24)	C 2	0.984	(55,24)	C 5	0.974	(267,24)	C 5	0.958	(333,24)	C 0
16	1.090	(1,24)	C 3	1.021	(267,24)	C 5	1.014	(247,24)	C 2	1.000	(55,24)	C 5	0.967	(255,24)	C 3
17	1.626	(267,24)	C 5	1.625	(211,24)	C 4	1.600	(247,24)	C 2	1.548	(255,24)	C 3	1.460	(245,24)	C 4
18	1.373	(247,24)	C 2	1.332	(267,24)	C 5	1.315	(211,24)	C 4	1.233	(255,24)	C 3	1.195	(1,24)	C 3
19	1.247	(267,24)	C 5	1.232	(247,24)	C 2	1.185	(211,24)	C 4	1.180					

```
(142,24) C 4   1.171 (255,24) C 3
             20   1.821*(267,24) C 5   1.785*(211,24) C 4   1.755 (247,24) C 2   1.733
(255,24) C 3   1.645 (245,24) C 4
             21   1.110 (301,24) C 4   0.943 (141,24) C 3   0.871 (351,24) C 0   0.867
(212,24) C 3   0.852 (102,24) C 1
             22   1.135 (301,24) C 4   0.919 (141,24) C 3   0.855 (343,24) C 2   0.822
(102,24) C 1   0.817 (231,24) C 0
             23   1.070 (301,24) C 4   0.836 (343,24) C 2   0.796 (351,24) C 0   0.792
(231,24) C 0   0.790 (141,24) C 3
             24   0.975 (301,24) C 4   0.786 (141,24) C 3   0.726 (102,24) C 1   0.717
(351,24) C 0   0.675 (231,24) C 0
             25   1.120 (301,24) C 4   0.750 (343,24) C 2   0.745 (346,24) C 4   0.730
(102,24) C 1   0.710 (141,24) C 3
             26   0.935 (301,24) C 4   0.750 (343,24) C 2   0.637 (231,24) C 0   0.635
(330,24) C 1   0.626 (102,24) C 1
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JOB: Goethals RUN: GOETHALS TOLL
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FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
27	0.830	(301,24)	C 4	0.632	(343,24)	C 2	0.587	(231,24)	C 0	0.575	(338,24)	C 0	0.548	(102,24)	C 1
28	0.720	(301,24)	C 4	0.555	(343,24)	C 2	0.517	(231,24)	C 0	0.504	(338,24)	C 0	0.478	(330,24)	C 1
29	0.524	(1,24)	C 3	0.508	(333,24)	C 0	0.495	(247,24)	C 2	0.471	(239,24)	C 3	0.458	(357,24)	C 0
30	0.450	(142,24)	C 4	0.445	(247,24)	C 2	0.443	(1,24)	C 3	0.432	(267,24)	C 5	0.430	(211,24)	C 4
31	1.180	(211,24)	C 4	1.116	(267,24)	C 5	1.095	(255,24)	C 3	1.067	(1,24)	C 3	1.050	(245,24)	C 4
32	1.210	(1,24)	C 3	1.175	(211,24)	C 4	1.079	(55,24)	C 5	1.063	(267,24)	C 5	1.052	(246,24)	C 1
33	1.140	(301,24)	C 4	0.938	(141,24)	C 3	0.871	(212,24)	C 3	0.867	(231,24)	C 0	0.830	(102,24)	C 1
34	1.340	(301,24)	C 4	1.010	(141,24)	C 3	0.983	(231,24)	C 0	0.968	(343,24)	C 2	0.933	(351,24)	C 0
35	0.467	(333,24)	C 0	0.457	(1,24)	C 3	0.429	(239,24)	C 3	0.421	(324,24)	C 0	0.417	(286,24)	C 0
36	0.430	(142,24)	C 4	0.352	(1,24)	C 3	0.350	(53,24)	C 7	0.347	(267,24)	C 5	0.337	(55,24)	C 5

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	0.734	(366,24)	C 657
2	0.572	(366,24)	C 657
3	0.514	(366,24)	C 657
4	0.432	(366,24)	C 657
5	0.371	(366,24)	C 657
6	0.305	(366,24)	C 657
7	0.220	(366,24)	C 657
8	0.268	(366,24)	C 657
9	0.347	(366,24)	C 657
10	0.269	(366,24)	C 657
11	0.188	(366,24)	C 657
12	0.274	(366,24)	C 657
13	0.326	(366,24)	C 657
14	0.392	(366,24)	C 657
15	0.386	(366,24)	C 657
16	0.394	(366,24)	C 657
17	0.698	(366,24)	C 657
18	0.608	(366,24)	C 657
19	0.564	(366,24)	C 657
20	0.736*	(366,24)	C 657
21	0.274	(366,24)	C 657
22	0.268	(366,24)	C 657
23	0.254	(366,24)	C 657
24	0.231	(366,24)	C 657

JOB: Goethals RUN: GOETHALS TOLL
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THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
25	0.223	(366,24)	C 657
26	0.202	(366,24)	C 657
27	0.178	(366,24)	C 657
28	0.156	(366,24)	C 657
29	0.170	(366,24)	C 657
30	0.148	(366,24)	C 657
31	0.386	(366,24)	C 657
32	0.401	(366,24)	C 657
33	0.303	(366,24)	C 657
34	0.342	(366,24)	C 657
35	0.177	(366,24)	C 657
36	0.121	(366,24)	C 657

MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
1	1.655	(247,24)	0.00	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.30	0.02	0.04
				Links 10+	0.03	0.03	0.07	0.26	0.05	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00
				Links 70+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1.223	(247,24)	0.00	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.21	0.03	0.04
				Links 10+	0.03	0.03	0.05	0.17	0.05	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00
				Links 70+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

JOB: Goethals RUN: VERAZZANO BRIDGE TOLL 2014 BlD Annual 9a

==========
General Information
==========

Run start date: 1/ 1/ 0 Julian: 1
end date: 12/31/ 0 Julian: 366

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to p for calculating PM averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 72502 0
Upper Air Sta. Id & Yr = 94703 0

Urban mixing heights were processed.

In 2000, Julian day 1 is a Saturday.

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				LINK COORDINATES (M)					LENGTH				
					X1	Y1	X2	Y2		(M)	BRG	TYPE	H (M)	W (M)	NLANES
1.	33369-11750	278WBto	*	579476.0	494992.0	579367.0	495008.0	*		110.	278.	AG	0.0	15.0	
2.	11750-11734	278WBto	*	579367.0	495008.0	578990.0	495135.0	*		398.	289.	AG	0.0	15.0	
3.	11734-33708	278WB	*	578990.0	495135.0	578875.0	495174.0	*		121.	289.	AG	0.0	15.0	
4.	11734-33708	278WB	*	578875.0	495174.0	578680.0	495269.0	*		217.	296.	AG	0.0	15.0	
5.	11661-33706	278EBto	*	578669.0	495245.0	578824.0	495167.0	*		174.	117.	AG	0.0	15.0	
6.	33706-11733	278EBto	*	578824.0	495167.0	579041.0	495071.0	*		237.	114.	AG	0.0	15.0	
7.	33706-11733	278EB	*	579041.0	495070.0	579112.0	495017.0	*		89.	127.	AG	0.0	15.0	
8.	11733-11749	278EBto	*	579112.0	495017.0	579208.0	494982.0	*		102.	110.	AG	0.0	15.0	
9.	11749-33751	278EB	*	579209.0	494981.0	579352.0	494953.0	*		146.	101.	AG	0.0	15.0	
10.	11749-33751	278EB	*	579352.0	494953.0	579464.0	494949.0	*		112.	92.	AG	0.0	15.0	
11.	11744-33711	Lly NB1	*	579215.0	494669.0	579144.0	494797.0	*		146.	331.	AG	0.0	12.0	
12.	11744-33711	Lly NB3	*	579144.0	494797.0	579121.0	494857.0	*		64.	339.	AG	0.0	12.0	
13.	11744-33711	Lly NB3	*	579121.0	494857.0	579105.0	494918.0	*		63.	345.	AG	0.0	15.0	
14.	11744-33711	Lly NBQ	*	579107.0	494911.0	579119.0	494862.0	*		50.	166.	AG	0.0	9.0	3
15.	33711-11740	Lly NB1	*	579105.0	494918.0	579049.0	495162.0	*		250.	347.	AG	0.0	9.0	

JOB: Goethals RUN: VERAZZANO
BRIDGE TOLL 2014 BlD Annual 9a

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -------------------------*----------------------------------------
*----------------------------------------
          16. 11731-33709  Lly NB1* 579049.0  495162.0  579042.0  495244.0 *      82.
355.  AG    0.0   9.0
          17. 33709-11723  Lly NB1* 579042.0  495244.0  579052.0  495294.0 *      51.
11.  AG    0.0  12.0
          18. 11723-11729  Lly NBd* 579053.0  495294.0  579073.0  495328.0 *      39.
30.  AG    0.0  12.0
          19. 11723-11729  Lly NBd* 579073.0  495328.0  579102.0  495356.0 *      40.
46.  AG    0.0  12.0
          20. 11723-11729  Lly NBd* 579102.0  495356.0  579265.0  495456.0 *     191.
58.  AG    0.0  12.0
          21. 11729-11723  Lly SB1* 579255.0  495461.0  579088.0  495360.0 *     195.
239.  AG    0.0  12.0
          22. 11729-11723  Lly SB1* 579088.0  495360.0  579050.0  495328.0 *      50.
230.  AG    0.0  12.0
          23. 33709-11731  Lly SB3* 579050.0  495328.0  579032.0  495270.0 *      61.
197.  AG    0.0  12.0
          24. 33709-11731  Lly SB3* 579032.0  495270.0  579029.0  495197.0 *      73.
182.  AG    0.0  12.0
          25. 11731-33747  Lly SB3* 579029.0  495197.0  579075.0  494994.0 *     208.
167.  AG    0.0  12.0
          26. 11740-33711  Lly SB3* 579075.0  494994.0  579095.0  494913.0 *      83.
166.  AG    0.0  12.0
          27. 11740-33711  Lly SBQ* 579092.0  494926.0  579081.0  494967.0 *      42.
345.  AG    0.0   6.0    2
          28. 11755-11769  Lly SB1* 579095.0  494912.0  579109.0  494855.0 *      59.
166.  AG    0.0  12.0
          29. 11755-11769  Lly SB1* 579109.0  494855.0  579134.0  494792.0 *      68.
158.  AG    0.0  12.0
          30. 11755-11769  Lly SB3* 579135.0  494792.0  579203.0  494665.0 *     144.
152.  AG    0.0  12.0
          31. 11755-11769  Lly SBQ* 579203.0  494667.0  579180.0  494709.0 *      48.
331.  AG    0.0   6.0    2
          32. 11744-11749  LlyNBon* 579133.0  494831.0  579128.0  494863.0 *      32.
351.  AG    0.0   9.0
          33. 11744-11749  LlyNBon* 579128.0  494863.0  579114.0  494925.0 *      64.
347.  AG    0.0   9.0
          34. 11744-11749  LlyNBon* 579114.0  494925.0  579117.0  494952.0 *      27.
6.  AG    0.0   9.0
          35. 11744-11749  LlyNBon* 579117.0  494952.0  579134.0  494970.0 *      25.
43.  AG    0.0   9.0
          36. 11744-11749  LlyNBon* 579134.0  494970.0  579158.0  494978.0 *      25.
72.  AG    0.0   9.0
          37. 11744-11749  LlyNBon* 579158.0  494978.0  579204.0  494981.0 *      46.
86.  AG    0.0   9.0
          38. 11750-11723  LlyNBof* 579365.0  495011.0  579115.0  495152.0 *     287.
299.  AG    0.0   9.0
          39. 11750-11723  LlyNBof* 579115.0  495152.0  579087.0  495179.0 *      39.
314.  AG    0.0  12.0
          40. 11750-11723  LlyNBof* 579087.0  495179.0  579064.0  495211.0 *      39.
324.  AG    0.0   9.0
          41. 11750-11723  LlyNBof* 579064.0  495211.0  579055.0  495249.0 *      39.
347.  AG    0.0   9.0
          42. 11750-11723  LlyNBof* 579055.0  495249.0  579056.0  495295.0 *      46.
1.  AG    0.0   9.0
          43. 11734-11731  LlySBof* 578993.0  495136.0  578931.0  495187.0 *      80.
309.  AG    0.0   9.0
          44. 11734-11731  LlySBof* 578931.0  495187.0  578919.0  495213.0 *      29.
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335.  AG    0.0   9.0
          45. 11734-11731  LlySBof* 578919.0  495213.0  578924.0  495243.0 *      30.
9.  AG    0.0   9.0
          46. 11734-11731  LlySBof* 578924.0  495243.0  578946.0  495264.0 *      30.
46.  AG    0.0   9.0
          47. 11734-11731  LlySBof* 578946.0  495264.0  578972.0  495269.0 *      26.
79.  AG    0.0   9.0
          48. 11734-11731  LlySBof* 578972.0  495269.0  578998.0  495261.0 *      27.
107.  AG    0.0  12.0
          49. 11734-11731  LlySBof* 578998.0  495261.0  579014.0  495239.0 *      27.
144.  AG    0.0   9.0
          50. 11734-11731  LlySBof* 579014.0  495239.0  579026.0  495201.0 *      40.
162.  AG    0.0   9.0
          51. 11740-11733  LlySBon* 579073.0  494988.0  579061.0  494964.0 *      27.
207.  AG    0.0   9.0
          52. 11740-11733  LlySBon* 579061.0  494964.0  579044.0  494949.0 *      23.
229.  AG    0.0   9.0
          53. 11740-11733  LlySBon* 579044.0  494949.0  579020.0  494944.0 *      25.
258.  AG    0.0   9.0
          54. 11740-11733  LlySBon* 579020.0  494944.0  578994.0  494950.0 *      27.
283.  AG    0.0  12.0
          55. 11740-11733  LlySBon* 578994.0  494950.0  578977.0  494969.0 *      25.
318.  AG    0.0   9.0
          56. 11740-11733  LlySBon* 578977.0  494969.0  578971.0  494997.0 *      29.
348.  AG    0.0   9.0
```

JOB: Goethals RUN: VERAZZANO
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Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          57. 11740-11733  LlySBon* 578971.0  494997.0  578978.0  495020.0 *      24.
17.  AG    0.0   9.0
          58. 11740-11733  LlySBon* 578978.0  495020.0  578997.0  495037.0 *      25.
48.  AG    0.0   9.0
          59. 11740-11733  LlySBon* 578997.0  495037.0  579020.0  495042.0 *      24.
78.  AG    0.0   9.0
          60. 11740-11733  LlySBon* 579020.0  495042.0  579105.0  495021.0 *      88.
104.  AG    0.0   9.0
          61. 33709-33708  LclnWBo* 579042.0  495333.0  578905.0  495249.0 *     161.
238.  AG    0.0  12.0
          62. 33709-33708  LclnWBo* 578905.0  495249.0  578865.0  495228.0 *      45.
242.  AG    0.0  12.0
          63. 33709-33708  LclnWBo* 578865.0  495228.0  578825.0  495220.0 *      41.
259.  AG    0.0  12.0
          64. 33709-33708  LclnWBo* 578825.0  495220.0  578798.0  495222.0 *      27.
274.  AG    0.0  12.0
          65. 33709-33708  LclnWBo* 578798.0  495222.0  578760.0  495233.0 *      40.
286.  AG    0.0  12.0
          66. 33706-33711  NrwsEBo* 578825.0  495164.0  578869.0  495127.0 *      57.
130.  AG    0.0  12.0
          67. 33706-33711  NrwsEBo* 578869.0  495127.0  578894.0  495096.0 *      40.
141.  AG    0.0  12.0
          68. 33706-33711  NrwsEBo* 578894.0  495096.0  578975.0  494958.0 *     160.
150.  AG    0.0  12.0
          69. 33706-33711  NrwsEBo* 578975.0  494958.0  578984.0  494946.0 *      15.
143.  AG    0.0  12.0
          70. 33706-33711  NrwsEBo* 578984.0  494946.0  579004.0  494929.0 *      26.
130.  AG    0.0  12.0
          71. 33706-33711  NrwsEBo* 579004.0  494929.0  579038.0  494917.0 *      36.
109.  AG    0.0  12.0
          72. 33706-33711  NrwsEBo* 579038.0  494917.0  579061.0  494916.0 *      23.
92.  AG    0.0  12.0
          73. 33706-33711  SIEEBof* 579061.0  494916.0  579098.0  494924.0 *      38.
78.  AG    0.0  12.0
          74. 33706-33711  NrwsEBQ* 579086.0  494921.0  579064.0  494917.0 *      22.
260.  AG    0.0   6.0    2
          75. 11652-11755  Nrw-soE* 578816.0  495139.0  578873.0  495100.0 *      69.
124.  AG    0.0  15.0
          76. 11652-11755  Nrw-soE* 578873.0  495100.0  578892.0  495078.0 *      29.
139.  AG    0.0  15.0
          77. 11652-11755  Nrw-soE* 578892.0  495078.0  578967.0  494948.0 *     150.
150.  AG    0.0  15.0
          78. 11652-11755  Nrw-soE* 578967.0  494948.0  578994.0  494922.0 *      37.
134.  AG    0.0  15.0
          79. 11652-11755  Nrw-soE* 578994.0  494922.0  579019.0  494911.0 *      27.
114.  AG    0.0  15.0
          80. 11652-11755  Nrw-soE* 579019.0  494911.0  579049.0  494905.0 *      31.
101.  AG    0.0  15.0
          81. 11652-11755  Nrw-soE* 579049.0  494905.0  579101.0  494908.0 *      52.
87.  AG    0.0  15.0
          82. 11652-11755  Nrw-soE* 579088.0  494907.0  579054.0  494905.0 *      34.
267.  AG    0.0   9.0    3
          83. 11734-11658  NrwsWB3* 578986.0  495138.0  578921.0  495177.0 *      76.
301.  AG    0.0  15.0
          84. 11734-11658  NrwsWB3* 578921.0  495177.0  578765.0  495259.0 *     176.
298.  AG    0.0  15.0
          85. 11734-11658  NrwsWBQ* 578773.0  495255.0  578817.0  495231.0 *      50.
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119.  AG    0.0   9.0    3
          86. 11658-11610  NrwsWBd* 578766.0  495259.0  578692.0  495297.0 *      83.
297.  AG    0.0  15.0
          87. 11604-11652  NrwsEB3* 578658.0  495214.0  578741.0  495172.0 *      93.
117.  AG    0.0  12.0
          88. 11604-11652  NrwsEBQ* 578730.0  495178.0  578688.0  495198.0 *      47.
295.  AG    0.0   6.0    2
          89. 11652-11733  NrwsEBt* 578741.0  495172.0  578817.0  495139.0 *      83.
113.  AG    0.0  12.0
          90. 11652-11733  NrwsEBt* 578823.0  495137.0  579098.0  495024.0 *     297.
112.  AG    0.0  12.0
          91. 11587-11652  fb NB13* 578645.0  495003.0  578666.0  495004.0 *      21.
87.  AG    0.0   9.0
          92. 11587-11652  fb NB13* 578666.0  495004.0  578699.0  495023.0 *      38.
60.  AG    0.0   9.0
          93. 11587-11652  fb NB13* 578699.0  495023.0  578710.0  495053.0 *      32.
20.  AG    0.0   9.0
          94. 11587-11652  fb NB13* 578710.0  495053.0  578725.0  495105.0 *      54.
16.  AG    0.0   9.0
          95. 11587-11652  fb NB33* 578725.0  495105.0  578744.0  495171.0 *      69.
16.  AG    0.0   9.0
          96. 11587-11652  fb NBQ3* 578741.0  495163.0  578731.0  495128.0 *      36.
196.  AG    0.0   3.0    1
          97. 11652-11658  fb NB32* 578744.0  495173.0  578768.0  495257.0 *      87.
16.  AG    0.0  12.0
```

JOB: Goethals RUN: VERAZZANO
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Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				LINK COORDINATES (M)					LENGTH	BRG	TYPE	H	W	NLANES
					X1	Y1	X2	Y2		(M)	(DEG)		(M)	(M)	
98.	11652-11658	fb	NBQ3	*	578766.0	495250.0	578757.0	495217.0	*	34.	195.	AG	0.0	6.0	2
99.	11658-11692	fb	NB13	*	578769.0	495259.0	578783.0	495306.0	*	49.	17.	AG	0.0	9.0	
100.	11587-11652	fb	NB13	*	578784.0	495306.0	578796.0	495351.0	*	47.	15.	AG	0.0	9.0	
101.	11658-11692	fb	NB13	*	578796.0	495351.0	578831.0	495468.0	*	122.	17.	AG	0.0	9.0	
102.	11692-11658	fb	SB13	*	578826.0	495468.0	578793.0	495351.0	*	122.	196.	AG	0.0	9.0	
103.	11692-11658	fb	SB13	*	578792.0	495351.0	578780.0	495307.0	*	46.	195.	AG	0.0	9.0	
104.	11692-11658	fb	SB32	*	578780.0	495307.0	578763.0	495261.0	*	49.	200.	AG	0.0	12.0	
105.	11692-11658	fb	SBQ3	*	578766.0	495269.0	578773.0	495290.0	*	22.	18.	AG	0.0	6.0	2
106.	11658-11652	fb	SB33	*	578762.0	495260.0	578739.0	495177.0	*	86.	195.	AG	0.0	12.0	
107.	11658-11652	fb	SBQ3	*	578740.0	495182.0	578749.0	495212.0	*	31.	17.	AG	0.0	6.0	2
108.	11652-11587	fb	SB13	*	578739.0	495176.0	578733.0	495148.0	*	29.	192.	AG	0.0	9.0	
109.	11652-11587	fb	SB13	*	578733.0	495148.0	578721.0	495107.0	*	43.	196.	AG	0.0	9.0	
110.	11652-11587	fb	SBde	*	578721.0	495107.0	578702.0	495040.0	*	70.	196.	AG	0.0	9.0	
111.	11652-11587	fb	SBde	*	578702.0	495040.0	578688.0	495020.0	*	24.	215.	AG	0.0	9.0	
112.	11652-11587	fb	SBde	*	578688.0	495020.0	578665.0	495008.0	*	26.	242.	AG	0.0	9.0	
113.	11652-11587	fb	SBde	*	578665.0	495008.0	578646.0	495008.0	*	19.	270.	AG	0.0	9.0	

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC E (MID S)	579148.0	494851.0	1.8
2. REC E (50 S)	579142.0	494895.0	1.8
3. REC E (25 S)	579137.0	494920.0	1.8
4. REC E (CNR)	579147.0	494953.0	1.8
5. REC E (25 E)	579175.0	494952.0	1.8
6. REC E (50 E)	579199.0	494945.0	1.8
7. REC E (MID E)	579234.0	494930.0	1.8
8. REC E (MID E)	579158.0	495154.0	1.8
9. REC E (50 E)	579123.0	495174.0	1.8
10. REC E (25 E)	579104.0	495191.0	1.8
11. REC E (CNR)	579074.0	495265.0	1.8
12. REC E (25 N)	579094.0	495318.0	1.8
13. REC E (50 N)	579113.0	495335.0	1.8
14. REC E (MID N)	579139.0	495358.0	1.8
15. REC W (MID N)	579121.0	495406.0	1.8
16. REC W (50 N)	579078.0	495380.0	1.8
17. REC W (25 N)	579056.0	495367.0	1.8
18. REC W (CNR)	579035.0	495355.0	1.8

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
19. REC W (CNR)	579013.0	495342.0	1.8
20. REC W (25 S)	578992.0	495329.0	1.8
21. REC W (50 S)	578971.0	495316.0	1.8
22. REC W (MID S)	578950.0	495303.0	1.8
23. REC W (MID W)	579000.0	494889.0	1.8
24. REC W (50 W)	579031.0	494880.0	1.8
25. REC W (25 W)	579053.0	494880.0	1.8
26. REC W (CNR)	579075.0	494880.0	1.8
27. REC W (25 S)	579083.0	494866.0	1.8
28. REC W (50 S)	579089.0	494843.0	1.8
29. REC W (MID S)	579107.0	494806.0	1.8
30. REC E (MID S)	578738.0	495069.0	1.8
31. REC E (50 S)	578745.0	495093.0	1.8
32. REC E (25 S)	578747.0	495116.0	1.8
33. REC E (CNR)	578753.0	495145.0	1.8
34. REC E (25 E)	578776.0	495133.0	1.8
35. REC E (50 E)	578804.0	495116.0	1.8
36. REC E (MID E)	578822.0	495106.0	1.8
37. REC E (MID E)	578860.0	495235.0	1.8
38. REC E (50 E)	578838.0	495246.0	1.8
39. REC E (25 E)	578815.0	495258.0	1.8
40. REC E (CNR)	578793.0	495270.0	1.8
41. REC E (25 N)	578805.0	495297.0	1.8
42. REC E (50 N)	578808.0	495320.0	1.8
43. REC E (MID N)	578815.0	495344.0	1.8
44. REC W (MID N)	578776.0	495363.0	1.8
45. REC W (50 N)	578769.0	495338.0	1.8
46. REC W (25 N)	578761.0	495318.0	1.8
47. REC W (CNR)	578751.0	495286.0	1.8
48. REC W (25 W)	578733.0	495303.0	1.8
49. REC W (50 W)	578706.0	495310.0	1.8
50. REC W (MID W)	578684.0	495321.0	1.8
51. REC W (MID W)	578649.0	495195.0	1.8
52. REC W (50 W)	578671.0	495188.0	1.8
53. REC W (25 W)	578693.0	495176.0	1.8
54. REC W (CNR)	578716.0	495159.0	1.8
55. REC W (25 S)	578714.0	495139.0	1.8
56. REC W (50 S)	578700.0	495112.0	1.8
57. REC W (MID S)	578696.0	495089.0	1.8

JOB: Goethals RUN: VERAZZANO BRIDGE TOLL 2014 BlD Annual 9a

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)

*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG *	9.2	8.0	8.3	9.7	9.3	8.7	7.2	3.2	2.9	2.9
- BKG *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX *	9.2	8.0	8.3	9.7	9.3	8.7	7.2	3.2	2.9	2.9
WIND DIR*	318	325	325	318	318	318	318	185	172	183
JULIAN *	176	43	43	176	176	176	176	125	120	255
HOUR *	2	22	22	2	2	2	2	3	20	3

*	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG *	2.5	2.2	2.0	2.1	2.7	3.2	3.0	3.1	2.8	2.7
- BKG *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX *	2.5	2.2	2.0	2.1	2.7	3.2	3.0	3.1	2.8	2.7
WIND DIR*	178	247	247	282	204	186	181	166	166	160
JULIAN *	172	83	83	314	276	250	348	206	206	211
HOUR *	24	2	2	1	23	21	17	20	20	8

*	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG *	2.7	2.7	4.7	5.1	5.3	5.8	5.6	5.4	6.8	2.7
- BKG *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX *	2.7	2.7	4.7	5.1	5.3	5.8	5.6	5.4	6.8	2.7
WIND DIR*	157	148	68	66	66	68	66	66	5	75
JULIAN *	211	259	142	142	142	142	142	142	82	106
HOUR *	23	2	10	11	11	10	11	11	24	

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	*	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
MAX+BKG	*	3.3	4.0	5.2	5.4	5.3	5.2	4.2	4.0	3.8	3.6
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	3.3	4.0	5.2	5.4	5.3	5.2	4.2	4.0	3.8	3.6
WIND DIR	*	75	75	75	75	75	75	136	133	135	129
JULIAN	*	106	106	106	106	106	106	142	106	151	212
HOUR	*	9	9	9	9	9	9	9	8	22	1

JOB: Goethals RUN: VERAZZANO BRIDGE TOLL 2014 BlD Annual 9a

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)

	*	REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50
MAX+BKG	*	2.8	2.4	1.9	2.2	2.5	2.7	3.9	3.3	3.5	3.4
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	2.8	2.4	1.9	2.2	2.5	2.7	3.9	3.3	3.5	3.4
WIND DIR	*	135	136	136	147	133	133	132	136	135	136
JULIAN	*	151	142	142	215	106	106	180	142	151	142
HOUR	*	22	9	9	8	8	8	22	9	22	9

	*	REC51	REC52	REC53	REC54	REC55	REC56	REC57
MAX+BKG	*	4.6	5.0	5.2	5.1	4.2	3.4	3.2
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	4.6	5.0	5.2	5.1	4.2	3.4	3.2
WIND DIR	*	75	99	75	75	75	75	75
JULIAN	*	106	143	106	106	106	106	106
HOUR	*	9	6	9	9	9	9	9

THE HIGHEST CONCENTRATION OF 9.70 UG/M**3 OCCURRED AT RECEPTOR REC4 .

JOB: Goethals RUN: VERAZZANO BRIDGE TOLL 2014 BlD Annual 9a

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	2.341	(309,24)	C 2	2.143	(287,24)	C 1	2.127	(201,24)	C 2	2.123	(247,24)	C 2	2.088	(136,24)	C 0
2	2.227	(247,24)	C 2	2.210	(294,24)	C 3	2.205	(1,24)	C 3	2.150	(201,24)	C 2	2.133	(9,24)	C 6
3	2.357	(294,24)	C 3	2.305	(247,24)	C 2	2.255	(201,24)	C 2	2.218	(309,24)	C 2	2.181	(1,24)	C 3
4	3.505*	(301,24)	C 4	2.955*	(237,24)	C 4	2.850	(35,24)	C 6	2.808	(231,24)	C 0	2.755	(343,24)	C 2
5	3.130	(301,24)	C 4	2.604	(231,24)	C 0	2.580	(237,24)	C 4	2.567	(35,24)	C 6	2.500	(343,24)	C 2
6	2.470	(301,24)	C 4	2.184	(29,24)	C 5	2.114	(309,24)	C 2	2.045	(237,24)	C 4	2.042	(281,24)	C 0
7	2.095	(301,24)	C 4	1.696	(73,24)	C 0	1.683	(231,24)	C 0	1.680	(237,24)	C 4	1.667	(35,24)	C 6
8	1.390	(255,24)	C 3	1.367	(1,24)	C 3	1.295	(267,24)	C 5	1.275	(245,24)	C 4	1.275	(142,24)	C 4
9	1.405	(1,24)	C 3	1.338	(255,24)	C 3	1.305	(245,24)	C 4	1.284	(55,24)	C 5	1.268	(267,24)	C 5
10	1.367	(255,24)	C 3	1.333	(1,24)	C 3	1.279	(267,24)	C 5	1.232	(55,24)	C 5	1.225	(245,24)	C 4
11	1.171	(1,24)	C 3	1.095	(247,24)	C 2	1.089	(55,24)	C 5	1.076	(294,24)	C 3	1.062	(255,24)	C 3
12	0.976	(1,24)	C 3	0.921	(262,24)	C 0	0.918	(247,24)	C 2	0.910	(294,24)	C 3	0.905	(55,24)	C 5
13	0.886	(1,24)	C 3	0.880	(346,24)	C 4	0.845	(247,24)	C 2	0.833	(294,24)	C 3	0.804	(262,24)	C 0
14	0.910	(346,24)	C 4	0.835	(301,24)	C 4	0.830	(237,24)	C 4	0.824	(294,24)	C 3	0.823	(247,24)	C 2
15	1.150	(142,24)	C 4	1.114	(255,24)	C 3	1.068	(267,24)	C 5	1.055	(245,24)	C 4	1.012	(196,24)	C 0
16	1.295	(255,24)	C 3	1.290	(142,24)	C 4	1.184	(267,24)	C 5	1.155	(245,24)	C 4	0.990	(211,24)	C 4
17	1.310	(245,24)	C 4	1.310	(255,24)	C 3	1.275	(142,24)	C 4	1.184	(267,24)	C 5	1.030	(211,24)	C 4
18	1.265	(245,24)	C 4	1.230	(142,24)	C 4	1.205	(255,24)	C 3	1.111	(267,24)	C 5	1.090	(211,24)	C 4
19	1.245	(245,24)	C 4	1.195	(211,24)	C 4	1.180	(142,24)	C 4	1.063					

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(267,24) C 5   1.029 (255,24) C 3
             20   1.140 (211,24) C 4   1.135 (142,24) C 4   1.130 (245,24) C 4   0.974
(267,24) C 5   0.871 (255,24) C 3
             21   1.205 (142,24) C 4   1.080 (245,24) C 4   1.060 (211,24) C 4   0.947
(267,24) C 5   0.887 (197,24) C 1
             22   1.230 (142,24) C 4   1.115 (245,24) C 4   1.055 (211,24) C 4   0.921
(267,24) C 5   0.914 (255,24) C 3
             23   1.570 (301,24) C 4   1.200 (351,24) C 0   1.182 (343,24) C 2   1.105
(141,24) C 3   1.071 (231,24) C 0
             24   1.835 (301,24) C 4   1.346 (351,24) C 0   1.281 (141,24) C 3   1.270
(102,24) C 1   1.259 ( 57,24) C 2
             25   2.265 (301,24) C 4   1.591 (102,24) C 1   1.588 (351,24) C 0   1.568
(343,24) C 2   1.557 (141,24) C 3
             26   2.930 (301,24) C 4   2.168 (343,24) C 2   2.117 (330,24) C 1   2.042
(351,24) C 0   2.013 (102,24) C 1
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JOB: Goethals RUN: VERAZZANO
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FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Day Hr	Calm	Second Highest Conc	Day Hr	Calm	Third Highest Conc	Day Hr	Calm	Fourth Highest Conc	Day Hr	Calm	Fifth Highest Conc	Day Hr	Calm
27	2.985	(301,24)	C 4	2.386	(343,24)	C 2	2.126	(330,24)	C 1	2.079	(351,24)	C 0	2.070	(102,24)	C 1
28	2.685	(301,24)	C 4	2.305	(343,24)	C 2	1.938	(231,24)	C 0	1.933	(338,24)	C 0	1.904	(351,24)	C 0
29	2.225	(301,24)	C 4	2.117	(338,24)	C 0	2.036	(343,24)	C 2	1.762	(231,24)	C 0	1.711	(24,24)	C 6
30	1.195	(301,24)	C 4	0.933	(141,24)	C 3	0.830	(102,24)	C 1	0.823	(343,24)	C 2	0.817	(351,24)	C 0
31	1.420	(301,24)	C 4	1.124	(141,24)	C 3	1.023	(343,24)	C 2	1.013	(351,24)	C 0	0.996	(102,24)	C 1
32	1.695	(301,24)	C 4	1.376	(141,24)	C 3	1.229	(351,24)	C 0	1.223	(343,24)	C 2	1.222	(102,24)	C 1
33	2.605	(301,24)	C 4	2.162	(141,24)	C 3	1.946	(351,24)	C 0	1.879	(231,24)	C 0	1.874	(102,24)	C 1
34	2.515	(301,24)	C 4	2.100	(141,24)	C 3	1.862	(351,24)	C 0	1.846	(231,24)	C 0	1.830	(102,24)	C 1
35	2.315	(301,24)	C 4	1.976	(141,24)	C 3	1.754	(351,24)	C 0	1.678	(102,24)	C 1	1.658	(231,24)	C 0
36	2.440	(301,24)	C 4	1.971	(141,24)	C 3	1.788	(351,24)	C 0	1.733	(231,24)	C 0	1.713	(102,24)	C 1
37	2.130	(142,24)	C 4	1.775	(245,24)	C 4	1.676	(255,24)	C 3	1.660	(211,24)	C 4	1.600	(267,24)	C 5
38	1.910	(142,24)	C 4	1.705	(245,24)	C 4	1.600	(211,24)	C 4	1.595	(255,24)	C 3	1.537	(267,24)	C 5
39	1.820	(142,24)	C 4	1.640	(245,24)	C 4	1.538	(255,24)	C 3	1.520	(211,24)	C 4	1.484	(267,24)	C 5
40	1.720	(142,24)	C 4	1.585	(245,24)	C 4	1.495	(255,24)	C 3	1.470	(211,24)	C 4	1.458	(267,24)	C 5
41	1.250	(142,24)	C 4	1.140	(245,24)	C 4	1.081	(255,24)	C 3	1.042	(267,24)	C 5	1.040	(211,24)	C 4
42	1.110	(142,24)	C 4	0.965	(245,24)	C 4	0.916	(267,24)	C 5	0.914	(255,24)	C 3	0.890	(211,24)	C 4
43	0.940	(142,24)	C 4	0.826	(267,24)	C 5	0.815	(245,24)	C 4	0.770	(211,24)	C 4	0.748	(255,24)	C 3
44	1.085	(142,24)	C 4	1.040	(245,24)	C 4	0.900	(255,24)	C 3	0.853	(267,24)	C 5	0.850	(211,24)	C 4
45	1.200	(142,24)	C 4	1.100	(245,24)	C 4	0.986	(255,24)	C 3	0.960	(211,24)	C 4	0.932	(267,24)	C 5
46	1.370	(142,24)	C 4	1.275	(245,24)	C 4	1.162	(255,24)	C 3	1.126	(267,24)	C 5	1.100	(211,24)	C 4
47	1.885	(142,24)	C 4	1.775	(245,24)	C 4	1.681	(255,24)	C 3	1.635	(211,24)	C 4	1.595	(267,24)	C 5
48	1.585	(142,24)	C 4	1.515	(245,24)	C 4	1.390	(255,24)	C 3	1.385	(211,24)	C 4	1.321	(267,24)	C 5
49	1.600	(142,24)	C 4	1.595	(245,24)	C 4	1.471	(255,24)	C 3	1.370	(211,24)	C 4	1.348	(197,24)	C 1
50	1.365	(245,24)	C 4	1.350	(142,24)	C 4	1.257	(197,24)	C 1	1.205	(211,24)	C 4	1.052	(255,24)	C 3
51	1.852	(141,24)	C 3	1.830	(301,24)	C 4	1.567	(212,24)	C 3	1.496	(351,24)	C 0	1.474	(330,24)	C 1
52	2.310	(301,24)	C 4	2.071	(141,24)	C 3	1.787	(351,24)	C 0	1.743	(330,24)	C 1	1.724	(212,24)	C 3
53	2.390	(301,24)	C 4	2.067	(141,24)	C 3	1.829	(351,24)	C 0	1.752	(212,24)	C 3	1.752	(102,24)	C 1
54	2.330	(301,24)	C 4	2.014	(141,24)	C 3	1.771	(351,24)	C 0	1.696	(102,24)	C 1	1.674	(330,24)	C 1

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            55   1.865 (301,24) C 4   1.581 (141,24) C 3   1.396 (351,24) C 0   1.335
(330,24) C 1   1.330 (102,24) C 1
            56   1.385 (301,24) C 4   1.129 (141,24) C 3   0.992 (351,24) C 0   0.983
(330,24) C 1   0.978 (102,24) C 1
            57   1.185 (301,24) C 4   0.986 (141,24) C 3   0.875 (351,24) C 0   0.873
(343,24) C 2   0.870 (102,24) C 1

         THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
                 IN MICROGRAMS/M**3
         INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

           Receptor      Maximum  Ending
            Number         Conc    Day Hr  Calm
               1           1.085  (366,24) C 657
               2           1.172  (366,24) C 657
               3           1.280  (366,24) C 657
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JOB: Goethals RUN: VERAZZANO
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THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
4	1.486*	(366,24)	C 657
5	1.237	(366,24)	C 657
6	1.018	(366,24)	C 657
7	0.789	(366,24)	C 657
8	0.432	(366,24)	C 657
9	0.441	(366,24)	C 657
10	0.436	(366,24)	C 657
11	0.451	(366,24)	C 657
12	0.460	(366,24)	C 657
13	0.436	(366,24)	C 657
14	0.467	(366,24)	C 657
15	0.248	(366,24)	C 657
16	0.251	(366,24)	C 657
17	0.241	(366,24)	C 657
18	0.229	(366,24)	C 657
19	0.221	(366,24)	C 657
20	0.216	(366,24)	C 657
21	0.221	(366,24)	C 657
22	0.234	(366,24)	C 657
23	0.302	(366,24)	C 657
24	0.351	(366,24)	C 657
25	0.435	(366,24)	C 657
26	0.579	(366,24)	C 657
27	0.590	(366,24)	C 657
28	0.538	(366,24)	C 657
29	0.471	(366,24)	C 657
30	0.236	(366,24)	C 657
31	0.300	(366,24)	C 657
32	0.392	(366,24)	C 657
33	0.664	(366,24)	C 657
34	0.635	(366,24)	C 657
35	0.585	(366,24)	C 657
36	0.593	(366,24)	C 657
37	0.566	(366,24)	C 657
38	0.502	(366,24)	C 657
39	0.470	(366,24)	C 657
40	0.455	(366,24)	C 657
41	0.293	(366,24)	C 657
42	0.238	(366,24)	C 657
43	0.193	(366,24)	C 657
44	0.152	(366,24)	C 657

JOB: Goethals RUN: VERAZZANO
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THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
45	0.194	(366,24)	C 657
46	0.241	(366,24)	C 657
47	0.419	(366,24)	C 657
48	0.285	(366,24)	C 657
49	0.219	(366,24)	C 657
50	0.143	(366,24)	C 657
51	0.299	(366,24)	C 657
52	0.454	(366,24)	C 657
53	0.516	(366,24)	C 657
54	0.518	(366,24)	C 657
55	0.376	(366,24)	C 657
56	0.249	(366,24)	C 657
57	0.210	(366,24)	C 657

MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr Link No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
1	2.341	(309,24)	0.00	2.34	0.00	0.05	0.01	0.01	0.01	0.09	0.05	0.05	0.01	0.00
				Links 10+	0.00	0.08	0.20	0.00	0.11	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.01	0.00
				Links 30+	0.00	0.50	0.85	0.09	0.03	0.02	0.01	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 70+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 80+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
				Links 90+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 100+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 110+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

JOB: Goethals RUN: VERAZZANO
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LINK CONTRIBUTION TABLES

MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
2	2.227	(247,24)	0.00	2.23	0.00	0.01	0.01	0.01	0.01	0.04	0.01	0.00	0.02	0.00
				Links 10+	0.03	0.06	0.27	0.00	0.06	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.05	0.01	0.01
				Links 30+	0.00	0.20	1.25	0.08	0.01	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 70+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 80+	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
				Links 90+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 100+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 110+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2.357	(294,24)	0.00	2.36	0.00	0.08	0.00	0.00	0.00	0.01	0.03	0.17	0.00	0.00
				Links 10+	0.01	0.03	0.21	0.00	0.07	0.00	0.00	0.00	0.00	0.01
				Links 20+	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.00	0.00
				Links 30+	0.00	0.10	1.11	0.13	0.14	0.13	0.02	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 70+	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 80+	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
				Links 90+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 100+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 110+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	3.505	(301,24)	0.00	3.50	0.02	0.36	0.00	0.00	0.00	0.00	0.01	1.03	0.33	0.05
				Links 10+	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Representative 24-hr PM2.5 Emission Factors

Emission Matrix with Fugitive Dust

Analysis Year	Pollutant	Roadway Type	Auto EF	SUV EF	Taxi EF	Light Truck EF	Heavy GasTrK EF	Heavy Diesel EF	Diesel Bus EF	Idle Heavy Diesel	Idle Diesel Bus	SILT LOADING	K FACTOR	FLEET WEIGHT	C FACTOR	Paved Dust
2014	PM25	Arterial	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.10	1.80	3.00	0.1617	0.086
2014	PM25	Collector	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.16	1.80	3.00	0.1617	0.169
2014	PM25	express	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.00	0.00	3.00	0.0000	0.000
2014	PM25	Local	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.40	1.80	3.00	0.1617	0.425
2014	PM25	SI	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.10	1.80	2.55	0.1617	0.035

Representative CAL3QHCR 24-hr PM2.5 Input Matrix

CAL3QHC Input Matrix WITH FUGITIVE DUST

A-node	B-node	Analysis Year	Location	Time Period	Scenario	Pollutant	Total Volume	CompEmission	Idle Emission	SFR per lane	Cycle	Red Time	Lost time	# Lanes	Signal Type	Arrival Type
33369-	11750	2014	NY	9	4	PM25	5770	0.026	0.069	1219	90	36	2	2	1	3
11750-	11734	2014	NY	9	4	PM25	5460	0.026	0.069	1193	90	45	2	3	1	3
11734-	33708	2014	NY	9	4	PM25	4360	0.026	0.069	1457	120	55	2	3	1	3
11661-	33706	2014	NY	9	4	PM25	7001	0.024	0.079	1006	120	65	2	2	1	3
33706-	11733	2014	NY	9	4	PM25	6591	0.024	0.079	1219	90	36	2	2	1	3
11733-	11749	2014	NY	9	4	PM25	10022	0.024	0.079	1488	120	65	2	2	1	3
11749-	33751	2014	NY	9	4	PM25	12222	0.024	0.079	1193	90	45	2	3	1	3
11755-	11744	2014	NY	9	4	PM25	2750	0.200	0.282	1193	90	45	2	3	1	3
11744-	33711	2014	NY	9	4	PM25	550	0.200	0.282	1193	90	45	2	3	1	3
33711-	11740	2014	NY	9	4	PM25	660	0.200	0.282	1582	90	67	2	2	1	3
11731-	33709	2014	NY	9	4	PM25	600	0.200	0.282	1488	120	65	2	2	1	3
33709-	11723	2014	NY	9	4	PM25	600	0.200	0.282	1582	90	67	2	2	1	3
11723-	11729	2014	NY	9	4	PM25	610	0.200	0.282	1488	120	65	2	2	1	3
11729-	11723	2014	NY	9	4	PM25	1165	0.118	0.064	1488	120	65	2	2	1	3
33709-	11731	2014	NY	9	4	PM25	890	0.118	0.064	1582	90	67	2	2	1	3
11731-	33747	2014	NY	9	4	PM25	1405	0.118	0.064	1488	120	65	2	2	1	3
11740-	33711	2014	NY	9	4	PM25	300	0.118	0.064	1747	90	45	2	2	1	3
33711-	11744	2014		9	4	PM25	600	0.118	0.064	1582	90	67	2	2	1	3
11744-	11755	2014	NY	9	4	PM25	600	0.118	0.064	1747	90	45	2	2	1	3
11744-	11749	2014	NY	9	4	PM25	2200	0.200	0.282	1747	90	45	2	2	1	3
11750-	11723	2014	NY	9	4	PM25	310	0.112	0.069	1193	90	45	2	3	1	3
11734-	11731	2014	NY	9	4	PM25	515	0.112	0.069	1457	120	55	2	3	1	3
11740-	11733	2014	NY	9	4	PM25	1165	0.118	0.064	1457	120	55	2	3	1	3
33709-	33708	2014	NY	9	4	PM25	605	0.107	0.048	1582	90	67	2	2	1	3
33706-	33711	2014	NY	9	4	PM25	410	0.109	0.060	1582	90	67	2	2	1	3
11734-	11658	2014	NY	9	4	PM25	585	0.132	0.146	1457	120	55	2	3	1	3
11658-	11610	2014	NY	9	4	PM25	500	0.132	0.146	1621	90	68	2	3	1	3
11604-	11652	2014	NY	9	4	PM25	1705	0.131	0.093	1349	120	55	2	2	1	3
11652-	11733	2014	NY	9	4	PM25	2265	0.131	0.093	1356	120	65	2	2	1	3
11587-	11652	2014	NY	9	4	PM25	775	0.105	0.024	1519	120	65	2	1	1	3
11652-	11658	2014	NY	9	4	PM25	140	0.128	0.088	1356	120	65	2	2	1	3
11658-	11692	2014	NY	9	4	PM25	145	0.128	0.088	1006	120	65	2	2	1	3
11692-	11658	2014	NY	9	4	PM25	420	0.121	0.071	1488	120	65	2	2	1	3
11658-	11652	2014	NY	9	4	PM25	535	0.109	0.054	937	120	65	2	2	1	3
11652-	11587	2014	NY	9	4	PM25	225	0.109	0.054	1344	120	55	2	2	1	3
33763-	10136	2014	NY	9	4	PM25	5265	0.030	0.088	1582	90	67	2	2	1	3
10136-	10095	2014	NY	9	4	PM25	3145	0.030	0.088	1417	90	36	2	2	1	3
10095-	10021	2014	NY	9	4	PM25	4255	0.030	0.088	1417	90	36	2	2	1	3
10021-	33728	2014	NY	9	4	PM25	4635	0.030	0.088						1	
33367-	10018	2014	NY	9	4	PM25	4030	0.028	0.133	1219	90	36	2	2	1	3
10018-	10086	2014	NY	9	4	PM25	3275	0.028	0.133						1	
10086-	10131	2014	NY	9	4	PM25	2800	0.028	0.133	1417	90	36	2	2	1	3
10131-	33764	2014	NY	9	4	PM25	4695	0.028	0.133	1417	90	36	2	2	1	3
10136-	10088	2014	NY	9	4	PM25	2120	0.030	0.088	1417	90	36	2	2	1	3
10097-	10131	2014	NY	9	4	PM25	1895	0.028	0.133	1417	90	36	2	2	1	3
10097-	10095	2014	NY	9	4	PM25	1110	0.030	0.088	1417	90	36	2	2	1	3
10086-	10088	2014	NY	9	4	PM25	475	0.028	0.133	1417	90	36	2	2	1	3
10166-	10055	2014	NY	9	4	PM25	475	0.127	0.120	1559	90	54	2	3	1	3
10055-	10033	2014	NY	9	4	PM25	1040	0.127	0.120	1030	90	36	2	2	1	3
10033-	33719	2014	NY	9	4	PM25	340	0.127	0.120	1030	90	36	2	2	1	3
33719-	39913	2014	NY	9	4	PM25	740	0.127	0.120	1582	90	67	2	2	1	3
10033-	10021	2014	NY	9	4	PM25	780	0.127	0.120	1030	90	36	2	2	1	3
10021-	33719	2014	NY	9	4	PM25	400	0.030	0.088						1	
9909-	33718	2014	NY	9	4	PM25	550	0.123	0.209						1	
33718-	10030	2014	NY	9	4	PM25	445	0.123	0.209	1582	90	67	2	2	1	3
10030-	173401	2014	NY	9	4	PM25	115	0.123	0.209	1582	90	67	2	2	1	3
33718-	10018	2014	NY	9	4	PM25	125	0.123	0.209	1582	90	67	2	2	1	3
10018-	10030	2014	NY	9	4	PM25	880	0.028	0.133						1	
10030-	10055	2014	NY	9	4	PM25	1250	0.124	0.224	1112	90	36	2	2	1	3
10055-	10065	2014	NY	9	4	PM25	805	0.124	0.224	1030	90	36	2	2	1	3
10065-	10055	2014	NY	9	4	PM25	280	0.120	0.115	1445	90	36	2	2	1	3
10055-	10030	2014	NY	9	4	PM25	60	0.120	0.115	1030	90	36	2	2	1	3
11755-	11769	2014	NY	9	4	PM25	670	0.118	0.064	1219	90	36	2	2	0	3
11652-	11755	2014	NY	9	4	PM25	390	0.131	0.093	1621	90	68	2	3	0	3

Representative Annual Neighborhood PM2.5 Emission Factors

Emission Matrix without Fugitive Dust

Analysis Year	Pollutant	Roadway Type	Auto EF	SUV EF	Taxi EF	Light Truck EF	Heavy GasTrK EF	Heavy Diesel EF	Diesel Bus EF	Idle Heavy Diesel	Idle Diesel Bus	SILT LOADING	K FACTOR	FLEET WEIGHT	C FACTOR	Paved Dust
2014	PM25	Arterial	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.00	0.00	0.00	0.00	0.00
2014	PM25	Collector	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.00	0.00	0.00	0.00	0.00
2014	PM25	express	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.00	0.00	0.00	0.00	0.00
2014	PM25	Local	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.00	0.00	0.00	0.00	0.00
2014	PM25	SI	0.0114	0.0118	0.0112	0.0118	0.0267	0.0702	0.6396	0.9500	1.6274	0.00	0.00	0.00	0.00	0.00

Representative CAL3QHCR Annual Neighborhood PM2.5 Input Matrix

CAL3QHC Input Matrix WITHOUT FUGITIVE DUST

A-node	B-node	Analysis Year	Location	Time Period	Scenario	Pollutant	Total Volume	CompEmission	Idle Emission	SFR per lane	Cycle	Red Time	Lost time	# Lanes	Signal Type	Arrival Type
33369-	11750	2034	NY	9	4	PM25	5135	0.026	0.000	1219	90	36	2	2	1	3
11750-	11734	2034	NY	9	4	PM25	4859	0.026	0.000	1193	90	45	2	3	1	3
11734-	33708	2034	NY	9	4	PM25	3880	0.026	0.000	1457	120	55	2	3	1	3
11661-	33706	2034	NY	9	4	PM25	6231	0.024	0.000	1006	120	65	2	2	1	3
33706-	11733	2034	NY	9	4	PM25	5866	0.024	0.000	1219	90	36	2	2	1	3
11733-	11749	2034	NY	9	4	PM25	8920	0.024	0.000	1488	120	65	2	2	1	3
11749-	33751	2034	NY	9	4	PM25	10878	0.024	0.000	1193	90	45	2	3	1	3
11755-	11744	2034	NY	9	4	PM25	2448	0.114	0.000	1193	90	45	2	3	1	3
11744-	33711	2034	NY	9	4	PM25	490	0.114	0.000	1193	90	45	2	3	1	3
33711-	11740	2034	NY	9	4	PM25	587	0.114	0.000	1582	90	67	2	2	1	3
11731-	33709	2034	NY	9	4	PM25	534	0.114	0.000	1488	120	65	2	2	1	3
33709-	11723	2034	NY	9	4	PM25	534	0.114	0.000	1582	90	67	2	2	1	3
11723-	11729	2034	NY	9	4	PM25	543	0.114	0.000	1488	120	65	2	2	1	3
11729-	11723	2034	NY	9	4	PM25	1037	0.032	0.000	1488	120	65	2	2	1	3
33709-	11731	2034	NY	9	4	PM25	792	0.032	0.000	1582	90	67	2	2	1	3
11731-	33747	2034	NY	9	4	PM25	1250	0.032	0.000	1488	120	65	2	2	1	3
11740-	33711	2034	NY	9	4	PM25	267	0.032	0.000	1747	90	45	2	2	1	3
33711-	11744	2034	NY	9	4	PM25	534	0.032	0.000	1582	90	67	2	2	1	3
11744-	11755	2034	NY	9	4	PM25	534	0.032	0.000	1747	90	45	2	2	1	3
11744-	11749	2034	NY	9	4	PM25	1958	0.114	0.000	1747	90	45	2	2	1	3
11750-	11723	2034	NY	9	4	PM25	276	0.026	0.000	1193	90	45	2	3	1	3
11734-	11731	2034	NY	9	4	PM25	458	0.026	0.000	1457	120	55	2	3	1	3
11740-	11733	2034	NY	9	4	PM25	1037	0.032	0.000	1457	120	55	2	3	1	3
33709-	33708	2034	NY	9	4	PM25	539	0.021	0.000	1582	90	67	2	2	1	3
33706-	33711	2034	NY	9	4	PM25	365	0.023	0.000	1582	90	67	2	2	1	3
11734-	11658	2034	NY	9	4	PM25	521	0.046	0.000	1457	120	55	2	3	1	3
11658-	11610	2034	NY	9	4	PM25	445	0.046	0.000	1621	90	68	2	3	1	3
11604-	11652	2034	NY	9	4	PM25	1517	0.045	0.000	1342	120	55	2	2	1	3
11652-	11733	2034	NY	9	4	PM25	2016	0.045	0.000	1356	120	65	2	2	1	3
11587-	11652	2034	NY	9	4	PM25	690	0.019	0.000	1520	120	65	2	1	1	3
11652-	11658	2034	NY	9	4	PM25	125	0.042	0.000	1356	120	65	2	2	1	3
11658-	11692	2034	NY	9	4	PM25	129	0.042	0.000	1006	120	65	2	2	1	3
11692-	11658	2034	NY	9	4	PM25	374	0.035	0.000	1488	120	65	2	2	1	3
11658-	11652	2034	NY	9	4	PM25	476	0.023	0.000	922	120	65	2	2	1	3
11652-	11587	2034	NY	9	4	PM25	200	0.023	0.000	1344	120	55	2	2	1	3
33763-	10136	2034	NY	9	4	PM25	4686	0.030	0.000	1582	90	67	2	2	1	3
10136-	10095	2034	NY	9	4	PM25	2799	0.030	0.000	1417	90	36	2	2	1	3
10095-	10021	2034	NY	9	4	PM25	3787	0.030	0.000	1417	90	36	2	2	1	3
10021-	33728	2034	NY	9	4	PM25	4125	0.030	0.000						1	3
33367-	10018	2034	NY	9	4	PM25	3587	0.028	0.000	1219	90	36	2	2	1	3
10018-	10086	2034	NY	9	4	PM25	2915	0.028	0.000						1	3
10086-	10131	2034	NY	9	4	PM25	2492	0.028	0.000	1417	90	36	2	2	1	3
10131-	33764	2034	NY	9	4	PM25	4179	0.028	0.000	1417	90	36	2	2	1	3
10136-	10088	2034	NY	9	4	PM25	1887	0.030	0.000	1417	90	36	2	2	1	3
10097-	10131	2034	NY	9	4	PM25	1687	0.028	0.000	1417	90	36	2	2	1	3
10097-	10095	2034	NY	9	4	PM25	988	0.030	0.000	1417	90	36	2	2	1	3
10086-	10088	2034	NY	9	4	PM25	423	0.028	0.000	1417	90	36	2	2	1	3
10166-	10055	2034	NY	9	4	PM25	423	0.041	0.000	1493	90	54	2	3	1	3
10055-	10033	2034	NY	9	4	PM25	926	0.041	0.000	1030	90	36	2	2	1	3
10033-	33719	2034	NY	9	4	PM25	303	0.041	0.000	1030	90	36	2	2	1	3
33719-	39913	2034	NY	9	4	PM25	659	0.041	0.000	1582	90	67	2	2	1	3
10033-	10021	2034	NY	9	4	PM25	694	0.041	0.000	1030	90	36	2	2	1	3
10021-	33719	2034	NY	9	4	PM25	356	0.030	0.000						1	3
9909-	33718	2034	NY	9	4	PM25	490	0.037	0.000						1	3
33718-	10030	2034	NY	9	4	PM25	396	0.037	0.000	1582	90	67	2	2	1	3
10030-	173401	2034	NY	9	4	PM25	102	0.037	0.000	1582	90	67	2	2	1	3
33718-	10018	2034	NY	9	4	PM25	111	0.037	0.000	1582	90	67	2	2	1	3
10018-	10030	2034	NY	9	4	PM25	783	0.028	0.000						1	3
10030-	10055	2034	NY	9	4	PM25	1113	0.038	0.000	1118	90	36	2	2	1	3
10055-	10065	2034	NY	9	4	PM25	716	0.038	0.000	1030	90	36	2	2	1	3
10065-	10055	2034	NY	9	4	PM25	249	0.034	0.000	1462	90	36	2	2	1	3
10055-	10030	2034	NY	9	4	PM25	53	0.034	0.000	1030	90	36	2	2	1	3
11755-	11769	2034	NY	9	4	PM25	596	0.032	0.000	1055	90	36	2	2	0	3
11652-	11755	2034	NY	9	4	PM25	347	0.045	0.000	1107	90	68	2	3	0	3

Representative Goethals Bridge Toll Plaza 24-hr PM2.5 Results

Air Quality Microscale Results
Site : Goethals Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM25
24-hr Background ($\mu g/m^3$): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3QHCR 24 Hr Year : 1996 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 1997 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 1998 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 1999 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 2000 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Maximum $\mu g/m^3$	2014 Build Total 24-hour Level $\mu g/m^3$
REC E	(50 S)	AM	24-hr	5.480	5.350	6.310	5.460	5.910	6.310	6.310
REC E	(25 S)	AM	24-hr	5.330	5.220	6.120	5.240	5.920	6.120	6.120
REC E	(CNR)	AM	24-hr	5.180	4.900	5.840	5.630	4.820	5.840	5.840
REC E	(25 E)	AM	24-hr	3.130	2.840	2.980	3.120	2.960	3.130	3.130
REC E	(50 E)	AM	24-hr	2.340	2.210	2.310	2.370	1.910	2.370	2.370
REC E	(MID E)	AM	24-hr	2.000	1.900	1.970	1.990	1.620	2.000	2.000
REC E	(MID E)	AM	24-hr	2.400	2.020	2.370	2.070	1.850	2.400	2.400
REC E	(50 E)	AM	24-hr	2.760	2.360	2.830	2.480	2.160	2.830	2.830
REC E	(25 E)	AM	24-hr	2.980	2.710	3.440	2.910	2.620	3.440	3.440
REC E	(CNR)	AM	24-hr	3.490	3.590	4.680	3.640	3.410	4.680	4.680
REC E	(25 N)	AM	24-hr	3.540	3.460	4.490	3.470	3.260	4.490	4.490
REC E	(50 N)	AM	24-hr	3.220	3.100	4.020	3.040	3.030	4.020	4.020
REC E	(MID N)	AM	24-hr	1.890	1.850	2.610	1.850	1.800	2.610	2.610
REC W	(50 N)	AM	24-hr	3.060	3.240	3.300	3.430	3.240	3.430	3.430
REC W	(25 N)	AM	24-hr	3.510	3.680	3.760	3.980	3.520	3.980	3.980
REC W	(CNR)	AM	24-hr	5.550	5.580	5.490	5.690	5.080	5.690	5.690
REC W	(25 W)	AM	24-hr	5.050	4.320	4.780	4.390	4.270	5.050	5.050
REC W	(50 W)	AM	24-hr	4.650	4.150	4.640	3.970	3.870	4.650	4.650
REC W	(MID W)	AM	24-hr	3.860	3.370	3.730	3.290	3.480	3.860	3.860
REC W	(MID W)	AM	24-hr	2.910	2.770	3.270	3.740	2.970	3.740	3.740
REC W	(50 W)	AM	24-hr	3.720	3.820	4.180	4.670	4.510	4.670	4.670
REC W	(25 W)	AM	24-hr	3.470	3.550	4.020	4.070	3.740	4.070	4.070
REC W	(CNR)	AM	24-hr	3.910	4.130	4.560	4.810	4.640	4.810	4.810
REC W	(25 S)	AM	24-hr	3.720	3.750	4.100	4.010	4.230	4.230	4.230
REC W	(50 S)	AM	24-hr	4.810	4.570	5.030	4.850	4.900	5.030	5.030
RECID	(N)	AM	24-hr	2.360	2.380	2.880	2.420	2.780	2.880	2.880
REC 0	(N)	AM	24-hr	2.220	2.280	2.730	2.360	2.720	2.730	2.730
REC 5	(N)	AM	24-hr	2.020	2.120	2.350	2.110	2.500	2.500	2.500
REC	(CNR)	AM	24-hr	2.160	2.300	2.620	2.400	2.410	2.620	2.620
REC	(CNR)	AM	24-hr	2.900	3.320	3.320	3.020	3.550	3.550	3.550
REC 5	(S)	AM	24-hr	2.020	1.980	2.120	2.020	2.400	2.400	2.400
REC 0	(S)	AM	24-hr	1.610	1.520	1.660	1.600	1.890	1.890	1.890
RECID	(S)	AM	24-hr	1.360	1.210	1.360	1.320	1.560	1.560	1.560
REC34		AM	24-hr	2.220	1.880	2.070	1.840	1.680	2.220	2.220
REC35		AM	24-hr	2.220	1.830	1.980	1.710	1.760	2.220	2.220
REC36		AM	24-hr	3.280	2.740	3.050	2.670	2.900	3.280	3.280
REC37		AM	24-hr	3.190	2.740	3.200	2.710	2.650	3.200	3.200
REC38		AM	24-hr	2.020	2.080	2.580	2.060	2.450	2.580	2.580
REC39		AM	24-hr	2.430	2.590	2.880	2.410	3.010	3.010	3.010
REC40		AM	24-hr	2.880	2.660	3.560	2.710	2.870	3.560	3.560
REC41		AM	24-hr	2.170	2.320	2.300	2.600	2.600	2.600	2.600
Maximum Results									6.310	6.310

Air Quality Microscale Results
Site : Goethals Bridge Toll Plaza
Scenario: 2014 No-Build
Pollutant: PM25
24-hr Background ($\mu g/m^3$): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 No-Build CAL3QHCR 24 Hr Year : 1996 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 1997 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 1998 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 1999 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 2000 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Maximum $\mu g/m^3$	2014 No-Build Total 24-hour Level $\mu g/m^3$
REC E	(50 S)	AM	24-hr	3.270	3.160	3.900	3.250	3.330	3.900	3.900
REC E	(25 S)	AM	24-hr	3.290	3.310	3.630	3.050	3.780	3.780	3.780
REC E	(CNR)	AM	24-hr	3.270	3.220	3.840	3.590	2.910	3.840	3.840
REC E	(25 E)	AM	24-hr	1.910	1.760	1.820	1.900	1.550	1.910	1.910
REC E	(50 E)	AM	24-hr	1.390	1.300	1.330	1.420	1.090	1.420	1.420
REC E	(MID E)	AM	24-hr	1.200	1.070	1.120	1.200	0.920	1.200	1.200
REC E	(MID E)	AM	24-hr	1.420	1.210	1.410	1.250	1.100	1.420	1.420
REC E	(50 E)	AM	24-hr	1.610	1.400	1.710	1.510	1.300	1.710	1.710
REC E	(25 E)	AM	24-hr	1.740	1.610	2.040	1.720	1.550	2.040	2.040
REC E	(CNR)	AM	24-hr	2.110	2.210	2.860	2.230	2.070	2.860	2.860
REC E	(25 N)	AM	24-hr	2.140	2.100	2.720	2.100	1.920	2.720	2.720
REC E	(50 N)	AM	24-hr	1.880	1.850	2.470	1.810	1.800	2.470	2.470
REC E	(MID N)	AM	24-hr	1.100	1.150	1.520	1.100	1.090	1.520	1.520
REC W	(50 N)	AM	24-hr	1.830	2.010	2.040	2.100	1.950	2.100	2.100
REC W	(25 N)	AM	24-hr	2.180	2.290	2.370	2.490	2.110	2.490	2.490
REC W	(CNR)	AM	24-hr	3.380	3.460	3.430	3.500	3.090	3.500	3.500
REC W	(25 W)	AM	24-hr	3.000	2.570	2.850	2.630	2.490	3.000	3.000
REC W	(50 W)	AM	24-hr	2.790	2.500	2.820	2.400	2.270	2.820	2.820
REC W	(MID W)	AM	24-hr	2.360	2.050	2.350	2.070	2.020	2.360	2.360
REC W	(MID W)	AM	24-hr	1.970	1.720	2.000	2.330	1.800	2.330	2.330
REC W	(50 W)	AM	24-hr	2.200	2.260	2.430	2.820	2.650	2.820	2.820
REC W	(25 W)	AM	24-hr	2.070	2.060	2.370	2.420	2.170	2.420	2.420
REC W	(CNR)	AM	24-hr	2.490	2.540	2.750	2.940	2.950	2.950	2.950
REC W	(25 S)	AM	24-hr	2.250	2.300	2.440	2.470	2.490	2.490	2.490
REC W	(50 S)	AM	24-hr	3.320	3.170	3.440	3.330	3.110	3.440	3.440
RECID	(N)	AM	24-hr	1.600	1.610	1.950	1.660	1.910	1.950	1.950
REC 0	(N)	AM	24-hr	1.420	1.490	1.760	1.570	1.850	1.850	1.850
REC 5	(N)	AM	24-hr	1.330	1.370	1.590	1.400	1.710	1.710	1.710
REC	(CNR)	AM	24-hr	1.410	1.470	1.770	1.580	1.640	1.770	1.770
REC	(CNR)	AM	24-hr	1.860	2.170	2.150	1.920	2.360	2.360	2.360
REC 5	(S)	AM	24-hr	1.320	1.280	1.400	1.320	1.560	1.560	1.560
REC 0	(S)	AM	24-hr	1.060	1.000	1.050	1.020	1.250	1.250	1.250
RECID	(S)	AM	24-hr	0.840	0.780	0.900	0.860	1.110	1.110	1.110
REC34		AM	24-hr	1.300	1.080	1.240	1.070	1.000	1.300	1.300
REC35		AM	24-hr	1.260	1.070	1.180	1.000	1.060	1.260	1.260
REC36		AM	24-hr	2.040	1.700	1.950	1.660	1.790	2.040	2.040
REC37		AM	24-hr	2.010	1.780	2.100	1.740	1.650	2.100	2.100
REC38		AM	24-hr	1.360	1.470	1.800	1.410	1.740	1.800	1.800
REC39		AM	24-hr	1.860	1.990	2.240	1.860	2.340	2.340	2.340
REC40		AM	24-hr	1.690	1.590	2.060	1.580	1.690	2.060	2.060
REC41		AM	24-hr	1.320	1.410	1.410	1.560	1.560	1.560	1.560
Maximum Results									3.900	3.900

Delta Analysis

Air Quality Microscale Results

Site : Goethals Bridge Toll Plaza

Scenario: 2014 Build

Pollutant: PM25

24-hr Background ($\mu g/m^3$): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3QHCR 24 Hr Year : 1996 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 1997 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 1998 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 1999 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Year : 2000 $\mu g/m^3$	2014 Build CAL3QHCR 24 Hr Maximum $\mu g/m^3$	2014 Build Total 24-hour Level $\mu g/m^3$
REC E	(50 S)	AM	24-hr	2.210	2.190	2.410	2.210	2.580	2.580	2.580
REC E	(25 S)	AM	24-hr	2.040	1.910	2.490	2.190	2.140	2.490	2.490
REC E	(CNR)	AM	24-hr	1.910	1.680	2.000	2.040	1.910	2.040	2.040
REC E	(25 E)	AM	24-hr	1.220	1.080	1.160	1.220	1.410	1.410	1.410
REC E	(50 E)	AM	24-hr	0.950	0.910	0.980	0.950	0.820	0.980	0.980
REC E	(MID E)	AM	24-hr	0.800	0.830	0.850	0.790	0.700	0.850	0.850
REC E	(MID E)	AM	24-hr	0.980	0.810	0.960	0.820	0.750	0.980	0.980
REC E	(50 E)	AM	24-hr	1.150	0.960	1.120	0.970	0.860	1.150	1.150
REC E	(25 E)	AM	24-hr	1.240	1.100	1.400	1.190	1.070	1.400	1.400
REC E	(CNR)	AM	24-hr	1.380	1.380	1.820	1.410	1.340	1.820	1.820
REC E	(25 N)	AM	24-hr	1.400	1.360	1.770	1.370	1.340	1.770	1.770
REC E	(50 N)	AM	24-hr	1.340	1.250	1.550	1.230	1.230	1.550	1.550
REC E	(MID N)	AM	24-hr	0.790	0.700	1.090	0.750	0.710	1.090	1.090
REC W	(50 N)	AM	24-hr	1.230	1.230	1.260	1.330	1.290	1.330	1.330
REC W	(25 N)	AM	24-hr	1.330	1.390	1.390	1.490	1.410	1.490	1.490
REC W	(CNR)	AM	24-hr	2.170	2.120	2.060	2.190	1.990	2.190	2.190
REC W	(25 W)	AM	24-hr	2.050	1.750	1.930	1.760	1.780	2.050	2.050
REC W	(50 W)	AM	24-hr	1.860	1.650	1.820	1.570	1.600	1.860	1.860
REC W	(MID W)	AM	24-hr	1.500	1.320	1.380	1.220	1.460	1.500	1.500
REC W	(MID W)	AM	24-hr	0.940	1.050	1.270	1.410	1.170	1.410	1.410
REC W	(50 W)	AM	24-hr	1.520	1.560	1.750	1.850	1.860	1.860	1.860
REC W	(25 W)	AM	24-hr	1.400	1.490	1.650	1.650	1.570	1.650	1.650
REC W	(CNR)	AM	24-hr	1.420	1.590	1.810	1.870	1.690	1.870	1.870
REC W	(25 S)	AM	24-hr	1.470	1.450	1.660	1.540	1.740	1.740	1.740
REC W	(50 S)	AM	24-hr	1.490	1.400	1.590	1.520	1.790	1.790	1.790
RECID	(N)	AM	24-hr	0.760	0.770	0.930	0.760	0.870	0.930	0.930
REC 0	(N)	AM	24-hr	0.800	0.790	0.970	0.790	0.870	0.970	0.970
REC 5	(N)	AM	24-hr	0.690	0.750	0.760	0.710	0.790	0.790	0.790
REC	(CNR)	AM	24-hr	0.750	0.830	0.850	0.820	0.770	0.850	0.850
REC	(CNR)	AM	24-hr	1.040	1.150	1.170	1.100	1.190	1.190	1.190
REC 5	(S)	AM	24-hr	0.700	0.700	0.720	0.700	0.840	0.840	0.840
REC 0	(S)	AM	24-hr	0.550	0.520	0.610	0.580	0.640	0.640	0.640
RECID	(S)	AM	24-hr	0.520	0.430	0.460	0.460	0.450	0.520	0.520
REC34		AM	24-hr	0.920	0.800	0.830	0.770	0.680	0.920	0.920
REC35		AM	24-hr	0.960	0.760	0.800	0.710	0.700	0.960	0.960
REC36		AM	24-hr	1.240	1.040	1.100	1.010	1.110	1.240	1.240
REC37		AM	24-hr	1.180	0.960	1.100	0.970	1.000	1.180	1.180
REC38		AM	24-hr	0.660	0.610	0.780	0.650	0.710	0.780	0.780
REC39		AM	24-hr	0.570	0.600	0.640	0.550	0.670	0.670	0.670
REC40		AM	24-hr	1.190	1.070	1.500	1.130	1.180	1.500	1.500
REC41		AM	24-hr	0.850	0.910	0.890	1.040	1.040	1.040	1.040
Maximum Results									2.580	2.580

Representative Verrazano Bridge Toll Plaza 24-hr PM2.5 Results

Air Quality Microscale Results
Site : Verrazano Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM25
24-hr Background (μg/m^3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3QHCR 24 Hr Year : 1996 μg/m^3	2014 Build CAL3QHCR 24 Hr Year : 1997 μg/m^3	2014 Build CAL3QHCR 24 Hr Year : 1998 μg/m^3	2014 Build CAL3QHCR 24 Hr Year : 1999 μg/m^3	2014 Build CAL3QHCR 24 Hr Year : 2000 μg/m^3	2014 Build CAL3QHCR 24 Hr Maximum μg/m^3	2014 Build Total 24-hour Level μg/m^3
REC E	(MID S)	AM	24-hr	9.880	9.510	9.300	10.380	9.050	10.380	10.380
REC E	(50 S)	AM	24-hr	9.940	11.520	9.870	10.100	10.170	11.520	11.520
REC E	(25 S)	AM	24-hr	10.370	11.720	10.310	9.880	10.140	11.720	11.720
REC E	(CNR)	AM	24-hr	10.060	9.690	10.580	10.570	11.030	11.030	11.030
REC E	(25 E)	AM	24-hr	7.220	6.920	7.040	6.890	7.660	7.660	7.660
REC E	(50 E)	AM	24-hr	5.730	5.240	5.570	5.470	4.660	5.730	5.730
REC E	(MID E)	AM	24-hr	4.020	3.810	4.020	3.950	3.530	4.020	4.020
REC E	(MID E)	AM	24-hr	3.820	3.870	3.980	3.560	3.340	3.980	3.980
REC E	(50 E)	AM	24-hr	4.210	4.380	4.310	4.040	3.610	4.380	4.380
REC E	(25 E)	AM	24-hr	4.440	4.490	4.360	4.140	3.620	4.490	4.490
REC E	(CNR)	AM	24-hr	4.770	5.150	4.890	4.530	4.180	5.150	5.150
REC E	(25 N)	AM	24-hr	3.710	3.960	4.340	3.590	3.610	4.340	4.340
REC E	(50 N)	AM	24-hr	4.300	4.320	4.680	4.160	4.150	4.680	4.680
REC E	(MID N)	AM	24-hr	4.000	3.620	4.350	3.600	4.170	4.350	4.350
REC W	(MID N)	AM	24-hr	5.150	5.200	5.320	5.870	5.430	5.870	5.870
REC W	(50 N)	AM	24-hr	5.550	5.450	5.910	5.860	5.590	5.910	5.910
REC W	(25 N)	AM	24-hr	5.020	4.710	5.730	4.840	5.140	5.730	5.730
REC W	(CNR)	AM	24-hr	4.110	4.010	5.210	4.070	4.490	5.210	5.210
REC W	(CNR)	AM	24-hr	3.920	4.040	4.770	4.040	4.690	4.770	4.770
REC W	(25 S)	AM	24-hr	3.770	3.720	4.100	3.770	4.330	4.330	4.330
REC W	(50 S)	AM	24-hr	3.690	3.720	4.030	3.800	4.260	4.260	4.260
REC W	(MID S)	AM	24-hr	3.760	3.730	4.130	3.790	4.330	4.330	4.330
REC W	(MID W)	AM	24-hr	4.010	4.210	4.220	4.160	4.960	4.960	4.960
REC W	(50 W)	AM	24-hr	4.220	4.580	4.430	4.180	5.110	5.110	5.110
REC W	(25 W)	AM	24-hr	5.100	5.720	5.030	4.860	6.160	6.160	6.160
REC W	(CNR)	AM	24-hr	6.700	7.220	7.020	6.920	8.320	8.320	8.320
REC W	(25 S)	AM	24-hr	6.600	6.480	6.740	6.830	8.030	8.030	8.030
REC W	(50 S)	AM	24-hr	6.290	6.120	6.060	6.070	7.460	7.460	7.460
REC W	(MID S)	AM	24-hr	5.070	4.200	4.090	5.120	5.280	5.280	5.280
REC E	(MID S)	AM	24-hr	2.830	2.670	2.660	2.820	3.340	3.340	3.340
REC E	(50 S)	AM	24-hr	3.600	3.310	3.380	3.700	4.240	4.240	4.240
REC E	(25 S)	AM	24-hr	4.400	4.130	4.250	4.580	5.260	5.260	5.260
REC E	(CNR)	AM	24-hr	7.250	7.600	8.060	7.970	9.100	9.100	9.100
REC E	(25 E)	AM	24-hr	6.230	6.840	7.390	6.900	8.160	8.160	8.160
REC E	(50 E)	AM	24-hr	5.610	6.070	6.490	6.010	7.310	7.310	7.310
REC E	(MID E)	AM	24-hr	6.070	6.620	6.940	6.570	7.980	7.980	7.980
REC E	(MID E)	AM	24-hr	6.210	5.770	6.300	5.730	6.590	6.590	6.590
REC E	(50 E)	AM	24-hr	5.590	5.180	5.460	5.080	5.590	5.590	5.590
REC E	(25 E)	AM	24-hr	5.450	4.960	5.500	5.040	5.290	5.500	5.500
REC E	(CNR)	AM	24-hr	5.510	5.420	5.850	5.630	5.520	5.850	5.850
REC E	(25 N)	AM	24-hr	3.610	3.710	3.780	3.900	3.390	3.900	3.900
REC E	(50 N)	AM	24-hr	3.560	3.780	3.710	3.810	3.350	3.810	3.810
REC E	(MID N)	AM	24-hr	3.020	3.320	3.010	3.380	2.540	3.380	3.380
REC W	(MID N)	AM	24-hr	3.560	3.560	4.450	3.540	3.980	4.450	4.450
REC W	(50 N)	AM	24-hr	3.980	3.810	4.350	3.850	4.550	4.550	4.550
REC W	(25 N)	AM	24-hr	4.230	4.390	5.240	4.310	4.860	5.240	5.240
REC W	(CNR)	AM	24-hr	6.010	5.780	6.290	5.550	6.480	6.480	6.480
REC W	(25 W)	AM	24-hr	5.210	4.510	5.050	4.310	5.090	5.210	5.210
REC W	(50 W)	AM	24-hr	4.810	4.100	4.660	3.870	4.640	4.810	4.810
REC W	(MID W)	AM	24-hr	4.440	3.800	4.270	3.510	4.300	4.440	4.440
REC W	(MID W)	AM	24-hr	5.540	5.530	6.140	5.910	6.580	6.580	6.580
REC W	(50 W)	AM	24-hr	5.870	6.060	6.960	6.490	7.360	7.360	7.360
REC W	(25 W)	AM	24-hr	6.440	6.640	7.670	7.090	8.010	8.010	8.010
REC W	(CNR)	AM	24-hr	7.430	7.480	8.500	8.550	9.210	9.210	9.210
REC W	(25 S)	AM	24-hr	4.860	5.300	5.210	5.870	6.300	6.300	6.300
REC W	(50 S)	AM	24-hr	4.020	4.420	4.300	5.010	5.250	5.250	5.250
REC W	(MID S)	AM	24-hr	3.630	3.920	3.800	4.470	4.640	4.640	4.640
Maximum Results									11.720	11.720

Air Quality Microscale Results
Site : Verrazano Bridge Toll Plaza
Scenario: 2014 No-Build
Pollutant: PM25
24-hr Background ($\mu g/m^3$): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 No-Build CAL3QHCR 24 Hr Year : 1996 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 1997 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 1998 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 1999 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Year : 2000 $\mu g/m^3$	2014 No-Build CAL3QHCR 24 Hr Maximum $\mu g/m^3$	2014 No-Build Total 24-hour Level $\mu g/m^3$
REC E	(MID S)	AM	24-hr	8.440	8.140	7.980	8.900	7.690	8.900	8.900
REC E	(50 S)	AM	24-hr	8.560	9.890	8.500	8.610	8.670	9.890	9.890
REC E	(25 S)	AM	24-hr	8.920	10.050	8.900	8.480	8.660	10.050	10.050
REC E	(CNR)	AM	24-hr	8.700	8.390	9.100	9.100	9.580	9.580	9.580
REC E	(25 E)	AM	24-hr	6.210	5.980	5.950	5.930	6.630	6.630	6.630
REC E	(50 E)	AM	24-hr	4.950	4.500	4.750	4.670	3.990	4.950	4.950
REC E	(MID E)	AM	24-hr	3.430	3.250	3.420	3.360	3.080	3.430	3.430
REC E	(MID E)	AM	24-hr	3.240	3.320	3.360	3.030	2.830	3.360	3.360
REC E	(50 E)	AM	24-hr	3.610	3.710	3.650	3.450	3.100	3.710	3.710
REC E	(25 E)	AM	24-hr	3.700	3.780	3.710	3.570	3.120	3.780	3.780
REC E	(CNR)	AM	24-hr	4.010	4.260	4.090	3.880	3.540	4.260	4.260
REC E	(25 N)	AM	24-hr	3.160	3.300	3.650	3.050	3.080	3.650	3.650
REC E	(50 N)	AM	24-hr	3.640	3.600	3.970	3.510	3.530	3.970	3.970
REC E	(MID N)	AM	24-hr	3.380	3.080	3.690	3.050	3.540	3.690	3.690
REC W	(MID N)	AM	24-hr	4.290	4.380	4.470	4.890	4.550	4.890	4.890
REC W	(50 N)	AM	24-hr	4.590	4.520	4.960	4.880	4.690	4.960	4.960
REC W	(25 N)	AM	24-hr	4.190	3.860	4.750	4.030	4.280	4.750	4.750
REC W	(CNR)	AM	24-hr	3.410	3.330	4.290	3.380	3.760	4.290	4.290
REC W	(CNR)	AM	24-hr	3.380	3.450	4.050	3.440	3.950	4.050	4.050
REC W	(25 S)	AM	24-hr	3.200	3.150	3.530	3.240	3.700	3.700	3.700
REC W	(50 S)	AM	24-hr	3.170	3.220	3.490	3.300	3.640	3.640	3.640
REC W	(MID S)	AM	24-hr	3.250	3.250	3.540	3.280	3.670	3.670	3.670
REC W	(MID W)	AM	24-hr	3.460	3.590	3.630	3.620	4.240	4.240	4.240
REC W	(50 W)	AM	24-hr	3.640	3.980	3.790	3.630	4.400	4.400	4.400
REC W	(25 W)	AM	24-hr	4.390	5.000	4.320	4.260	5.350	5.350	5.350
REC W	(CNR)	AM	24-hr	5.790	6.230	6.080	6.010	7.170	7.170	7.170
REC W	(25 S)	AM	24-hr	5.720	5.610	5.750	5.960	6.900	6.900	6.900
REC W	(50 S)	AM	24-hr	5.470	5.270	5.240	5.270	6.470	6.470	6.470
REC W	(MID S)	AM	24-hr	4.380	3.600	3.600	4.370	4.500	4.500	4.500
REC E	(MID S)	AM	24-hr	2.450	2.450	2.350	2.460	2.860	2.860	2.860
REC E	(50 S)	AM	24-hr	3.160	2.960	2.870	3.200	3.690	3.690	3.690
REC E	(25 S)	AM	24-hr	3.810	3.530	3.640	3.920	4.530	4.530	4.530
REC E	(CNR)	AM	24-hr	6.040	6.300	6.710	6.630	7.630	7.630	7.630
REC E	(25 E)	AM	24-hr	5.120	5.650	6.160	5.740	6.770	6.770	6.770
REC E	(50 E)	AM	24-hr	4.690	5.050	5.370	5.010	6.130	6.130	6.130
REC E	(MID E)	AM	24-hr	5.100	5.550	5.840	5.530	6.700	6.700	6.700
REC E	(MID E)	AM	24-hr	5.230	4.910	5.350	4.900	5.550	5.550	5.550
REC E	(50 E)	AM	24-hr	4.660	4.320	4.590	4.300	4.710	4.710	4.710
REC E	(25 E)	AM	24-hr	4.550	4.200	4.510	4.270	4.470	4.550	4.550
REC E	(CNR)	AM	24-hr	4.600	4.610	5.050	4.820	4.660	5.050	5.050
REC E	(25 N)	AM	24-hr	3.020	3.130	3.190	3.330	2.860	3.330	3.330
REC E	(50 N)	AM	24-hr	3.040	3.240	3.200	3.190	2.890	3.240	3.240
REC E	(MID N)	AM	24-hr	2.550	2.920	2.510	2.920	2.200	2.920	2.920
REC W	(MID N)	AM	24-hr	3.000	3.010	3.700	2.930	3.340	3.700	3.700
REC W	(50 N)	AM	24-hr	3.280	3.100	3.610	3.230	3.770	3.770	3.770
REC W	(25 N)	AM	24-hr	3.400	3.550	4.280	3.430	3.880	4.280	4.280
REC W	(CNR)	AM	24-hr	5.000	4.870	5.290	4.630	5.420	5.420	5.420
REC W	(25 W)	AM	24-hr	4.380	3.880	4.270	3.690	4.330	4.380	4.380
REC W	(50 W)	AM	24-hr	4.050	3.490	4.010	3.340	3.950	4.050	4.050
REC W	(MID W)	AM	24-hr	3.770	3.230	3.710	3.040	3.660	3.770	3.770
REC W	(MID W)	AM	24-hr	4.670	4.690	5.220	5.050	5.570	5.570	5.570
REC W	(50 W)	AM	24-hr	5.010	5.160	5.890	5.570	6.280	6.280	6.280
REC W	(25 W)	AM	24-hr	5.470	5.610	6.460	6.090	6.760	6.760	6.760
REC W	(CNR)	AM	24-hr	6.320	6.340	7.260	7.320	7.760	7.760	7.760
REC W	(25 S)	AM	24-hr	4.260	4.580	4.580	5.160	5.510	5.510	5.510
REC W	(50 S)	AM	24-hr	3.600	3.850	3.830	4.510	4.680	4.680	4.680
REC W	(MID S)	AM	24-hr	3.230	3.550	3.420	4.100	4.150	4.150	4.150
Maximum Results									10.050	10.050

Delta Analysis
Air Quality Microscale Results
Site : Verrazano Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM25
24-hr Background (μg/m³): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3QHCR 24 Hr Year : 1996 μg/m³	2014 Build CAL3QHCR 24 Hr Year : 1997 μg/m³	2014 Build CAL3QHCR 24 Hr Year : 1998 μg/m³	2014 Build CAL3QHCR 24 Hr Year : 1999 μg/m³	2014 Build CAL3QHCR 24 Hr Year : 2000 μg/m³	2014 Build CAL3QHCR 24 Hr Maximum μg/m³	2014 Build Total 24-hour Level μg/m³
REC E	(MID S)	AM	24-hr	1.440	1.370	1.320	1.480	1.360	1.480	1.480
REC E	(50 S)	AM	24-hr	1.380	1.630	1.370	1.490	1.500	1.630	1.630
REC E	(25 S)	AM	24-hr	1.450	1.670	1.410	1.400	1.480	1.670	1.670
REC E	(CNR)	AM	24-hr	1.360	1.300	1.480	1.470	1.450	1.480	1.480
REC E	(25 E)	AM	24-hr	1.010	0.940	1.090	0.960	1.030	1.090	1.090
REC E	(50 E)	AM	24-hr	0.780	0.740	0.820	0.800	0.670	0.820	0.820
REC E	(MID E)	AM	24-hr	0.590	0.560	0.600	0.590	0.450	0.600	0.600
REC E	(MID E)	AM	24-hr	0.580	0.550	0.620	0.530	0.510	0.620	0.620
REC E	(50 E)	AM	24-hr	0.600	0.670	0.660	0.590	0.510	0.670	0.670
REC E	(25 E)	AM	24-hr	0.740	0.710	0.650	0.570	0.500	0.740	0.740
REC E	(CNR)	AM	24-hr	0.760	0.890	0.800	0.650	0.640	0.890	0.890
REC E	(25 N)	AM	24-hr	0.550	0.660	0.690	0.540	0.530	0.690	0.690
REC E	(50 N)	AM	24-hr	0.660	0.720	0.710	0.650	0.620	0.720	0.720
REC E	(MID N)	AM	24-hr	0.620	0.540	0.660	0.550	0.630	0.660	0.660
REC W	(MID N)	AM	24-hr	0.860	0.820	0.850	0.980	0.880	0.980	0.980
REC W	(50 N)	AM	24-hr	0.960	0.930	0.950	0.980	0.900	0.980	0.980
REC W	(25 N)	AM	24-hr	0.830	0.850	0.980	0.810	0.860	0.980	0.980
REC W	(CNR)	AM	24-hr	0.700	0.680	0.920	0.690	0.730	0.920	0.920
REC W	(CNR)	AM	24-hr	0.540	0.590	0.720	0.600	0.740	0.740	0.740
REC W	(25 S)	AM	24-hr	0.570	0.570	0.570	0.530	0.630	0.630	0.630
REC W	(50 S)	AM	24-hr	0.520	0.500	0.540	0.500	0.620	0.620	0.620
REC W	(MID S)	AM	24-hr	0.510	0.480	0.590	0.510	0.660	0.660	0.660
REC W	(MID W)	AM	24-hr	0.550	0.620	0.590	0.540	0.720	0.720	0.720
REC W	(50 W)	AM	24-hr	0.580	0.600	0.640	0.550	0.710	0.710	0.710
REC W	(25 W)	AM	24-hr	0.710	0.720	0.710	0.600	0.810	0.810	0.810
REC W	(CNR)	AM	24-hr	0.910	0.990	0.940	0.910	1.150	1.150	1.150
REC W	(25 S)	AM	24-hr	0.880	0.870	0.990	0.870	1.130	1.130	1.130
REC W	(50 S)	AM	24-hr	0.820	0.850	0.820	0.800	0.990	0.990	0.990
REC W	(MID S)	AM	24-hr	0.690	0.600	0.490	0.750	0.780	0.780	0.780
REC E	(MID S)	AM	24-hr	0.380	0.220	0.310	0.360	0.480	0.480	0.480
REC E	(50 S)	AM	24-hr	0.440	0.350	0.510	0.500	0.550	0.550	0.550
REC E	(25 S)	AM	24-hr	0.590	0.600	0.610	0.660	0.730	0.730	0.730
REC E	(CNR)	AM	24-hr	1.210	1.300	1.350	1.340	1.470	1.470	1.470
REC E	(25 E)	AM	24-hr	1.110	1.190	1.230	1.160	1.390	1.390	1.390
REC E	(50 E)	AM	24-hr	0.920	1.020	1.120	1.000	1.180	1.180	1.180
REC E	(MID E)	AM	24-hr	0.970	1.070	1.100	1.040	1.280	1.280	1.280
REC E	(MID E)	AM	24-hr	0.980	0.860	0.950	0.830	1.040	1.040	1.040
REC E	(50 E)	AM	24-hr	0.930	0.860	0.870	0.780	0.880	0.930	0.930
REC E	(25 E)	AM	24-hr	0.900	0.760	0.990	0.770	0.820	0.990	0.990
REC E	(CNR)	AM	24-hr	0.910	0.810	0.800	0.810	0.860	0.910	0.910
REC E	(25 N)	AM	24-hr	0.590	0.580	0.590	0.570	0.530	0.590	0.590
REC E	(50 N)	AM	24-hr	0.520	0.540	0.510	0.620	0.460	0.620	0.620
REC E	(MID N)	AM	24-hr	0.470	0.400	0.500	0.460	0.340	0.500	0.500
REC W	(MID N)	AM	24-hr	0.560	0.550	0.750	0.610	0.640	0.750	0.750
REC W	(50 N)	AM	24-hr	0.700	0.710	0.740	0.620	0.780	0.780	0.780
REC W	(25 N)	AM	24-hr	0.830	0.840	0.960	0.880	0.980	0.980	0.980
REC W	(CNR)	AM	24-hr	1.010	0.910	1.000	0.920	1.060	1.060	1.060
REC W	(25 W)	AM	24-hr	0.830	0.630	0.780	0.620	0.760	0.830	0.830
REC W	(50 W)	AM	24-hr	0.760	0.610	0.650	0.530	0.690	0.760	0.760
REC W	(MID W)	AM	24-hr	0.670	0.570	0.560	0.470	0.640	0.670	0.670
REC W	(MID W)	AM	24-hr	0.870	0.840	0.920	0.860	1.010	1.010	1.010
REC W	(50 W)	AM	24-hr	0.860	0.900	1.070	0.920	1.080	1.080	1.080
REC W	(25 W)	AM	24-hr	0.970	1.030	1.210	1.000	1.250	1.250	1.250
REC W	(CNR)	AM	24-hr	1.110	1.140	1.240	1.230	1.450	1.450	1.450
REC W	(25 S)	AM	24-hr	0.600	0.720	0.630	0.710	0.790	0.790	0.790
REC W	(50 S)	AM	24-hr	0.420	0.570	0.470	0.500	0.570	0.570	0.570
REC W	(MID S)	AM	24-hr	0.400	0.370	0.380	0.370	0.490	0.490	0.490
Maximum Results									1.670	1.670

Representative Goethals Bridge Toll Plaza Annual Neighborhood PM2.5 Results

Air Quality Microscale Results
Site : Goethals Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM2.5

Annual Background (mg/m3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3Q Annual Year : 1996 µg/m^3	2014 Build CAL3Q Annual Year : 1997 µg/m^3	2014 Build CAL3Q Annual Year : 1998 µg/m^3	2014 Build CAL3Q Annual Year : 1999 µg/m^3	2014 Build CAL3Q Annual Year : 2000 µg/m^3	2014 Build CAL3Q Annual Maximum µg/m^3	2014 Build Total Annual Level µg/m^3
REC E	(50 S)	AM	Annual	0.491	0.485	0.484	0.465	0.456	0.491	0.491
REC E	(25 S)	AM	Annual	0.378	0.381	0.378	0.364	0.355	0.381	0.381
REC E	(CNR)	AM	Annual	0.337	0.342	0.342	0.327	0.319	0.342	0.342
REC E	(25 E)	AM	Annual	0.283	0.284	0.286	0.274	0.268	0.286	0.286
REC E	(50 E)	AM	Annual	0.243	0.245	0.245	0.235	0.230	0.245	0.245
REC E	(MID E)	AM	Annual	0.204	0.202	0.207	0.196	0.189	0.207	0.207
REC E	(MID E)	AM	Annual	0.151	0.150	0.152	0.143	0.137	0.152	0.152
REC E	(50 E)	AM	Annual	0.183	0.184	0.184	0.175	0.166	0.184	0.184
REC E	(CNR)	AM	Annual	0.230	0.237	0.232	0.224	0.215	0.237	0.237
REC E	(50 N)	AM	Annual	0.176	0.184	0.181	0.172	0.167	0.184	0.184
REC E	(MID N)	AM	Annual	0.123	0.129	0.126	0.120	0.117	0.129	0.129
REC W	(50 N)	AM	Annual	0.188	0.179	0.187	0.178	0.170	0.188	0.188
REC W	(25 N)	AM	Annual	0.224	0.215	0.221	0.212	0.202	0.224	0.224
REC W	(CNR)	AM	Annual	0.270	0.260	0.264	0.255	0.243	0.270	0.270
REC W	(25 W)	AM	Annual	0.268	0.258	0.261	0.253	0.240	0.268	0.268
REC W	(50 W)	AM	Annual	0.273	0.263	0.265	0.256	0.245	0.273	0.273
REC W	(MID W)	AM	Annual	0.475	0.456	0.464	0.446	0.433	0.475	0.475
REC W	(50 W)	AM	Annual	0.409	0.394	0.403	0.388	0.378	0.409	0.409
REC W	(CNR)	AM	Annual	0.381	0.364	0.376	0.361	0.350	0.381	0.381
REC W	(50 S)	AM	Annual	0.506	0.477	0.489	0.471	0.457	0.506	0.506
RECID	(N)	AM	Annual	0.166	0.160	0.179	0.167	0.170	0.179	0.179
REC 0	(N)	AM	Annual	0.160	0.154	0.173	0.163	0.166	0.173	0.173
REC 5	(N)	AM	Annual	0.150	0.145	0.163	0.152	0.158	0.163	0.163
REC	(CNR)	AM	Annual	0.138	0.136	0.153	0.143	0.143	0.153	0.153
REC	(CNR)	AM	Annual	0.137	0.133	0.148	0.140	0.138	0.148	0.148
REC 5	(S)	AM	Annual	0.122	0.117	0.130	0.123	0.125	0.130	0.130
REC 0	(S)	AM	Annual	0.107	0.102	0.114	0.107	0.111	0.114	0.114
RECID	(S)	AM	Annual	0.092	0.088	0.099	0.093	0.097	0.099	0.099
REC34		AM	Annual	0.118	0.115	0.119	0.112	0.106	0.119	0.119
REC35		AM	Annual	0.107	0.099	0.104	0.099	0.092	0.107	0.107
REC36		AM	Annual	0.271	0.258	0.258	0.251	0.240	0.271	0.271
REC37		AM	Annual	0.282	0.267	0.268	0.261	0.249	0.282	0.282
REC38		AM	Annual	0.182	0.179	0.199	0.186	0.188	0.199	0.199
REC39		AM	Annual	0.203	0.203	0.224	0.210	0.212	0.224	0.224
REC40		AM	Annual	0.114	0.122	0.119	0.112	0.110	0.122	0.122
REC41		AM	Annual	0.086	0.077	0.084	0.078	0.075	0.086	0.086
Maximum Results									0.506	0.506

Air Quality Microscale Results
Site : Goethals Bridge Toll Plaza
Scenario: 2014 No-Build
Pollutant: PM2.5
Annual Background (mg/m3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 No-Build CAL3Q Annual Year : 1996 µg/m^3	2014 No-Build CAL3Q Annual Year : 1997 µg/m^3	2014 No-Build CAL3Q Annual Year : 1998 µg/m^3	2014 No-Build CAL3Q Annual Year : 1999 µg/m^3	2014 No-Build CAL3Q Annual Year : 2000 µg/m^3	2014 No-Build CAL3Q Annual Maximum µg/m^3	2014 No-Build Total Annual Level µg/m^3
REC E	(50 S)	AM	Annual	0.374	0.368	0.366	0.352	0.347	0.374	0.374
REC E	(25 S)	AM	Annual	0.281	0.283	0.281	0.270	0.263	0.283	0.283
REC E	(CNR)	AM	Annual	0.244	0.251	0.250	0.238	0.232	0.251	0.251
REC E	(25 E)	AM	Annual	0.207	0.207	0.207	0.197	0.194	0.207	0.207
REC E	(50 E)	AM	Annual	0.174	0.174	0.175	0.166	0.161	0.175	0.175
REC E	(MID E)	AM	Annual	0.143	0.142	0.146	0.138	0.131	0.146	0.146
REC E	(MID E)	AM	Annual	0.099	0.099	0.101	0.094	0.089	0.101	0.101
REC E	(50 E)	AM	Annual	0.122	0.121	0.123	0.116	0.110	0.123	0.123
REC E	(CNR)	AM	Annual	0.159	0.162	0.161	0.155	0.148	0.162	0.162
REC E	(50 N)	AM	Annual	0.116	0.121	0.120	0.114	0.111	0.121	0.121
REC E	(MID N)	AM	Annual	0.078	0.081	0.081	0.075	0.072	0.081	0.081
REC W	(50 N)	AM	Annual	0.127	0.121	0.127	0.120	0.112	0.127	0.127
REC W	(25 N)	AM	Annual	0.155	0.149	0.154	0.147	0.140	0.155	0.155
REC W	(CNR)	AM	Annual	0.187	0.181	0.184	0.178	0.168	0.187	0.187
REC W	(25 W)	AM	Annual	0.186	0.179	0.181	0.176	0.167	0.186	0.186
REC W	(50 W)	AM	Annual	0.191	0.185	0.186	0.180	0.171	0.191	0.191
REC W	(MID W)	AM	Annual	0.361	0.347	0.353	0.340	0.328	0.361	0.361
REC W	(50 W)	AM	Annual	0.307	0.295	0.301	0.290	0.281	0.307	0.307
REC W	(CNR)	AM	Annual	0.280	0.269	0.276	0.265	0.255	0.280	0.280
REC W	(50 S)	AM	Annual	0.389	0.367	0.375	0.362	0.350	0.389	0.389
RECID	(N)	AM	Annual	0.122	0.118	0.133	0.124	0.127	0.133	0.133
REC 0	(N)	AM	Annual	0.118	0.113	0.127	0.118	0.122	0.127	0.127
REC 5	(N)	AM	Annual	0.109	0.106	0.118	0.109	0.115	0.118	0.118
REC	(CNR)	AM	Annual	0.101	0.099	0.112	0.104	0.105	0.112	0.112
REC	(CNR)	AM	Annual	0.099	0.096	0.108	0.101	0.100	0.108	0.108
REC 5	(S)	AM	Annual	0.089	0.084	0.096	0.090	0.092	0.096	0.096
REC 0	(S)	AM	Annual	0.077	0.074	0.083	0.078	0.081	0.083	0.083
RECID	(S)	AM	Annual	0.065	0.062	0.070	0.066	0.068	0.070	0.070
REC34		AM	Annual	0.079	0.076	0.079	0.076	0.071	0.079	0.079
REC35		AM	Annual	0.075	0.068	0.073	0.069	0.063	0.075	0.075
REC36		AM	Annual	0.193	0.184	0.186	0.179	0.171	0.193	0.193
REC37		AM	Annual	0.210	0.198	0.199	0.193	0.184	0.210	0.210
REC38		AM	Annual	0.137	0.133	0.149	0.138	0.141	0.149	0.149
REC39		AM	Annual	0.157	0.157	0.173	0.163	0.166	0.173	0.173
REC40		AM	Annual	0.073	0.079	0.078	0.072	0.071	0.079	0.079
REC41		AM	Annual	0.054	0.048	0.055	0.050	0.047	0.055	0.055
Maximum Results									0.389	0.389

Delta Analysis
Air Quality Microscale Results
Site : Goethals Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM2.5
Annual Background (mg/m3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3Q Annual Year : 1996 µg/m^3	2014 Build CAL3Q Annual Year : 1997 µg/m^3	2014 Build CAL3Q Annual Year : 1998 µg/m^3	2014 Build CAL3Q Annual Year : 1999 µg/m^3	2014 Build CAL3Q Annual Year : 2000 µg/m^3	2014 Build CAL3Q Annual Maximum µg/m^3	2014 Build Total Annual Level µg/m^3
REC E	(50 S)	AM	Annual	0.117	0.117	0.118	0.113	0.109	0.118	0.118
REC E	(25 S)	AM	Annual	0.097	0.097	0.097	0.094	0.093	0.097	0.097
REC E	(CNR)	AM	Annual	0.093	0.091	0.092	0.089	0.087	0.093	0.093
REC E	(25 E)	AM	Annual	0.076	0.078	0.079	0.076	0.075	0.079	0.079
REC E	(50 E)	AM	Annual	0.070	0.071	0.070	0.069	0.069	0.071	0.071
REC E	(MID E)	AM	Annual	0.060	0.060	0.061	0.058	0.058	0.061	0.061
REC E	(MID E)	AM	Annual	0.052	0.050	0.051	0.049	0.047	0.052	0.052
REC E	(50 E)	AM	Annual	0.061	0.063	0.061	0.059	0.057	0.063	0.063
REC E	(CNR)	AM	Annual	0.071	0.075	0.071	0.068	0.068	0.075	0.075
REC E	(50 N)	AM	Annual	0.060	0.063	0.061	0.058	0.056	0.063	0.063
REC E	(MID N)	AM	Annual	0.045	0.048	0.045	0.045	0.045	0.048	0.048
REC W	(50 N)	AM	Annual	0.061	0.058	0.060	0.058	0.058	0.061	0.061
REC W	(25 N)	AM	Annual	0.069	0.066	0.067	0.065	0.063	0.069	0.069
REC W	(CNR)	AM	Annual	0.083	0.079	0.079	0.078	0.075	0.083	0.083
REC W	(25 W)	AM	Annual	0.082	0.078	0.080	0.077	0.073	0.082	0.082
REC W	(50 W)	AM	Annual	0.083	0.078	0.079	0.076	0.073	0.083	0.083
REC W	(MID W)	AM	Annual	0.114	0.109	0.111	0.107	0.106	0.114	0.114
REC W	(50 W)	AM	Annual	0.102	0.099	0.102	0.097	0.096	0.102	0.102
REC W	(CNR)	AM	Annual	0.101	0.095	0.100	0.096	0.095	0.101	0.101
REC W	(50 S)	AM	Annual	0.117	0.110	0.114	0.109	0.107	0.117	0.117
RECID	(N)	AM	Annual	0.043	0.042	0.047	0.043	0.043	0.047	0.047
REC 0	(N)	AM	Annual	0.042	0.041	0.047	0.045	0.044	0.047	0.047
REC 5	(N)	AM	Annual	0.041	0.039	0.045	0.043	0.043	0.045	0.045
REC	(CNR)	AM	Annual	0.038	0.037	0.041	0.039	0.039	0.041	0.041
REC	(CNR)	AM	Annual	0.037	0.037	0.040	0.039	0.039	0.040	0.040
REC 5	(S)	AM	Annual	0.032	0.032	0.034	0.033	0.034	0.034	0.034
REC 0	(S)	AM	Annual	0.030	0.029	0.032	0.030	0.030	0.032	0.032
RECID	(S)	AM	Annual	0.027	0.026	0.029	0.027	0.029	0.029	0.029
REC34		AM	Annual	0.039	0.039	0.039	0.037	0.035	0.039	0.039
REC35		AM	Annual	0.032	0.031	0.031	0.030	0.029	0.032	0.032
REC36		AM	Annual	0.078	0.073	0.072	0.071	0.069	0.078	0.078
REC37		AM	Annual	0.072	0.069	0.068	0.068	0.065	0.072	0.072
REC38		AM	Annual	0.045	0.046	0.050	0.047	0.047	0.050	0.050
REC39		AM	Annual	0.046	0.046	0.050	0.047	0.047	0.050	0.050
REC40		AM	Annual	0.040	0.043	0.042	0.040	0.039	0.043	0.043
REC41		AM	Annual	0.032	0.029	0.030	0.029	0.029	0.032	0.032
Maximum Results									0.118	0.118

Representative Verrazano Bridge Toll Plaza Annual Neighborhood PM2.5 Results

Air Quality Microscale Results
Site : Verrazano Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM2.5
Annual Background (mg/m3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3Q Annual Year : 1996 µg/m³	2014 Build CAL3Q Annual Year : 1997 µg/m³	2014 Build CAL3Q Annual Year : 1998 µg/m³	2014 Build CAL3Q Annual Year : 1999 µg/m³	2014 Build CAL3Q Annual Year : 2000 µg/m³	2014 Build CAL3Q Annual Maximum µg/m³	2014 Build Total Annual Level µg/m³
REC E	(MID S)	AM	Annual	1.085	1.169	1.141	1.082	1.085	1.169	1.169
REC E	(50 S)	AM	Annual	1.195	1.239	1.236	1.180	1.172	1.239	1.239
REC E	(25 S)	AM	Annual	1.301	1.335	1.350	1.292	1.280	1.350	1.350
REC E	(CNR)	AM	Annual	1.470	1.522	1.552	1.484	1.486	1.552	1.552
REC E	(25 E)	AM	Annual	1.201	1.251	1.281	1.217	1.237	1.281	1.281
REC E	(50 E)	AM	Annual	0.989	1.043	1.070	1.008	1.018	1.070	1.070
REC E	(MID E)	AM	Annual	0.767	0.805	0.828	0.785	0.789	0.828	0.828
REC E	(MID E)	AM	Annual	0.500	0.446	0.473	0.455	0.432	0.500	0.500
REC E	(50 E)	AM	Annual	0.506	0.455	0.479	0.462	0.441	0.506	0.506
REC E	(25 E)	AM	Annual	0.497	0.447	0.470	0.454	0.436	0.497	0.497
REC E	(CNR)	AM	Annual	0.496	0.468	0.485	0.464	0.451	0.496	0.496
REC E	(25 N)	AM	Annual	0.487	0.478	0.486	0.467	0.460	0.487	0.487
REC E	(50 N)	AM	Annual	0.460	0.453	0.461	0.443	0.436	0.461	0.461
REC E	(MID N)	AM	Annual	0.486	0.490	0.493	0.472	0.467	0.493	0.493
REC W	(MID N)	AM	Annual	0.305	0.237	0.283	0.267	0.248	0.305	0.305
REC W	(50 N)	AM	Annual	0.311	0.238	0.288	0.272	0.251	0.311	0.311
REC W	(25 N)	AM	Annual	0.295	0.227	0.276	0.261	0.241	0.295	0.295
REC W	(CNR)	AM	Annual	0.277	0.214	0.257	0.244	0.229	0.277	0.277
REC W	(CNR)	AM	Annual	0.267	0.205	0.244	0.232	0.221	0.267	0.267
REC W	(25 S)	AM	Annual	0.261	0.204	0.240	0.227	0.216	0.261	0.261
REC W	(50 S)	AM	Annual	0.267	0.210	0.243	0.230	0.221	0.267	0.267
REC W	(MID S)	AM	Annual	0.284	0.223	0.258	0.245	0.234	0.284	0.284
REC W	(MID W)	AM	Annual	0.284	0.274	0.310	0.298	0.302	0.310	0.310
REC W	(50 W)	AM	Annual	0.343	0.327	0.373	0.359	0.351	0.373	0.373
REC W	(25 W)	AM	Annual	0.430	0.404	0.462	0.444	0.435	0.462	0.462
REC W	(CNR)	AM	Annual	0.577	0.530	0.608	0.580	0.579	0.608	0.608
REC W	(25 S)	AM	Annual	0.581	0.528	0.604	0.584	0.590	0.604	0.604
REC W	(50 S)	AM	Annual	0.520	0.478	0.538	0.528	0.538	0.538	0.538
REC W	(MID S)	AM	Annual	0.453	0.418	0.457	0.454	0.471	0.471	0.471
REC E	(MID S)	AM	Annual	0.226	0.226	0.250	0.239	0.236	0.250	0.250
REC E	(50 S)	AM	Annual	0.286	0.287	0.318	0.301	0.300	0.318	0.318
REC E	(25 S)	AM	Annual	0.376	0.377	0.415	0.393	0.392	0.415	0.415
REC E	(CNR)	AM	Annual	0.634	0.635	0.697	0.655	0.664	0.697	0.697
REC E	(25 E)	AM	Annual	0.603	0.603	0.665	0.622	0.635	0.665	0.665
REC E	(50 E)	AM	Annual	0.556	0.558	0.614	0.574	0.585	0.614	0.614
REC E	(MID E)	AM	Annual	0.561	0.558	0.617	0.577	0.593	0.617	0.617
REC E	(MID E)	AM	Annual	0.658	0.568	0.613	0.593	0.566	0.658	0.658
REC E	(50 E)	AM	Annual	0.592	0.504	0.547	0.526	0.502	0.592	0.592
REC E	(25 E)	AM	Annual	0.557	0.473	0.515	0.495	0.470	0.557	0.557
REC E	(CNR)	AM	Annual	0.542	0.457	0.499	0.481	0.455	0.542	0.542
REC E	(25 N)	AM	Annual	0.356	0.289	0.324	0.311	0.293	0.356	0.356
REC E	(50 N)	AM	Annual	0.295	0.239	0.267	0.254	0.238	0.295	0.295
REC E	(MID N)	AM	Annual	0.237	0.189	0.215	0.204	0.193	0.237	0.237
REC W	(MID N)	AM	Annual	0.202	0.139	0.173	0.165	0.152	0.202	0.202
REC W	(50 N)	AM	Annual	0.252	0.177	0.216	0.206	0.194	0.252	0.252
REC W	(25 N)	AM	Annual	0.305	0.221	0.265	0.254	0.241	0.305	0.305
REC W	(CNR)	AM	Annual	0.513	0.402	0.458	0.441	0.419	0.513	0.513
REC W	(25 W)	AM	Annual	0.368	0.266	0.317	0.306	0.285	0.368	0.368
REC W	(50 W)	AM	Annual	0.307	0.199	0.255	0.245	0.219	0.307	0.307
REC W	(MID W)	AM	Annual	0.205	0.121	0.165	0.156	0.143	0.205	0.205
REC W	(MID W)	AM	Annual	0.287	0.263	0.321	0.302	0.299	0.321	0.321
REC W	(50 W)	AM	Annual	0.429	0.407	0.470	0.447	0.454	0.470	0.470
REC W	(25 W)	AM	Annual	0.491	0.478	0.541	0.511	0.516	0.541	0.541
REC W	(CNR)	AM	Annual	0.496	0.484	0.545	0.514	0.518	0.545	0.545
REC W	(25 S)	AM	Annual	0.360	0.347	0.394	0.375	0.376	0.394	0.394
REC W	(50 S)	AM	Annual	0.237	0.225	0.259	0.249	0.249	0.259	0.259
REC W	(MID S)	AM	Annual	0.200	0.186	0.214	0.209	0.210	0.214	0.214
Maximum Results									1.552	1.552

Air Quality Microscale Results
Site : Verrazano Bridge Toll Plaza
Scenario: 2014 No-Build
Pollutant: PM2.5
Annual Background (mg/m3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 No-Build CAL3Q Annual Year : 1996 µg/m^3	2014 No-Build CAL3Q Annual Year : 1997 µg/m^3	2014 No-Build CAL3Q Annual Year : 1998 µg/m^3	2014 No-Build CAL3Q Annual Year : 1999 µg/m^3	2014 No-Build CAL3Q Annual Year : 2000 µg/m^3	2014 No-Build CAL3Q Annual Maximum µg/m^3	2014 No-Build Total Annual Level µg/m^3
REC E	(MID S)	AM	Annual	1.042	1.126	1.098	1.041	1.044	1.126	1.126
REC E	(50 S)	AM	Annual	1.153	1.195	1.193	1.139	1.132	1.195	1.195
REC E	(25 S)	AM	Annual	1.257	1.290	1.303	1.247	1.235	1.303	1.303
REC E	(CNR)	AM	Annual	1.421	1.471	1.502	1.435	1.438	1.502	1.502
REC E	(25 E)	AM	Annual	1.165	1.213	1.244	1.180	1.199	1.244	1.244
REC E	(50 E)	AM	Annual	0.960	1.012	1.038	0.979	0.987	1.038	1.038
REC E	(MID E)	AM	Annual	0.744	0.779	0.803	0.760	0.765	0.803	0.803
REC E	(MID E)	AM	Annual	0.481	0.429	0.455	0.437	0.414	0.481	0.481
REC E	(50 E)	AM	Annual	0.485	0.435	0.459	0.442	0.422	0.485	0.485
REC E	(25 E)	AM	Annual	0.477	0.426	0.451	0.435	0.417	0.477	0.477
REC E	(CNR)	AM	Annual	0.467	0.437	0.455	0.435	0.422	0.467	0.467
REC E	(25 N)	AM	Annual	0.464	0.454	0.462	0.444	0.436	0.464	0.464
REC E	(50 N)	AM	Annual	0.437	0.432	0.438	0.421	0.413	0.438	0.438
REC E	(MID N)	AM	Annual	0.463	0.466	0.469	0.450	0.444	0.469	0.469
REC W	(MID N)	AM	Annual	0.292	0.226	0.271	0.255	0.237	0.292	0.292
REC W	(50 N)	AM	Annual	0.295	0.226	0.274	0.258	0.239	0.295	0.295
REC W	(25 N)	AM	Annual	0.280	0.215	0.262	0.248	0.229	0.280	0.280
REC W	(CNR)	AM	Annual	0.263	0.203	0.245	0.232	0.219	0.263	0.263
REC W	(CNR)	AM	Annual	0.253	0.196	0.233	0.220	0.210	0.253	0.253
REC W	(25 S)	AM	Annual	0.250	0.196	0.230	0.217	0.207	0.250	0.250
REC W	(50 S)	AM	Annual	0.256	0.201	0.234	0.221	0.212	0.256	0.256
REC W	(MID S)	AM	Annual	0.274	0.216	0.249	0.236	0.225	0.274	0.274
REC W	(MID W)	AM	Annual	0.274	0.264	0.300	0.287	0.290	0.300	0.300
REC W	(50 W)	AM	Annual	0.331	0.315	0.361	0.347	0.340	0.361	0.361
REC W	(25 W)	AM	Annual	0.416	0.391	0.447	0.430	0.420	0.447	0.447
REC W	(CNR)	AM	Annual	0.556	0.511	0.587	0.560	0.559	0.587	0.587
REC W	(25 S)	AM	Annual	0.560	0.510	0.582	0.562	0.569	0.582	0.582
REC W	(50 S)	AM	Annual	0.500	0.459	0.518	0.508	0.518	0.518	0.518
REC W	(MID S)	AM	Annual	0.435	0.401	0.439	0.435	0.452	0.452	0.452
REC E	(MID S)	AM	Annual	0.223	0.225	0.247	0.236	0.233	0.247	0.247
REC E	(50 S)	AM	Annual	0.282	0.284	0.313	0.296	0.296	0.313	0.313
REC E	(25 S)	AM	Annual	0.368	0.370	0.407	0.385	0.384	0.407	0.407
REC E	(CNR)	AM	Annual	0.614	0.618	0.675	0.635	0.644	0.675	0.675
REC E	(25 E)	AM	Annual	0.580	0.580	0.639	0.598	0.610	0.639	0.639
REC E	(50 E)	AM	Annual	0.534	0.535	0.591	0.553	0.563	0.591	0.591
REC E	(MID E)	AM	Annual	0.539	0.536	0.592	0.555	0.569	0.592	0.592
REC E	(MID E)	AM	Annual	0.636	0.548	0.593	0.573	0.548	0.636	0.636
REC E	(50 E)	AM	Annual	0.570	0.486	0.527	0.508	0.485	0.570	0.570
REC E	(25 E)	AM	Annual	0.536	0.454	0.494	0.476	0.452	0.536	0.536
REC E	(CNR)	AM	Annual	0.514	0.433	0.474	0.457	0.433	0.514	0.514
REC E	(25 N)	AM	Annual	0.339	0.276	0.310	0.297	0.279	0.339	0.339
REC E	(50 N)	AM	Annual	0.282	0.228	0.255	0.242	0.227	0.282	0.282
REC E	(MID N)	AM	Annual	0.223	0.177	0.200	0.191	0.181	0.223	0.223
REC W	(MID N)	AM	Annual	0.191	0.131	0.164	0.155	0.143	0.191	0.191
REC W	(50 N)	AM	Annual	0.238	0.167	0.205	0.194	0.184	0.238	0.238
REC W	(25 N)	AM	Annual	0.290	0.211	0.252	0.242	0.229	0.290	0.290
REC W	(CNR)	AM	Annual	0.494	0.388	0.441	0.425	0.404	0.494	0.494
REC W	(25 W)	AM	Annual	0.356	0.259	0.307	0.296	0.275	0.356	0.356
REC W	(50 W)	AM	Annual	0.299	0.194	0.249	0.239	0.213	0.299	0.299
REC W	(MID W)	AM	Annual	0.201	0.118	0.161	0.153	0.139	0.201	0.201
REC W	(MID W)	AM	Annual	0.279	0.257	0.312	0.294	0.291	0.312	0.312
REC W	(50 W)	AM	Annual	0.417	0.396	0.456	0.433	0.440	0.456	0.456
REC W	(25 W)	AM	Annual	0.473	0.462	0.522	0.492	0.499	0.522	0.522
REC W	(CNR)	AM	Annual	0.480	0.469	0.528	0.497	0.502	0.528	0.528
REC W	(25 S)	AM	Annual	0.351	0.339	0.385	0.365	0.366	0.385	0.385
REC W	(50 S)	AM	Annual	0.233	0.220	0.254	0.245	0.245	0.254	0.254
REC W	(MID S)	AM	Annual	0.197	0.183	0.213	0.206	0.207	0.213	0.213
Maximum Results									1.502	1.502

Delta Analysis
Air Quality Microscale Results
Site : Verrazano Bridge Toll Plaza
Scenario: 2014 Build
Pollutant: PM2.5
Annual Background (mg/m3): 0

Receptor #	Description	Emission for Time Period	Analysis Period	2014 Build CAL3Q Annual Year : 1996 µg/m^3	2014 Build CAL3Q Annual Year : 1997 µg/m^3	2014 Build CAL3Q Annual Year : 1998 µg/m^3	2014 Build CAL3Q Annual Year : 1999 µg/m^3	2014 Build CAL3Q Annual Year : 2000 µg/m^3	2014 Build CAL3Q Annual Maximum µg/m^3	2014 Build Total Annual Level µg/m^3
REC E	(MID S)	AM	Annual	0.043	0.043	0.043	0.041	0.041	0.043	0.043
REC E	(50 S)	AM	Annual	0.042	0.044	0.043	0.041	0.040	0.044	0.044
REC E	(25 S)	AM	Annual	0.044	0.045	0.047	0.045	0.045	0.047	0.047
REC E	(CNR)	AM	Annual	0.049	0.051	0.050	0.049	0.048	0.051	0.051
REC E	(25 E)	AM	Annual	0.036	0.038	0.037	0.037	0.038	0.038	0.038
REC E	(50 E)	AM	Annual	0.029	0.031	0.032	0.029	0.031	0.032	0.032
REC E	(MID E)	AM	Annual	0.023	0.026	0.025	0.025	0.024	0.026	0.026
REC E	(MID E)	AM	Annual	0.019	0.017	0.018	0.018	0.018	0.019	0.019
REC E	(50 E)	AM	Annual	0.021	0.020	0.020	0.020	0.019	0.021	0.021
REC E	(25 E)	AM	Annual	0.020	0.021	0.019	0.019	0.019	0.021	0.021
REC E	(CNR)	AM	Annual	0.029	0.031	0.030	0.029	0.029	0.031	0.031
REC E	(25 N)	AM	Annual	0.023	0.024	0.024	0.023	0.024	0.024	0.024
REC E	(50 N)	AM	Annual	0.023	0.021	0.023	0.022	0.023	0.023	0.023
REC E	(MID N)	AM	Annual	0.023	0.024	0.024	0.022	0.023	0.024	0.024
REC W	(MID N)	AM	Annual	0.013	0.011	0.012	0.012	0.011	0.013	0.013
REC W	(50 N)	AM	Annual	0.016	0.012	0.014	0.014	0.012	0.016	0.016
REC W	(25 N)	AM	Annual	0.015	0.012	0.014	0.013	0.012	0.015	0.015
REC W	(CNR)	AM	Annual	0.014	0.011	0.012	0.012	0.010	0.014	0.014
REC W	(CNR)	AM	Annual	0.014	0.009	0.011	0.012	0.011	0.014	0.014
REC W	(25 S)	AM	Annual	0.011	0.008	0.010	0.010	0.009	0.011	0.011
REC W	(50 S)	AM	Annual	0.011	0.009	0.009	0.009	0.009	0.011	0.011
REC W	(MID S)	AM	Annual	0.010	0.007	0.009	0.009	0.009	0.010	0.010
REC W	(MID W)	AM	Annual	0.010	0.010	0.010	0.011	0.012	0.012	0.012
REC W	(50 W)	AM	Annual	0.012	0.012	0.012	0.012	0.011	0.012	0.012
REC W	(25 W)	AM	Annual	0.014	0.013	0.015	0.014	0.015	0.015	0.015
REC W	(CNR)	AM	Annual	0.021	0.019	0.021	0.020	0.020	0.021	0.021
REC W	(25 S)	AM	Annual	0.021	0.018	0.022	0.022	0.021	0.022	0.022
REC W	(50 S)	AM	Annual	0.020	0.019	0.020	0.020	0.020	0.020	0.020
REC W	(MID S)	AM	Annual	0.018	0.017	0.018	0.019	0.019	0.019	0.019
REC E	(MID S)	AM	Annual	0.003	0.001	0.003	0.003	0.003	0.003	0.003
REC E	(50 S)	AM	Annual	0.004	0.003	0.005	0.005	0.004	0.005	0.005
REC E	(25 S)	AM	Annual	0.008	0.007	0.008	0.008	0.008	0.008	0.008
REC E	(CNR)	AM	Annual	0.020	0.017	0.022	0.020	0.020	0.022	0.022
REC E	(25 E)	AM	Annual	0.023	0.023	0.026	0.024	0.025	0.026	0.026
REC E	(50 E)	AM	Annual	0.022	0.023	0.023	0.021	0.022	0.023	0.023
REC E	(MID E)	AM	Annual	0.022	0.022	0.025	0.022	0.024	0.025	0.025
REC E	(MID E)	AM	Annual	0.022	0.020	0.020	0.020	0.018	0.022	0.022
REC E	(50 E)	AM	Annual	0.022	0.018	0.020	0.018	0.017	0.022	0.022
REC E	(25 E)	AM	Annual	0.021	0.019	0.021	0.019	0.018	0.021	0.021
REC E	(CNR)	AM	Annual	0.028	0.024	0.025	0.024	0.022	0.028	0.028
REC E	(25 N)	AM	Annual	0.017	0.013	0.014	0.014	0.014	0.017	0.017
REC E	(50 N)	AM	Annual	0.013	0.011	0.012	0.012	0.011	0.013	0.013
REC E	(MID N)	AM	Annual	0.014	0.012	0.015	0.013	0.012	0.015	0.015
REC W	(MID N)	AM	Annual	0.011	0.008	0.009	0.010	0.009	0.011	0.011
REC W	(50 N)	AM	Annual	0.014	0.010	0.011	0.012	0.010	0.014	0.014
REC W	(25 N)	AM	Annual	0.015	0.010	0.013	0.012	0.012	0.015	0.015
REC W	(CNR)	AM	Annual	0.019	0.014	0.017	0.016	0.015	0.019	0.019
REC W	(25 W)	AM	Annual	0.012	0.007	0.010	0.010	0.010	0.012	0.012
REC W	(50 W)	AM	Annual	0.008	0.005	0.006	0.006	0.006	0.008	0.008
REC W	(MID W)	AM	Annual	0.004	0.003	0.004	0.003	0.004	0.004	0.004
REC W	(MID W)	AM	Annual	0.008	0.006	0.009	0.008	0.008	0.009	0.009
REC W	(50 W)	AM	Annual	0.012	0.011	0.014	0.014	0.014	0.014	0.014
REC W	(25 W)	AM	Annual	0.018	0.016	0.019	0.019	0.017	0.019	0.019
REC W	(CNR)	AM	Annual	0.016	0.015	0.017	0.017	0.016	0.017	0.017
REC W	(25 S)	AM	Annual	0.009	0.008	0.009	0.010	0.010	0.010	0.010
REC W	(50 S)	AM	Annual	0.004	0.005	0.005	0.004	0.004	0.005	0.005
REC W	(MID S)	AM	Annual	0.003	0.003	0.001	0.003	0.003	0.003	0.003
Maximum Results									0.051	0.051

Representative CAL3QHC CO Input Files

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'REC 3 (NE CIRCLE)   '      1573.      2440.        1.8
'REC 4 (NE CIRCLE)   '      1570.      2422.        1.8
'REC 5 (NE CIRCLE)   '      1571.      2397.        1.8
'REC 6 (SE CIRCLE)   '      1563.      2362.        1.8
'REC 7 (SE CIRCLE)   '      1543.      2353.        1.8
'REC 8 (SE CIRCLE)   '      1459.      2360.        1.8
'REC 9 (SW CIRCLE)   '      1442.      2389.        1.8
'REC10 (SW CIRCLE)   '      1445.      2445.        1.8
'REC10 (NW CIRCLE)   '      1454.      2460.        1.8
'REC11 (NW CIRCLE)   '      1515.      2477.        1.8
'REC12 (NW CIRCLE)   '      1492.      2474.        1.8
'REC13 (NW CIRCLE)   '      1472.      2469.        1.8
'REC14 (NW ELMORA)   '      1436.      2477.        1.8
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'REC22 (SW CIRCLE)   '      1446.      2438.        1.8
'REC23 (SW CIRCLE)   '      1443.      2426.        1.8
'REC24 (SW CIRCLE)   '      1442.      2411.        1.8
'REC25 (SW RT19)     '      1425.      2369.        1.8
'REC26 (SW RT19)     '      1407.      2350.        1.8
'REC27 (SW RT19)     '      1389.      2330.        1.8
'REC28 (SW RT19)     '      1371.      2311.        1.8
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'REC31 (SW RT19)     '      1405.      2302.        1.8
'REC32 (SW RT19)     '      1388.      2282.        1.8
'REC33 (SE CIRCLE)   '      1476.      2349.        1.8
'REC34 (SE CIRCLE)   '      1502.      2341.        1.8
'REC35 (SE CIRCLE)   '      1522.      2346.        1.8
'REC36 (SE BAYWAY)   '      1565.      2335.        1.8
'REC37 (SE BAYWAY)   '      1585.      2318.        1.8
'REC38 (SE BAYWAY)   '      1606.      2300.        1.8
'REC39 (SE BAYWAY)   '      1626.      2282.        1.8
'REC40 (SE BAYWAY)   '      1582.      2344.        1.8
'REC41 (SE BAYWAY)   '      1602.      2326.        1.8
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'REC43 (SE BAYWAY)   '      1642.      2290.        1.8
'REC44 (SE CIRCLE)   '      1563.      2381.        1.8
'REC45 (NE RT19)     '      1570.      2477.        1.8
'REC46 (NE RT19)     '      1596.      2486.        1.8
'REC47 (NE RT19)     '      1622.      2496.        1.8
'REC48 (NE RT19)     '      1649.      2505.        1.8
'REC49 (NE RT19)     '      1599.      2449.        1.8
'REC50 (NE RT19)     '      1625.      2459.        1.8
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'REC52 (NE RT19)     '      1674.      2477.        1.8
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'34264-173407 19 S BR' 'AG' 1948. 2600. 2102. 2655. 0. 15.0
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'34271-34273  19 S BA' 'AG' 1451. 2382. 1504. 2425. 0. 18.0
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'172702-34250 19 S BA' 'AG' 1189. 2089. 1263. 2176. 0.  10. 3
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'34269-173408 19 N GR' 'AG' 1796. 2533. 1563. 2447. 0. 18.8
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'34270-34269  19 N BA' 'AG' 1537. 2430. 1469. 2382. 0. 11.9 3
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'34248-34255  19 N BA' 'AG' 1461. 2376. 1191. 2076. 0. 17.9
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'34248-34255  19 N BA' 'AG' 1455. 2370. 1407. 2317. 0. 11.9 3
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'34262-34261  CIRCLE ' 'AG' 1509. 2353. 1484. 2360. 0.   15
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  22 2
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  24 1
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'173411-9412  BW W CI' 'AG' 1559. 2355. 1551. 2372. 0.    9
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'9353-172706  ELM E E' 'AG' 1426. 2469. 1290. 2592. 0.  12.
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'9353-172706  ELM E E' 'AG' 1420. 2475. 1317. 2567. 0.   6. 1
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'9302-9353    ELM E L' 'AG' 1290. 2592. 1124. 2739. 0.  12.
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'9353-9302    ELM W N' 'AG' 1130. 2745. 1296. 2596. 0.  12.
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'172706-9353  ELM W N' 'AG' 1296. 2595. 1432. 2474. 0.  12.
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'172706-9353  ELM W L' 'AG' 1301. 2591. 1397. 2505. 0.   6. 2
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'34257-172706 ELM W E' 'AG' 1431. 2475. 1458. 2450. 0.  12.
  48 2
'34257-172706 ELM W E' 'AG' 1441. 2466. 1456. 2451. 0.   6. 2
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'34274-34254  19 S BW' 'AG' 1553. 2455. 1655. 2496. 0.  15.
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'34274-34254  19 S BW' 'AG' 1557. 2457. 1623. 2483. 0.   9. 4
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  3 2015 10.795
  4 1925 11.163
  5 120 43 2 1925 69.797 1629 1 3
  6 1925 11.163
  7 2010 10.843
  8 120 41 2 2010 69.797 1475 1 3
  9 2010 10.843
  10 2910 11.371
  11 2750 11.371
  12 120 38 2 2750 69.455 1623 1 3
  13 2665 18.789
  14 120 43 2 2665 69.455 1355 1 3
  15 2810 15.978
  16 120 43 2 2810 69.455 1560 1 3
  17 1105 19.377
  18 1105 19.377
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  26 951 23.741
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  28 120 80 2 951 69.593 696 1 3
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  30 585 23.741
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  32 465 11.004
  33 90 36 2 465 69.593 730 1 3
  34 695 12.093
  35 90 36 2 695 68.225 1358 1 3
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  37 90 35 2 620 68.225 1307 1 3
  38 620 12.892
  39 815 19.377
  40 1030 13.533
  41 90 41 2 1030 68.225 1358 1 3
  42 920 27.290
  43 90 39 2 920 68.225 1588 1 3
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  45 936 21.243
  46 90 39 2 936 69.593 770 1 3
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  48 90 60 2 906 69.593 789 1 3
  49 1665 11.125
  50 120 43 2 1665 69.797 1165 1 3
  51 1665 11.125
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99999 99 99999 99
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'REC 1 (NS BAYWAY)   '      2332.      1673.        1.8
'REC 2 (NS BAYWAY)   '      2342.      1673.        1.8
'REC 3 (SS BAYWAY)   '      2306.      1670.        1.8
'REC 4 (SS BAYWAY)   '      2305.      1661.        1.8
'REC 4 (NS ATLANTIC) '      2356.      1670.        1.8
'REC 5 (NS ATLANTIC) '      2382.      1672.        1.8
'REC 7 (NS ATLANTIC) '      2398.      1675.        1.8
'REC 8 (NS ATLANTIC) '      2423.      1675.        1.8
'REC 9 (NS ATLANTIC) '      2448.      1674.        1.8
'REC10 (SCHOOL ATLAN)'      2503.      1680.        1.8
'REC11 (SCHOOL ATLAN)'      2524.      1685.        1.8
'REC12 (SCHOOL ATLAN)'      2484.      1698.        1.8
'REC13 (SCHOOL ATLAN)'      2544.      1700.        1.8
'REC14 (SCHOOL ATLAN)'      2561.      1719.        1.8
'REC15 (SCHOOL ATLAN)'      2577.      1738.        1.8
'REC16 (SCHOOL ATLAN)'      2594.      1757.        1.8
'REC17 (BAYWAY)      '      2319.      1684.        1.8
'REC18 (BAYWAY)      '      2300.      1701.        1.8
'REC19 (BAYWAY)      '      2282.      1717.        1.8
'REC20 (BAYWAY)      '      2263.      1734.        1.8
'REC21 (BAYWAY)      '      2244.      1751.        1.8
'REC22 (BAYWAY)      '      2232.      1737.        1.8
'REC23 (BAYWAY)      '      2250.      1721.        1.8
'REC24 (BAYWAY)      '      2269.      1704.        1.8
'REC25 (BAYWAY)      '      2288.      1687.        1.8
'REC26 (BRUNSWICK)   '      2287.      1652.        1.8
'REC27 (BRUNSWICK)   '      2269.      1641.        1.8
'REC28 (SCHOOL)      '      2385.      1686.        1.8
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'173414-172712BW E AT' 'AG' 2312. 1673. 2242. 1736. 0.  5.8 2
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'11740-11733  LlySBon' 'AG' 578994. 494950. 578977. 494969. 0    9
  56 1
'11740-11733  LlySBon' 'AG' 578977. 494969. 578971. 494997. 0    9
  57 1
'11740-11733  LlySBon' 'AG' 578971. 494997. 578978. 495020. 0    9
  58 1
'11740-11733  LlySBon' 'AG' 578978. 495020. 578997. 495037. 0    9
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'11740-11733  LlySBon' 'AG' 578997. 495037. 579020. 495042. 0    9
  60 1
'11740-11733  LlySBon' 'AG' 579020. 495042. 579105. 495021. 0    9
  61 1
'33709-33708  LclnWBo' 'AG' 579042. 495333. 578905. 495249. 0   12
  62 1
'33709-33708  LclnWBo' 'AG' 578905. 495249. 578865. 495228. 0   12
  63 1
'33709-33708  LclnWBo' 'AG' 578865. 495228. 578825. 495220. 0   12
  64 1
'33709-33708  LclnWBo' 'AG' 578825. 495220. 578798. 495222. 0   12
  65 1
'33709-33708  LclnWBo' 'AG' 578798. 495222. 578760. 495233. 0   12
  66 1
'33706-33711  NrwsEBo' 'AG' 578825. 495164. 578869. 495127. 0   12
  67 1
'33706-33711  NrwsEBo' 'AG' 578869. 495127. 578894. 495096. 0   12
  68 1
'33706-33711  NrwsEBo' 'AG' 578894. 495096. 578975. 494958. 0   12
  69 1
'33706-33711  NrwsEBo' 'AG' 578975. 494958. 578984. 494946. 0   12
  70 1
'33706-33711  NrwsEBo' 'AG' 578984. 494946. 579004. 494929. 0   12
  71 1
'33706-33711  NrwsEBo' 'AG' 579004. 494929. 579038. 494917. 0   12
  72 1
'33706-33711  NrwsEBo' 'AG' 579038. 494917. 579061. 494916. 0   12
  73 1
'33706-33711  SIEEBof' 'AG' 579061. 494916. 579098. 494924. 0   12
  74 2
'33706-33711  NrwsEBQ' 'AG' 579086. 494921. 579064. 494917. 0.    6 2
  75 1
'11652-11755  Nrw-soE' 'AG' 578816. 495139. 578873. 495100. 0  15.
  76 1
'11652-11755  Nrw-soE' 'AG' 578873. 495100. 578892. 495078. 0  15.
  77 1
'11652-11755  Nrw-soE' 'AG' 578892. 495078. 578967. 494948. 0  15.
  78 1
'11652-11755  Nrw-soE' 'AG' 578967. 494948. 578994. 494922. 0  15.
  79 1
'11652-11755  Nrw-soE' 'AG' 578994. 494922. 579019. 494911. 0  15.
  80 1
'11652-11755  Nrw-soE' 'AG' 579019. 494911. 579049. 494905. 0  15.
  81 1
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'11652-11755  Nrw-soE' 'AG' 579049. 494905. 579101. 494908. 0  15.
  82 2
'11652-11755  Nrw-soE' 'AG' 579088. 494907. 579054. 494905. 0.    9 3
  83 1
'11734-11658  NrwsWB3' 'AG' 578986. 495138. 578921. 495177. 0   15
  84 1
'11734-11658  NrwsWB3' 'AG' 578921. 495177. 578765. 495259. 0   15
  85 2
'11734-11658  NrwsWBQ' 'AG' 578773. 495255. 578817. 495231. 0.    9 3
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'11658-11610  NrwsWBd' 'AG' 578766. 495259. 578692. 495297. 0   15
  87 1
'11604-11652  NrwsEB3' 'AG' 578658. 495214. 578741. 495172. 0   12
  88 2
'11604-11652  NrwsEBQ' 'AG' 578730. 495178. 578688. 495198. 0.    6 2
  89 1
'11652-11733  NrwsEBt' 'AG' 578741. 495172. 578817. 495139. 0   12
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'11652-11733  NrwsEBt' 'AG' 578823. 495137. 579098. 495024. 0   12
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'11587-11652  fb NB13' 'AG' 578645. 495003. 578666. 495004. 0    9
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  96 2
'11587-11652  fb NBQ3' 'AG' 578741. 495163. 578731. 495128. 0.    3 1
  97 1
'11652-11658  fb NB32' 'AG' 578744. 495173. 578768. 495257. 0   12
  98 2
'11652-11658  fb NBQ3' 'AG' 578766. 495250. 578757. 495217. 0.    6 2
  99 1
'11658-11692  fb NB13' 'AG' 578769. 495259. 578783. 495306. 0    9
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'11658-11692  fb NB13' 'AG' 578796. 495351. 578831. 495468. 0    9
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'11692-11658  fb SB13' 'AG' 578826. 495468. 578793. 495351. 0    9
  103 1
'11692-11658  fb SB13' 'AG' 578792. 495351. 578780. 495307. 0    9
  104 1
'11692-11658  fb SB32' 'AG' 578780. 495307. 578763. 495261. 0   12
  105 2
'11692-11658  fb SBQ3' 'AG' 578766. 495269. 578773. 495290. 0.    6 2
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'11658-11652  fb SB33' 'AG' 578762. 495260. 578739. 495177. 0   12
  107 2
'11658-11652  fb SBQ3' 'AG' 578740. 495182. 578749. 495212. 0.    6 2
  108 1
'11652-11587  fb SB13' 'AG' 578739. 495176. 578733. 495148. 0    9
  109 1
'11652-11587  fb SB13' 'AG' 578733. 495148. 578721. 495107. 0    9
  110 1
'11652-11587  fb SBde' 'AG' 578721. 495107. 578702. 495040. 0    9
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'11652-11587  fb SBde' 'AG' 578702. 495040. 578688. 495020. 0    9
  112 1
'11652-11587  fb SBde' 'AG' 578688. 495020. 578665. 495008. 0    9
  113 1
'11652-11587  fb SBde' 'AG' 578665. 495008. 578646. 495008. 0    9
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  1 5770 8.856
  2 5460 8.843
  3 4360 8.611
  4 4360 8.611
  5 7001 8.548
  6 6591 8.568
  7 6591 8.568
  8 10022 8.633
  9 12222 8.965
```

10 12222 8.965
11 550 7.462
12 550 7.462
13 550 7.462
14 90 45 2 550 40.43 1193 1 3
15 660 7.437
16 600 7.437
17 600 7.437
18 610 7.437
19 610 7.437
20 610 7.437
21 1165 8.484
22 1165 8.484
23 890 8.484
24 890 8.484
25 1405 8.484
26 300 8.484
27 90 45 2 300 45.826 1747 1 3
28 670 8.484
29 670 8.484
30 670 8.484
31 90 36 2 670 45.826 1219 0 3
32 2200 11.652
33 2200 11.652
34 2200 11.652
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36 2200 11.652
37 2200 11.652
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74 90 67 2 410 47.421 1582 1 3
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77 390 8.346
78 390 8.346
79 390 8.346
80 390 8.346
81 390 8.346
82 90 68 2 390 44.569 1621 0 3
83 585 8.068
84 585 8.068

85 120 55 2 585 47.182 1457 1 3
86 500 7.998
87 1705 9.177
88 120 55 2 1705 44.569 1348 1 3
89 2265 8.332
90 2265 8.332
91 775 17.338
92 775 17.338
93 775 17.338
94 775 17.338
95 775 17.338
96 120 65 2 775 46.372 1519 1 3
97 140 8.43
98 120 65 2 140 44.962 1356 1 3
99 145 8.43
100 775 17.338
101 145 8.43
102 420 9.568
103 420 9.568
104 420 9.568
105 120 65 2 420 45.517 1488 1 3
106 535 18.81
107 120 65 2 535 47.036 937 1 3
108 225 18.81
109 225 18.81
110 225 18.81
111 225 18.81
112 225 18.81
113 225 18.81

Representative CAL3QHC CO Output Files

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

==========
General Information
==========

Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to C for calculating CO averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 180. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99

Urban mixing heights were processed.

In 1999, Julian day 1 is a Friday.

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				*	LINK COORDINATES (M)				*	LENGTH				
BRG	TYPE	H	W	NLANES	*	X1	Y1	X2	Y2	*	(M)	(DEG)	(M)	(M)	
1.	34264-173407	19	S	GR*		1795.0	2545.0	1948.0	2600.0	*	163.	70.	AG	0.0	20.6
2.	34264-173407	19	S	GR*		1805.0	2549.0	1935.0	2595.0	*	138.	71.	AG	0.0	14.6 4
3.	34264-173407	19	S	BR*		1948.0	2600.0	2102.0	2655.0	*	164.	70.	AG	0.0	15.0
4.	34271-34273	19	S	BA*		1451.0	2382.0	1504.0	2425.0	*	68.	51.	AG	0.0	18.0
5.	34271-34273	19	S	BA*		1468.0	2396.0	1501.0	2422.0	*	42.	52.	AG	0.0	12.0 3
6.	34271-34273	19	S	BA*		1504.0	2425.0	1554.0	2456.0	*	59.	58.	AG	0.0	18.0
7.	172702-34250	19	S	BA*		1183.0	2082.0	1295.0	2214.0	*	173.	40.	AG	0.0	16.0
8.	172702-34250	19	S	BA*		1189.0	2089.0	1263.0	2176.0	*	114.	40.	AG	0.0	10.0 3
9.	172702-34250	19	S	BA*		1295.0	2214.0	1449.0	2383.0	*	229.	42.	AG	0.0	16.0
10.	173408-34268	19	N	BR*		2104.0	2642.0	1795.0	2533.0	*	328.	251.	AG	0.0	18.8
11.	34269-173408	19	N	GR*		1796.0	2533.0	1563.0	2447.0	*	248.	250.	AG	0.0	18.8
12.	34269-173408	19	N	GR*		1782.0	2528.0	1679.0	2490.0	*	110.	250.	AG	0.0	12.8 3
13.	34270-34269	19	N	BA*		1462.0	2377.0	1562.0	2448.0	*	123.	55.	AG	0.0	17.9
14.	34270-34269	19	N	BA*		1537.0	2430.0	1469.0	2382.0	*	83.	235.	AG	0.0	11.9 3
15.	34248-34255	19	N	BA*		1461.0	2376.0	1191.0	2076.0	*	404.	222.	AG	0.0	17.9

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          16. 34248-34255  19 N BA*   1455.0    2370.0    1407.0    2317.0 *      72.
222.  AG    0.0  11.9    3
          17. 34262-34261  CIRCLE *   1543.0    2369.0    1509.0    2353.0 *      38.
245.  AG    0.0  15.0
          18. 34262-34261  CIRCLE *   1509.0    2353.0    1484.0    2360.0 *      26.
286.  AG    0.0  15.0
          19. 34262-34261  CIRCLE *   1484.0    2360.0    1460.0    2381.0 *      32.
311.  AG    0.0  15.0
          20. 34259-34263  CIR E 1*   1462.0    2380.0    1453.0    2399.0 *      21.
335.  AG    0.0  15.2
          21. 34259-34263  CIR E 1*   1453.0    2399.0    1457.0    2445.0 *      46.
5.  AG    0.0  15.2
          22. 34259-34263  CIR E 1*   1453.0    2401.0    1457.0    2443.0 *      42.
5.  AG    0.0  15.2    4
          23. 34275-34258  CIR E E*   1457.0    2445.0    1480.0    2460.0 *      27.
57.  AG    0.0  15.2
          24. 34275-34258  CIR E E*   1480.0    2460.0    1513.0    2466.0 *      34.
80.  AG    0.0  15.2
          25. 34275-34258  CIR E E*   1513.0    2466.0    1546.0    2450.0 *      37.
116.  AG    0.0  15.2
          26. 34260-34269  CIR E 1*   1546.0    2450.0    1557.0    2433.0 *      20.
147.  AG    0.0  15.2
          27. 34260-34269  CIR E 1*   1557.0    2433.0    1561.0    2403.0 *      30.
172.  AG    0.0  15.2
          28. 34260-34269  CIR W 1*   1557.0    2433.0    1561.0    2406.0 *      27.
172.  AG    0.0  15.2    4
          29. 34260-34269  CIR E 1*   1561.0    2403.0    1544.0    2369.0 *      38.
207.  AG    0.0  15.2
          30. 173411-9412  BW W CI*   1695.0    2234.0    1559.0    2355.0 *     182.
312.  AG    0.0   9.0
          31. 173411-9412  BW W CI*   1559.0    2355.0    1551.0    2372.0 *      19.
335.  AG    0.0   9.0
          32. 9498-173411  BW W GR*   1695.0    2234.0    1905.0    2049.0 *     280.
131.  AG    0.0   9.0
          33. 9498-173411  BWY W G*   1699.0    2230.0    1772.0    2166.0 *      97.
131.  AG    0.0   3.0    2
          34. 173411-9498  BW E BR*   1899.0    2046.0    1690.0    2235.0 *     282.
312.  AG    0.0   9.0
          35. 173411-9498  BWY E B*   1894.0    2051.0    1810.0    2127.0 *     113.
312.  AG    0.0   3.0    1
          36. 9412-173411  BW E GR*   1690.0    2234.0    1553.0    2354.0 *     182.
311.  AG    0.0   9.0
          37. 9412-173411  BWY E G*   1683.0    2240.0    1630.0    2287.0 *      71.
312.  AG    0.0   3.0    1
          38. 9412-173411  BW E GR*   1553.0    2354.0    1539.0    2362.0 *      16.
300.  AG    0.0   9.0
          39. 172706-34257 ELM E C*   1426.0    2470.0    1454.0    2444.0 *      38.
133.  AG    0.0  12.0
          40. 9353-172706  ELM E E*   1426.0    2469.0    1290.0    2592.0 *     183.
312.  AG    0.0  12.0
          41. 9353-172706  ELM E E*   1420.0    2475.0    1317.0    2567.0 *     138.
312.  AG    0.0   6.0    1
          42. 9302-9353    ELM E L*   1290.0    2592.0    1124.0    2739.0 *     222.
312.  AG    0.0  12.0
          43. 9302-9353    ELM E L*   1281.0    2600.0    1202.0    2670.0 *     106.
312.  AG    0.0   6.0    2
          44. 9353-9302    ELM W N*   1130.0    2745.0    1296.0    2596.0 *     223.
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132.  AG    0.0  12.0
          45. 172706-9353  ELM W N*   1296.0    2595.0    1432.0    2474.0 *     182.
132.  AG    0.0  12.0
          46. 172706-9353  ELM W L*   1301.0    2591.0    1397.0    2505.0 *     129.
132.  AG    0.0   6.0    2
          47. 34257-172706 ELM W E*   1431.0    2475.0    1458.0    2450.0 *      37.
133.  AG    0.0  12.0
          48. 34257-172706 ELM W E*   1441.0    2466.0    1456.0    2451.0 *      21.
135.  AG    0.0   6.0    2
          49. 34274-34254  19 S BW*   1553.0    2455.0    1655.0    2496.0 *     110.
68.  AG    0.0  15.0
          50. 34274-34254  19 S BW*   1557.0    2457.0    1623.0    2483.0 *      71.
68.  AG    0.0   9.0    4
          51. 34274-34254  19 S BW*   1654.0    2496.0    1795.0    2546.0 *     150.
70.  AG    0.0  15.0
```

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC 2 (NE CIRCLE)	1542.0	2466.0	1.8
2. REC 3 (NE CIRCLE)	1573.0	2440.0	1.8
3. REC 4 (NE CIRCLE)	1570.0	2422.0	1.8
4. REC 5 (NE CIRCLE)	1571.0	2397.0	1.8
5. REC 6 (SE CIRCLE)	1563.0	2362.0	1.8
6. REC 7 (SE CIRCLE)	1543.0	2353.0	1.8
7. REC 8 (SE CIRCLE)	1459.0	2360.0	1.8
8. REC 9 (SW CIRCLE)	1442.0	2389.0	1.8
9. REC10 (SW CIRCLE)	1445.0	2445.0	1.8
10. REC10 (NW CIRCLE)	1454.0	2460.0	1.8
11. REC11 (NW CIRCLE)	1515.0	2477.0	1.8
12. REC12 (NW CIRCLE)	1492.0	2474.0	1.8
13. REC13 (NW CIRCLE)	1472.0	2469.0	1.8
14. REC14 (NW ELMORA)	1436.0	2477.0	1.8
15. REC15 (NW ELMORA)	1417.0	2494.0	1.8
16. REC16 (NW ELMORA)	1399.0	2510.0	1.8
17. REC17 (NW ELMORA)	1380.0	2527.0	1.8
18. REC18 (NW ELMORA)	1369.0	2513.0	1.8
19. REC19 (NW ELMORA)	1388.0	2497.0	1.8
20. REC20 (NW ELMORA)	1407.0	2480.0	1.8
21. REC21 (NW ELMORA)	1425.0	2463.0	1.8
22. REC22 (SW CIRCLE)	1446.0	2438.0	1.8
23. REC23 (SW CIRCLE)	1443.0	2426.0	1.8
24. REC24 (SW CIRCLE)	1442.0	2411.0	1.8
25. REC25 (SW RT19)	1425.0	2369.0	1.8
26. REC26 (SW RT19)	1407.0	2350.0	1.8
27. REC27 (SW RT19)	1389.0	2330.0	1.8
28. REC28 (SW RT19)	1371.0	2311.0	1.8
29. REC29 (SW RT19)	1441.0	2341.0	1.8
30. REC30 (SW RT19)	1423.0	2321.0	1.8
31. REC31 (SW RT19)	1405.0	2302.0	1.8
32. REC32 (SW RT19)	1388.0	2282.0	1.8
33. REC33 (SE CIRCLE)	1476.0	2349.0	1.8
34. REC34 (SE CIRCLE)	1502.0	2341.0	1.8
35. REC35 (SE CIRCLE)	1522.0	2346.0	1.8
36. REC36 (SE BAYWAY)	1565.0	2335.0	1.8
37. REC37 (SE BAYWAY)	1585.0	2318.0	1.8
38. REC38 (SE BAYWAY)	1606.0	2300.0	1.8
39. REC39 (SE BAYWAY)	1626.0	2282.0	1.8
40. REC40 (SE BAYWAY)	1582.0	2344.0	1.8
41. REC41 (SE BAYWAY)	1602.0	2326.0	1.8
42. REC42 (SE BAYWAY)	1622.0	2308.0	1.8
43. REC43 (SE BAYWAY)	1642.0	2290.0	1.8

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
44. REC44 (SE CIRCLE)	1563.0	2381.0	1.8
45. REC45 (NE RT19)	1570.0	2477.0	1.8
46. REC46 (NE RT19)	1596.0	2486.0	1.8
47. REC47 (NE RT19)	1622.0	2496.0	1.8
48. REC48 (NE RT19)	1649.0	2505.0	1.8
49. REC49 (NE RT19)	1599.0	2449.0	1.8
50. REC50 (NE RT19)	1625.0	2459.0	1.8
51. REC51 (NE RT19)	1650.0	2468.0	1.8
52. REC52 (NE RT19)	1674.0	2477.0	1.8

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED

(PPM)

	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG	3.0	4.0	4.0	2.7	2.0	2.2	3.7	3.8	2.9	3.9
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	3.0	4.0	4.0	2.7	2.0	2.2	3.7	3.8	2.9	3.9
WIND DIR	215	240	260	335	305	10	35	70	155	175
JULIAN	1	1	1	2	2	2	2	3	3	3
HOUR	7	12	16	7	1	14	19	2	19	23

	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG	2.1	2.1	2.1	2.8	2.5	2.9	2.9	2.3	2.5	2.6
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	2.1	2.1	2.1	2.8	2.5	2.9	2.9	2.3	2.5	2.6
WIND DIR	210	200	185	155	305	300	145	330	325	120
JULIAN	1	1	1	3	2	1	3	2	2	3
HOUR	6	4	1	19	1	24	17	6	5	12

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
(PPM)

	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG	2.4	3.1	3.4	3.7	3.5	3.6	3.3	2.9	3.8	4.0
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	2.4	3.1	3.4	3.7	3.5	3.6	3.3	2.9	3.8	4.0
WIND DIR	120	140	135	80	65	65	60	60	25	25
JULIAN	3	3	3	3	3	3	2	2	2	2
HOUR	12	16	15	4	1	1	24	24	17	17

	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
MAX+BKG	3.8	3.2	2.4	2.3	2.4	1.7	1.7	1.5	1.4	1.8
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	3.8	3.2	2.4	2.3	2.4	1.7	1.7	1.5	1.4	1.8
WIND DIR	30	30	340	325	310	355	335	340	325	295
JULIAN	2	2	2	2	2	2	2	2	2	1
HOUR	18	18	8	5	2	11	7	8	5	23

	REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50
MAX+BKG	1.5	1.5	1.4	2.4	3.3	3.0	2.7	2.4	2.8	2.5
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	1.5	1.5	1.4	2.4	3.3	3.0	2.7	2.4	2.8	2.5
WIND DIR	290	300	305	340	220	225	230	230	250	250
JULIAN	1	1	2	2	1	1	1	1	1	1
HOUR	22	24	1	8	8	9	10	10	14	14

	REC51	REC52
MAX+BKG	2.3	2.3
- BKG	0.0	0.0
MAX	2.3	2.3

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WIND DIR*    250     255
JULIAN  *      1       1
HOUR    *     14      15
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JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

THE HIGHEST CONCENTRATION OF 4.00 PPM OCCURRED AT RECEPTOR REC2 .

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AVERAGES.

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Highest Ending Day Hr	Highest Calm	Second highest Conc	Second highest Ending Day Hr	Second highest Calm
1	2.61	(1, 9)	C 0	2.50	(3,24)	C 0
2	3.59	(1,17)	C 0	3.01	(1,22)	C 0
3	3.75*	(1,20)	C 0	3.56*	(2, 1)	C 0
4	2.62	(2, 7)	C 0	2.36	(2,11)	C 0
5	1.89	(2, 2)	C 0	1.69	(1,21)	C 0
6	1.80	(2,17)	C 0	1.73	(2, 6)	C 0
7	3.54	(2,21)	C 0	3.29	(2,15)	C 0
8	3.30	(3, 7)	C 0	2.80	(3,11)	C 0
9	2.61	(3,21)	C 0	2.29	(3,16)	C 0
10	3.02	(3,24)	C 0	2.82	(1, 8)	C 0
11	1.79	(1, 8)	C 0	1.61	(3,21)	C 0
12	1.75	(1, 8)	C 0	1.56	(3,17)	C 0
13	1.90	(1, 8)	C 0	1.40	(3,24)	C 0
14	2.65	(3,23)	C 0	1.99	(2, 3)	C 0
15	2.33	(3,21)	C 0	2.04	(2, 3)	C 0
16	2.49	(2, 2)	C 0	2.25	(3,22)	C 0
17	2.66	(3,22)	C 0	2.49	(2, 2)	C 0
18	2.08	(2,10)	C 0	2.07	(3,13)	C 0
19	2.20	(2,10)	C 0	2.12	(3,15)	C 0
20	2.24	(3,14)	C 0	2.09	(2, 9)	C 0
21	2.21	(3,12)	C 0	1.95	(3,18)	C 0
22	3.05	(3,21)	C 0	2.66	(3,16)	C 0
23	3.23	(3,15)	C 0	3.12	(3,11)	C 0
24	3.52	(3,10)	C 0	3.20	(3,15)	C 0

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE 2034
BLD SCEN:4 9am CO

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Highest Ending Day Hr	Highest Calm	Second highest Conc	Second highest Ending Day Hr	Second highest Calm
25	3.19	(3, 6)	C 0	2.59	(3, 2)	C 0
26	2.96	(3, 5)	C 0	2.30	(3,10)	C 0
27	2.74	(3, 4)	C 0	2.13	(3,10)	C 0
28	2.38	(3, 4)	C 0	1.91	(1, 8)	C 0
29	3.61	(2,20)	C 0	3.28	(1,16)	C 0
30	3.56	(2,20)	C 0	3.02	(2,24)	C 0
31	3.35	(2,21)	C 0	2.74	(1,15)	C 0
32	2.90	(2,21)	C 0	2.63	(1,15)	C 0
33	2.21	(2,12)	C 0	2.06	(2,10)	C 0
34	2.02	(2,10)	C 0	1.67	(2,14)	C 0
35	2.05	(2, 6)	C 0	1.72	(2,11)	C 0
36	1.56	(2,13)	C 0	1.39	(2, 7)	C 0
37	1.46	(2,10)	C 0	1.24	(2, 6)	C 0
38	1.34	(2, 9)	C 0	1.11	(2, 6)	C 0
39	1.20	(2, 9)	C 0	0.95	(2,14)	C 0
40	1.59	(2, 2)	C 0	1.33	(2, 6)	C 0
41	1.38	(2, 3)	C 0	1.16	(2, 6)	C 0
42	1.26	(2, 2)	C 0	1.06	(1,22)	C 0
43	1.14	(2, 2)	C 0	0.99	(1,21)	C 0
44	2.10	(2,13)	C 0	1.85	(2, 2)	C 0
45	2.94	(1,10)	C 0	1.68	(3,24)	C 0
46	2.56	(1,12)	C 0	1.71	(1,16)	C 0
47	2.11	(1,12)	C 0	1.50	(1, 8)	C 0
48	1.90	(1,13)	C 0	1.51	(3,10)	C 0
49	2.56	(1,19)	C 0	2.23	(1,24)	C 0
50	2.26	(1,20)	C 0	1.88	(1,16)	C 0
51	2.03	(1,20)	C 0	1.84	(3, 2)	C 0
52	1.96	(1,20)	C 0	1.90	(3, 2)	C 0

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Highest Ending Day Hr	Highest Calm	Second Highest Conc	Second Highest Ending Day Hr	Second Highest Calm	Third Highest Conc	Third Highest Ending Day Hr	Third Highest Calm	Fourth Highest Conc	Fourth Highest Ending Day Hr	Fourth Highest Calm	Fifth Highest Conc	Fifth Highest Ending Day Hr	Fifth Highest Calm
1	3.000	(1, 7)	C 0	3.000	(1, 8)	C 0	2.800	(1, 6)	C 0	2.700	(3,22)	C 0	2.700	(3,20)	C 0
2	4.000*	(1,12)	C 0	4.000*	(1,13)	C 0	3.800	(1,14)	C 0	3.700	(1,15)	C 0	3.400	(1,11)	C 0
3	4.000	(1,16)	C 0	3.900	(1,17)	C 0	3.800	(1,15)	C 0	3.800	(1,18)	C 0	3.700	(1,19)	C 0
4	2.700	(2, 7)	C 0	2.700	(2, 3)	C 0	2.700	(2, 5)	C 0	2.700	(2, 6)	C 0	2.600	(2, 2)	C 0
5	2.000	(2, 1)	C 0	2.000	(1,19)	C 0	2.000	(2, 2)	C 0	1.900	(1,20)	C 0	1.800	(1,22)	C 0
6	2.200	(2,14)	C 0	1.900	(2, 2)	C 0	1.900	(2, 3)	C 0	1.900	(2,12)	C 0	1.900	(2,13)	C 0
7	3.700	(2,19)	C 0	3.600	(2,18)	C 0	3.600	(2,15)	C 0	3.600	(2,20)	C 0	3.600	(2,21)	C 0

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
8	3.800	(3, 2)	C 0	3.600	(3, 1)	C 0	3.600	(3, 3)	C 0	3.400	(2,24)	C 0	3.200	(3, 4)	C 0
9	2.900	(3,19)	C 0	2.700	(3,18)	C 0	2.700	(3,20)	C 0	2.600	(3,17)	C 0	2.600	(3,21)	C 0
10	3.900	(3,23)	C 0	3.800	(3,24)	C 0	3.500	(1, 1)	C 0	3.500	(3,22)	C 0	3.400	(1, 2)	C 0
11	2.100	(1, 6)	C 0	2.000	(1, 5)	C 0	2.000	(1, 7)	C 0	1.800	(1, 4)	C 0	1.800	(3,18)	C 0
12	2.100	(1, 4)	C 0	2.000	(1, 5)	C 0	1.900	(1, 6)	C 0	1.800	(1, 3)	C 0	1.800	(1, 7)	C 0
13	2.100	(1, 1)	C 0	2.100	(1, 2)	C 0	2.100	(1, 5)	C 0	2.000	(1, 3)	C 0	2.000	(1, 4)	C 0
14	2.800	(3,19)	C 0	2.800	(3,20)	C 0	2.800	(3,21)	C 0	2.800	(3,18)	C 0	2.700	(3,22)	C 0
15	2.500	(2, 1)	C 0	2.500	(3,21)	C 0	2.400	(1,24)	C 0	2.400	(3,17)	C 0	2.400	(3,18)	C 0
16	2.900	(1,24)	C 0	2.800	(1,23)	C 0	2.600	(2, 1)	C 0	2.500	(2, 2)	C 0	2.500	(3,17)	C 0
17	2.900	(3,17)	C 0	2.900	(3,18)	C 0	2.800	(1,23)	C 0	2.700	(1,24)	C 0	2.700	(2, 1)	C 0
18	2.300	(2, 6)	C 0	2.300	(2, 4)	C 0	2.200	(3,11)	C 0	2.200	(3,12)	C 0	2.100	(2, 5)	C 0
19	2.500	(2, 5)	C 0	2.400	(2, 6)	C 0	2.300	(2, 4)	C 0	2.300	(3,10)	C 0	2.300	(3,12)	C 0
20	2.600	(3,12)	C 0	2.400	(3,11)	C 0	2.400	(2, 4)	C 0	2.400	(2, 5)	C 0	2.300	(2, 6)	C 0
21	2.400	(3,12)	C 0	2.300	(2, 5)	C 0	2.300	(3, 7)	C 0	2.200	(3,11)	C 0	2.200	(3, 8)	C 0
22	3.100	(3,16)	C 0	3.100	(3,18)	C 0	3.100	(3,19)	C 0	3.100	(3,17)	C 0	3.100	(3,21)	C 0
23	3.400	(3,15)	C 0	3.300	(3, 8)	C 0	3.200	(3,16)	C 0	3.200	(3,18)	C 0	3.200	(3, 9)	C 0
24	3.700	(3, 4)	C 0	3.700	(3, 6)	C 0	3.600	(3, 8)	C 0	3.500	(3, 5)	C 0	3.500	(3,10)	C 0
25	3.500	(3, 1)	C 0	3.400	(2,24)	C 0	3.400	(3, 3)	C 0	3.400	(3, 2)	C 0	3.100	(3, 4)	C 0
26	3.600	(3, 1)	C 0	3.500	(2,24)	C 0	3.100	(3, 3)	C 0	3.000	(2,23)	C 0	2.900	(3, 2)	C 0
27	3.300	(2,24)	C 0	3.100	(3, 1)	C 0	2.900	(2,23)	C 0	2.700	(3, 2)	C 0	2.700	(3, 3)	C 0
28	2.900	(2,24)	C 0	2.800	(3, 1)	C 0	2.600	(2,23)	C 0	2.400	(2,22)	C 0	2.400	(3, 2)	C 0
29	3.800	(2,17)	C 0	3.800	(2,18)	C 0	3.700	(2,16)	C 0	3.700	(2,19)	C 0	3.700	(2,15)	C 0
30	4.000	(2,17)	C 0	4.000	(2,18)	C 0	3.700	(2,19)	C 0	3.600	(2,16)	C 0	3.500	(2,15)	C 0
31	3.800	(2,18)	C 0	3.700	(2,19)	C 0	3.600	(2,20)	C 0	3.500	(2,17)	C 0	3.400	(2,16)	C 0
32	3.200	(2,18)	C 0	3.200	(2,19)	C 0	3.100	(2,17)	C 0	3.100	(2,20)	C 0	2.900	(1,10)	C 0
33	2.400	(2, 8)	C 0	2.400	(2, 9)	C 0	2.300	(2,11)	C 0	2.200	(2,10)	C 0	2.100	(2, 5)	C 0
34	2.300	(2, 5)	C 0	2.300	(2, 4)	C 0	2.200	(2, 6)	C 0	2.100	(2, 3)	C 0	2.000	(2, 7)	C 0
35	2.400	(2, 2)	C 0	2.300	(2, 3)	C 0	2.300	(2, 4)	C 0	2.000	(2, 5)	C 0	2.000	(2, 6)	C 0

36 1.700 (2,11) C 0 1.700 (2,12) C 0 1.600 (2, 4) C 0 1.600 (2, 8) C 0 1.600 (2, 9) C 0
37 1.700 (2, 7) C 0 1.600 (2, 3) C 0 1.500 (2, 6) C 0 1.400 (2, 5) C 0 1.400 (2, 9) C 0
38 1.500 (2, 8) C 0 1.400 (2, 4) C 0 1.400 (2, 5) C 0 1.400 (2, 6) C 0 1.400 (2, 7) C 0
39 1.400 (2, 5) C 0 1.300 (2, 6) C 0 1.200 (2, 2) C 0 1.200 (2, 3) C 0 1.200 (2, 4) C 0
40 1.800 (1,23) C 0 1.700 (1,22) C 0 1.600 (2, 2) C 0 1.600 (1,20) C 0 1.600 (1,21) C 0
41 1.500 (1,22) C 0 1.500 (2, 1) C 0 1.400 (2, 2) C 0 1.400 (1,21) C 0 1.400 (1,23) C 0
42 1.500 (1,24) C 0 1.500 (2, 1) C 0 1.300 (2, 2) C 0 1.200 (1,20) C 0 1.200 (1,21) C 0
43 1.400 (2, 1) C 0 1.200 (1,24) C 0 1.100 (1,20) C 0 1.100 (1,21) C 0 1.100 (1,22) C 0
44 2.400 (2, 8) C 0 2.300 (2,10) C 0 2.200 (2,11) C 0 2.100 (2, 7) C 0 2.100 (2, 9) C 0
45 3.300 (1, 8) C 0 3.200 (1, 7) C 0 2.900 (1, 5) C 0 2.900 (1, 6) C 0 2.900 (1, 9) C 0
46 3.000 (1, 9) C 0 2.900 (1, 8) C 0 2.900 (1,10) C 0 2.700 (1, 7) C 0 2.600 (1,11) C 0
47 2.700 (1,10) C 0 2.500 (1, 9) C 0 2.400 (1,11) C 0 2.300 (1, 8) C 0 2.000 (1,12) C 0
48 2.400 (1,10) C 0 2.300 (1,11) C 0 2.100 (1, 9) C 0 2.000 (1,12) C 0 1.900 (1, 8) C 0

JOB: GOETHALS BRIDGE RUN: BAYWAY CIRCLE
2034 BLD SCEN:4 9am CO

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
49	2.800	(1,14)	C 0	2.700	(1,15)	C 0	2.700	(1,16)	C 0	2.600	(1,12)	C 0	2.600	(1,13)	C 0
50	2.500	(1,14)	C 0	2.500	(1,16)	C 0	2.500	(1,15)	C 0	2.200	(1,17)	C 0	2.200	(1,18)	C 0
51	2.300	(1,14)	C 0	2.300	(1,15)	C 0	2.200	(1,16)	C 0	2.100	(2,22)	C 0	2.100	(2,23)	C 0
52	2.300	(1,15)	C 0	2.200	(3, 1)	C 0	2.100	(2,23)	C 0	2.100	(2,24)	C 0	2.000	(1,13)	C 0

MAXIMUM 8-HOUR AVERAGED LINK CONTRIBUTIONS
IN PARTS PER MILLION (PPM)
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
1	2.612	(1, 9)	0.00	2.61	0.00	0.00	0.00	0.10	0.05	0.56	0.00	0.00	0.08	0.00
				Links 10+	0.00	0.00	0.84	0.25	0.25	0.04	0.04	0.00	0.04	0.00
				Links 20+	0.00	0.03	0.00	0.00	0.30	0.03	0.00	0.01	0.01	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	3.587	(1,17)	0.00	3.59	0.00	0.00	0.00	0.14	0.08	0.16	0.00	0.00	0.10	0.00
				Links 10+	0.11	0.00	1.40	0.23	0.20	0.05	0.00	0.00	0.04	0.00
				Links 20+	0.04	0.06	0.00	0.00	0.00	0.25	0.24	0.50	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	3.750	(1,20)	0.00	3.75	0.00	0.00	0.00	0.14	0.09	0.10	0.00	0.00	0.06	0.00
				Links 10+	0.00	0.00	0.88	0.25	0.10	0.03	0.00	0.00	0.03	0.00
				Links 20+	0.06	0.09	0.00	0.00	0.00	0.01	0.60	1.33	0.00	0.00
				Links 30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	2.625	(2, 7)	0.00	2.62	0.00	0.00	0.00	0.01	0.00	0.20	0.00	0.00	0.00	0.00

0.00	0.00	0.00
0.85	0.15	0.00
0.00	0.00	0.04
0.00	0.00	0.00
0.00	0.00	0.00

Links	10+	0.00	0.00	0.56	0.08	0.00	0.00	0.00
Links	20+	0.00	0.00	0.00	0.00	0.06	0.08	0.51
Links	30+	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Links	40+	0.00	0.04	0.00	0.00	0.05	0.00	0.00
Links	50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00

DATE : 7/25/ 7
PAGE: 1
TIME : 19:17:44

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

==========
General Information
==========

Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to C for calculating CO averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99

Urban mixing heights were processed.

In 1999, Julian day 1 is a Friday.

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				LINK COORDINATES (M)					LENGTH				
					X1	Y1	X2	Y2			BRG	TYPE	H (M)	W (M)	NLANES
1.	33763-10136	278wb	*	570318.0	497039.0	570204.0	497065.0	*	117.	283.	AG	0.0	15.0	
2.	10136-10095	278wb	*	570204.0	497065.0	570016.0	497090.0	*	190.	278.	AG	0.0	15.0	
3.	10136-10095	278wb	*	570016.0	497090.0	569928.0	497117.0	*	92.	287.	AG	0.0	15.0	
4.	10136-10095	278wb	*	569928.0	497117.0	569825.0	497170.0	*	116.	297.	AG	0.0	15.0	
5.	10136-10095	278wb	*	569825.0	497170.0	569743.0	497234.0	*	104.	308.	AG	0.0	15.0	
6.	10136-10095	278wb	*	569743.0	497234.0	569676.0	497307.0	*	99.	317.	AG	0.0	15.0	
7.	10136-10095	278wb	*	569676.0	497307.0	569557.0	497454.0	*	189.	321.	AG	0.0	15.0	
8.	10095-10021	278wb-o	*	569557.0	497454.0	569447.0	497579.0	*	167.	319.	AG	0.0	15.0	
9.	10021-33728	278wb-t	*	569446.0	497579.0	569359.0	497648.0	*	111.	308.	AG	0.0	15.0	
10.	10021-33728	278wb-t	*	569359.0	497648.0	569035.0	497879.0	*	398.	305.	AG	0.0	15.0	
11.	33367-10018	278eb-o	*	569021.0	497864.0	569307.0	497651.0	*	357.	127.	AG	0.0	15.0	
12.	10018-10086	278eb-o	*	569307.0	497651.0	569443.0	497541.0	*	175.	129.	AG	0.0	15.0	
13.	10018-10086	278ebRM	*	569444.0	497540.0	569518.0	497464.0	*	106.	136.	AG	0.0	15.0	
14.	10018-10086	278ebRM	*	569518.0	497464.0	569588.0	497373.0	*	115.	142.	AG	0.0	15.0	
15.	10086-10131	278ebDE	*	569589.0	497372.0	569699.0	497244.0	*	169.	139.	AG	0.0	15.0	

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          16. 10086-10131  278ebDE* 569699.0  497244.0  569794.0  497164.0 *     124.
130.  AG    0.0  15.0
          17. 10086-10131  278ebDE* 569794.0  497164.0  569859.0  497124.0 *      76.
122.  AG    0.0  15.0
          18. 10086-10131  278ebDE* 569859.0  497124.0  569959.0  497081.0 *     109.
113.  AG    0.0  15.0
          19. 10086-10131  278ebDE* 569959.0  497081.0  570026.0  497066.0 *      69.
103.  AG    0.0  15.0
          20. 10086-10131  278ebDE* 570026.0  497066.0  570243.0  497034.0 *     219.
98.  AG    0.0  15.0
          21. 10131-33764  278ebDE* 570243.0  497034.0  570304.0  497019.0 *      63.
104.  AG    0.0  15.0
          22. 10136-10088  WBtoSB * 570268.0  497052.0  570114.0  497120.0 *     168.
294.  AG    0.0   9.0
          23. 10136-10088  WBtoSB * 570114.0  497120.0  570071.0  497130.0 *      44.
283.  AG    0.0   9.0
          24. 10136-10088  WBtoSB * 570071.0  497130.0  570028.0  497132.0 *      43.
273.  AG    0.0   9.0
          25. 10136-10088  WBtoSB * 570028.0  497132.0  569985.0  497126.0 *      43.
262.  AG    0.0   9.0
          26. 10136-10088  WBtoSB * 569985.0  497126.0  569895.0  497097.0 *      95.
252.  AG    0.0   9.0
          27. 10136-10088  WBtoSB * 569895.0  497097.0  569818.0  497056.0 *      87.
242.  AG    0.0   9.0
          28. 10136-10088  WBtoSB * 569818.0  497056.0  569751.0  497007.0 *      83.
234.  AG    0.0   9.0
          29. 10136-10088  WBtoSB * 569751.0  497007.0  569710.0  496964.0 *      59.
224.  AG    0.0   9.0
          30. 10097-10131  NBtoEB * 569806.0  496898.0  569870.0  496949.0 *      82.
51.  AG    0.0   9.0
          31. 10097-10131  NBtoEB * 569870.0  496949.0  569920.0  496977.0 *      57.
61.  AG    0.0   9.0
          32. 10097-10131  NBtoEB * 569920.0  496977.0  569993.0  497011.0 *      81.
65.  AG    0.0   9.0
          33. 10097-10131  NBtoEB * 569993.0  497011.0  570058.0  497029.0 *      67.
75.  AG    0.0   9.0
          34. 10097-10131  NBtoEB * 570058.0  497029.0  570116.0  497038.0 *      59.
81.  AG    0.0   9.0
          35. 10097-10131  NBtoEB * 570116.0  497038.0  570181.0  497040.0 *      65.
88.  AG    0.0   9.0
          36. 10097-10095  NBtoWB * 569744.0  496938.0  569758.0  497003.0 *      66.
12.  AG    0.0   9.0
          37. 10097-10095  NBtoWB * 569758.0  497003.0  569766.0  497100.0 *      97.
5.  AG    0.0   9.0
          38. 10097-10095  NBtoWB * 569766.0  497100.0  569765.0  497179.0 *      79.
359.  AG    0.0   9.0
          39. 10097-10095  NBtoWB * 569765.0  497179.0  569756.0  497240.0 *      62.
352.  AG    0.0   9.0
          40. 10097-10095  NBtoWB * 569756.0  497240.0  569742.0  497285.0 *      47.
343.  AG    0.0   9.0
          41. 10097-10095  NBtoWB * 569742.0  497285.0  569715.0  497333.0 *      55.
331.  AG    0.0   9.0
          42. 10097-10095  NBtoWB * 569715.0  497333.0  569685.0  497370.0 *      48.
321.  AG    0.0   9.0
          43. 10097-10095  NBtoWB * 569685.0  497370.0  569648.0  497398.0 *      46.
307.  AG    0.0   9.0
          44. 10097-10095  NBtoWB * 569648.0  497398.0  569562.0  497449.0 *     100.
```

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301.  AG    0.0   9.0
          45. 10086-10088  EBtoSB * 569588.0  497370.0  569622.0  497290.0 *      87.
157.  AG    0.0   9.0
          46. 10086-10088  EBtoSB * 569622.0  497290.0  569641.0  497224.0 *      69.
164.  AG    0.0   9.0
          47. 10086-10088  EBtoSB * 569641.0  497224.0  569652.0  497151.0 *      74.
171.  AG    0.0   9.0
          48. 10086-10088  EBtoSB * 569652.0  497151.0  569652.0  497081.0 *      70.
180.  AG    0.0   9.0
          49. 10086-10088  EBtoSB * 569652.0  497081.0  569643.0  496994.0 *      87.
186.  AG    0.0   9.0
          50. 10166-10055  GoeWBap* 570331.0  497080.0  569971.0  497279.0 *     411.
299.  AG    0.0  15.0
          51. 10166-10055  GoeWBap* 569971.0  497279.0  569728.0  497427.0 *     285.
301.  AG    0.0  15.0
          52. 10166-10055  GoeWBap* 569728.0  497427.0  569616.0  497502.0 *     135.
304.  AG    0.0  15.0
          53. 10166-10055  GoeWBQ * 569634.0  497490.0  569709.0  497440.0 *      90.
124.  AG    0.0   9.0    3
          54. 10055-10033  GoeWBon* 569616.0  497502.0  569552.0  497543.0 *      76.
303.  AG    0.0  15.0
          55. 10033-33719  GoeWBof* 569552.0  497543.0  569248.0  497767.0 *     378.
306.  AG    0.0  15.0
          56. 33719-39913  GoeWBde* 569248.0  497767.0  569136.0  497850.0 *     139.
307.  AG    0.0  15.0
```

JOB: Goethals RUN: GOETHALS TOLL 2034 BLD SCEN:4 9am CO

Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION			LINK COORDINATES (M)				LENGTH	BRG	TYPE	H	W	NLANES
			X1	Y1	X2	Y2	(M)	(DEG)		(M)	(M)	
57.	33719-39913	GoeWBde	569136.0	497850.0	569052.0	497907.0	102.	304.	AG	0.0	15.0	
58.	10033-10021	WBon	569561.0	497535.0	569450.0	497578.0	119.	291.	AG	0.0	9.0	
59.	10021-33719	WBoff	569318.0	497680.0	569249.0	497763.0	108.	320.	AG	0.0	9.0	
60.	9909-33718	GulEB10	569005.0	497835.0	569277.0	497635.0	338.	126.	AG	0.0	12.0	
61.	33718-10030	GulEB10	569277.0	497635.0	569328.0	497593.0	66.	129.	AG	0.0	12.0	
62.	33718-10030	GulEB10	569328.0	497593.0	569394.0	497527.0	93.	135.	AG	0.0	12.0	
63.	33718-10030	GulEB10	569394.0	497527.0	569456.0	497449.0	100.	142.	AG	0.0	12.0	
64.	10030-173401	GulEB10	569456.0	497449.0	569476.0	497416.0	39.	149.	AG	0.0	12.0	
65.	33718-10018	EBon	569164.0	497720.0	569306.0	497650.0	158.	116.	AG	0.0	9.0	
66.	10018-10030	EBoff	569429.0	497550.0	569457.0	497453.0	101.	164.	AG	0.0	9.0	
67.	10030-173401	GulEBde	569476.0	497415.0	569508.0	497362.0	62.	149.	AG	0.0	12.0	
68.	10030-173401	GulEBde	569508.0	497362.0	569539.0	497294.0	75.	155.	AG	0.0	12.0	
69.	10030-10055	ForNB17	569482.0	497416.0	569618.0	497499.0	159.	59.	AG	0.0	12.0	
70.	10030-10055	ForNBQ	569614.0	497497.0	569564.0	497466.0	59.	238.	AG	0.0	6.0	2
71.	10055-10065	ForNBde	569620.0	497500.0	569990.0	497730.0	436.	58.	AG	0.0	12.0	
72.	10065-10055	ForSB17	569975.0	497730.0	569613.0	497505.0	426.	238.	AG	0.0	12.0	
73.	10065-10055	ForSBQ	569620.0	497509.0	569685.0	497550.0	77.	58.	AG	0.0	6.0	2
74.	10055-10030	ForSBde	569609.0	497503.0	569479.0	497423.0	153.	238.	AG	0.0	12.0	
75.	10065-10055	MorWB	569706.0	497567.0	569521.0	497572.0	185.	272.	AG	0.0	9.0	

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC E (50 S)	569575.0	497466.0	1.8
2. REC E (25 S)	569596.0	497479.0	1.8
3. REC E (CNR)	569617.0	497491.0	1.8
4. REC E (25 E)	569639.0	497478.0	1.8
5. REC E (50 E)	569659.0	497464.0	1.8
6. REC E (MID E)	569695.0	497441.0	1.8
7. REC E (MID E)	569718.0	497443.0	1.8
8. REC E (50 E)	569684.0	497464.0	1.8
9. REC E (25 E)	569663.0	497479.0	1.8
10. REC E (CNR)	569642.0	497500.0	1.8
11. REC E (25 N)	569666.0	497521.0	1.8
12. REC E (50 N)	569688.0	497534.0	1.8

13. REC E (MID N)	*	569727.0	497546.0	1.8
14. REC W (50 N)	*	569656.0	497538.0	1.8
15. REC W (25 N)	*	569634.0	497525.0	1.8

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
16. REC W (CNR)	569613.0	497513.0	1.8
17. REC W (25 W)	569592.0	497527.0	1.8
18. REC W (50 W)	569572.0	497541.0	1.8
19. REC W (MID W)	569545.0	497559.0	1.8
20. REC W (MID W)	569520.0	497544.0	1.8
21. REC W (50 W)	569554.0	497532.0	1.8
22. REC W (25 W)	569576.0	497520.0	1.8
23. REC W (CNR)	569598.0	497504.0	1.8
24. REC W (25 S)	569577.0	497490.0	1.8
25. REC W (50 S)	569555.0	497477.0	1.8
26. RECID (N)	569411.0	497493.0	1.8
27. REC 0 (N)	569432.0	497463.0	1.8
28. REC 5 (N)	569447.0	497443.0	1.8
29. REC (CNR)	569462.0	497423.0	1.8
30. REC (CNR)	569475.0	497401.0	1.8
31. REC 5 (S)	569487.0	497379.0	1.8
32. REC 0 (S)	569499.0	497357.0	1.8
33. RECID (S)	569512.0	497328.0	1.8
34. REC34	569791.0	497397.0	1.8
35. REC35	569887.0	497337.0	1.8
36. REC36	569452.0	497625.0	1.8
37. REC37	569320.0	497722.0	1.8
38. REC38	569331.0	497576.0	1.8
39. REC39	569237.0	497653.0	1.8
40. REC40	569772.0	497586.0	1.8
41. REC41	569792.0	497624.0	1.8

JOB: Goethals RUN: GOETHALS TOLL 2034 BLD SCEN:4 9am CO

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (PPM)

	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG	*	2.5	2.0	2.0	1.3	1.2	1.1	1.0	1.2	1.5	1.4
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	2.5	2.0	2.0	1.3	1.2	1.1	1.0	1.2	1.5	1.4
WIND DIR	*	300	290	300	295	295	305	290	295	290	290
JULIAN	*	1	1	1	1	1	2	1	1	1	1
HOUR	*	24	22	24	23	23	1	22	23	22	22

	*	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG	*	1.4	1.2	0.8	1.0	1.2	1.4	1.2	1.3	1.3	1.9
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	1.4	1.2	0.8	1.0	1.2	1.4	1.2	1.3	1.3	1.9
WIND DIR	*	250	255	280	230	225	205	290	285	295	300
JULIAN	*	1	1	1	1	1	1	1	1	1	1
HOUR	*	14	15	20	10	9	5	22	21	23	24

	*	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG	*	1.5	1.5	1.3	1.4	2.1	1.0	0.9	0.9	0.9	1.1
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	1.5	1.5	1.3	1.4	2.1	1.0	0.9	0.9	0.9	1.1
WIND DIR	*	305	300	305	165	305	325	0	350	345	50
JULIAN	*	2	1	2	3	2	2	2	2	2	2
HOUR	*	1	24	1	21	1	5	12	10	9	

22

	*	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
MAX+BKG	*	0.7	0.7	0.6	0.7	0.6	1.5	1.5	1.1	1.2	1.0
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	0.7	0.7	0.6	0.7	0.6	1.5	1.5	1.1	1.2	1.0
WIND DIR	*	340	25	340	285	300	290	145	330	325	250
JULIAN	*	2	2	2	1	1	1	3	2	2	1
HOUR	*	8	17	8	21	24	22	17	6	5	14

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

```
                 * MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND
CONCENTRATIONS (BKG) ADDED
                 *         (PPM)
                 *    REC41
         --------*--------
         MAX+BKG *     0.7
         - BKG   *     0.0
         --------*--------
           MAX   *     0.7
         WIND DIR*    225
         JULIAN  *      1
         HOUR    *      9
```

THE HIGHEST CONCENTRATION OF 2.50 PPM OCCURRED AT RECEPTOR REC1 .

JOB: Goethals RUN: GOETHALS TOLL 2034 BLD SCEN:4 9am CO

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AVERAGES.

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Highest Ending Day Hr	Highest Calm	Second highest Conc	Second highest Ending Day Hr	Second highest Calm
1	2.20*	(2, 2)	C 0	2.01*	(1,20)	C 0
2	1.86	(1,20)	C 0	1.80	(2, 2)	C 0
3	1.75	(2, 1)	C 0	1.69	(1,19)	C 0
4	1.09	(2, 2)	C 0	0.95	(2, 7)	C 0
5	0.98	(2, 3)	C 0	0.75	(2, 7)	C 0
6	0.74	(2, 2)	C 0	0.54	(2, 7)	C 0
7	0.76	(2, 1)	C 0	0.54	(2, 5)	C 0
8	0.99	(2, 1)	C 0	0.70	(1,21)	C 0
9	1.23	(1,24)	C 0	0.84	(1,20)	C 0
10	1.24	(1,24)	C 0	1.06	(2, 3)	C 0
11	1.18	(1,20)	C 0	1.04	(2, 1)	C 0
12	1.06	(1,19)	C 0	0.91	(1,16)	C 0
13	0.64	(1,22)	C 0	0.51	(2, 2)	C 0
14	0.85	(1,12)	C 0	0.71	(1,16)	C 0
15	1.08	(1,10)	C 0	0.76	(1,16)	C 0
16	1.36	(1, 9)	C 0	1.04	(1,24)	C 0
17	1.08	(2, 1)	C 0	0.96	(1, 8)	C 0
18	1.10	(1,23)	C 0	0.90	(1,19)	C 0
19	1.04	(1,24)	C 0	0.88	(3,24)	C 0
20	1.41	(2, 2)	C 0	0.99	(1,22)	C 0
21	1.21	(2, 2)	C 0	0.86	(2, 7)	C 0
22	1.11	(2, 2)	C 0	0.81	(2, 7)	C 0
23	1.14	(1, 8)	C 0	0.98	(3,24)	C 0
24	1.28	(3,24)	C 0	1.21	(1, 8)	C 0

JOB: Goethals RUN: GOETHALS TOLL 2034
BLD SCEN:4 9am CO

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Ending Day Hr	Calm	Second highest Conc	Ending Day Hr	Calm
25	1.86	(3,24)	C 0	1.78	(2, 3)	C 0
26	0.88	(2,11)	C 0	0.88	(3, 9)	C 0
27	0.80	(3, 8)	C 0	0.75	(2,12)	C 0
28	0.81	(2,13)	C 0	0.73	(2,10)	C 0
29	0.84	(3, 6)	C 0	0.73	(2,11)	C 0
30	0.91	(2,24)	C 0	0.74	(2,21)	C 0
31	0.64	(2,14)	C 0	0.61	(2,21)	C 0
32	0.59	(2,17)	C 0	0.54	(2,14)	C 0
33	0.51	(2,15)	C 0	0.48	(2,20)	C 0
34	0.56	(2, 1)	C 0	0.39	(1,20)	C 0
35	0.44	(1,24)	C 0	0.35	(3,19)	C 0
36	1.26	(1,24)	C 0	1.05	(3,24)	C 0
37	1.26	(3,22)	C 0	1.23	(1,22)	C 0
38	1.02	(2,11)	C 0	0.88	(2,17)	C 0
39	1.12	(2,11)	C 0	1.02	(3, 7)	C 0
40	0.92	(1,20)	C 0	0.76	(1,16)	C 0
41	0.60	(1,12)	C 0	0.45	(3, 8)	C 0

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	2.500*	(1,24)	C 0	2.400*	(1,23)	C 0	2.300	(2, 1)	C 0	2.200	(1,15)	C 0	2.200	(2, 2)	C 0
2	2.000	(1,22)	C 0	2.000	(1,15)	C 0	2.000	(1,17)	C 0	1.900	(1,13)	C 0	1.900	(1,14)	C 0
3	2.000	(1,24)	C 0	1.900	(1,23)	C 0	1.900	(1,15)	C 0	1.800	(1,22)	C 0	1.800	(1,16)	C 0
4	1.300	(1,23)	C 0	1.300	(1,24)	C 0	1.200	(1,22)	C 0	1.200	(2, 1)	C 0	1.000	(1,21)	C 0
5	1.200	(1,23)	C 0	1.200	(1,24)	C 0	1.100	(1,22)	C 0	1.000	(2, 1)	C 0	1.000	(2, 2)	C 0
6	1.100	(2, 1)	C 0	0.900	(1,23)	C 0	0.900	(1,24)	C 0	0.800	(1,22)	C 0	0.600	(1,20)	C 0
7	1.000	(1,22)	C 0	0.800	(1,23)	C 0	0.800	(1,24)	C 0	0.800	(2, 1)	C 0	0.700	(1,19)	C 0
8	1.200	(1,23)	C 0	1.200	(1,24)	C 0	1.100	(1,22)	C 0	1.000	(1,21)	C 0	1.000	(2, 1)	C 0
9	1.500	(1,22)	C 0	1.400	(1,21)	C 0	1.400	(1,23)	C 0	1.300	(1,24)	C 0	1.200	(1,20)	C 0
10	1.400	(1,22)	C 0	1.400	(1,23)	C 0	1.300	(1,14)	C 0	1.300	(1,19)	C 0	1.200	(1,24)	C 0
11	1.400	(1,14)	C 0	1.300	(1,15)	C 0	1.200	(1,19)	C 0	1.200	(1,20)	C 0	1.200	(1,22)	C 0
12	1.200	(1,15)	C 0	1.200	(1,16)	C 0	1.100	(1,12)	C 0	1.100	(1,17)	C 0	1.100	(1,18)	C 0
13	0.800	(1,20)	C 0	0.700	(1,18)	C 0	0.700	(1,21)	C 0	0.700	(1,22)	C 0	0.600	(1,15)	C 0
14	1.000	(1,10)	C 0	1.000	(1,12)	C 0	0.900	(1, 8)	C 0	0.900	(1, 9)	C 0	0.800	(1, 4)	C 0
15	1.200	(1, 9)	C 0	1.100	(1, 8)	C 0	1.100	(1, 3)	C 0	1.100	(1, 4)	C 0	1.100	(1,10)	C 0

```
             16   1.400 (  1, 5) C 0   1.400 (  1, 6) C 0   1.400 (  1, 7) C 0   1.400 (
1, 8) C 0   1.400 (  1, 9) C 0
             17   1.200 (  1,22) C 0   1.200 (  1,24) C 0   1.200 (  1,21) C 0   1.200 (
1,23) C 0   1.100 (  1, 1) C 0
             18   1.300 (  1,21) C 0   1.300 (  1,22) C 0   1.200 (  1,23) C 0   1.200 (
1,20) C 0   1.000 (  1,24) C 0
```

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
19	1.300	(1,23)	C 0	1.200	(1,21)	C 0	1.200	(1,22)	C 0	1.100	(3,22)	C 0	1.100	(1,24)	C 0
20	1.900	(1,24)	C 0	1.700	(1,23)	C 0	1.700	(2, 1)	C 0	1.600	(1,22)	C 0	1.300	(1,21)	C 0
21	1.500	(2, 1)	C 0	1.500	(1,23)	C 0	1.500	(1,24)	C 0	1.400	(1,22)	C 0	1.100	(1,21)	C 0
22	1.500	(1,24)	C 0	1.400	(2, 1)	C 0	1.400	(1,23)	C 0	1.200	(1,22)	C 0	1.000	(1,21)	C 0
23	1.300	(2, 1)	C 0	1.200	(1,24)	C 0	1.200	(1, 1)	C 0	1.200	(1, 6)	C 0	1.200	(1, 8)	C 0
24	1.400	(3,21)	C 0	1.400	(3,23)	C 0	1.400	(3,24)	C 0	1.300	(1, 1)	C 0	1.300	(1, 3)	C 0
25	2.100	(2, 1)	C 0	2.000	(1,23)	C 0	2.000	(1,24)	C 0	2.000	(2, 2)	C 0	2.000	(3,18)	C 0
26	1.000	(2, 5)	C 0	1.000	(2, 6)	C 0	1.000	(3,11)	C 0	0.900	(2,17)	C 0	0.900	(3, 2)	C 0
27	0.900	(2,12)	C 0	0.900	(3, 4)	C 0	0.800	(2,15)	C 0	0.800	(3, 2)	C 0	0.800	(3, 3)	C 0
28	0.900	(2,10)	C 0	0.900	(2,13)	C 0	0.800	(2, 9)	C 0	0.800	(2, 6)	C 0	0.800	(2, 7)	C 0
29	0.900	(2, 9)	C 0	0.900	(3, 1)	C 0	0.900	(3, 2)	C 0	0.900	(3, 5)	C 0	0.900	(3, 6)	C 0
30	1.100	(2,22)	C 0	1.000	(2,21)	C 0	1.000	(2,23)	C 0	0.900	(2,24)	C 0	0.900	(2,20)	C 0
31	0.700	(2, 8)	C 0	0.700	(2, 9)	C 0	0.700	(2,10)	C 0	0.700	(2,21)	C 0	0.600	(2, 7)	C 0
32	0.700	(2,17)	C 0	0.600	(2, 8)	C 0	0.600	(2,10)	C 0	0.600	(2,11)	C 0	0.600	(2,14)	C 0
33	0.600	(2, 8)	C 0	0.500	(2, 6)	C 0	0.500	(2, 9)	C 0	0.500	(2,10)	C 0	0.500	(2,11)	C 0
34	0.700	(1,21)	C 0	0.700	(1,23)	C 0	0.600	(1,20)	C 0	0.600	(1,22)	C 0	0.600	(1,24)	C 0
35	0.600	(1,24)	C 0	0.500	(1,23)	C 0	0.400	(1, 4)	C 0	0.400	(1,11)	C 0	0.400	(1,16)	C 0
36	1.500	(1,22)	C 0	1.400	(1,21)	C 0	1.400	(1,23)	C 0	1.200	(3,19)	C 0	1.200	(1,18)	C 0
37	1.500	(3,17)	C 0	1.400	(3,16)	C 0	1.300	(1,20)	C 0	1.300	(1,21)	C 0	1.300	(1,22)	C 0
38	1.100	(2, 6)	C 0	1.100	(2, 8)	C 0	1.100	(2, 9)	C 0	1.000	(2, 5)	C 0	1.000	(2, 7)	C 0
39	1.200	(2, 5)	C 0	1.200	(2, 6)	C 0	1.200	(2, 7)	C 0	1.200	(2, 8)	C 0	1.200	(2, 9)	C 0
40	1.000	(1,14)	C 0	1.000	(1,15)	C 0	1.000	(1,17)	C 0	0.900	(1,13)	C 0	0.900	(1,18)	C 0
41	0.700	(1, 9)	C 0	0.700	(1,10)	C 0	0.600	(1, 5)	C 0	0.600	(1, 7)	C 0	0.600	(1, 8)	C 0

MAXIMUM 8-HOUR AVERAGED LINK CONTRIBUTIONS
IN PARTS PER MILLION (PPM)
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10

```
                1   2.200 (  2, 2)   0.00    2.20   0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.74  0.08  0.10
                                        Links  10+  0.05  0.09  0.23  0.03  0.00  0.00  0.00
0.00  0.00  0.00
                                        Links  20+  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  0.00  0.00
                                        Links  30+  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  0.00  0.00
                                        Links  40+  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  0.00  0.00
                                        Links  50+  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  0.00  0.00
                                        Links  60+  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  0.60  0.30
                                        Links  70+  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  0.00  0.00
```

DATE : 7/25/ 7
PAGE: 1
TIME : 19:17:44

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

==========
General Information
==========

Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to C for calculating CO averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99

Urban mixing heights were processed.

In 1999, Julian day 1 is a Friday.

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				LINK COORDINATES (M)					LENGTH				
					X1	Y1	X2	Y2			BRG	TYPE	H (M)	W (M)	NLANES
1.	33763-10136	278wb	*	570318.0	497039.0	570204.0	497065.0	*	117.	283.	AG	0.0	15.0	
2.	10136-10095	278wb	*	570204.0	497065.0	570016.0	497090.0	*	190.	278.	AG	0.0	15.0	
3.	10136-10095	278wb	*	570016.0	497090.0	569928.0	497117.0	*	92.	287.	AG	0.0	15.0	
4.	10136-10095	278wb	*	569928.0	497117.0	569825.0	497170.0	*	116.	297.	AG	0.0	15.0	
5.	10136-10095	278wb	*	569825.0	497170.0	569743.0	497234.0	*	104.	308.	AG	0.0	15.0	
6.	10136-10095	278wb	*	569743.0	497234.0	569676.0	497307.0	*	99.	317.	AG	0.0	15.0	
7.	10136-10095	278wb	*	569676.0	497307.0	569557.0	497454.0	*	189.	321.	AG	0.0	15.0	
8.	10095-10021	278wb-o	*	569557.0	497454.0	569447.0	497579.0	*	167.	319.	AG	0.0	15.0	
9.	10021-33728	278wb-t	*	569446.0	497579.0	569359.0	497648.0	*	111.	308.	AG	0.0	15.0	
10.	10021-33728	278wb-t	*	569359.0	497648.0	569035.0	497879.0	*	398.	305.	AG	0.0	15.0	
11.	33367-10018	278eb-o	*	569021.0	497864.0	569307.0	497651.0	*	357.	127.	AG	0.0	15.0	
12.	10018-10086	278eb-o	*	569307.0	497651.0	569443.0	497541.0	*	175.	129.	AG	0.0	15.0	
13.	10018-10086	278ebRM	*	569444.0	497540.0	569518.0	497464.0	*	106.	136.	AG	0.0	15.0	
14.	10018-10086	278ebRM	*	569518.0	497464.0	569588.0	497373.0	*	115.	142.	AG	0.0	15.0	
15.	10086-10131	278ebDE	*	569589.0	497372.0	569699.0	497244.0	*	169.	139.	AG	0.0	15.0	

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          16. 10086-10131  278ebDE* 569699.0  497244.0  569794.0  497164.0 *     124.
130.  AG    0.0  15.0
          17. 10086-10131  278ebDE* 569794.0  497164.0  569859.0  497124.0 *      76.
122.  AG    0.0  15.0
          18. 10086-10131  278ebDE* 569859.0  497124.0  569959.0  497081.0 *     109.
113.  AG    0.0  15.0
          19. 10086-10131  278ebDE* 569959.0  497081.0  570026.0  497066.0 *      69.
103.  AG    0.0  15.0
          20. 10086-10131  278ebDE* 570026.0  497066.0  570243.0  497034.0 *     219.
98.  AG    0.0  15.0
          21. 10131-33764  278ebDE* 570243.0  497034.0  570304.0  497019.0 *      63.
104.  AG    0.0  15.0
          22. 10136-10088  WBtoSB * 570268.0  497052.0  570114.0  497120.0 *     168.
294.  AG    0.0   9.0
          23. 10136-10088  WBtoSB * 570114.0  497120.0  570071.0  497130.0 *      44.
283.  AG    0.0   9.0
          24. 10136-10088  WBtoSB * 570071.0  497130.0  570028.0  497132.0 *      43.
273.  AG    0.0   9.0
          25. 10136-10088  WBtoSB * 570028.0  497132.0  569985.0  497126.0 *      43.
262.  AG    0.0   9.0
          26. 10136-10088  WBtoSB * 569985.0  497126.0  569895.0  497097.0 *      95.
252.  AG    0.0   9.0
          27. 10136-10088  WBtoSB * 569895.0  497097.0  569818.0  497056.0 *      87.
242.  AG    0.0   9.0
          28. 10136-10088  WBtoSB * 569818.0  497056.0  569751.0  497007.0 *      83.
234.  AG    0.0   9.0
          29. 10136-10088  WBtoSB * 569751.0  497007.0  569710.0  496964.0 *      59.
224.  AG    0.0   9.0
          30. 10097-10131  NBtoEB * 569806.0  496898.0  569870.0  496949.0 *      82.
51.  AG    0.0   9.0
          31. 10097-10131  NBtoEB * 569870.0  496949.0  569920.0  496977.0 *      57.
61.  AG    0.0   9.0
          32. 10097-10131  NBtoEB * 569920.0  496977.0  569993.0  497011.0 *      81.
65.  AG    0.0   9.0
          33. 10097-10131  NBtoEB * 569993.0  497011.0  570058.0  497029.0 *      67.
75.  AG    0.0   9.0
          34. 10097-10131  NBtoEB * 570058.0  497029.0  570116.0  497038.0 *      59.
81.  AG    0.0   9.0
          35. 10097-10131  NBtoEB * 570116.0  497038.0  570181.0  497040.0 *      65.
88.  AG    0.0   9.0
          36. 10097-10095  NBtoWB * 569744.0  496938.0  569758.0  497003.0 *      66.
12.  AG    0.0   9.0
          37. 10097-10095  NBtoWB * 569758.0  497003.0  569766.0  497100.0 *      97.
5.  AG    0.0   9.0
          38. 10097-10095  NBtoWB * 569766.0  497100.0  569765.0  497179.0 *      79.
359.  AG    0.0   9.0
          39. 10097-10095  NBtoWB * 569765.0  497179.0  569756.0  497240.0 *      62.
352.  AG    0.0   9.0
          40. 10097-10095  NBtoWB * 569756.0  497240.0  569742.0  497285.0 *      47.
343.  AG    0.0   9.0
          41. 10097-10095  NBtoWB * 569742.0  497285.0  569715.0  497333.0 *      55.
331.  AG    0.0   9.0
          42. 10097-10095  NBtoWB * 569715.0  497333.0  569685.0  497370.0 *      48.
321.  AG    0.0   9.0
          43. 10097-10095  NBtoWB * 569685.0  497370.0  569648.0  497398.0 *      46.
307.  AG    0.0   9.0
          44. 10097-10095  NBtoWB * 569648.0  497398.0  569562.0  497449.0 *     100.
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301.  AG    0.0   9.0
          45. 10086-10088  EBtoSB * 569588.0  497370.0  569622.0  497290.0 *      87.
157.  AG    0.0   9.0
          46. 10086-10088  EBtoSB * 569622.0  497290.0  569641.0  497224.0 *      69.
164.  AG    0.0   9.0
          47. 10086-10088  EBtoSB * 569641.0  497224.0  569652.0  497151.0 *      74.
171.  AG    0.0   9.0
          48. 10086-10088  EBtoSB * 569652.0  497151.0  569652.0  497081.0 *      70.
180.  AG    0.0   9.0
          49. 10086-10088  EBtoSB * 569652.0  497081.0  569643.0  496994.0 *      87.
186.  AG    0.0   9.0
          50. 10166-10055  GoeWBap* 570331.0  497080.0  569971.0  497279.0 *     411.
299.  AG    0.0  15.0
          51. 10166-10055  GoeWBap* 569971.0  497279.0  569728.0  497427.0 *     285.
301.  AG    0.0  15.0
          52. 10166-10055  GoeWBap* 569728.0  497427.0  569616.0  497502.0 *     135.
304.  AG    0.0  15.0
          53. 10166-10055  GoeWBQ * 569634.0  497490.0  569709.0  497440.0 *      90.
124.  AG    0.0   9.0    3
          54. 10055-10033  GoeWBon* 569616.0  497502.0  569552.0  497543.0 *      76.
303.  AG    0.0  15.0
          55. 10033-33719  GoeWBof* 569552.0  497543.0  569248.0  497767.0 *     378.
306.  AG    0.0  15.0
          56. 33719-39913  GoeWBde* 569248.0  497767.0  569136.0  497850.0 *     139.
307.  AG    0.0  15.0
```

JOB: Goethals RUN: GOETHALS TOLL 2034 BLD SCEN:4 9am CO

Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION			LINK COORDINATES (M)				LENGTH	BRG	TYPE	H	W	NLANES
			X1	Y1	X2	Y2	(M)	(DEG)		(M)	(M)	
57.	33719-39913	GoeWBde	569136.0	497850.0	569052.0	497907.0	102.	304.	AG	0.0	15.0	
58.	10033-10021	WBon	569561.0	497535.0	569450.0	497578.0	119.	291.	AG	0.0	9.0	
59.	10021-33719	WBoff	569318.0	497680.0	569249.0	497763.0	108.	320.	AG	0.0	9.0	
60.	9909-33718	GulEB10	569005.0	497835.0	569277.0	497635.0	338.	126.	AG	0.0	12.0	
61.	33718-10030	GulEB10	569277.0	497635.0	569328.0	497593.0	66.	129.	AG	0.0	12.0	
62.	33718-10030	GulEB10	569328.0	497593.0	569394.0	497527.0	93.	135.	AG	0.0	12.0	
63.	33718-10030	GulEB10	569394.0	497527.0	569456.0	497449.0	100.	142.	AG	0.0	12.0	
64.	10030-173401	GulEB10	569456.0	497449.0	569476.0	497416.0	39.	149.	AG	0.0	12.0	
65.	33718-10018	EBon	569164.0	497720.0	569306.0	497650.0	158.	116.	AG	0.0	9.0	
66.	10018-10030	EBoff	569429.0	497550.0	569457.0	497453.0	101.	164.	AG	0.0	9.0	
67.	10030-173401	GulEBde	569476.0	497415.0	569508.0	497362.0	62.	149.	AG	0.0	12.0	
68.	10030-173401	GulEBde	569508.0	497362.0	569539.0	497294.0	75.	155.	AG	0.0	12.0	
69.	10030-10055	ForNB17	569482.0	497416.0	569618.0	497499.0	159.	59.	AG	0.0	12.0	
70.	10030-10055	ForNBQ	569614.0	497497.0	569564.0	497466.0	59.	238.	AG	0.0	6.0	2
71.	10055-10065	ForNBde	569620.0	497500.0	569990.0	497730.0	436.	58.	AG	0.0	12.0	
72.	10065-10055	ForSB17	569975.0	497730.0	569613.0	497505.0	426.	238.	AG	0.0	12.0	
73.	10065-10055	ForSBQ	569620.0	497509.0	569685.0	497550.0	77.	58.	AG	0.0	6.0	2
74.	10055-10030	ForSBde	569609.0	497503.0	569479.0	497423.0	153.	238.	AG	0.0	12.0	
75.	10065-10055	MorWB	569706.0	497567.0	569521.0	497572.0	185.	272.	AG	0.0	9.0	

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC E (50 S)	569575.0	497466.0	1.8
2. REC E (25 S)	569596.0	497479.0	1.8
3. REC E (CNR)	569617.0	497491.0	1.8
4. REC E (25 E)	569639.0	497478.0	1.8
5. REC E (50 E)	569659.0	497464.0	1.8
6. REC E (MID E)	569695.0	497441.0	1.8
7. REC E (MID E)	569718.0	497443.0	1.8
8. REC E (50 E)	569684.0	497464.0	1.8
9. REC E (25 E)	569663.0	497479.0	1.8
10. REC E (CNR)	569642.0	497500.0	1.8
11. REC E (25 N)	569666.0	497521.0	1.8
12. REC E (50 N)	569688.0	497534.0	1.8

13. REC E (MID N)	*	569727.0	497546.0	1.8
14. REC W (50 N)	*	569656.0	497538.0	1.8
15. REC W (25 N)	*	569634.0	497525.0	1.8

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
16. REC W (CNR)	569613.0	497513.0	1.8
17. REC W (25 W)	569592.0	497527.0	1.8
18. REC W (50 W)	569572.0	497541.0	1.8
19. REC W (MID W)	569545.0	497559.0	1.8
20. REC W (MID W)	569520.0	497544.0	1.8
21. REC W (50 W)	569554.0	497532.0	1.8
22. REC W (25 W)	569576.0	497520.0	1.8
23. REC W (CNR)	569598.0	497504.0	1.8
24. REC W (25 S)	569577.0	497490.0	1.8
25. REC W (50 S)	569555.0	497477.0	1.8
26. RECID (N)	569411.0	497493.0	1.8
27. REC 0 (N)	569432.0	497463.0	1.8
28. REC 5 (N)	569447.0	497443.0	1.8
29. REC (CNR)	569462.0	497423.0	1.8
30. REC (CNR)	569475.0	497401.0	1.8
31. REC 5 (S)	569487.0	497379.0	1.8
32. REC 0 (S)	569499.0	497357.0	1.8
33. RECID (S)	569512.0	497328.0	1.8
34. REC34	569791.0	497397.0	1.8
35. REC35	569887.0	497337.0	1.8
36. REC36	569452.0	497625.0	1.8
37. REC37	569320.0	497722.0	1.8
38. REC38	569331.0	497576.0	1.8
39. REC39	569237.0	497653.0	1.8
40. REC40	569772.0	497586.0	1.8
41. REC41	569792.0	497624.0	1.8

JOB: Goethals RUN: GOETHALS TOLL 2034 BLD SCEN:4 9am CO

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (PPM)

	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG	*	2.5	2.0	2.0	1.3	1.2	1.1	1.0	1.2	1.5	1.4
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	2.5	2.0	2.0	1.3	1.2	1.1	1.0	1.2	1.5	1.4
WIND DIR	*	300	290	300	295	295	305	290	295	290	290
JULIAN	*	1	1	1	1	1	2	1	1	1	1
HOUR	*	24	22	24	23	23	1	22	23	22	22

	*	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG	*	1.4	1.2	0.8	1.0	1.2	1.4	1.2	1.3	1.3	1.9
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	1.4	1.2	0.8	1.0	1.2	1.4	1.2	1.3	1.3	1.9
WIND DIR	*	250	255	280	230	225	205	290	285	295	300
JULIAN	*	1	1	1	1	1	1	1	1	1	1
HOUR	*	14	15	20	10	9	5	22	21	23	24

	*	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG	*	1.5	1.5	1.3	1.4	2.1	1.0	0.9	0.9	0.9	1.1
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	1.5	1.5	1.3	1.4	2.1	1.0	0.9	0.9	0.9	1.1
WIND DIR	*	305	300	305	165	305	325	0	350	345	50
JULIAN	*	2	1	2	3	2	2	2	2	2	2
HOUR	*	1	24	1	21	1	5	12	10	9	

22

	*	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
MAX+BKG	*	0.7	0.7	0.6	0.7	0.6	1.5	1.5	1.1	1.2	1.0
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	0.7	0.7	0.6	0.7	0.6	1.5	1.5	1.1	1.2	1.0
WIND DIR	*	340	25	340	285	300	290	145	330	325	250
JULIAN	*	2	2	2	1	1	1	3	2	2	1
HOUR	*	8	17	8	21	24	22	17	6	5	14

JOB: Goethals RUN: GOETHALS TOLL
2034 BLD SCEN:4 9am CO

```
                 * MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND
CONCENTRATIONS (BKG) ADDED
                 *         (PPM)
                 *    REC41
         --------*--------
         MAX+BKG *     0.7
         - BKG   *     0.0
         --------*--------
           MAX   *     0.7
         WIND DIR*    225
         JULIAN  *      1
         HOUR    *      9
```

THE HIGHEST CONCENTRATION OF 2.50 PPM OCCURRED AT RECEPTOR REC1 .

JOB: Goethals RUN: GOETHALS TOLL 2034 BLD SCEN:4 9am CO

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AVERAGES.

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Highest Ending Day Hr	Highest Calm	Second highest Conc	Second highest Ending Day Hr	Second highest Calm
1	2.20*	(2, 2)	C 0	2.01*	(1,20)	C 0
2	1.86	(1,20)	C 0	1.80	(2, 2)	C 0
3	1.75	(2, 1)	C 0	1.69	(1,19)	C 0
4	1.09	(2, 2)	C 0	0.95	(2, 7)	C 0
5	0.98	(2, 3)	C 0	0.75	(2, 7)	C 0
6	0.74	(2, 2)	C 0	0.54	(2, 7)	C 0
7	0.76	(2, 1)	C 0	0.54	(2, 5)	C 0
8	0.99	(2, 1)	C 0	0.70	(1,21)	C 0
9	1.23	(1,24)	C 0	0.84	(1,20)	C 0
10	1.24	(1,24)	C 0	1.06	(2, 3)	C 0
11	1.18	(1,20)	C 0	1.04	(2, 1)	C 0
12	1.06	(1,19)	C 0	0.91	(1,16)	C 0
13	0.64	(1,22)	C 0	0.51	(2, 2)	C 0
14	0.85	(1,12)	C 0	0.71	(1,16)	C 0
15	1.08	(1,10)	C 0	0.76	(1,16)	C 0
16	1.36	(1, 9)	C 0	1.04	(1,24)	C 0
17	1.08	(2, 1)	C 0	0.96	(1, 8)	C 0
18	1.10	(1,23)	C 0	0.90	(1,19)	C 0
19	1.04	(1,24)	C 0	0.88	(3,24)	C 0
20	1.41	(2, 2)	C 0	0.99	(1,22)	C 0
21	1.21	(2, 2)	C 0	0.86	(2, 7)	C 0
22	1.11	(2, 2)	C 0	0.81	(2, 7)	C 0
23	1.14	(1, 8)	C 0	0.98	(3,24)	C 0
24	1.28	(3,24)	C 0	1.21	(1, 8)	C 0

JOB: Goethals RUN: GOETHALS TOLL 2034
BLD SCEN:4 9am CO

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Ending Day Hr	Calm	Second highest Conc	Ending Day Hr	Calm
25	1.86	(3,24)	C 0	1.78	(2, 3)	C 0
26	0.88	(2,11)	C 0	0.88	(3, 9)	C 0
27	0.80	(3, 8)	C 0	0.75	(2,12)	C 0
28	0.81	(2,13)	C 0	0.73	(2,10)	C 0
29	0.84	(3, 6)	C 0	0.73	(2,11)	C 0
30	0.91	(2,24)	C 0	0.74	(2,21)	C 0
31	0.64	(2,14)	C 0	0.61	(2,21)	C 0
32	0.59	(2,17)	C 0	0.54	(2,14)	C 0
33	0.51	(2,15)	C 0	0.48	(2,20)	C 0
34	0.56	(2, 1)	C 0	0.39	(1,20)	C 0
35	0.44	(1,24)	C 0	0.35	(3,19)	C 0
36	1.26	(1,24)	C 0	1.05	(3,24)	C 0
37	1.26	(3,22)	C 0	1.23	(1,22)	C 0
38	1.02	(2,11)	C 0	0.88	(2,17)	C 0
39	1.12	(2,11)	C 0	1.02	(3, 7)	C 0
40	0.92	(1,20)	C 0	0.76	(1,16)	C 0
41	0.60	(1,12)	C 0	0.45	(3, 8)	C 0

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	2.500*	(1,24)	C 0	2.400*	(1,23)	C 0	2.300	(2, 1)	C 0	2.200	(1,15)	C 0	2.200	(2, 2)	C 0
2	2.000	(1,22)	C 0	2.000	(1,15)	C 0	2.000	(1,17)	C 0	1.900	(1,13)	C 0	1.900	(1,14)	C 0
3	2.000	(1,24)	C 0	1.900	(1,23)	C 0	1.900	(1,15)	C 0	1.800	(1,22)	C 0	1.800	(1,16)	C 0
4	1.300	(1,23)	C 0	1.300	(1,24)	C 0	1.200	(1,22)	C 0	1.200	(2, 1)	C 0	1.000	(1,21)	C 0
5	1.200	(1,23)	C 0	1.200	(1,24)	C 0	1.100	(1,22)	C 0	1.000	(2, 1)	C 0	1.000	(2, 2)	C 0
6	1.100	(2, 1)	C 0	0.900	(1,23)	C 0	0.900	(1,24)	C 0	0.800	(1,22)	C 0	0.600	(1,20)	C 0
7	1.000	(1,22)	C 0	0.800	(1,23)	C 0	0.800	(1,24)	C 0	0.800	(2, 1)	C 0	0.700	(1,19)	C 0
8	1.200	(1,23)	C 0	1.200	(1,24)	C 0	1.100	(1,22)	C 0	1.000	(1,21)	C 0	1.000	(2, 1)	C 0
9	1.500	(1,22)	C 0	1.400	(1,21)	C 0	1.400	(1,23)	C 0	1.300	(1,24)	C 0	1.200	(1,20)	C 0
10	1.400	(1,22)	C 0	1.400	(1,23)	C 0	1.300	(1,14)	C 0	1.300	(1,19)	C 0	1.200	(1,24)	C 0
11	1.400	(1,14)	C 0	1.300	(1,15)	C 0	1.200	(1,19)	C 0	1.200	(1,20)	C 0	1.200	(1,22)	C 0
12	1.200	(1,15)	C 0	1.200	(1,16)	C 0	1.100	(1,12)	C 0	1.100	(1,17)	C 0	1.100	(1,18)	C 0
13	0.800	(1,20)	C 0	0.700	(1,18)	C 0	0.700	(1,21)	C 0	0.700	(1,22)	C 0	0.600	(1,15)	C 0
14	1.000	(1,10)	C 0	1.000	(1,12)	C 0	0.900	(1, 8)	C 0	0.900	(1, 9)	C 0	0.800	(1, 4)	C 0
15	1.200	(1, 9)	C 0	1.100	(1, 8)	C 0	1.100	(1, 3)	C 0	1.100	(1, 4)	C 0	1.100	(1,10)	C 0

```
             16   1.400 (  1, 5) C 0   1.400 (  1, 6) C 0   1.400 (  1, 7) C 0   1.400 (
1, 8) C 0   1.400 (  1, 9) C 0
             17   1.200 (  1,22) C 0   1.200 (  1,24) C 0   1.200 (  1,21) C 0   1.200 (
1,23) C 0   1.100 (  1, 1) C 0
             18   1.300 (  1,21) C 0   1.300 (  1,22) C 0   1.200 (  1,23) C 0   1.200 (
1,20) C 0   1.000 (  1,24) C 0
```

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

==========
General Information
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Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to C for calculating CO averages.

Ambient background concentrations are included in the averages below.

Site & Meteorological Constants

VS = 2.0 CM/S VD = 1.0 CM/S Z0 = 108. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99

Urban mixing heights were processed.

In 1999, Julian day 1 is a Friday.

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION			*	LINK COORDINATES (M)				*	LENGTH				
		H	W	NLANES	*	X1	Y1	X2	Y2	*	(M)	BRG	TYPE	(DEG)
		(M)	(M)											
1.	33369-11750	278	WBto	*	579476.0	494992.0	579367.0	495008.0	*	110.	278.	AG	0.0	15.0
2.	11750-11734	278	WBto	*	579367.0	495008.0	578990.0	495135.0	*	398.	289.	AG	0.0	15.0
3.	11734-33708	278	WB	*	578990.0	495135.0	578875.0	495174.0	*	121.	289.	AG	0.0	15.0
4.	11734-33708	278	WB	*	578875.0	495174.0	578680.0	495269.0	*	217.	296.	AG	0.0	15.0
5.	11661-33706	278	EBto	*	578669.0	495245.0	578824.0	495167.0	*	174.	117.	AG	0.0	15.0
6.	33706-11733	278	EBto	*	578824.0	495167.0	579041.0	495071.0	*	237.	114.	AG	0.0	15.0
7.	33706-11733	278	EB	*	579041.0	495070.0	579112.0	495017.0	*	89.	127.	AG	0.0	15.0
8.	11733-11749	278	EBto	*	579112.0	495017.0	579208.0	494982.0	*	102.	110.	AG	0.0	15.0
9.	11749-33751	278	EB	*	579209.0	494981.0	579352.0	494953.0	*	146.	101.	AG	0.0	15.0
10.	11749-33751	278	EB	*	579352.0	494953.0	579464.0	494949.0	*	112.	92.	AG	0.0	15.0
11.	11744-33711	Lly	NB1	*	579215.0	494669.0	579144.0	494797.0	*	146.	331.	AG	0.0	12.0
12.	11744-33711	Lly	NB3	*	579144.0	494797.0	579121.0	494857.0	*	64.	339.	AG	0.0	12.0
13.	11744-33711	Lly	NB3	*	579121.0	494857.0	579105.0	494918.0	*	63.	345.	AG	0.0	15.0
14.	11744-33711	Lly	NBQ	*	579107.0	494911.0	579119.0	494862.0	*	50.	166.	AG	0.0	9.0 3
15.	33711-11740	Lly	NB1	*	579105.0	494918.0	579049.0	495162.0	*	250.	347.	AG	0.0	9.0

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -------------------------*----------------------------------------
*----------------------------------------
          16. 11731-33709  Lly NB1* 579049.0  495162.0  579042.0  495244.0 *      82.
355.  AG    0.0   9.0
          17. 33709-11723  Lly NB1* 579042.0  495244.0  579052.0  495294.0 *      51.
11.  AG    0.0  12.0
          18. 11723-11729  Lly NBd* 579053.0  495294.0  579073.0  495328.0 *      39.
30.  AG    0.0  12.0
          19. 11723-11729  Lly NBd* 579073.0  495328.0  579102.0  495356.0 *      40.
46.  AG    0.0  12.0
          20. 11723-11729  Lly NBd* 579102.0  495356.0  579265.0  495456.0 *     191.
58.  AG    0.0  12.0
          21. 11729-11723  Lly SB1* 579255.0  495461.0  579088.0  495360.0 *     195.
239.  AG    0.0  12.0
          22. 11729-11723  Lly SB1* 579088.0  495360.0  579050.0  495328.0 *      50.
230.  AG    0.0  12.0
          23. 33709-11731  Lly SB3* 579050.0  495328.0  579032.0  495270.0 *      61.
197.  AG    0.0  12.0
          24. 33709-11731  Lly SB3* 579032.0  495270.0  579029.0  495197.0 *      73.
182.  AG    0.0  12.0
          25. 11731-33747  Lly SB3* 579029.0  495197.0  579075.0  494994.0 *     208.
167.  AG    0.0  12.0
          26. 11740-33711  Lly SB3* 579075.0  494994.0  579095.0  494913.0 *      83.
166.  AG    0.0  12.0
          27. 11740-33711  Lly SBQ* 579092.0  494926.0  579081.0  494967.0 *      42.
345.  AG    0.0   6.0    2
          28. 11755-11769  Lly SB1* 579095.0  494912.0  579109.0  494855.0 *      59.
166.  AG    0.0  12.0
          29. 11755-11769  Lly SB1* 579109.0  494855.0  579134.0  494792.0 *      68.
158.  AG    0.0  12.0
          30. 11755-11769  Lly SB3* 579135.0  494792.0  579203.0  494665.0 *     144.
152.  AG    0.0  12.0
          31. 11755-11769  Lly SBQ* 579203.0  494667.0  579180.0  494709.0 *      48.
331.  AG    0.0   6.0    2
          32. 11744-11749  LlyNBon* 579133.0  494831.0  579128.0  494863.0 *      32.
351.  AG    0.0   9.0
          33. 11744-11749  LlyNBon* 579128.0  494863.0  579114.0  494925.0 *      64.
347.  AG    0.0   9.0
          34. 11744-11749  LlyNBon* 579114.0  494925.0  579117.0  494952.0 *      27.
6.  AG    0.0   9.0
          35. 11744-11749  LlyNBon* 579117.0  494952.0  579134.0  494970.0 *      25.
43.  AG    0.0   9.0
          36. 11744-11749  LlyNBon* 579134.0  494970.0  579158.0  494978.0 *      25.
72.  AG    0.0   9.0
          37. 11744-11749  LlyNBon* 579158.0  494978.0  579204.0  494981.0 *      46.
86.  AG    0.0   9.0
          38. 11750-11723  LlyNBof* 579365.0  495011.0  579115.0  495152.0 *     287.
299.  AG    0.0   9.0
          39. 11750-11723  LlyNBof* 579115.0  495152.0  579087.0  495179.0 *      39.
314.  AG    0.0  12.0
          40. 11750-11723  LlyNBof* 579087.0  495179.0  579064.0  495211.0 *      39.
324.  AG    0.0   9.0
          41. 11750-11723  LlyNBof* 579064.0  495211.0  579055.0  495249.0 *      39.
347.  AG    0.0   9.0
          42. 11750-11723  LlyNBof* 579055.0  495249.0  579056.0  495295.0 *      46.
1.  AG    0.0   9.0
          43. 11734-11731  LlySBof* 578993.0  495136.0  578931.0  495187.0 *      80.
309.  AG    0.0   9.0
          44. 11734-11731  LlySBof* 578931.0  495187.0  578919.0  495213.0 *      29.
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335.  AG    0.0   9.0
          45. 11734-11731  LlySBof* 578919.0  495213.0  578924.0  495243.0 *      30.
9.  AG    0.0   9.0
          46. 11734-11731  LlySBof* 578924.0  495243.0  578946.0  495264.0 *      30.
46.  AG    0.0   9.0
          47. 11734-11731  LlySBof* 578946.0  495264.0  578972.0  495269.0 *      26.
79.  AG    0.0   9.0
          48. 11734-11731  LlySBof* 578972.0  495269.0  578998.0  495261.0 *      27.
107.  AG    0.0  12.0
          49. 11734-11731  LlySBof* 578998.0  495261.0  579014.0  495239.0 *      27.
144.  AG    0.0   9.0
          50. 11734-11731  LlySBof* 579014.0  495239.0  579026.0  495201.0 *      40.
162.  AG    0.0   9.0
          51. 11740-11733  LlySBon* 579073.0  494988.0  579061.0  494964.0 *      27.
207.  AG    0.0   9.0
          52. 11740-11733  LlySBon* 579061.0  494964.0  579044.0  494949.0 *      23.
229.  AG    0.0   9.0
          53. 11740-11733  LlySBon* 579044.0  494949.0  579020.0  494944.0 *      25.
258.  AG    0.0   9.0
          54. 11740-11733  LlySBon* 579020.0  494944.0  578994.0  494950.0 *      27.
283.  AG    0.0  12.0
          55. 11740-11733  LlySBon* 578994.0  494950.0  578977.0  494969.0 *      25.
318.  AG    0.0   9.0
          56. 11740-11733  LlySBon* 578977.0  494969.0  578971.0  494997.0 *      29.
348.  AG    0.0   9.0
```

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

Link Data Constants - (Variable data in *.LNK file)

```
            LINK DESCRIPTION     *         LINK COORDINATES (M)           *   LENGTH
BRG  TYPE    H     W  NLANES
                                  *     X1        Y1        X2        Y2   *     (M)
(DEG)        (M)   (M)
          -----------------------*----------------------------------------
*----------------------------------------
          57. 11740-11733  LlySBon* 578971.0  494997.0  578978.0  495020.0 *      24.
17.  AG    0.0   9.0
          58. 11740-11733  LlySBon* 578978.0  495020.0  578997.0  495037.0 *      25.
48.  AG    0.0   9.0
          59. 11740-11733  LlySBon* 578997.0  495037.0  579020.0  495042.0 *      24.
78.  AG    0.0   9.0
          60. 11740-11733  LlySBon* 579020.0  495042.0  579105.0  495021.0 *      88.
104.  AG    0.0   9.0
          61. 33709-33708  LclnWBo* 579042.0  495333.0  578905.0  495249.0 *     161.
238.  AG    0.0  12.0
          62. 33709-33708  LclnWBo* 578905.0  495249.0  578865.0  495228.0 *      45.
242.  AG    0.0  12.0
          63. 33709-33708  LclnWBo* 578865.0  495228.0  578825.0  495220.0 *      41.
259.  AG    0.0  12.0
          64. 33709-33708  LclnWBo* 578825.0  495220.0  578798.0  495222.0 *      27.
274.  AG    0.0  12.0
          65. 33709-33708  LclnWBo* 578798.0  495222.0  578760.0  495233.0 *      40.
286.  AG    0.0  12.0
          66. 33706-33711  NrwsEBo* 578825.0  495164.0  578869.0  495127.0 *      57.
130.  AG    0.0  12.0
          67. 33706-33711  NrwsEBo* 578869.0  495127.0  578894.0  495096.0 *      40.
141.  AG    0.0  12.0
          68. 33706-33711  NrwsEBo* 578894.0  495096.0  578975.0  494958.0 *     160.
150.  AG    0.0  12.0
          69. 33706-33711  NrwsEBo* 578975.0  494958.0  578984.0  494946.0 *      15.
143.  AG    0.0  12.0
          70. 33706-33711  NrwsEBo* 578984.0  494946.0  579004.0  494929.0 *      26.
130.  AG    0.0  12.0
          71. 33706-33711  NrwsEBo* 579004.0  494929.0  579038.0  494917.0 *      36.
109.  AG    0.0  12.0
          72. 33706-33711  NrwsEBo* 579038.0  494917.0  579061.0  494916.0 *      23.
92.  AG    0.0  12.0
          73. 33706-33711  SIEEBof* 579061.0  494916.0  579098.0  494924.0 *      38.
78.  AG    0.0  12.0
          74. 33706-33711  NrwsEBQ* 579086.0  494921.0  579064.0  494917.0 *      22.
260.  AG    0.0   6.0    2
          75. 11652-11755  Nrw-soE* 578816.0  495139.0  578873.0  495100.0 *      69.
124.  AG    0.0  15.0
          76. 11652-11755  Nrw-soE* 578873.0  495100.0  578892.0  495078.0 *      29.
139.  AG    0.0  15.0
          77. 11652-11755  Nrw-soE* 578892.0  495078.0  578967.0  494948.0 *     150.
150.  AG    0.0  15.0
          78. 11652-11755  Nrw-soE* 578967.0  494948.0  578994.0  494922.0 *      37.
134.  AG    0.0  15.0
          79. 11652-11755  Nrw-soE* 578994.0  494922.0  579019.0  494911.0 *      27.
114.  AG    0.0  15.0
          80. 11652-11755  Nrw-soE* 579019.0  494911.0  579049.0  494905.0 *      31.
101.  AG    0.0  15.0
          81. 11652-11755  Nrw-soE* 579049.0  494905.0  579101.0  494908.0 *      52.
87.  AG    0.0  15.0
          82. 11652-11755  Nrw-soE* 579088.0  494907.0  579054.0  494905.0 *      34.
267.  AG    0.0   9.0    3
          83. 11734-11658  NrwsWB3* 578986.0  495138.0  578921.0  495177.0 *      76.
301.  AG    0.0  15.0
          84. 11734-11658  NrwsWB3* 578921.0  495177.0  578765.0  495259.0 *     176.
298.  AG    0.0  15.0
          85. 11734-11658  NrwsWBQ* 578773.0  495255.0  578817.0  495231.0 *      50.
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119.  AG    0.0   9.0    3
          86. 11658-11610  NrwsWBd* 578766.0  495259.0  578692.0  495297.0 *      83.
297.  AG    0.0  15.0
          87. 11604-11652  NrwsEB3* 578658.0  495214.0  578741.0  495172.0 *      93.
117.  AG    0.0  12.0
          88. 11604-11652  NrwsEBQ* 578730.0  495178.0  578688.0  495198.0 *      47.
295.  AG    0.0   6.0    2
          89. 11652-11733  NrwsEBt* 578741.0  495172.0  578817.0  495139.0 *      83.
113.  AG    0.0  12.0
          90. 11652-11733  NrwsEBt* 578823.0  495137.0  579098.0  495024.0 *     297.
112.  AG    0.0  12.0
          91. 11587-11652  fb NB13* 578645.0  495003.0  578666.0  495004.0 *      21.
87.  AG    0.0   9.0
          92. 11587-11652  fb NB13* 578666.0  495004.0  578699.0  495023.0 *      38.
60.  AG    0.0   9.0
          93. 11587-11652  fb NB13* 578699.0  495023.0  578710.0  495053.0 *      32.
20.  AG    0.0   9.0
          94. 11587-11652  fb NB13* 578710.0  495053.0  578725.0  495105.0 *      54.
16.  AG    0.0   9.0
          95. 11587-11652  fb NB33* 578725.0  495105.0  578744.0  495171.0 *      69.
16.  AG    0.0   9.0
          96. 11587-11652  fb NBQ3* 578741.0  495163.0  578731.0  495128.0 *      36.
196.  AG    0.0   3.0    1
          97. 11652-11658  fb NB32* 578744.0  495173.0  578768.0  495257.0 *      87.
16.  AG    0.0  12.0
```

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

Link Data Constants - (Variable data in *.LNK file)

	LINK DESCRIPTION				LINK COORDINATES (M)					LENGTH	BRG	TYPE	H	W	NLANES
					X1	Y1	X2	Y2		(M)	(DEG)		(M)	(M)	
98.	11652-11658	fb	NBQ3	*	578766.0	495250.0	578757.0	495217.0	*	34.	195.	AG	0.0	6.0	2
99.	11658-11692	fb	NB13	*	578769.0	495259.0	578783.0	495306.0	*	49.	17.	AG	0.0	9.0	
100.	11587-11652	fb	NB13	*	578784.0	495306.0	578796.0	495351.0	*	47.	15.	AG	0.0	9.0	
101.	11658-11692	fb	NB13	*	578796.0	495351.0	578831.0	495468.0	*	122.	17.	AG	0.0	9.0	
102.	11692-11658	fb	SB13	*	578826.0	495468.0	578793.0	495351.0	*	122.	196.	AG	0.0	9.0	
103.	11692-11658	fb	SB13	*	578792.0	495351.0	578780.0	495307.0	*	46.	195.	AG	0.0	9.0	
104.	11692-11658	fb	SB32	*	578780.0	495307.0	578763.0	495261.0	*	49.	200.	AG	0.0	12.0	
105.	11692-11658	fb	SBQ3	*	578766.0	495269.0	578773.0	495290.0	*	22.	18.	AG	0.0	6.0	2
106.	11658-11652	fb	SB33	*	578762.0	495260.0	578739.0	495177.0	*	86.	195.	AG	0.0	12.0	
107.	11658-11652	fb	SBQ3	*	578740.0	495182.0	578749.0	495212.0	*	31.	17.	AG	0.0	6.0	2
108.	11652-11587	fb	SB13	*	578739.0	495176.0	578733.0	495148.0	*	29.	192.	AG	0.0	9.0	
109.	11652-11587	fb	SB13	*	578733.0	495148.0	578721.0	495107.0	*	43.	196.	AG	0.0	9.0	
110.	11652-11587	fb	SBde	*	578721.0	495107.0	578702.0	495040.0	*	70.	196.	AG	0.0	9.0	
111.	11652-11587	fb	SBde	*	578702.0	495040.0	578688.0	495020.0	*	24.	215.	AG	0.0	9.0	
112.	11652-11587	fb	SBde	*	578688.0	495020.0	578665.0	495008.0	*	26.	242.	AG	0.0	9.0	
113.	11652-11587	fb	SBde	*	578665.0	495008.0	578646.0	495008.0	*	19.	270.	AG	0.0	9.0	

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
1. REC E (MID S)	579137.0	494849.0	1.8
2. REC E (50 S)	579128.0	494893.0	1.8
3. REC E (25 S)	579123.0	494917.0	1.8
4. REC E (CNR)	579134.0	494962.0	1.8
5. REC E (25 E)	579178.0	494966.0	1.8
6. REC E (50 E)	579202.0	494959.0	1.8
7. REC E (MID E)	579242.0	494948.0	1.8
8. REC E (MID E)	579152.0	495141.0	1.8
9. REC E (50 E)	579110.0	495165.0	1.8
10. REC E (25 E)	579092.0	495183.0	1.8
11. REC E (CNR)	579060.0	495265.0	1.8
12. REC E (25 N)	579082.0	495325.0	1.8
13. REC E (50 N)	579099.0	495344.0	1.8
14. REC E (MID N)	579134.0	495367.0	1.8
15. REC W (MID N)	579140.0	495400.0	1.8
16. REC W (50 N)	579095.0	495373.0	1.8
17. REC W (25 N)	579074.0	495361.0	1.8
18. REC W (CNR)	579052.0	495348.0	1.8

JOB: Goethals RUN: VERAZZANO
NARROWS BRIDGE TOLL 2034 BLD S

Receptor Data

RECEPTOR	COORDINATES (M) X	Y	Z
19. REC W (CNR)	579031.0	495335.0	1.8
20. REC W (25 S)	579009.0	495322.0	1.8
21. REC W (50 S)	578988.0	495309.0	1.8
22. REC W (MID S)	578958.0	495292.0	1.8
23. REC W (MID W)	579009.0	494906.0	1.8
24. REC W (50 W)	579037.0	494899.0	1.8
25. REC W (25 W)	579061.0	494898.0	1.8
26. REC W (CNR)	579087.0	494895.0	1.8
27. REC W (25 S)	579097.0	494871.0	1.8
28. REC W (50 S)	579103.0	494847.0	1.8
29. REC W (MID S)	579118.0	494808.0	1.8
30. REC E (MID S)	578726.0	495088.0	1.8
31. REC E (50 S)	578731.0	495112.0	1.8
32. REC E (25 S)	578738.0	495136.0	1.8
33. REC E (CNR)	578745.0	495161.0	1.8
34. REC E (25 E)	578768.0	495150.0	1.8
35. REC E (50 E)	578790.0	495137.0	1.8
36. REC E (MID E)	578828.0	495119.0	1.8
37. REC E (MID E)	578838.0	495229.0	1.8
38. REC E (50 E)	578820.0	495239.0	1.8
39. REC E (25 E)	578798.0	495250.0	1.8
40. REC E (CNR)	578776.0	495263.0	1.8
41. REC E (25 N)	578783.0	495287.0	1.8
42. REC E (50 N)	578790.0	495311.0	1.8
43. REC E (MID N)	578802.0	495353.0	1.8
44. REC W (MID N)	578788.0	495355.0	1.8
45. REC W (50 N)	578776.0	495314.0	1.8
46. REC W (25 N)	578769.0	495294.0	1.8
47. REC W (CNR)	578760.0	495271.0	1.8
48. REC W (25 W)	578737.0	495282.0	1.8
49. REC W (50 W)	578715.0	495293.0	1.8
50. REC W (MID W)	578698.0	495302.0	1.8
51. REC W (MID W)	578659.0	495205.0	1.8
52. REC W (50 W)	578688.0	495190.0	1.8
53. REC W (25 W)	578711.0	495179.0	1.8
54. REC W (CNR)	578733.0	495167.0	1.8
55. REC W (25 S)	578727.0	495143.0	1.8
56. REC W (50 S)	578720.0	495119.0	1.8
57. REC W (MID S)	578712.0	495091.0	1.8

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (PPM)

	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10
MAX+BKG	*	2.3	2.1	1.9	2.6	3.0	3.0	3.1	1.3	1.3	1.2
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	2.3	2.1	1.9	2.6	3.0	3.0	3.1	1.3	1.3	1.2
WIND DIR	*	335	320	330	325	305	310	310	270	140	185
JULIAN	*	2	2	2	2	2	2	2	1	3	1
HOUR	*	7	4	6	5	1	2	2	18	16	1

	*	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
MAX+BKG	*	1.0	0.7	0.8	0.6	0.9	1.1	0.9	0.9	1.0	0.9
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	1.0	0.7	0.8	0.6	0.9	1.1	0.9	0.9	1.0	0.9
WIND DIR	*	190	210	240	240	230	205	200	185	180	155
JULIAN	*	1	1	1	1	1	1	1	1	3	3
HOUR	*	2	6	12	12	10	5	4	1	24	19

	*	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30
MAX+BKG	*	0.9	0.9	1.3	1.5	1.8	1.7	1.7	1.5	1.3	1.6
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	0.9	0.9	1.3	1.5	1.8	1.7	1.7	1.5	1.3	1.6
WIND DIR	*	140	135	80	75	50	45	30	10	5	10
JULIAN	*	3	3	3	3	2	2	2	2	2	2
HOUR	*	16	15	4	3	22	21	18	14	13	

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	*	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
MAX+BKG	*	1.9	2.2	2.6	2.4	2.2	2.2	1.9	1.7	1.8	2.0
- BKG	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	1.9	2.2	2.6	2.4	2.2	2.2	1.9	1.7	1.8	2.0
WIND DIR	*	5	355	100	100	100	95	125	255	125	160
JULIAN	*	2	2	3	3	3	3	3	1	3	3
HOUR	*	13	11	8	8	8	7	13	15	13	20

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED

(PPM)

	REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50
MAX+BKG	1.3	1.3	1.2	1.2	1.4	1.8	2.0	2.0	1.8	1.8
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	1.3	1.3	1.2	1.2	1.4	1.8	2.0	2.0	1.8	1.8
WIND DIR	210	195	200	135	135	160	125	130	130	130
JULIAN	1	1	1	3	3	3	3	3	3	3
HOUR	6	3	4	15	15	20	13	14	14	14

	REC51	REC52	REC53	REC54	REC55	REC56	REC57
MAX+BKG	2.6	2.7	2.7	2.9	2.0	1.6	1.4
- BKG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	2.6	2.7	2.7	2.9	2.0	1.6	1.4
WIND DIR	105	105	105	100	100	20	20
JULIAN	3	3	3	3	3	2	2
HOUR	9	9	9	8	8	16	16

THE HIGHEST CONCENTRATION OF 3.10 PPM OCCURRED AT RECEPTOR REC7 .

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

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Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.

3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AVERAGES.

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Highest Ending Day Hr	Highest Calm	Second highest Conc	Second highest Ending Day Hr	Second highest Calm
1	1.97	(2, 9)	C 0	1.50	(2, 5)	C 0
2	1.91	(2, 9)	C 0	1.65	(2,12)	C 0
3	1.80	(2,10)	C 0	1.49	(2,14)	C 0
4	2.39	(2, 8)	C 0	2.29	(3, 4)	C 0
5	2.70*	(2, 7)	C 0	2.64*	(3, 6)	C 0
6	2.67	(2, 7)	C 0	2.63	(3, 6)	C 0
7	2.59	(2, 6)	C 0	2.40	(3, 5)	C 0
8	1.17	(1,18)	C 0	1.16	(3,22)	C 0
9	1.11	(3,20)	C 0	1.09	(1,16)	C 0
10	1.10	(1, 8)	C 0	0.96	(3,21)	C 0
11	0.88	(1, 8)	C 0	0.78	(1,16)	C 0
12	0.59	(1, 8)	C 0	0.54	(1,16)	C 0
13	0.66	(1,16)	C 0	0.54	(1,11)	C 0
14	0.52	(1,18)	C 0	0.43	(1,23)	C 0
15	0.77	(1,10)	C 0	0.70	(3,24)	C 0
16	0.88	(1, 8)	C 0	0.79	(3,23)	C 0
17	0.81	(1, 8)	C 0	0.81	(3,23)	C 0
18	0.79	(3,24)	C 0	0.69	(1, 8)	C 0
19	0.83	(3,24)	C 0	0.66	(1, 8)	C 0
20	0.80	(3,23)	C 0	0.64	(1, 8)	C 0
21	0.86	(3,23)	C 0	0.67	(1, 8)	C 0
22	0.84	(3,21)	C 0	0.74	(1, 8)	C 0
23	1.02	(3, 5)	C 0	0.96	(2,20)	C 0
24	1.25	(3, 4)	C 0	0.94	(3, 8)	C 0

JOB: Goethals RUN: VERAZZANO NARROWS BRIDGE TOLL 2034 BLD S

MAXIMUM 8-HOUR RUNNING NONOVERLAPPING AVERAGE CONCENTRATIONS
IN PARTS PER MILLION (PPM),
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Highest Conc	Ending Day Hr	Calm	Second highest Conc	Ending Day Hr	Calm
25	1.64	(3, 4)	C 0	1.34	(3, 7)	C 0
26	1.64	(2,12)	C 0	1.62	(3, 3)	C 0
27	1.49	(2,21)	C 0	1.36	(2,18)	C 0
28	1.38	(2,21)	C 0	1.29	(2,17)	C 0
29	1.21	(2,19)	C 0	1.02	(2,15)	C 0
30	1.36	(2,15)	C 0	1.04	(2,20)	C 0
31	1.71	(2,16)	C 0	1.35	(2,12)	C 0
32	2.08	(2,14)	C 0	1.69	(2,19)	C 0
33	2.49	(2,13)	C 0	2.22	(2, 9)	C 0
34	2.05	(3, 9)	C 0	1.84	(2,10)	C 0
35	1.82	(3,10)	C 0	1.65	(2,11)	C 0
36	1.84	(3, 9)	C 0	1.58	(3, 4)	C 0
37	1.78	(3,19)	C 0	1.69	(1,17)	C 0
38	1.59	(3,19)	C 0	1.50	(1,17)	C 0
39	1.64	(1,17)	C 0	1.55	(3,19)	C 0
40	1.85	(3,22)	C 0	1.80	(1, 8)	C 0
41	1.25	(1,11)	C 0	1.11	(1,16)	C 0
42	1.21	(1,10)	C 0	0.89	(1,16)	C 0
43	1.09	(1, 9)	C 0	0.62	(3,21)	C 0
44	1.12	(3,21)	C 0	0.74	(1, 8)	C 0
45	1.14	(3,20)	C 0	1.03	(1, 8)	C 0
46	1.62	(3,24)	C 0	1.25	(1, 8)	C 0
47	1.85	(3,20)	C 0	1.53	(1, 8)	C 0
48	1.65	(3,19)	C 0	1.36	(3,16)	C 0
49	1.61	(3,20)	C 0	1.25	(3,16)	C 0
50	1.60	(3,19)	C 0	1.24	(3,16)	C 0
51	2.20	(3,10)	C 0	1.73	(3,14)	C 0
52	2.47	(3,10)	C 0	2.05	(3, 5)	C 0
53	2.53	(3,10)	C 0	2.16	(3, 4)	C 0
54	2.54	(3,10)	C 0	2.09	(3, 5)	C 0
55	1.83	(3, 9)	C 0	1.70	(3, 1)	C 0
56	1.51	(2,23)	C 0	1.44	(2,21)	C 0
57	1.34	(2,23)	C 0	1.21	(2,20)	C 0

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
1	2.300	(2, 7)	C 0	2.100	(2, 4)	C 0	2.100	(2, 8)	C 0	2.000	(2, 5)	C 0	1.900	(2, 9)	C 0
2	2.100	(2, 4)	C 0	2.100	(2, 5)	C 0	1.900	(2, 8)	C 0	1.900	(2, 2)	C 0	1.900	(2, 6)	C 0

JOB: Goethals RUN: VERAZZANO
NARROWS BRIDGE TOLL 2034 BLD S

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
3	1.900	(2, 6)	C 0	1.900	(2, 4)	C 0	1.900	(2, 5)	C 0	1.800	(2, 7)	C 0	1.800	(2, 8)	C 0
4	2.600	(2, 5)	C 0	2.500	(2, 3)	C 0	2.500	(2, 4)	C 0	2.500	(2, 6)	C 0	2.400	(2, 2)	C 0
5	3.000	(2, 1)	C 0	3.000	(2, 2)	C 0	3.000	(3, 4)	C 0	3.000	(2, 3)	C 0	2.900	(3, 5)	C 0
6	3.000	(2, 2)	C 0	3.000	(2, 1)	C 0	2.900	(2, 3)	C 0	2.900	(3, 4)	C 0	2.800	(3, 3)	C 0
7	3.100*	(2, 2)	C 0	3.100*	(2, 1)	C 0	2.700	(1,24)	C 0	2.600	(3, 3)	C 0	2.600	(2, 3)	C 0
8	1.300	(1,18)	C 0	1.200	(1,13)	C 0	1.200	(1,15)	C 0	1.200	(1,16)	C 0	1.200	(1,17)	C 0
9	1.300	(3,16)	C 0	1.200	(1,13)	C 0	1.200	(1,15)	C 0	1.200	(3,15)	C 0	1.200	(3,17)	C 0
10	1.200	(1, 1)	C 0	1.100	(1, 2)	C 0	1.100	(1, 5)	C 0	1.100	(1, 6)	C 0	1.100	(1, 7)	C 0
11	1.000	(1, 2)	C 0	0.900	(1, 1)	C 0	0.900	(1, 4)	C 0	0.900	(1, 5)	C 0	0.900	(1, 7)	C 0
12	0.700	(1, 6)	C 0	0.600	(1, 2)	C 0	0.600	(1, 3)	C 0	0.600	(1, 5)	C 0	0.600	(1, 7)	C 0
13	0.800	(1,12)	C 0	0.800	(1,11)	C 0	0.700	(1,13)	C 0	0.700	(1,16)	C 0	0.600	(1, 3)	C 0
14	0.600	(1,12)	C 0	0.600	(1,15)	C 0	0.600	(1,16)	C 0	0.500	(1,11)	C 0	0.500	(1,13)	C 0
15	0.900	(1,10)	C 0	0.800	(1, 3)	C 0	0.800	(1, 4)	C 0	0.800	(1, 6)	C 0	0.800	(1, 8)	C 0
16	1.100	(1, 5)	C 0	0.900	(1, 2)	C 0	0.900	(1, 6)	C 0	0.900	(1, 7)	C 0	0.900	(1, 8)	C 0
17	0.900	(1, 4)	C 0	0.900	(1, 5)	C 0	0.900	(1, 1)	C 0	0.900	(3,18)	C 0	0.900	(3,19)	C 0
18	0.900	(1, 1)	C 0	0.900	(1, 3)	C 0	0.900	(3,18)	C 0	0.800	(1, 2)	C 0	0.800	(3,23)	C 0
19	1.000	(3,24)	C 0	0.900	(1, 1)	C 0	0.900	(3,17)	C 0	0.900	(3,23)	C 0	0.800	(3,16)	C 0
20	0.900	(3,19)	C 0	0.900	(3,23)	C 0	0.800	(3,22)	C 0	0.800	(3,16)	C 0	0.800	(3,17)	C 0
21	0.900	(3,16)	C 0	0.900	(3,18)	C 0	0.900	(3,19)	C 0	0.900	(3,20)	C 0	0.900	(3,23)	C 0
22	0.900	(3,15)	C 0	0.900	(3,16)	C 0	0.900	(3,18)	C 0	0.900	(3,21)	C 0	0.900	(1, 1)	C 0
23	1.300	(3, 4)	C 0	1.200	(3, 2)	C 0	1.100	(2,15)	C 0	1.100	(3, 3)	C 0	1.000	(2,13)	C 0
24	1.500	(3, 3)	C 0	1.400	(3, 2)	C 0	1.400	(2,24)	C 0	1.300	(3, 1)	C 0	1.200	(2,23)	C 0
25	1.800	(2,22)	C 0	1.700	(2,24)	C 0	1.700	(3, 1)	C 0	1.600	(2,21)	C 0	1.600	(2,23)	C 0
26	1.700	(2,21)	C 0	1.700	(2,10)	C 0	1.700	(2,11)	C 0	1.700	(2,12)	C 0	1.700	(2,24)	C 0
27	1.700	(2,18)	C 0	1.600	(2,17)	C 0	1.500	(2,16)	C 0	1.500	(2,19)	C 0	1.400	(2,14)	C 0
28	1.500	(2,14)	C 0	1.400	(2,17)	C 0	1.400	(2,18)	C 0	1.400	(2,21)	C 0	1.400	(2,23)	C 0
29	1.300	(2,13)	C 0	1.300	(2,14)	C 0	1.300	(2,15)	C 0	1.300	(2,16)	C 0	1.300	(2,17)	C 0
30	1.600	(2,14)	C 0	1.500	(2,13)	C 0	1.400	(2,10)	C 0	1.400	(2,11)	C 0	1.400	(2,12)	C 0

31 1.900 (2,13) C 0 1.900 (2,14) C 0 1.800 (2,12) C 0 1.700 (2,10) C 0 1.700 (2,11) C 0
32 2.200 (2,11) C 0 2.200 (2,13) C 0 2.100 (2, 9) C 0 2.100 (2,10) C 0 2.100 (2,12) C 0
33 2.600 (3, 8) C 0 2.600 (2, 8) C 0 2.600 (2, 9) C 0 2.500 (2,10) C 0 2.500 (2,12) C 0
34 2.400 (3, 8) C 0 2.200 (3, 6) C 0 2.100 (3, 5) C 0 2.100 (3, 7) C 0 2.000 (3, 4) C 0
35 2.200 (3, 8) C 0 2.100 (3, 7) C 0 1.900 (3, 6) C 0 1.800 (2, 5) C 0 1.800 (3, 9) C 0
36 2.200 (3, 7) C 0 2.000 (3, 8) C 0 1.900 (3, 4) C 0 1.900 (3, 5) C 0 1.700 (3, 9) C 0
37 1.900 (3,13) C 0 1.900 (3,14) C 0 1.900 (3,15) C 0 1.800 (1,14) C 0 1.800 (1,15) C 0
38 1.700 (1,15) C 0 1.700 (3,13) C 0 1.700 (3,15) C 0 1.600 (1,14) C 0 1.600 (1,16) C 0
39 1.800 (3,13) C 0 1.700 (1,12) C 0 1.700 (1,16) C 0 1.700 (3,15) C 0 1.700 (1,14) C 0
40 2.000 (3,20) C 0 2.000 (3,21) C 0 1.900 (1, 4) C 0 1.900 (1, 5) C 0 1.900 (1, 3) C 0
41 1.300 (1, 6) C 0 1.300 (1, 7) C 0 1.300 (1, 8) C 0 1.300 (1, 9) C 0 1.300 (1,10) C 0
42 1.300 (1, 3) C 0 1.300 (1, 6) C 0 1.300 (1, 7) C 0 1.200 (1, 5) C 0 1.200 (1, 8) C 0
43 1.200 (1, 4) C 0 1.200 (1, 5) C 0 1.200 (1, 6) C 0 1.200 (1, 7) C 0 1.000 (1, 3) C 0

JOB: Goethals RUN: VERAZZANO
NARROWS BRIDGE TOLL 2034 BLD S

FIVE HIGHEST 1-HOUR END-TO-END AVERAGE CONCENTRATIONS IN PARTS PER MILLION
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Conc	Ending Day Hr	Calm	Second Highest Conc	Ending Day Hr	Calm	Third Highest Conc	Ending Day Hr	Calm	Fourth Highest Conc	Ending Day Hr	Calm	Fifth Highest Conc	Ending Day Hr	Calm
44	1.200	(3,15)	C 0	1.200	(3,20)	C 0	1.200	(3,21)	C 0	1.100	(1, 1)	C 0	1.100	(3,14)	C 0
45	1.400	(3,15)	C 0	1.300	(1, 1)	C 0	1.200	(1, 2)	C 0	1.200	(3,18)	C 0	1.200	(3,19)	C 0
46	1.800	(3,20)	C 0	1.700	(3,21)	C 0	1.700	(3,23)	C 0	1.700	(3,19)	C 0	1.600	(3,22)	C 0
47	2.000	(3,13)	C 0	2.000	(3,14)	C 0	1.900	(3,16)	C 0	1.900	(3,19)	C 0	1.900	(3,20)	C 0
48	2.000	(3,14)	C 0	1.800	(3,15)	C 0	1.700	(3,13)	C 0	1.700	(3,18)	C 0	1.600	(3,17)	C 0
49	1.800	(3,14)	C 0	1.800	(3,17)	C 0	1.600	(3,13)	C 0	1.600	(3,16)	C 0	1.600	(3,18)	C 0
50	1.800	(3,14)	C 0	1.700	(3,17)	C 0	1.600	(3,13)	C 0	1.600	(3,15)	C 0	1.600	(3,16)	C 0
51	2.600	(3, 9)	C 0	2.500	(3, 8)	C 0	2.300	(3, 7)	C 0	2.300	(3, 6)	C 0	2.300	(3,10)	C 0
52	2.700	(3, 9)	C 0	2.700	(3, 8)	C 0	2.600	(3, 6)	C 0	2.600	(3, 7)	C 0	2.400	(3, 5)	C 0
53	2.700	(3, 9)	C 0	2.700	(3, 7)	C 0	2.700	(3, 8)	C 0	2.500	(3, 4)	C 0	2.500	(3, 5)	C 0
54	2.900	(3, 8)	C 0	2.700	(3, 9)	C 0	2.700	(3, 7)	C 0	2.600	(3, 6)	C 0	2.500	(3, 5)	C 0
55	2.000	(3, 8)	C 0	1.900	(2,18)	C 0	1.900	(3, 5)	C 0	1.900	(3, 4)	C 0	1.800	(3, 6)	C 0
56	1.600	(2,16)	C 0	1.600	(2,21)	C 0	1.500	(2,17)	C 0	1.500	(2,18)	C 0	1.500	(2,20)	C 0
57	1.400	(2,16)	C 0	1.400	(2,17)	C 0	1.400	(2,19)	C 0	1.400	(2,21)	C 0	1.400	(3, 1)	C 0

MAXIMUM 8-HOUR AVERAGED LINK CONTRIBUTIONS
IN PARTS PER MILLION (PPM)
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Total Conc	Ending Day Hr	Ambient Backgnd	Total Link	Link +1	Link +2	Link +3	Link +4	Link +5	Link +6	Link +7	Link +8	Link +9	Link +10
1	1.975	(2, 9)	0.00	1.98	0.00	0.06	0.05	0.05	0.04	0.16	0.10	0.03	0.00	0.00
				Links 10+	0.00	0.00	0.09	0.00	0.04	0.00	0.00	0.00	0.00	0.00
				Links 20+	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.05	0.00	0.00
				Links 30+	0.00	0.61	0.50	0.04	0.00	0.00	0.00	0.00	0.00	0.00
				Links 40+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 50+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 70+	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Links 80+	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09

Representative NJ MOBILE 6.2 CO Emission Factors

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	0.00	68.74	66.15	60.06	57.80	60.06	87.98	2.37	7.31	57.80	82.03	2.21	6.82
2034	9	New Jersey	CO	2.5	27.496	26.460	24.022	23.119	24.022	35.190	0.948	2.922	23.119	32.810	0.885	2.726
2034	9	New Jersey	CO	2.6	26.801	26.460	23.417	23.119	23.417	34.650	0.934	2.879	23.119	32.810	0.885	2.726
2034	9	New Jersey	CO	2.7	26.157	26.460	22.857	23.119	22.857	34.150	0.922	2.838	23.119	32.810	0.885	2.726
2034	9	New Jersey	CO	2.8	25.560	25.876	22.337	22.611	22.337	33.680	0.911	2.801	22.611	32.350	0.874	2.689
2034	9	New Jersey	CO	2.9	25.003	25.319	21.853	22.127	21.853	33.240	0.900	2.766	22.127	31.910	0.863	2.654
2034	9	New Jersey	CO	3.0	24.484	24.800	21.401	21.675	21.401	32.840	0.890	2.733	21.675	31.510	0.853	2.621
2034	9	New Jersey	CO	3.1	23.998	24.314	20.979	21.253	20.979	32.450	0.880	2.702	21.253	31.130	0.843	2.591
2034	9	New Jersey	CO	3.2	23.543	23.859	20.583	20.857	20.583	32.100	0.872	2.674	20.857	30.770	0.835	2.562
2034	9	New Jersey	CO	3.3	23.115	23.431	20.210	20.485	20.210	31.760	0.863	2.647	20.485	30.440	0.826	2.535
2034	9	New Jersey	CO	3.4	22.712	23.028	19.860	20.134	19.860	31.450	0.856	2.622	20.134	30.120	0.819	2.510
2034	9	New Jersey	CO	3.5	22.333	22.649	19.530	19.804	19.530	31.150	0.848	2.598	19.804	29.820	0.811	2.486
2034	9	New Jersey	CO	3.6	21.974	22.290	19.218	19.492	19.218	30.870	0.841	2.575	19.492	29.540	0.804	2.463
2034	9	New Jersey	CO	3.7	21.635	21.951	18.923	19.197	18.923	30.600	0.835	2.554	19.197	29.280	0.798	2.442
2034	9	New Jersey	CO	3.8	21.314	21.630	18.643	18.917	18.643	30.350	0.829	2.534	18.917	29.030	0.792	2.422
2034	9	New Jersey	CO	3.9	21.009	21.325	18.378	18.652	18.378	30.110	0.823	2.514	18.652	28.790	0.786	2.403
2034	9	New Jersey	CO	4.0	20.719	21.035	18.126	18.400	18.126	29.890	0.817	2.496	18.400	28.560	0.780	2.385
2034	9	New Jersey	CO	4.1	20.444	20.760	17.887	18.161	17.887	29.670	0.812	2.479	18.161	28.350	0.775	2.367
2034	9	New Jersey	CO	4.2	20.182	20.498	17.658	17.932	17.658	29.470	0.807	2.462	17.932	28.140	0.770	2.351
2034	9	New Jersey	CO	4.3	19.931	20.247	17.441	17.715	17.441	29.270	0.802	2.447	17.715	27.940	0.765	2.335
2034	9	New Jersey	CO	4.4	19.693	20.009	17.233	17.507	17.233	29.080	0.797	2.432	17.507	27.760	0.760	2.320
2034	9	New Jersey	CO	4.5	19.464	19.780	17.035	17.309	17.035	28.910	0.793	2.417	17.309	27.580	0.756	2.306
2034	9	New Jersey	CO	4.6	19.246	19.562	16.845	17.119	16.845	28.730	0.789	2.403	17.119	27.410	0.752	2.292
2034	9	New Jersey	CO	4.7	19.037	19.353	16.663	16.937	16.663	28.570	0.785	2.390	16.937	27.240	0.748	2.279
2034	9	New Jersey	CO	4.8	18.837	19.153	16.489	16.763	16.489	28.410	0.781	2.378	16.763	27.090	0.744	2.266
2034	9	New Jersey	CO	4.9	18.645	18.961	16.322	16.596	16.322	28.260	0.777	2.366	16.596	26.940	0.740	2.254
2034	9	New Jersey	CO	5.0	18.461	18.777	16.161	16.435	16.161	28.120	0.774	2.354	16.435	26.790	0.737	2.242
2034	9	New Jersey	CO	5.1	18.293	18.599	16.012	16.281	16.012	27.750	0.764	2.324	16.281	26.650	0.733	2.231
2034	9	New Jersey	CO	5.2	18.131	18.429	15.868	16.133	15.868	27.400	0.755	2.295	16.133	26.520	0.730	2.221
2034	9	New Jersey	CO	5.3	17.976	18.265	15.729	15.990	15.729	27.050	0.747	2.267	15.990	26.390	0.727	2.210
2034	9	New Jersey	CO	5.4	17.826	18.103	15.596	15.848	15.596	26.730	0.738	2.241	15.848	26.210	0.722	2.195
2034	9	New Jersey	CO	5.5	17.682	17.938	15.468	15.700	15.468	26.410	0.730	2.215	15.700	25.890	0.714	2.170
2034	9	New Jersey	CO	5.6	17.543	17.779	15.344	15.558	15.344	26.100	0.722	2.190	15.558	25.590	0.706	2.145
2034	9	New Jersey	CO	5.7	17.408	17.625	15.224	15.420	15.224	25.810	0.715	2.166	15.420	25.290	0.699	2.121
2034	9	New Jersey	CO	5.8	17.279	17.476	15.109	15.287	15.109	25.520	0.707	2.143	15.287	25.010	0.692	2.098
2034	9	New Jersey	CO	5.9	17.154	17.333	14.997	15.159	14.997	25.250	0.700	2.120	15.159	24.730	0.685	2.075
2034	9	New Jersey	CO	6.0	17.033	17.194	14.890	15.035	14.890	24.980	0.694	2.099	15.035	24.470	0.678	2.054
2034	9	New Jersey	CO	6.1	16.916	17.060	14.785	14.915	14.785	24.730	0.687	2.078	14.915	24.210	0.671	2.033
2034	9	New Jersey	CO	6.2	16.802	16.930	14.684	14.798	14.684	24.480	0.681	2.057	14.798	23.960	0.665	2.012
2034	9	New Jersey	CO	6.3	16.693	16.805	14.587	14.686	14.587	24.240	0.675	2.038	14.686	23.720	0.659	1.993
2034	9	New Jersey	CO	6.4	16.586	16.683	14.492	14.577	14.492	24.000	0.669	2.019	14.577	23.490	0.653	1.974
2034	9	New Jersey	CO	6.5	16.484	16.565	14.400	14.471	14.400	23.780	0.663	2.000	14.471	23.260	0.647	1.955
2034	9	New Jersey	CO	6.6	16.384	16.450	14.311	14.369	14.311	23.560	0.657	1.983	14.369	23.040	0.641	1.937
2034	9	New Jersey	CO	6.7	16.287	16.339	14.225	14.270	14.225	23.340	0.652	1.965	14.270	22.830	0.636	1.920
2034	9	New Jersey	CO	6.8	16.193	16.232	14.141	14.173	14.141	23.140	0.647	1.948	14.173	22.620	0.631	1.903
2034	9	New Jersey	CO	6.9	16.101	16.127	14.060	14.080	14.060	22.940	0.641	1.932	14.080	22.420	0.626	1.887
2034	9	New Jersey	CO	7.0	16.013	16.025	13.981	13.989	13.981	22.740	0.636	1.916	13.989	22.230	0.621	1.871
2034	9	New Jersey	CO	7.1	15.927	15.927	13.904	13.900	13.904	22.550	0.632	1.901	13.900	22.040	0.616	1.856
2034	9	New Jersey	CO	7.2	15.843	15.830	13.830	13.814	13.830	22.370	0.627	1.886	13.814	21.850	0.611	1.841
2034	9	New Jersey	CO	7.3	15.761	15.737	13.757	13.731	13.757	22.190	0.622	1.871	13.731	21.670	0.607	1.826
2034	9	New Jersey	CO	7.4	15.682	15.646	13.687	13.649	13.687	22.020	0.618	1.857	13.649	21.500	0.602	1.812

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	7.5	15.605	15.558	13.618	13.570	13.618	21.850	0.614	1.843	13.570	21.330	0.598	1.798
2034	9	New Jersey	CO	7.6	15.530	15.472	13.551	13.493	13.551	21.680	0.609	1.830	13.493	21.160	0.594	1.785
2034	9	New Jersey	CO	7.7	15.456	15.388	13.486	13.418	13.486	21.520	0.605	1.817	13.418	21.000	0.589	1.772
2034	9	New Jersey	CO	7.8	15.385	15.306	13.422	13.345	13.422	21.360	0.601	1.804	13.345	20.850	0.585	1.759
2034	9	New Jersey	CO	7.9	15.316	15.226	13.360	13.274	13.360	21.210	0.597	1.792	13.274	20.690	0.582	1.746
2034	9	New Jersey	CO	8.0	15.248	15.149	13.300	13.204	13.300	21.060	0.594	1.779	13.204	20.540	0.578	1.734
2034	9	New Jersey	CO	8.1	15.182	15.073	13.241	13.136	13.241	20.920	0.590	1.768	13.136	20.400	0.574	1.722
2034	9	New Jersey	CO	8.2	15.117	14.999	13.184	13.070	13.184	20.770	0.586	1.756	13.070	20.260	0.570	1.711
2034	9	New Jersey	CO	8.3	15.054	14.927	13.128	13.006	13.128	20.640	0.583	1.745	13.006	20.120	0.567	1.700
2034	9	New Jersey	CO	8.4	14.993	14.856	13.073	12.943	13.073	20.500	0.579	1.734	12.943	19.980	0.563	1.689
2034	9	New Jersey	CO	8.5	14.933	14.788	13.019	12.881	13.019	20.370	0.576	1.723	12.881	19.850	0.560	1.678
2034	9	New Jersey	CO	8.6	14.874	14.720	12.967	12.821	12.967	20.240	0.573	1.713	12.821	19.720	0.557	1.667
2034	9	New Jersey	CO	8.7	14.817	14.655	12.916	12.762	12.916	20.110	0.569	1.702	12.762	19.600	0.554	1.657
2034	9	New Jersey	CO	8.8	14.761	14.591	12.866	12.705	12.866	19.990	0.566	1.692	12.705	19.480	0.550	1.647
2034	9	New Jersey	CO	8.9	14.706	14.528	12.818	12.649	12.818	19.870	0.563	1.683	12.649	19.360	0.547	1.637
2034	9	New Jersey	CO	9.0	14.653	14.467	12.770	12.594	12.770	19.750	0.560	1.673	12.594	19.240	0.544	1.628
2034	9	New Jersey	CO	9.1	14.601	14.407	12.723	12.540	12.723	19.640	0.557	1.664	12.540	19.120	0.541	1.618
2034	9	New Jersey	CO	9.2	14.549	14.348	12.678	12.488	12.678	19.530	0.554	1.654	12.488	19.010	0.539	1.609
2034	9	New Jersey	CO	9.3	14.499	14.291	12.633	12.436	12.633	19.420	0.552	1.645	12.436	18.900	0.536	1.600
2034	9	New Jersey	CO	9.4	14.450	14.235	12.590	12.386	12.590	19.310	0.549	1.637	12.386	18.790	0.533	1.592
2034	9	New Jersey	CO	9.5	14.402	14.180	12.547	12.337	12.547	19.200	0.546	1.628	12.337	18.690	0.530	1.583
2034	9	New Jersey	CO	9.6	14.355	14.126	12.505	12.289	12.505	19.100	0.544	1.620	12.289	18.580	0.528	1.575
2034	9	New Jersey	CO	9.7	14.309	14.073	12.464	12.242	12.464	19.000	0.541	1.612	12.242	18.480	0.525	1.566
2034	9	New Jersey	CO	9.8	14.264	14.021	12.424	12.195	12.424	18.900	0.538	1.603	12.195	18.380	0.523	1.558
2034	9	New Jersey	CO	9.9	14.220	13.971	12.385	12.150	12.385	18.800	0.536	1.596	12.150	18.290	0.520	1.550
2034	9	New Jersey	CO	10.0	14.177	13.921	12.346	12.106	12.346	18.710	0.534	1.588	12.106	18.190	0.518	1.543
2034	9	New Jersey	CO	10.1	14.138	13.873	12.310	12.062	12.310	18.540	0.529	1.574	12.062	18.100	0.515	1.535
2034	9	New Jersey	CO	10.2	14.100	13.825	12.275	12.020	12.275	18.380	0.525	1.561	12.020	18.010	0.513	1.528
2034	9	New Jersey	CO	10.3	14.062	13.778	12.240	11.978	12.240	18.220	0.521	1.548	11.978	17.920	0.511	1.520
2034	9	New Jersey	CO	10.4	14.025	13.732	12.206	11.937	12.206	18.070	0.516	1.535	11.937	17.830	0.508	1.513
2034	9	New Jersey	CO	10.5	13.989	13.688	12.172	11.896	12.172	17.910	0.512	1.522	11.896	17.740	0.506	1.506
2034	9	New Jersey	CO	10.6	13.954	13.643	12.140	11.857	12.140	17.760	0.508	1.510	11.857	17.660	0.504	1.499
2034	9	New Jersey	CO	10.7	13.919	13.605	12.107	11.822	12.107	17.620	0.504	1.498	11.822	17.520	0.500	1.488
2034	9	New Jersey	CO	10.8	13.885	13.568	12.076	11.788	12.076	17.470	0.500	1.486	11.788	17.370	0.496	1.476
2034	9	New Jersey	CO	10.9	13.851	13.532	12.045	11.754	12.045	17.330	0.497	1.474	11.754	17.230	0.493	1.464
2034	9	New Jersey	CO	11.0	13.818	13.496	12.014	11.721	12.014	17.190	0.493	1.462	11.721	17.090	0.489	1.452
2034	9	New Jersey	CO	11.1	13.786	13.461	11.985	11.689	11.985	17.060	0.489	1.451	11.689	16.960	0.485	1.441
2034	9	New Jersey	CO	11.2	13.754	13.427	11.955	11.657	11.955	16.920	0.486	1.440	11.657	16.820	0.482	1.430
2034	9	New Jersey	CO	11.3	13.723	13.393	11.926	11.626	11.926	16.790	0.482	1.429	11.626	16.690	0.478	1.419
2034	9	New Jersey	CO	11.4	13.693	13.360	11.898	11.595	11.898	16.660	0.479	1.418	11.595	16.560	0.475	1.408
2034	9	New Jersey	CO	11.5	13.662	13.327	11.870	11.565	11.870	16.530	0.475	1.408	11.565	16.430	0.471	1.398
2034	9	New Jersey	CO	11.6	13.633	13.295	11.843	11.535	11.843	16.410	0.472	1.397	11.535	16.310	0.468	1.387
2034	9	New Jersey	CO	11.7	13.604	13.263	11.816	11.506	11.816	16.290	0.469	1.387	11.506	16.190	0.465	1.377
2034	9	New Jersey	CO	11.8	13.575	13.232	11.790	11.478	11.790	16.170	0.466	1.377	11.478	16.060	0.461	1.367
2034	9	New Jersey	CO	11.9	13.547	13.202	11.764	11.450	11.764	16.050	0.462	1.367	11.450	15.950	0.458	1.357
2034	9	New Jersey	CO	12.0	13.520	13.172	11.738	11.422	11.738	15.930	0.459	1.358	11.422	15.830	0.455	1.348
2034	9	New Jersey	CO	12.1	13.492	13.142	11.713	11.395	11.713	15.810	0.456	1.348	11.395	15.710	0.452	1.338
2034	9	New Jersey	CO	12.2	13.466	13.113	11.688	11.368	11.688	15.700	0.453	1.339	11.368	15.600	0.449	1.329
2034	9	New Jersey	CO	12.3	13.439	13.085	11.664	11.342	11.664	15.590	0.450	1.330	11.342	15.490	0.446	1.320
2034	9	New Jersey	CO	12.4	13.413	13.057	11.640	11.316	11.640	15.480	0.447	1.321	11.316	15.380	0.443	1.311

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	12.5	13.388	13.029	11.617	11.290	11.617	15.370	0.444	1.312	11.290	15.270	0.440	1.302
2034	9	New Jersey	CO	12.6	13.363	13.002	11.593	11.265	11.593	15.270	0.442	1.303	11.265	15.170	0.437	1.293
2034	9	New Jersey	CO	12.7	13.338	12.975	11.571	11.241	11.571	15.160	0.439	1.294	11.241	15.060	0.435	1.284
2034	9	New Jersey	CO	12.8	13.314	12.949	11.548	11.216	11.548	15.060	0.436	1.286	11.216	14.960	0.432	1.276
2034	9	New Jersey	CO	12.9	13.290	12.923	11.526	11.192	11.526	14.960	0.433	1.277	11.192	14.860	0.429	1.268
2034	9	New Jersey	CO	13.0	13.267	12.897	11.504	11.169	11.504	14.860	0.431	1.269	11.169	14.760	0.427	1.259
2034	9	New Jersey	CO	13.1	13.243	12.872	11.483	11.146	11.483	14.760	0.428	1.261	11.146	14.660	0.424	1.251
2034	9	New Jersey	CO	13.2	13.221	12.847	11.462	11.123	11.462	14.670	0.425	1.253	11.123	14.570	0.421	1.243
2034	9	New Jersey	CO	13.3	13.198	12.823	11.441	11.100	11.441	14.570	0.423	1.245	11.100	14.470	0.419	1.235
2034	9	New Jersey	CO	13.4	13.176	12.799	11.420	11.078	11.420	14.480	0.420	1.238	11.078	14.380	0.416	1.228
2034	9	New Jersey	CO	13.5	13.154	12.775	11.400	11.056	11.400	14.390	0.418	1.230	11.056	14.290	0.414	1.220
2034	9	New Jersey	CO	13.6	13.133	12.752	11.380	11.035	11.380	14.290	0.416	1.222	11.035	14.190	0.411	1.212
2034	9	New Jersey	CO	13.7	13.112	12.729	11.361	11.014	11.361	14.210	0.413	1.215	11.014	14.110	0.409	1.205
2034	9	New Jersey	CO	13.8	13.091	12.706	11.342	10.993	11.342	14.120	0.411	1.208	10.993	14.020	0.407	1.198
2034	9	New Jersey	CO	13.9	13.070	12.684	11.323	10.972	11.323	14.030	0.408	1.200	10.972	13.930	0.404	1.191
2034	9	New Jersey	CO	14.0	13.050	12.662	11.304	10.952	11.304	13.940	0.406	1.193	10.952	13.840	0.402	1.183
2034	9	New Jersey	CO	14.1	13.030	12.640	11.285	10.932	11.285	13.860	0.404	1.186	10.932	13.760	0.400	1.176
2034	9	New Jersey	CO	14.2	13.010	12.619	11.267	10.912	11.267	13.780	0.402	1.180	10.912	13.680	0.398	1.170
2034	9	New Jersey	CO	14.3	12.991	12.598	11.249	10.893	11.249	13.690	0.400	1.173	10.893	13.590	0.395	1.163
2034	9	New Jersey	CO	14.4	12.972	12.577	11.231	10.873	11.231	13.610	0.397	1.166	10.873	13.510	0.393	1.156
2034	9	New Jersey	CO	14.5	12.953	12.557	11.214	10.855	11.214	13.530	0.395	1.159	10.855	13.430	0.391	1.149
2034	9	New Jersey	CO	14.6	12.934	12.536	11.197	10.836	11.197	13.460	0.393	1.153	10.836	13.360	0.389	1.143
2034	9	New Jersey	CO	14.7	12.916	12.517	11.180	10.817	11.180	13.380	0.391	1.146	10.817	13.280	0.387	1.137
2034	9	New Jersey	CO	14.8	12.898	12.497	11.163	10.799	11.163	13.300	0.389	1.140	10.799	13.200	0.385	1.130
2034	9	New Jersey	CO	14.9	12.880	12.477	11.146	10.781	11.146	13.230	0.387	1.134	10.781	13.130	0.383	1.124
2034	9	New Jersey	CO	15.0	12.862	12.458	11.130	10.764	11.130	13.150	0.385	1.128	10.764	13.050	0.381	1.118
2034	9	New Jersey	CO	15.1	12.846	12.444	11.115	10.751	11.115	13.065	0.383	1.121	10.751	12.977	0.379	1.112
2034	9	New Jersey	CO	15.2	12.829	12.429	11.100	10.737	11.100	12.980	0.380	1.114	10.737	12.904	0.377	1.106
2034	9	New Jersey	CO	15.3	12.813	12.415	11.084	10.724	11.084	12.895	0.378	1.107	10.724	12.831	0.375	1.100
2034	9	New Jersey	CO	15.4	12.796	12.400	11.069	10.710	11.069	12.810	0.375	1.100	10.710	12.758	0.373	1.094
2034	9	New Jersey	CO	15.5	12.780	12.386	11.054	10.697	11.054	12.725	0.373	1.093	10.697	12.685	0.371	1.088
2034	9	New Jersey	CO	15.6	12.764	12.371	11.039	10.684	11.039	12.640	0.371	1.085	10.684	12.612	0.369	1.081
2034	9	New Jersey	CO	15.7	12.747	12.357	11.024	10.670	11.024	12.555	0.368	1.078	10.670	12.539	0.367	1.075
2034	9	New Jersey	CO	15.8	12.731	12.342	11.008	10.657	11.008	12.470	0.366	1.071	10.657	12.466	0.365	1.069
2034	9	New Jersey	CO	15.9	12.714	12.328	10.993	10.643	10.993	12.385	0.363	1.064	10.643	12.393	0.363	1.063
2034	9	New Jersey	CO	16.0	12.698	12.313	10.978	10.630	10.978	12.300	0.361	1.057	10.630	12.320	0.361	1.057
2034	9	New Jersey	CO	16.1	12.684	12.308	10.965	10.626	10.965	12.226	0.359	1.051	10.626	12.245	0.359	1.051
2034	9	New Jersey	CO	16.2	12.669	12.303	10.951	10.621	10.951	12.152	0.357	1.044	10.621	12.170	0.357	1.044
2034	9	New Jersey	CO	16.3	12.655	12.298	10.938	10.617	10.938	12.078	0.355	1.038	10.617	12.095	0.355	1.038
2034	9	New Jersey	CO	16.4	12.640	12.293	10.924	10.612	10.924	12.004	0.353	1.032	10.612	12.020	0.353	1.032
2034	9	New Jersey	CO	16.5	12.626	12.288	10.911	10.608	10.911	11.930	0.351	1.026	10.608	11.945	0.351	1.026
2034	9	New Jersey	CO	16.6	12.611	12.283	10.898	10.603	10.898	11.856	0.349	1.019	10.603	11.870	0.348	1.019
2034	9	New Jersey	CO	16.7	12.597	12.278	10.884	10.599	10.884	11.782	0.347	1.013	10.599	11.795	0.346	1.013
2034	9	New Jersey	CO	16.8	12.582	12.273	10.871	10.594	10.871	11.708	0.345	1.007	10.594	11.720	0.344	1.007
2034	9	New Jersey	CO	16.9	12.568	12.268	10.857	10.590	10.857	11.634	0.343	1.000	10.590	11.645	0.342	1.000
2034	9	New Jersey	CO	17.0	12.553	12.263	10.844	10.585	10.844	11.560	0.341	0.994	10.585	11.570	0.340	0.994
2034	9	New Jersey	CO	17.1	12.540	12.259	10.832	10.581	10.832	11.493	0.339	0.988	10.581	11.504	0.338	0.988
2034	9	New Jersey	CO	17.2	12.527	12.254	10.820	10.577	10.820	11.426	0.337	0.983	10.577	11.438	0.336	0.983
2034	9	New Jersey	CO	17.3	12.514	12.250	10.808	10.573	10.808	11.359	0.335	0.977	10.573	11.372	0.335	0.977
2034	9	New Jersey	CO	17.4	12.501	12.245	10.796	10.569	10.796	11.292	0.333	0.972	10.569	11.306	0.333	0.972

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	17.5	12.489	12.241	10.785	10.565	10.785	11.225	0.332	0.966	10.565	11.240	0.331	0.966
2034	9	New Jersey	CO	17.6	12.476	12.237	10.773	10.561	10.773	11.158	0.330	0.960	10.561	11.174	0.329	0.960
2034	9	New Jersey	CO	17.7	12.463	12.232	10.761	10.557	10.761	11.091	0.328	0.955	10.557	11.108	0.327	0.955
2034	9	New Jersey	CO	17.8	12.450	12.228	10.749	10.553	10.749	11.024	0.326	0.949	10.553	11.042	0.326	0.949
2034	9	New Jersey	CO	17.9	12.437	12.223	10.737	10.549	10.737	10.957	0.324	0.944	10.549	10.976	0.324	0.944
2034	9	New Jersey	CO	18.0	12.424	12.219	10.725	10.545	10.725	10.890	0.322	0.938	10.545	10.910	0.322	0.938
2034	9	New Jersey	CO	18.1	12.412	12.215	10.714	10.541	10.714	10.831	0.320	0.933	10.541	10.850	0.320	0.933
2034	9	New Jersey	CO	18.2	12.401	12.211	10.704	10.538	10.704	10.772	0.319	0.928	10.538	10.790	0.319	0.928
2034	9	New Jersey	CO	18.3	12.389	12.207	10.693	10.534	10.693	10.713	0.317	0.923	10.534	10.730	0.317	0.923
2034	9	New Jersey	CO	18.4	12.378	12.203	10.682	10.531	10.682	10.654	0.316	0.918	10.531	10.670	0.315	0.918
2034	9	New Jersey	CO	18.5	12.366	12.199	10.672	10.527	10.672	10.595	0.314	0.913	10.527	10.610	0.314	0.913
2034	9	New Jersey	CO	18.6	12.354	12.195	10.661	10.523	10.661	10.536	0.312	0.908	10.523	10.550	0.312	0.908
2034	9	New Jersey	CO	18.7	12.343	12.191	10.650	10.520	10.650	10.477	0.311	0.903	10.520	10.490	0.310	0.903
2034	9	New Jersey	CO	18.8	12.331	12.187	10.639	10.516	10.639	10.418	0.309	0.898	10.516	10.430	0.308	0.898
2034	9	New Jersey	CO	18.9	12.320	12.183	10.629	10.513	10.629	10.359	0.308	0.893	10.513	10.370	0.307	0.893
2034	9	New Jersey	CO	19.0	12.308	12.179	10.618	10.509	10.618	10.300	0.306	0.888	10.509	10.310	0.305	0.888
2034	9	New Jersey	CO	19.1	12.298	12.175	10.608	10.506	10.608	10.247	0.305	0.884	10.506	10.257	0.304	0.884
2034	9	New Jersey	CO	19.2	12.287	12.172	10.599	10.503	10.599	10.194	0.303	0.879	10.503	10.204	0.302	0.879
2034	9	New Jersey	CO	19.3	12.277	12.168	10.589	10.499	10.589	10.141	0.302	0.875	10.499	10.151	0.301	0.875
2034	9	New Jersey	CO	19.4	12.267	12.165	10.580	10.496	10.580	10.088	0.300	0.870	10.496	10.098	0.299	0.870
2034	9	New Jersey	CO	19.5	12.257	12.161	10.570	10.493	10.570	10.035	0.299	0.866	10.493	10.045	0.298	0.866
2034	9	New Jersey	CO	19.6	12.246	12.157	10.560	10.490	10.560	9.982	0.297	0.861	10.490	9.992	0.296	0.861
2034	9	New Jersey	CO	19.7	12.236	12.154	10.551	10.487	10.551	9.929	0.296	0.857	10.487	9.939	0.295	0.857
2034	9	New Jersey	CO	19.8	12.226	12.150	10.541	10.483	10.541	9.876	0.294	0.852	10.483	9.886	0.293	0.852
2034	9	New Jersey	CO	19.9	12.215	12.147	10.532	10.480	10.532	9.823	0.293	0.848	10.480	9.833	0.292	0.848
2034	9	New Jersey	CO	20.0	12.205	12.143	10.522	10.477	10.522	9.770	0.291	0.843	10.477	9.780	0.290	0.843
2034	9	New Jersey	CO	20.1	12.196	12.140	10.514	10.474	10.514	9.720	0.290	0.839	10.474	9.731	0.289	0.839
2034	9	New Jersey	CO	20.2	12.187	12.137	10.506	10.471	10.506	9.670	0.288	0.834	10.471	9.682	0.287	0.835
2034	9	New Jersey	CO	20.3	12.179	12.133	10.498	10.468	10.498	9.620	0.287	0.830	10.468	9.633	0.286	0.831
2034	9	New Jersey	CO	20.4	12.170	12.130	10.490	10.465	10.490	9.570	0.285	0.826	10.465	9.584	0.285	0.827
2034	9	New Jersey	CO	20.5	12.161	12.127	10.482	10.463	10.482	9.520	0.284	0.822	10.463	9.535	0.284	0.823
2034	9	New Jersey	CO	20.6	12.152	12.124	10.473	10.460	10.473	9.470	0.282	0.817	10.460	9.486	0.282	0.818
2034	9	New Jersey	CO	20.7	12.143	12.121	10.465	10.457	10.465	9.420	0.281	0.813	10.457	9.437	0.281	0.814
2034	9	New Jersey	CO	20.8	12.135	12.117	10.457	10.454	10.457	9.370	0.279	0.809	10.454	9.388	0.280	0.810
2034	9	New Jersey	CO	20.9	12.126	12.114	10.449	10.451	10.449	9.320	0.278	0.804	10.451	9.339	0.278	0.806
2034	9	New Jersey	CO	21.0	12.117	12.111	10.441	10.448	10.441	9.270	0.276	0.800	10.448	9.290	0.277	0.802
2034	9	New Jersey	CO	21.1	12.109	12.108	10.434	10.445	10.434	9.224	0.275	0.796	10.445	9.244	0.276	0.798
2034	9	New Jersey	CO	21.2	12.101	12.105	10.426	10.443	10.426	9.178	0.273	0.792	10.443	9.198	0.274	0.794
2034	9	New Jersey	CO	21.3	12.093	12.102	10.419	10.440	10.419	9.132	0.272	0.788	10.440	9.152	0.273	0.790
2034	9	New Jersey	CO	21.4	12.085	12.099	10.412	10.438	10.412	9.086	0.271	0.784	10.438	9.106	0.271	0.786
2034	9	New Jersey	CO	21.5	12.077	12.097	10.405	10.435	10.405	9.040	0.270	0.781	10.435	9.060	0.270	0.783
2034	9	New Jersey	CO	21.6	12.069	12.094	10.397	10.432	10.397	8.994	0.268	0.777	10.432	9.014	0.269	0.779
2034	9	New Jersey	CO	21.7	12.061	12.091	10.390	10.430	10.390	8.948	0.267	0.773	10.430	8.968	0.267	0.775
2034	9	New Jersey	CO	21.8	12.053	12.088	10.383	10.427	10.383	8.902	0.266	0.769	10.427	8.922	0.266	0.771
2034	9	New Jersey	CO	21.9	12.045	12.085	10.375	10.425	10.375	8.856	0.264	0.765	10.425	8.876	0.264	0.767
2034	9	New Jersey	CO	22.0	12.037	12.082	10.368	10.422	10.368	8.810	0.263	0.761	10.422	8.830	0.263	0.763
2034	9	New Jersey	CO	22.1	12.030	12.079	10.361	10.420	10.361	8.769	0.262	0.758	10.420	8.789	0.262	0.759
2034	9	New Jersey	CO	22.2	12.023	12.077	10.355	10.417	10.355	8.728	0.261	0.754	10.417	8.748	0.261	0.756
2034	9	New Jersey	CO	22.3	12.015	12.074	10.348	10.415	10.348	8.687	0.259	0.751	10.415	8.707	0.259	0.752
2034	9	New Jersey	CO	22.4	12.008	12.071	10.341	10.412	10.341	8.646	0.258	0.747	10.412	8.666	0.258	0.749

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	22.5	12.001	12.069	10.335	10.410	10.335	8.605	0.257	0.744	10.410	8.625	0.257	0.745
2034	9	New Jersey	CO	22.6	11.994	12.066	10.328	10.408	10.328	8.564	0.256	0.740	10.408	8.584	0.256	0.741
2034	9	New Jersey	CO	22.7	11.987	12.063	10.321	10.405	10.321	8.523	0.255	0.737	10.405	8.543	0.255	0.738
2034	9	New Jersey	CO	22.8	11.979	12.060	10.314	10.403	10.314	8.482	0.253	0.733	10.403	8.502	0.253	0.734
2034	9	New Jersey	CO	22.9	11.972	12.058	10.308	10.400	10.308	8.441	0.252	0.730	10.400	8.461	0.252	0.731
2034	9	New Jersey	CO	23.0	11.965	12.055	10.301	10.398	10.301	8.400	0.251	0.726	10.398	8.420	0.251	0.727
2034	9	New Jersey	CO	23.1	11.958	12.053	10.295	10.396	10.295	8.361	0.250	0.723	10.396	8.382	0.250	0.724
2034	9	New Jersey	CO	23.2	11.952	12.050	10.289	10.394	10.289	8.322	0.249	0.719	10.394	8.344	0.249	0.721
2034	9	New Jersey	CO	23.3	11.945	12.048	10.283	10.391	10.283	8.283	0.248	0.716	10.391	8.306	0.248	0.717
2034	9	New Jersey	CO	23.4	11.938	12.045	10.277	10.389	10.277	8.244	0.247	0.713	10.389	8.268	0.247	0.714
2034	9	New Jersey	CO	23.5	11.932	12.043	10.271	10.387	10.271	8.205	0.246	0.710	10.387	8.230	0.246	0.711
2034	9	New Jersey	CO	23.6	11.925	12.041	10.264	10.385	10.264	8.166	0.244	0.706	10.385	8.192	0.244	0.708
2034	9	New Jersey	CO	23.7	11.918	12.038	10.258	10.383	10.258	8.127	0.243	0.703	10.383	8.154	0.243	0.705
2034	9	New Jersey	CO	23.8	11.911	12.036	10.252	10.380	10.252	8.088	0.242	0.700	10.380	8.116	0.242	0.701
2034	9	New Jersey	CO	23.9	11.905	12.033	10.246	10.378	10.246	8.049	0.241	0.696	10.378	8.078	0.241	0.698
2034	9	New Jersey	CO	24.0	11.898	12.031	10.240	10.376	10.240	8.010	0.240	0.693	10.376	8.040	0.240	0.695
2034	9	New Jersey	CO	24.1	11.892	12.029	10.234	10.374	10.234	7.975	0.239	0.690	10.374	8.005	0.239	0.692
2034	9	New Jersey	CO	24.2	11.886	12.026	10.229	10.372	10.229	7.940	0.238	0.687	10.372	7.970	0.238	0.689
2034	9	New Jersey	CO	24.3	11.880	12.024	10.223	10.370	10.223	7.905	0.237	0.684	10.370	7.935	0.237	0.686
2034	9	New Jersey	CO	24.4	11.874	12.022	10.218	10.368	10.218	7.870	0.236	0.681	10.368	7.900	0.236	0.683
2034	9	New Jersey	CO	24.5	11.868	12.020	10.212	10.366	10.212	7.835	0.235	0.678	10.366	7.865	0.235	0.680
2034	9	New Jersey	CO	24.6	11.861	12.017	10.206	10.363	10.206	7.800	0.234	0.675	10.363	7.830	0.234	0.677
2034	9	New Jersey	CO	24.7	11.855	12.015	10.201	10.361	10.201	7.765	0.233	0.672	10.361	7.795	0.233	0.674
2034	9	New Jersey	CO	24.8	11.849	12.013	10.195	10.359	10.195	7.730	0.232	0.669	10.359	7.760	0.232	0.671
2034	9	New Jersey	CO	24.9	11.843	12.010	10.190	10.357	10.190	7.695	0.231	0.666	10.357	7.725	0.231	0.668
2034	9	New Jersey	CO	25.0	11.837	12.008	10.184	10.355	10.184	7.660	0.230	0.663	10.355	7.690	0.230	0.665
2034	9	New Jersey	CO	25.1	11.834	12.006	10.181	10.353	10.181	7.630	0.229	0.660	10.353	7.658	0.229	0.662
2034	9	New Jersey	CO	25.2	11.830	12.004	10.178	10.351	10.178	7.600	0.228	0.658	10.351	7.626	0.228	0.660
2034	9	New Jersey	CO	25.3	11.827	12.002	10.175	10.349	10.175	7.570	0.227	0.655	10.349	7.594	0.227	0.657
2034	9	New Jersey	CO	25.4	11.823	12.000	10.172	10.347	10.172	7.540	0.226	0.653	10.347	7.562	0.226	0.654
2034	9	New Jersey	CO	25.5	11.820	11.998	10.169	10.346	10.169	7.510	0.226	0.650	10.346	7.530	0.226	0.652
2034	9	New Jersey	CO	25.6	11.816	11.995	10.166	10.344	10.166	7.480	0.225	0.647	10.344	7.498	0.225	0.649
2034	9	New Jersey	CO	25.7	11.813	11.993	10.163	10.342	10.163	7.450	0.224	0.645	10.342	7.466	0.224	0.646
2034	9	New Jersey	CO	25.8	11.809	11.991	10.160	10.340	10.160	7.420	0.223	0.642	10.340	7.434	0.223	0.643
2034	9	New Jersey	CO	25.9	11.806	11.989	10.157	10.338	10.157	7.390	0.222	0.640	10.338	7.402	0.222	0.641
2034	9	New Jersey	CO	26.0	11.802	11.987	10.154	10.336	10.154	7.360	0.221	0.637	10.336	7.370	0.221	0.638
2034	9	New Jersey	CO	26.1	11.799	11.985	10.151	10.334	10.151	7.332	0.220	0.635	10.334	7.342	0.220	0.636
2034	9	New Jersey	CO	26.2	11.796	11.983	10.148	10.333	10.148	7.304	0.219	0.632	10.333	7.314	0.219	0.633
2034	9	New Jersey	CO	26.3	11.792	11.981	10.146	10.331	10.146	7.276	0.218	0.630	10.331	7.286	0.218	0.631
2034	9	New Jersey	CO	26.4	11.789	11.979	10.143	10.329	10.143	7.248	0.217	0.627	10.329	7.258	0.217	0.628
2034	9	New Jersey	CO	26.5	11.786	11.978	10.140	10.328	10.140	7.220	0.217	0.625	10.328	7.230	0.217	0.626
2034	9	New Jersey	CO	26.6	11.783	11.976	10.137	10.326	10.137	7.192	0.216	0.623	10.326	7.202	0.216	0.624
2034	9	New Jersey	CO	26.7	11.780	11.974	10.134	10.324	10.134	7.164	0.215	0.620	10.324	7.174	0.215	0.621
2034	9	New Jersey	CO	26.8	11.776	11.972	10.132	10.322	10.132	7.136	0.214	0.618	10.322	7.146	0.214	0.619
2034	9	New Jersey	CO	26.9	11.773	11.970	10.129	10.321	10.129	7.108	0.213	0.615	10.321	7.118	0.213	0.616
2034	9	New Jersey	CO	27.0	11.770	11.968	10.126	10.319	10.126	7.080	0.212	0.613	10.319	7.090	0.212	0.614
2034	9	New Jersey	CO	27.1	11.767	11.966	10.124	10.317	10.124	7.054	0.211	0.611	10.317	7.064	0.211	0.612
2034	9	New Jersey	CO	27.2	11.764	11.964	10.121	10.316	10.121	7.028	0.210	0.608	10.316	7.038	0.210	0.609
2034	9	New Jersey	CO	27.3	11.761	11.963	10.119	10.314	10.119	7.002	0.210	0.606	10.314	7.012	0.210	0.607
2034	9	New Jersey	CO	27.4	11.758	11.961	10.116	10.313	10.116	6.976	0.209	0.604	10.313	6.986	0.209	0.605

CO Emission Matrix

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Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	27.5	11.755	11.959	10.114	10.311	10.114	6.950	0.208	0.602	10.311	6.960	0.208	0.603
2034	9	New Jersey	CO	27.6	11.752	11.957	10.111	10.309	10.111	6.924	0.207	0.599	10.309	6.934	0.207	0.600
2034	9	New Jersey	CO	27.7	11.749	11.955	10.109	10.308	10.109	6.898	0.206	0.597	10.308	6.908	0.206	0.598
2034	9	New Jersey	CO	27.8	11.746	11.954	10.106	10.306	10.106	6.872	0.206	0.595	10.306	6.882	0.206	0.596
2034	9	New Jersey	CO	27.9	11.743	11.952	10.104	10.305	10.104	6.846	0.205	0.592	10.305	6.856	0.205	0.593
2034	9	New Jersey	CO	28.0	11.740	11.950	10.101	10.303	10.101	6.820	0.204	0.590	10.303	6.830	0.204	0.591
2034	9	New Jersey	CO	28.1	11.737	11.948	10.099	10.302	10.099	6.796	0.203	0.588	10.302	6.806	0.203	0.589
2034	9	New Jersey	CO	28.2	11.734	11.947	10.096	10.300	10.096	6.772	0.203	0.586	10.300	6.782	0.203	0.587
2034	9	New Jersey	CO	28.3	11.732	11.945	10.094	10.299	10.094	6.748	0.202	0.584	10.299	6.758	0.202	0.585
2034	9	New Jersey	CO	28.4	11.729	11.943	10.091	10.297	10.091	6.724	0.201	0.582	10.297	6.734	0.201	0.583
2034	9	New Jersey	CO	28.5	11.726	11.942	10.089	10.296	10.089	6.700	0.201	0.580	10.296	6.710	0.201	0.581
2034	9	New Jersey	CO	28.6	11.723	11.940	10.087	10.294	10.087	6.676	0.200	0.577	10.294	6.686	0.200	0.578
2034	9	New Jersey	CO	28.7	11.720	11.938	10.084	10.293	10.084	6.652	0.199	0.575	10.293	6.662	0.199	0.576
2034	9	New Jersey	CO	28.8	11.718	11.936	10.082	10.291	10.082	6.628	0.198	0.573	10.291	6.638	0.198	0.574
2034	9	New Jersey	CO	28.9	11.715	11.935	10.079	10.290	10.079	6.604	0.198	0.571	10.290	6.614	0.198	0.572
2034	9	New Jersey	CO	29.0	11.712	11.933	10.077	10.288	10.077	6.580	0.197	0.569	10.288	6.590	0.197	0.570
2034	9	New Jersey	CO	29.1	11.709	11.932	10.075	10.287	10.075	6.557	0.196	0.567	10.287	6.567	0.196	0.568
2034	9	New Jersey	CO	29.2	11.707	11.930	10.073	10.285	10.073	6.534	0.196	0.565	10.285	6.544	0.196	0.566
2034	9	New Jersey	CO	29.3	11.704	11.929	10.070	10.284	10.070	6.511	0.195	0.563	10.284	6.521	0.195	0.564
2034	9	New Jersey	CO	29.4	11.702	11.927	10.068	10.282	10.068	6.488	0.194	0.561	10.282	6.498	0.194	0.562
2034	9	New Jersey	CO	29.5	11.699	11.926	10.066	10.281	10.066	6.465	0.194	0.560	10.281	6.475	0.194	0.560
2034	9	New Jersey	CO	29.6	11.696	11.924	10.064	10.280	10.064	6.442	0.193	0.558	10.280	6.452	0.193	0.558
2034	9	New Jersey	CO	29.7	11.694	11.923	10.062	10.278	10.062	6.419	0.192	0.556	10.278	6.429	0.192	0.556
2034	9	New Jersey	CO	29.8	11.691	11.921	10.059	10.277	10.059	6.396	0.191	0.554	10.277	6.406	0.191	0.554
2034	9	New Jersey	CO	29.9	11.689	11.920	10.057	10.275	10.057	6.373	0.191	0.552	10.275	6.383	0.191	0.552
2034	9	New Jersey	CO	30.0	11.686	11.918	10.055	10.274	10.055	6.350	0.190	0.550	10.274	6.360	0.190	0.550
2034	9	New Jersey	CO	30.1	11.687	11.918	10.056	10.274	10.056	6.333	0.189	0.548	10.274	6.341	0.189	0.548
2034	9	New Jersey	CO	30.2	11.687	11.918	10.057	10.275	10.057	6.316	0.189	0.547	10.275	6.322	0.189	0.547
2034	9	New Jersey	CO	30.3	11.688	11.918	10.057	10.275	10.057	6.299	0.188	0.545	10.275	6.303	0.188	0.545
2034	9	New Jersey	CO	30.4	11.688	11.918	10.058	10.275	10.058	6.282	0.188	0.544	10.275	6.284	0.188	0.544
2034	9	New Jersey	CO	30.5	11.689	11.918	10.059	10.276	10.059	6.265	0.187	0.542	10.276	6.265	0.187	0.542
2034	9	New Jersey	CO	30.6	11.689	11.918	10.060	10.276	10.060	6.248	0.186	0.540	10.276	6.246	0.186	0.540
2034	9	New Jersey	CO	30.7	11.690	11.918	10.061	10.276	10.061	6.231	0.186	0.539	10.276	6.227	0.186	0.539
2034	9	New Jersey	CO	30.8	11.690	11.918	10.061	10.276	10.061	6.214	0.185	0.537	10.276	6.208	0.185	0.537
2034	9	New Jersey	CO	30.9	11.691	11.918	10.062	10.277	10.062	6.197	0.185	0.536	10.277	6.189	0.185	0.536
2034	9	New Jersey	CO	31.0	11.691	11.918	10.063	10.277	10.063	6.180	0.184	0.534	10.277	6.170	0.184	0.534
2034	9	New Jersey	CO	31.1	11.692	11.919	10.064	10.278	10.064	6.163	0.184	0.533	10.278	6.154	0.184	0.533
2034	9	New Jersey	CO	31.2	11.692	11.920	10.065	10.279	10.065	6.146	0.183	0.531	10.279	6.138	0.183	0.531
2034	9	New Jersey	CO	31.3	11.693	11.920	10.065	10.280	10.065	6.129	0.183	0.530	10.280	6.122	0.183	0.530
2034	9	New Jersey	CO	31.4	11.693	11.921	10.066	10.281	10.066	6.112	0.182	0.528	10.281	6.106	0.182	0.528
2034	9	New Jersey	CO	31.5	11.694	11.922	10.067	10.282	10.067	6.095	0.182	0.527	10.282	6.090	0.182	0.527
2034	9	New Jersey	CO	31.6	11.694	11.923	10.068	10.283	10.068	6.078	0.181	0.525	10.283	6.074	0.181	0.525
2034	9	New Jersey	CO	31.7	11.695	11.924	10.069	10.284	10.069	6.061	0.181	0.524	10.284	6.058	0.181	0.524
2034	9	New Jersey	CO	31.8	11.695	11.924	10.069	10.285	10.069	6.044	0.180	0.522	10.285	6.042	0.180	0.522
2034	9	New Jersey	CO	31.9	11.696	11.925	10.070	10.286	10.070	6.027	0.180	0.521	10.286	6.026	0.180	0.521
2034	9	New Jersey	CO	32.0	11.696	11.926	10.071	10.287	10.071	6.010	0.179	0.519	10.287	6.010	0.179	0.519
2034	9	New Jersey	CO	32.1	11.697	11.927	10.072	10.288	10.072	5.994	0.179	0.518	10.288	5.994	0.179	0.518
2034	9	New Jersey	CO	32.2	11.697	11.927	10.073	10.289	10.073	5.978	0.178	0.516	10.289	5.978	0.178	0.516
2034	9	New Jersey	CO	32.3	11.698	11.928	10.073	10.290	10.073	5.962	0.178	0.515	10.290	5.962	0.178	0.515
2034	9	New Jersey	CO	32.4	11.698	11.929	10.074	10.291	10.074	5.946	0.177	0.513	10.291	5.946	0.177	0.513

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	32.5	11.699	11.930	10.075	10.292	10.075	5.930	0.177	0.512	10.292	5.930	0.177	0.512
2034	9	New Jersey	CO	32.6	11.699	11.930	10.076	10.293	10.076	5.914	0.176	0.511	10.293	5.914	0.176	0.511
2034	9	New Jersey	CO	32.7	11.700	11.931	10.077	10.294	10.077	5.898	0.176	0.509	10.294	5.898	0.176	0.509
2034	9	New Jersey	CO	32.8	11.700	11.932	10.077	10.295	10.077	5.882	0.175	0.508	10.295	5.882	0.175	0.508
2034	9	New Jersey	CO	32.9	11.701	11.932	10.078	10.296	10.078	5.866	0.175	0.506	10.296	5.866	0.175	0.506
2034	9	New Jersey	CO	33.0	11.701	11.933	10.079	10.297	10.079	5.850	0.174	0.505	10.297	5.850	0.174	0.505
2034	9	New Jersey	CO	33.1	11.701	11.934	10.080	10.298	10.080	5.835	0.174	0.504	10.298	5.835	0.174	0.504
2034	9	New Jersey	CO	33.2	11.702	11.934	10.080	10.299	10.080	5.820	0.173	0.502	10.299	5.820	0.173	0.502
2034	9	New Jersey	CO	33.3	11.702	11.935	10.081	10.300	10.081	5.805	0.173	0.501	10.300	5.805	0.173	0.501
2034	9	New Jersey	CO	33.4	11.703	11.936	10.082	10.301	10.082	5.790	0.172	0.500	10.301	5.790	0.172	0.499
2034	9	New Jersey	CO	33.5	11.703	11.937	10.083	10.302	10.083	5.775	0.172	0.499	10.302	5.775	0.172	0.498
2034	9	New Jersey	CO	33.6	11.703	11.937	10.083	10.302	10.083	5.760	0.171	0.497	10.302	5.760	0.171	0.497
2034	9	New Jersey	CO	33.7	11.704	11.938	10.084	10.303	10.084	5.745	0.171	0.496	10.303	5.745	0.171	0.495
2034	9	New Jersey	CO	33.8	11.704	11.939	10.085	10.304	10.085	5.730	0.170	0.495	10.304	5.730	0.170	0.494
2034	9	New Jersey	CO	33.9	11.705	11.939	10.085	10.305	10.085	5.715	0.170	0.493	10.305	5.715	0.170	0.492
2034	9	New Jersey	CO	34.0	11.705	11.940	10.086	10.306	10.086	5.700	0.169	0.492	10.306	5.700	0.169	0.491
2034	9	New Jersey	CO	34.1	11.705	11.941	10.087	10.307	10.087	5.686	0.169	0.491	10.307	5.687	0.169	0.490
2034	9	New Jersey	CO	34.2	11.706	11.942	10.087	10.308	10.087	5.672	0.168	0.489	10.308	5.674	0.168	0.489
2034	9	New Jersey	CO	34.3	11.706	11.943	10.088	10.309	10.088	5.658	0.168	0.488	10.309	5.661	0.168	0.487
2034	9	New Jersey	CO	34.4	11.707	11.944	10.089	10.310	10.089	5.644	0.167	0.487	10.310	5.648	0.167	0.486
2034	9	New Jersey	CO	34.5	11.707	11.945	10.090	10.311	10.090	5.630	0.167	0.486	10.311	5.635	0.167	0.485
2034	9	New Jersey	CO	34.6	11.707	11.945	10.090	10.312	10.090	5.616	0.167	0.484	10.312	5.622	0.167	0.484
2034	9	New Jersey	CO	34.7	11.708	11.946	10.091	10.313	10.091	5.602	0.166	0.483	10.313	5.609	0.166	0.483
2034	9	New Jersey	CO	34.8	11.708	11.947	10.092	10.314	10.092	5.588	0.166	0.482	10.314	5.596	0.166	0.481
2034	9	New Jersey	CO	34.9	11.709	11.948	10.092	10.315	10.092	5.574	0.165	0.480	10.315	5.583	0.165	0.480
2034	9	New Jersey	CO	35.0	11.709	11.949	10.093	10.316	10.093	5.560	0.165	0.479	10.316	5.570	0.165	0.479
2034	9	New Jersey	CO	35.1	11.716	11.956	10.101	10.324	10.101	5.551	0.165	0.478	10.324	5.560	0.165	0.478
2034	9	New Jersey	CO	35.2	11.724	11.964	10.108	10.331	10.108	5.542	0.164	0.477	10.331	5.550	0.164	0.477
2034	9	New Jersey	CO	35.3	11.731	11.971	10.116	10.339	10.116	5.533	0.164	0.476	10.339	5.540	0.164	0.476
2034	9	New Jersey	CO	35.4	11.739	11.978	10.123	10.346	10.123	5.524	0.163	0.475	10.346	5.530	0.163	0.475
2034	9	New Jersey	CO	35.5	11.746	11.986	10.131	10.354	10.131	5.515	0.163	0.475	10.354	5.520	0.163	0.475
2034	9	New Jersey	CO	35.6	11.753	11.993	10.138	10.361	10.138	5.506	0.163	0.474	10.361	5.510	0.163	0.474
2034	9	New Jersey	CO	35.7	11.761	12.000	10.146	10.369	10.146	5.497	0.162	0.473	10.369	5.500	0.162	0.473
2034	9	New Jersey	CO	35.8	11.768	12.007	10.153	10.376	10.153	5.488	0.162	0.472	10.376	5.490	0.162	0.472
2034	9	New Jersey	CO	35.9	11.776	12.015	10.161	10.384	10.161	5.479	0.161	0.471	10.384	5.480	0.161	0.471
2034	9	New Jersey	CO	36.0	11.783	12.022	10.168	10.391	10.168	5.470	0.161	0.470	10.391	5.470	0.161	0.470
2034	9	New Jersey	CO	36.1	11.790	12.029	10.175	10.398	10.175	5.462	0.161	0.469	10.398	5.462	0.161	0.469
2034	9	New Jersey	CO	36.2	11.797	12.036	10.182	10.405	10.182	5.454	0.160	0.468	10.405	5.454	0.160	0.468
2034	9	New Jersey	CO	36.3	11.804	12.043	10.189	10.412	10.189	5.446	0.160	0.468	10.412	5.446	0.160	0.468
2034	9	New Jersey	CO	36.4	11.811	12.050	10.196	10.419	10.196	5.438	0.160	0.467	10.419	5.438	0.160	0.467
2034	9	New Jersey	CO	36.5	11.818	12.057	10.204	10.427	10.204	5.430	0.160	0.466	10.427	5.430	0.160	0.466
2034	9	New Jersey	CO	36.6	11.824	12.064	10.211	10.434	10.211	5.422	0.159	0.465	10.434	5.422	0.159	0.465
2034	9	New Jersey	CO	36.7	11.831	12.071	10.218	10.441	10.218	5.414	0.159	0.464	10.441	5.414	0.159	0.464
2034	9	New Jersey	CO	36.8	11.838	12.078	10.225	10.448	10.225	5.406	0.159	0.464	10.448	5.406	0.159	0.464
2034	9	New Jersey	CO	36.9	11.845	12.085	10.232	10.455	10.232	5.398	0.158	0.463	10.455	5.398	0.158	0.463
2034	9	New Jersey	CO	37.0	11.852	12.092	10.239	10.462	10.239	5.390	0.158	0.462	10.462	5.390	0.158	0.462
2034	9	New Jersey	CO	37.1	11.859	12.099	10.246	10.469	10.246	5.381	0.158	0.461	10.469	5.381	0.158	0.461
2034	9	New Jersey	CO	37.2	11.865	12.105	10.252	10.475	10.252	5.372	0.157	0.460	10.475	5.372	0.157	0.460
2034	9	New Jersey	CO	37.3	11.872	12.112	10.259	10.482	10.259	5.363	0.157	0.460	10.482	5.363	0.157	0.460
2034	9	New Jersey	CO	37.4	11.878	12.118	10.266	10.489	10.266	5.354	0.157	0.459	10.489	5.354	0.157	0.459

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	37.5	11.885	12.125	10.273	10.496	10.273	5.345	0.157	0.458	10.496	5.345	0.157	0.458
2034	9	New Jersey	CO	37.6	11.892	12.132	10.279	10.502	10.279	5.336	0.156	0.457	10.502	5.336	0.156	0.457
2034	9	New Jersey	CO	37.7	11.898	12.138	10.286	10.509	10.286	5.327	0.156	0.456	10.509	5.327	0.156	0.456
2034	9	New Jersey	CO	37.8	11.905	12.145	10.293	10.516	10.293	5.318	0.156	0.456	10.516	5.318	0.156	0.456
2034	9	New Jersey	CO	37.9	11.911	12.151	10.299	10.522	10.299	5.309	0.155	0.455	10.522	5.309	0.155	0.455
2034	9	New Jersey	CO	38.0	11.918	12.158	10.306	10.529	10.306	5.300	0.155	0.454	10.529	5.300	0.155	0.454
2034	9	New Jersey	CO	38.1	11.924	12.164	10.312	10.535	10.312	5.292	0.155	0.453	10.535	5.293	0.155	0.453
2034	9	New Jersey	CO	38.2	11.931	12.171	10.319	10.542	10.319	5.284	0.154	0.453	10.542	5.286	0.154	0.453
2034	9	New Jersey	CO	38.3	11.937	12.177	10.325	10.548	10.325	5.276	0.154	0.452	10.548	5.279	0.154	0.452
2034	9	New Jersey	CO	38.4	11.943	12.183	10.331	10.555	10.331	5.268	0.154	0.451	10.555	5.272	0.154	0.451
2034	9	New Jersey	CO	38.5	11.950	12.190	10.338	10.561	10.338	5.260	0.154	0.451	10.561	5.265	0.154	0.451
2034	9	New Jersey	CO	38.6	11.956	12.196	10.344	10.567	10.344	5.252	0.153	0.450	10.567	5.258	0.153	0.450
2034	9	New Jersey	CO	38.7	11.962	12.202	10.350	10.574	10.350	5.244	0.153	0.449	10.574	5.251	0.153	0.449
2034	9	New Jersey	CO	38.8	11.968	12.208	10.356	10.580	10.356	5.236	0.153	0.448	10.580	5.244	0.153	0.448
2034	9	New Jersey	CO	38.9	11.975	12.215	10.363	10.587	10.363	5.228	0.152	0.448	10.587	5.237	0.152	0.448
2034	9	New Jersey	CO	39.0	11.981	12.221	10.369	10.593	10.369	5.220	0.152	0.447	10.593	5.230	0.152	0.447
2034	9	New Jersey	CO	39.1	11.987	12.228	10.375	10.600	10.375	5.213	0.152	0.446	10.600	5.224	0.152	0.446
2034	9	New Jersey	CO	39.2	11.993	12.234	10.381	10.607	10.381	5.206	0.151	0.446	10.607	5.218	0.152	0.446
2034	9	New Jersey	CO	39.3	11.999	12.241	10.387	10.614	10.387	5.199	0.151	0.445	10.614	5.212	0.151	0.445
2034	9	New Jersey	CO	39.4	12.005	12.248	10.393	10.621	10.393	5.192	0.151	0.444	10.621	5.206	0.151	0.445
2034	9	New Jersey	CO	39.5	12.011	12.255	10.400	10.628	10.400	5.185	0.151	0.444	10.628	5.200	0.151	0.444
2034	9	New Jersey	CO	39.6	12.016	12.261	10.406	10.634	10.406	5.178	0.150	0.443	10.634	5.194	0.151	0.443
2034	9	New Jersey	CO	39.7	12.022	12.268	10.412	10.641	10.412	5.171	0.150	0.442	10.641	5.188	0.151	0.443
2034	9	New Jersey	CO	39.8	12.028	12.275	10.418	10.648	10.418	5.164	0.150	0.441	10.648	5.182	0.150	0.442
2034	9	New Jersey	CO	39.9	12.034	12.281	10.424	10.655	10.424	5.157	0.149	0.441	10.655	5.176	0.150	0.442
2034	9	New Jersey	CO	40.0	12.040	12.288	10.430	10.662	10.430	5.150	0.149	0.440	10.662	5.170	0.150	0.441
2034	9	New Jersey	CO	40.1	12.047	12.295	10.437	10.669	10.437	5.147	0.149	0.440	10.669	5.168	0.150	0.441
2034	9	New Jersey	CO	40.2	12.055	12.303	10.445	10.677	10.445	5.144	0.149	0.439	10.677	5.166	0.150	0.440
2034	9	New Jersey	CO	40.3	12.062	12.310	10.452	10.684	10.452	5.141	0.148	0.439	10.684	5.164	0.149	0.440
2034	9	New Jersey	CO	40.4	12.069	12.317	10.460	10.692	10.460	5.138	0.148	0.438	10.692	5.162	0.149	0.440
2034	9	New Jersey	CO	40.5	12.077	12.325	10.467	10.699	10.467	5.135	0.148	0.438	10.699	5.160	0.149	0.440
2034	9	New Jersey	CO	40.6	12.084	12.332	10.474	10.706	10.474	5.132	0.148	0.438	10.706	5.158	0.149	0.439
2034	9	New Jersey	CO	40.7	12.091	12.339	10.482	10.714	10.482	5.129	0.148	0.437	10.714	5.156	0.149	0.439
2034	9	New Jersey	CO	40.8	12.098	12.346	10.489	10.721	10.489	5.126	0.147	0.437	10.721	5.154	0.148	0.439
2034	9	New Jersey	CO	40.9	12.106	12.354	10.497	10.729	10.497	5.123	0.147	0.436	10.729	5.152	0.148	0.438
2034	9	New Jersey	CO	41.0	12.113	12.361	10.504	10.736	10.504	5.120	0.147	0.436	10.736	5.150	0.148	0.438
2034	9	New Jersey	CO	41.1	12.120	12.368	10.511	10.743	10.511	5.118	0.147	0.436	10.743	5.148	0.148	0.438
2034	9	New Jersey	CO	41.2	12.127	12.375	10.518	10.750	10.518	5.116	0.147	0.435	10.750	5.146	0.148	0.437
2034	9	New Jersey	CO	41.3	12.134	12.382	10.525	10.757	10.525	5.114	0.147	0.435	10.757	5.144	0.147	0.437
2034	9	New Jersey	CO	41.4	12.141	12.389	10.532	10.764	10.532	5.112	0.147	0.435	10.764	5.142	0.147	0.437
2034	9	New Jersey	CO	41.5	12.148	12.396	10.540	10.772	10.540	5.110	0.147	0.435	10.772	5.140	0.147	0.437
2034	9	New Jersey	CO	41.6	12.155	12.402	10.547	10.779	10.547	5.108	0.146	0.434	10.779	5.138	0.147	0.436
2034	9	New Jersey	CO	41.7	12.162	12.409	10.554	10.786	10.554	5.106	0.146	0.434	10.786	5.136	0.147	0.436
2034	9	New Jersey	CO	41.8	12.169	12.416	10.561	10.793	10.561	5.104	0.146	0.434	10.793	5.134	0.146	0.436
2034	9	New Jersey	CO	41.9	12.176	12.423	10.568	10.800	10.568	5.102	0.146	0.433	10.800	5.132	0.146	0.435
2034	9	New Jersey	CO	42.0	12.183	12.430	10.575	10.807	10.575	5.100	0.146	0.433	10.807	5.130	0.146	0.435
2034	9	New Jersey	CO	42.1	12.190	12.437	10.582	10.814	10.582	5.098	0.146	0.433	10.814	5.127	0.146	0.435
2034	9	New Jersey	CO	42.2	12.196	12.443	10.588	10.820	10.588	5.096	0.146	0.432	10.820	5.124	0.146	0.434
2034	9	New Jersey	CO	42.3	12.203	12.450	10.595	10.827	10.595	5.094	0.145	0.432	10.827	5.121	0.146	0.434
2034	9	New Jersey	CO	42.4	12.209	12.457	10.602	10.834	10.602	5.092	0.145	0.432	10.834	5.118	0.146	0.434

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	42.5	12.216	12.464	10.609	10.841	10.609	5.090	0.145	0.432	10.841	5.115	0.146	0.434
2034	9	New Jersey	CO	42.6	12.223	12.470	10.615	10.847	10.615	5.088	0.145	0.431	10.847	5.112	0.145	0.433
2034	9	New Jersey	CO	42.7	12.229	12.477	10.622	10.854	10.622	5.086	0.145	0.431	10.854	5.109	0.145	0.433
2034	9	New Jersey	CO	42.8	12.236	12.484	10.629	10.861	10.629	5.084	0.144	0.431	10.861	5.106	0.145	0.433
2034	9	New Jersey	CO	42.9	12.242	12.490	10.635	10.867	10.635	5.082	0.144	0.430	10.867	5.103	0.145	0.432
2034	9	New Jersey	CO	43.0	12.249	12.497	10.642	10.874	10.642	5.080	0.144	0.430	10.874	5.100	0.145	0.432
2034	9	New Jersey	CO	43.1	12.255	12.503	10.648	10.881	10.648	5.078	0.144	0.430	10.881	5.098	0.145	0.432
2034	9	New Jersey	CO	43.2	12.262	12.510	10.655	10.887	10.655	5.076	0.144	0.429	10.887	5.096	0.145	0.432
2034	9	New Jersey	CO	43.3	12.268	12.516	10.661	10.894	10.661	5.074	0.144	0.429	10.894	5.094	0.144	0.431
2034	9	New Jersey	CO	43.4	12.274	12.523	10.668	10.900	10.668	5.072	0.144	0.429	10.900	5.092	0.144	0.431
2034	9	New Jersey	CO	43.5	12.281	12.529	10.674	10.907	10.674	5.070	0.144	0.429	10.907	5.090	0.144	0.431
2034	9	New Jersey	CO	43.6	12.287	12.535	10.680	10.913	10.680	5.068	0.143	0.428	10.913	5.088	0.144	0.431
2034	9	New Jersey	CO	43.7	12.293	12.542	10.687	10.920	10.687	5.066	0.143	0.428	10.920	5.086	0.144	0.431
2034	9	New Jersey	CO	43.8	12.299	12.548	10.693	10.926	10.693	5.064	0.143	0.428	10.926	5.084	0.143	0.430
2034	9	New Jersey	CO	43.9	12.306	12.555	10.700	10.933	10.700	5.062	0.143	0.427	10.933	5.082	0.143	0.430
2034	9	New Jersey	CO	44.0	12.312	12.561	10.706	10.939	10.706	5.060	0.143	0.427	10.939	5.080	0.143	0.430
2034	9	New Jersey	CO	44.1	12.318	12.569	10.712	10.947	10.712	5.058	0.143	0.427	10.947	5.084	0.143	0.430
2034	9	New Jersey	CO	44.2	12.324	12.576	10.718	10.954	10.718	5.056	0.143	0.427	10.954	5.088	0.143	0.430
2034	9	New Jersey	CO	44.3	12.330	12.584	10.725	10.962	10.725	5.054	0.142	0.426	10.962	5.092	0.143	0.430
2034	9	New Jersey	CO	44.4	12.336	12.591	10.731	10.970	10.731	5.052	0.142	0.426	10.970	5.096	0.143	0.430
2034	9	New Jersey	CO	44.5	12.342	12.599	10.737	10.978	10.737	5.050	0.142	0.426	10.978	5.100	0.143	0.431
2034	9	New Jersey	CO	44.6	12.348	12.606	10.743	10.985	10.743	5.048	0.142	0.426	10.985	5.104	0.143	0.431
2034	9	New Jersey	CO	44.7	12.354	12.614	10.749	10.993	10.749	5.046	0.142	0.426	10.993	5.108	0.143	0.431
2034	9	New Jersey	CO	44.8	12.360	12.621	10.756	11.001	10.756	5.044	0.141	0.425	11.001	5.112	0.143	0.431
2034	9	New Jersey	CO	44.9	12.366	12.629	10.762	11.008	10.762	5.042	0.141	0.425	11.008	5.116	0.143	0.431
2034	9	New Jersey	CO	45.0	12.372	12.636	10.768	11.016	10.768	5.040	0.141	0.425	11.016	5.120	0.143	0.431
2034	9	New Jersey	CO	45.1	12.379	12.643	10.775	11.023	10.775	5.043	0.141	0.425	11.023	5.124	0.143	0.431
2034	9	New Jersey	CO	45.2	12.386	12.650	10.783	11.031	10.783	5.046	0.141	0.425	11.031	5.128	0.143	0.431
2034	9	New Jersey	CO	45.3	12.394	12.658	10.790	11.038	10.790	5.049	0.141	0.425	11.038	5.132	0.143	0.432
2034	9	New Jersey	CO	45.4	12.401	12.665	10.797	11.045	10.797	5.052	0.141	0.425	11.045	5.136	0.143	0.432
2034	9	New Jersey	CO	45.5	12.408	12.672	10.805	11.053	10.805	5.055	0.141	0.426	11.053	5.140	0.143	0.432
2034	9	New Jersey	CO	45.6	12.415	12.679	10.812	11.060	10.812	5.058	0.141	0.426	11.060	5.144	0.143	0.432
2034	9	New Jersey	CO	45.7	12.422	12.686	10.819	11.067	10.819	5.061	0.141	0.426	11.067	5.148	0.143	0.432
2034	9	New Jersey	CO	45.8	12.430	12.694	10.826	11.074	10.826	5.064	0.141	0.426	11.074	5.152	0.143	0.433
2034	9	New Jersey	CO	45.9	12.437	12.701	10.834	11.082	10.834	5.067	0.141	0.426	11.082	5.156	0.143	0.433
2034	9	New Jersey	CO	46.0	12.444	12.708	10.841	11.089	10.841	5.070	0.141	0.426	11.089	5.160	0.143	0.433
2034	9	New Jersey	CO	46.1	12.451	12.715	10.848	11.096	10.848	5.074	0.141	0.426	11.096	5.163	0.143	0.433
2034	9	New Jersey	CO	46.2	12.458	12.722	10.855	11.103	10.855	5.078	0.141	0.426	11.103	5.166	0.143	0.433
2034	9	New Jersey	CO	46.3	12.465	12.729	10.862	11.110	10.862	5.082	0.141	0.427	11.110	5.169	0.143	0.433
2034	9	New Jersey	CO	46.4	12.472	12.736	10.869	11.117	10.869	5.086	0.141	0.427	11.117	5.172	0.143	0.433
2034	9	New Jersey	CO	46.5	12.479	12.743	10.876	11.125	10.876	5.090	0.141	0.427	11.125	5.175	0.143	0.434
2034	9	New Jersey	CO	46.6	12.485	12.749	10.883	11.132	10.883	5.094	0.141	0.427	11.132	5.178	0.143	0.434
2034	9	New Jersey	CO	46.7	12.492	12.756	10.890	11.139	10.890	5.098	0.141	0.427	11.139	5.181	0.143	0.434
2034	9	New Jersey	CO	46.8	12.499	12.763	10.897	11.146	10.897	5.102	0.141	0.428	11.146	5.184	0.143	0.434
2034	9	New Jersey	CO	46.9	12.506	12.770	10.904	11.153	10.904	5.106	0.141	0.428	11.153	5.187	0.143	0.434
2034	9	New Jersey	CO	47.0	12.513	12.777	10.911	11.160	10.911	5.110	0.141	0.428	11.160	5.190	0.143	0.434
2034	9	New Jersey	CO	47.1	12.520	12.784	10.918	11.167	10.918	5.113	0.141	0.428	11.167	5.194	0.143	0.434
2034	9	New Jersey	CO	47.2	12.526	12.790	10.924	11.173	10.924	5.116	0.141	0.428	11.173	5.198	0.143	0.434
2034	9	New Jersey	CO	47.3	12.533	12.797	10.931	11.180	10.931	5.119	0.141	0.428	11.180	5.202	0.143	0.435
2034	9	New Jersey	CO	47.4	12.539	12.803	10.938	11.187	10.938	5.122	0.141	0.428	11.187	5.206	0.143	0.435

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	47.5	12.546	12.810	10.945	11.194	10.945	5.125	0.141	0.429	11.194	5.210	0.143	0.435
2034	9	New Jersey	CO	47.6	12.553	12.817	10.951	11.200	10.951	5.128	0.141	0.429	11.200	5.214	0.142	0.435
2034	9	New Jersey	CO	47.7	12.559	12.823	10.958	11.207	10.958	5.131	0.141	0.429	11.207	5.218	0.142	0.435
2034	9	New Jersey	CO	47.8	12.566	12.830	10.965	11.214	10.965	5.134	0.141	0.429	11.214	5.222	0.142	0.436
2034	9	New Jersey	CO	47.9	12.572	12.836	10.971	11.220	10.971	5.137	0.141	0.429	11.220	5.226	0.142	0.436
2034	9	New Jersey	CO	48.0	12.579	12.843	10.978	11.227	10.978	5.140	0.141	0.429	11.227	5.230	0.142	0.436
2034	9	New Jersey	CO	48.1	12.585	12.850	10.985	11.235	10.985	5.143	0.141	0.429	11.235	5.239	0.142	0.437
2034	9	New Jersey	CO	48.2	12.592	12.858	10.991	11.242	10.991	5.146	0.141	0.429	11.242	5.248	0.142	0.437
2034	9	New Jersey	CO	48.3	12.598	12.865	10.998	11.250	10.998	5.149	0.141	0.430	11.250	5.257	0.142	0.438
2034	9	New Jersey	CO	48.4	12.604	12.873	11.004	11.257	11.004	5.152	0.141	0.430	11.257	5.266	0.142	0.438
2034	9	New Jersey	CO	48.5	12.611	12.880	11.011	11.265	11.011	5.155	0.141	0.430	11.265	5.275	0.143	0.439
2034	9	New Jersey	CO	48.6	12.617	12.887	11.017	11.272	11.017	5.158	0.140	0.430	11.272	5.284	0.143	0.440
2034	9	New Jersey	CO	48.7	12.623	12.895	11.024	11.280	11.024	5.161	0.140	0.430	11.280	5.293	0.143	0.440
2034	9	New Jersey	CO	48.8	12.629	12.902	11.030	11.287	11.030	5.164	0.140	0.431	11.287	5.302	0.143	0.441
2034	9	New Jersey	CO	48.9	12.636	12.910	11.037	11.295	11.037	5.167	0.140	0.431	11.295	5.311	0.143	0.441
2034	9	New Jersey	CO	49.0	12.642	12.917	11.043	11.302	11.043	5.170	0.140	0.431	11.302	5.320	0.143	0.442
2034	9	New Jersey	CO	49.1	12.648	12.924	11.049	11.310	11.049	5.173	0.140	0.431	11.310	5.330	0.143	0.443
2034	9	New Jersey	CO	49.2	12.654	12.932	11.055	11.317	11.055	5.176	0.140	0.431	11.317	5.340	0.143	0.443
2034	9	New Jersey	CO	49.3	12.660	12.939	11.062	11.325	11.062	5.179	0.140	0.431	11.325	5.350	0.143	0.444
2034	9	New Jersey	CO	49.4	12.666	12.947	11.068	11.332	11.068	5.182	0.140	0.431	11.332	5.360	0.143	0.444
2034	9	New Jersey	CO	49.5	12.673	12.954	11.074	11.340	11.074	5.185	0.140	0.432	11.340	5.370	0.144	0.445
2034	9	New Jersey	CO	49.6	12.679	12.961	11.080	11.348	11.080	5.188	0.140	0.432	11.348	5.380	0.144	0.446
2034	9	New Jersey	CO	49.7	12.685	12.969	11.086	11.355	11.086	5.191	0.140	0.432	11.355	5.390	0.144	0.446
2034	9	New Jersey	CO	49.8	12.691	12.976	11.093	11.363	11.093	5.194	0.140	0.432	11.363	5.400	0.144	0.447
2034	9	New Jersey	CO	49.9	12.697	12.984	11.099	11.370	11.099	5.197	0.140	0.432	11.370	5.410	0.144	0.447
2034	9	New Jersey	CO	50.0	12.703	12.991	11.105	11.378	11.105	5.200	0.140	0.432	11.378	5.420	0.144	0.448
2034	9	New Jersey	CO	50.1	12.710	12.998	11.112	11.385	11.112	5.210	0.140	0.433	11.385	5.431	0.144	0.449
2034	9	New Jersey	CO	50.2	12.717	13.005	11.120	11.393	11.120	5.220	0.140	0.433	11.393	5.442	0.144	0.449
2034	9	New Jersey	CO	50.3	12.725	13.013	11.127	11.400	11.127	5.230	0.140	0.434	11.400	5.453	0.145	0.450
2034	9	New Jersey	CO	50.4	12.732	13.020	11.134	11.407	11.134	5.240	0.140	0.435	11.407	5.464	0.145	0.451
2034	9	New Jersey	CO	50.5	12.739	13.027	11.142	11.415	11.142	5.250	0.141	0.436	11.415	5.475	0.145	0.452
2034	9	New Jersey	CO	50.6	12.746	13.034	11.149	11.422	11.149	5.260	0.141	0.436	11.422	5.486	0.145	0.452
2034	9	New Jersey	CO	50.7	12.753	13.041	11.156	11.429	11.156	5.270	0.141	0.437	11.429	5.497	0.145	0.453
2034	9	New Jersey	CO	50.8	12.761	13.049	11.163	11.436	11.163	5.280	0.141	0.438	11.436	5.508	0.146	0.454
2034	9	New Jersey	CO	50.9	12.768	13.056	11.171	11.444	11.171	5.290	0.141	0.438	11.444	5.519	0.146	0.454
2034	9	New Jersey	CO	51.0	12.775	13.063	11.178	11.451	11.178	5.300	0.141	0.439	11.451	5.530	0.146	0.455
2034	9	New Jersey	CO	51.1	12.782	13.070	11.185	11.458	11.185	5.310	0.141	0.440	11.458	5.539	0.146	0.456
2034	9	New Jersey	CO	51.2	12.789	13.077	11.192	11.465	11.192	5.320	0.141	0.440	11.465	5.548	0.146	0.456
2034	9	New Jersey	CO	51.3	12.796	13.083	11.199	11.472	11.199	5.330	0.142	0.441	11.472	5.557	0.146	0.457
2034	9	New Jersey	CO	51.4	12.803	13.090	11.206	11.479	11.206	5.340	0.142	0.441	11.479	5.566	0.146	0.458
2034	9	New Jersey	CO	51.5	12.810	13.097	11.213	11.486	11.213	5.350	0.142	0.442	11.486	5.575	0.147	0.459
2034	9	New Jersey	CO	51.6	12.816	13.104	11.220	11.493	11.220	5.360	0.142	0.443	11.493	5.584	0.147	0.459
2034	9	New Jersey	CO	51.7	12.823	13.111	11.227	11.500	11.227	5.370	0.142	0.443	11.500	5.593	0.147	0.460
2034	9	New Jersey	CO	51.8	12.830	13.117	11.234	11.507	11.234	5.380	0.143	0.444	11.507	5.602	0.147	0.461
2034	9	New Jersey	CO	51.9	12.837	13.124	11.241	11.514	11.241	5.390	0.143	0.444	11.514	5.611	0.147	0.461
2034	9	New Jersey	CO	52.0	12.844	13.131	11.248	11.521	11.248	5.400	0.143	0.445	11.521	5.620	0.147	0.462
2034	9	New Jersey	CO	52.1	12.851	13.138	11.255	11.528	11.255	5.410	0.143	0.446	11.528	5.635	0.147	0.463
2034	9	New Jersey	CO	52.2	12.857	13.146	11.261	11.536	11.261	5.420	0.143	0.446	11.536	5.650	0.147	0.464
2034	9	New Jersey	CO	52.3	12.864	13.153	11.268	11.543	11.268	5.430	0.143	0.447	11.543	5.665	0.148	0.465
2034	9	New Jersey	CO	52.4	12.870	13.160	11.275	11.551	11.275	5.440	0.143	0.447	11.551	5.680	0.148	0.466

CO Emission Matrix

				1	2	3	4	5	6	7	8	9	10	11	12	13
Analysis Year	Time Period	Location	Pollutant		ARTERIAL	EXPRESS	ARTERIAL	EXPRESS	Light	Heavy Gas	Heavy Diese	Diesel	Light	Heavy Gas	Heavy Diesel	Diesel
	(hour ending)			SPEED	Auto	Auto	SUV	SUV	Truck	Truck	Truck	Bus	Truck	Truck	Truck	Bus
2034	9	New Jersey	CO	52.5	12.877	13.168	11.282	11.558	11.282	5.450	0.144	0.448	11.558	5.695	0.148	0.467
2034	9	New Jersey	CO	52.6	12.884	13.175	11.288	11.565	11.288	5.460	0.144	0.449	11.565	5.710	0.148	0.468
2034	9	New Jersey	CO	52.7	12.890	13.182	11.295	11.573	11.295	5.470	0.144	0.449	11.573	5.725	0.148	0.469
2034	9	New Jersey	CO	52.8	12.897	13.189	11.302	11.580	11.302	5.480	0.144	0.450	11.580	5.740	0.149	0.470
2034	9	New Jersey	CO	52.9	12.903	13.197	11.308	11.588	11.308	5.490	0.144	0.450	11.588	5.755	0.149	0.471
2034	9	New Jersey	CO	53.0	12.910	13.204	11.315	11.595	11.315	5.500	0.144	0.451	11.595	5.770	0.149	0.472
2034	9	New Jersey	CO	53.1	12.916	13.212	11.322	11.603	11.322	5.509	0.144	0.452	11.603	5.790	0.149	0.473
2034	9	New Jersey	CO	53.2	12.923	13.219	11.328	11.610	11.328	5.518	0.144	0.452	11.610	5.810	0.150	0.475
2034	9	New Jersey	CO	53.3	12.929	13.227	11.335	11.618	11.335	5.527	0.144	0.453	11.618	5.830	0.150	0.476
2034	9	New Jersey	CO	53.4	12.935	13.235	11.341	11.626	11.341	5.536	0.144	0.453	11.626	5.850	0.150	0.478
2034	9	New Jersey	CO	53.5	12.942	13.243	11.348	11.634	11.348	5.545	0.145	0.454	11.634	5.870	0.151	0.479
2034	9	New Jersey	CO	53.6	12.948	13.250	11.354	11.641	11.354	5.554	0.145	0.455	11.641	5.890	0.151	0.480
2034	9	New Jersey	CO	53.7	12.954	13.258	11.361	11.649	11.361	5.563	0.145	0.455	11.649	5.910	0.151	0.482
2034	9	New Jersey	CO	53.8	12.960	13.266	11.367	11.657	11.367	5.572	0.145	0.456	11.657	5.930	0.151	0.483
2034	9	New Jersey	CO	53.9	12.967	13.273	11.374	11.664	11.374	5.581	0.145	0.456	11.664	5.950	0.152	0.485
2034	9	New Jersey	CO	54.0	12.973	13.281	11.380	11.672	11.380	5.590	0.145	0.457	11.672	5.970	0.152	0.486
2034	9	New Jersey	CO	54.1	12.979	13.288	11.386	11.680	11.386	5.599	0.145	0.458	11.680	5.990	0.152	0.487
2034	9	New Jersey	CO	54.2	12.985	13.296	11.393	11.687	11.393	5.608	0.145	0.458	11.687	6.010	0.153	0.489
2034	9	New Jersey	CO	54.3	12.992	13.303	11.399	11.695	11.399	5.617	0.145	0.459	11.695	6.030	0.153	0.490
2034	9	New Jersey	CO	54.4	12.998	13.310	11.405	11.702	11.405	5.626	0.145	0.459	11.702	6.050	0.153	0.491
2034	9	New Jersey	CO	54.5	13.004	13.318	11.412	11.710	11.412	5.635	0.146	0.460	11.710	6.070	0.154	0.493
2034	9	New Jersey	CO	54.6	13.010	13.325	11.418	11.717	11.418	5.644	0.146	0.461	11.717	6.090	0.154	0.494
2034	9	New Jersey	CO	54.7	13.016	13.332	11.424	11.725	11.424	5.653	0.146	0.461	11.725	6.110	0.154	0.495
2034	9	New Jersey	CO	54.8	13.023	13.339	11.430	11.732	11.430	5.662	0.146	0.462	11.732	6.130	0.154	0.496
2034	9	New Jersey	CO	54.9	13.029	13.347	11.437	11.740	11.437	5.671	0.146	0.462	11.740	6.150	0.155	0.498
2034	9	New Jersey	CO	55.0	13.035	13.354	11.443	11.747	11.443	5.680	0.146	0.463	11.747	6.170	0.155	0.499

Representative NJ CAl3QHC CO Input Matrix

CAL3QHC Input Matrix

A-node	B-node	Analysis Year	Scenario	Total Volume	CompEmission	Idle Emission	SFR per lane	Cycle	Red Time	Lost time	# Lanes	Signal Type	Arrival Type
34274-	34254	2034	4	1665	11.12	69.8	1165	120	43	2	4	1	3
34264-	173407	2034	4	2015	10.80	69.8	1526	120	38	2	4	1	3
34271-	34273	2034	4	1925	11.16	69.8	1629	120	43	2	3	1	3
172702-	34250	2034	4	2010	10.84	69.8	1475	120	41	2	3	1	3
173408-	34268	2034	4	2910	11.37	69.5	1475	120	41	2	3	1	3
34269-	173408	2034	4	2750	11.37	69.5	1623	120	38	2	3	1	3
34270-	34269	2034	4	2665	18.79	69.5	1355	120	43	2	3	1	3
34248-	34255	2034	4	2810	15.98	69.5	1560	120	43	2	3	1	3
34262-	34261	2034	4	1105	19.38	68.2	694	120	80	2	4	1	3
34259-	34263	2034	4	970	19.38	68.2	1204	120	80	2	4	1	3
34275-	34258	2034	4	1061	10.89	69.6	1165	120	43	2	4	1	3
34260-	34269	2034	4	951	23.74	69.6	696	120	80	2	4	1	3
173411-	9412	2034	4	585	23.74	69.6	1257	90	35	2	1	1	3
9498-	173411	2034	4	465	11.00	69.6	731	90	36	2	2	1	3
173411-	9498	2034	4	695	12.09	68.2	1358	90	36	2	1	1	3
9412-	173411	2034	4	620	12.89	68.2	1307	90	35	2	1	1	3
172706-	34257	2034	4	815	19.38	68.2	1475	120	41	2	3	1	3
9353-	172706	2034	4	1030	13.53	68.2	1358	90	41	2	2	1	3
9302-	9353	2034	4	920	27.29	68.2	794	90	39	2	2	1	3
9353-	9302	2034	4	956	21.24	69.6	687	90	39	2	2	1	3
172706-	9353	2034	4	936	21.24	69.6	771	90	39	2	2	1	3
34257-	172706	2034	4	906	18.66	69.6	789	90	60	2	2	1	3
173414-	172712	2034	4	960	22.08	69.0	1367	90	61	2	2	1	3
9498-	173414	2034	4	1125	25.25	69.0	548	90	30	2	2	1	3
172712-	173414	2034	4	765	14.97	69.7	630	90	30	2	2	1	3
173414-	9498	2034	4	740	14.58	69.7	1270	90	36	2	1	1	3
172712-	179402	2034	4	1375	11.25	69.1	1315	90	30	2	2	1	3
179402-	179401	2034	4	695	11.25	69.1	1708	90	39	2	3	1	3
179401-	172711	2034	4	695	11.25	69.1	1727	90	51	2	2	1	3
172711-	179401	2034	4	1355	13.88	69.3	1397	89	30	2	2	1	3
179402-	179403	2034	4	680	11.64	69.1	1708	90	39	2	3	1	3
179401-	179403	2034	4	95	11.51	69.1	1699	90	51	2	2	1	3
179403-	34047	2034	4	775	11.77	66.3	1475	120	41	2	3	1	3
34083-	172711	2034	4	836	11.62	66.3	1579	90	60	2	2	1	3
179402-	172712	2034	4	1230	14.10	69.3	1708	90	39	2	3	1	3
179404-	172712	2034	4	465	12.56	69.1	1691	90	69	2	2	1	3
172712-	179404	2034	4	1170	11.55	69.3	1315	90	30	2	2	1	3
34456-	172712	2034	4	725	11.24	66.7	1608	90	53	2	2	1	3
34456-	34079	2034	4	485	10.34	67.8	1165	120	43	2	4	1	3
179404-	34079	2034	4	275	11.67	66.3	1475	120	41	2	3	1	3
34083-	34079	2034	4	375	10.72	67.4	1270	90	36	2	1	1	3
34083-	173104	2034	4	3285	11.49	66.4	1657	90	60	2	2	1	3
34082-	34081	2034	4	1035	11.00	67.4	1270	90	36	2	1	1	3
179405-	34081	2034	4	760	11.50	66.4	1475	120	41	2	3	1	3
173103-	34456	2034	4	1211	12.49	67.8	1475	120	41	2	3	1	3
34047-	34045	2034	4	4030	13.09	66.4	1270	90	36	2	1	1	3
173103-	34047	2034	4	2955	12.10	66.4	1475	120	41	2	3	1	3
34082-	34047	2034	4	535	12.30	66.4	1270	90	36	2	1	1	3
172711-	172717	2034	4	725	10.85	69.1	1166	89	30	2	2	1	3
172717-	172711	2034	4	675	10.98	69.3	1473	90	32	2	3	1	3

Representative NY CAl3QHC CO Input Matrix

CAL3QHC Input Matrix

A-node	B-node	Analysis Year	Location	Time Period	Scenario	Pollutant	Total Volume	CompEmission	Idle Emission	SFR per lane	Cycle	Red Time	Lost time	# Lanes	Signal Type	Arrival Type
33369-	11750	2034	NY	9	4	CO	5770	8.86	45.6	1219	90	36	2	2	1	3
11750-	11734	2034	NY	9	4	CO	5460	8.84	45.6	1193	90	45	2	3	1	3
11734-	33708	2034	NY	9	4	CO	4360	8.61	45.6	1457	120	55	2	3	1	3
11661-	33706	2034	NY	9	4	CO	7001	8.55	46.4	1006	120	65	2	2	1	3
33706-	11733	2034	NY	9	4	CO	6591	8.57	46.4	1219	90	36	2	2	1	3
11733-	11749	2034	NY	9	4	CO	10022	8.63	46.4	1488	120	65	2	2	1	3
11749-	33751	2034	NY	9	4	CO	12222	8.97	46.4	1193	90	45	2	3	1	3
11755-	11744	2034	NY	9	4	CO	2750	7.46	40.4	1193	90	45	2	3	1	3
11744-	33711	2034	NY	9	4	CO	550	7.46	40.4	1193	90	45	2	3	1	3
33711-	11740	2034	NY	9	4	CO	660	7.44	40.4	1582	90	67	2	2	1	3
11731-	33709	2034	NY	9	4	CO	600	7.44	40.4	1488	120	65	2	2	1	3
33709-	11723	2034	NY	9	4	CO	600	7.44	40.4	1582	90	67	2	2	1	3
11723-	11729	2034	NY	9	4	CO	610	7.44	40.4	1488	120	65	2	2	1	3
11729-	11723	2034	NY	9	4	CO	1165	8.48	45.8	1488	120	65	2	2	1	3
33709-	11731	2034	NY	9	4	CO	890	8.48	45.8	1582	90	67	2	2	1	3
11731-	33747	2034	NY	9	4	CO	1405	8.48	45.8	1488	120	65	2	2	1	3
11740-	33711	2034	NY	9	4	CO	300	8.48	45.8	1747	90	45	2	2	1	3
33711-	11744	2034	NY	9	4	CO	600	8.48	45.8	1582	90	67	2	2	1	3
11744-	11755	2034	NY	9	4	CO	600	8.48	45.8	1747	90	45	2	2	1	3
11744-	11749	2034	NY	9	4	CO	2200	11.65	40.4	1747	90	45	2	2	1	3
11750-	11723	2034	NY	9	4	CO	310	8.58	47.3	1193	90	45	2	3	1	3
11734-	11731	2034	NY	9	4	CO	515	8.59	47.3	1457	120	55	2	3	1	3
11740-	11733	2034	NY	9	4	CO	1165	9.30	45.8	1457	120	55	2	3	1	3
33709-	33708	2034	NY	9	4	CO	605	8.70	47.1	1582	90	67	2	2	1	3
33706-	33711	2034	NY	9	4	CO	410	8.64	47.4	1582	90	67	2	2	1	3
11734-	11658	2034	NY	9	4	CO	585	8.07	47.2	1457	120	55	2	3	1	3
11658-	11610	2034	NY	9	4	CO	500	8.00	47.2	1621	90	68	2	3	1	3
11604-	11652	2034	NY	9	4	CO	1705	9.18	44.6	1349	120	55	2	2	1	3
11652-	11733	2034	NY	9	4	CO	2265	8.33	44.6	1356	120	65	2	2	1	3
11587-	11652	2034	NY	9	4	CO	775	17.34	46.4	1519	120	65	2	1	1	3
11652-	11658	2034	NY	9	4	CO	140	8.43	45.0	1356	120	65	2	2	1	3
11658-	11692	2034	NY	9	4	CO	145	8.43	45.0	1006	120	65	2	2	1	3
11692-	11658	2034	NY	9	4	CO	420	9.57	45.5	1488	120	65	2	2	1	3
11658-	11652	2034	NY	9	4	CO	535	18.81	47.0	937	120	65	2	2	1	3
11652-	11587	2034	NY	9	4	CO	225	18.81	47.0	1344	120	55	2	2	1	3
33763-	10136	2034	NY	9	4	CO	5265	8.60	45.7	1582	90	67	2	2	1	3
10136-	10095	2034	NY	9	4	CO	3145	8.51	45.7	1417	90	36	2	2	1	3
10095-	10021	2034	NY	9	4	CO	4255	8.49	45.7	1417	90	36	2	2	1	3
10021-	33728	2034	NY	9	4	CO	4635	11.85	45.7						1	
33367-	10018	2034	NY	9	4	CO	4030	8.30	48.1	1219	90	36	2	2	1	3
10018-	10086	2034	NY	9	4	CO	3275	8.44	48.1						1	
10086-	10131	2034	NY	9	4	CO	2800	8.15	48.1	1417	90	36	2	2	1	3
10131-	33764	2034	NY	9	4	CO	4695	8.48	48.1	1417	90	36	2	2	1	3
10136-	10088	2034	NY	9	4	CO	2120	8.63	45.7	1417	90	36	2	2	1	3
10097-	10131	2034	NY	9	4	CO	1895	8.41	48.1	1417	90	36	2	2	1	3
10097-	10095	2034	NY	9	4	CO	1110	8.72	45.7	1417	90	36	2	2	1	3
10086-	10088	2034	NY	9	4	CO	475	8.47	48.1	1417	90	36	2	2	1	3
10166-	10055	2034	NY	9	4	CO	475	8.38	46.9	1559	90	54	2	3	1	3
10055-	10033	2034	NY	9	4	CO	1040	8.29	46.9	1030	90	36	2	2	1	3
10033-	33719	2034	NY	9	4	CO	340	8.37	46.9	1030	90	36	2	2	1	3
33719-	39913	2034	NY	9	4	CO	740	8.38	46.9	1582	90	67	2	2	1	3
10033-	10021	2034	NY	9	4	CO	780	8.47	46.9	1030	90	36	2	2	1	3
10021-	33719	2034	NY	9	4	CO	400	8.64	45.7						1	
9909-	33718	2034	NY	9	4	CO	550	8.01	52.2						1	
33718-	10030	2034	NY	9	4	CO	445	8.15	52.2	1582	90	67	2	2	1	3
10030-	173401	2034	NY	9	4	CO	115	7.61	52.2	1582	90	67	2	2	1	3
33718-	10018	2034	NY	9	4	CO	125	7.98	52.2	1582	90	67	2	2	1	3
10018-	10030	2034	NY	9	4	CO	880	8.69	48.1						1	
10030-	10055	2034	NY	9	4	CO	1250	13.47	52.8	1112	90	36	2	2	1	3
10055-	10065	2034	NY	9	4	CO	805	15.52	52.8	1030	90	36	2	2	1	3
10065-	10055	2034	NY	9	4	CO	280	8.15	48.0	1445	90	36	2	2	1	3
10055-	10030	2034	NY	9	4	CO	60	10.96	48.0	1030	90	36	2	2	1	3
11755-	11769	2034	NY	9	4	CO	670	8.48	45.8	1219	90	36	2	2	0	3
11652-	11755	2034	NY	9	4	CO	390	8.35	44.6	1621	90	68	2	3	0	3

Emission Burden Analysis

Forecast Travel Demand Performance Measure
Future Year (2014) No Build

Peak Period (6-10) AM

Alternative	County	Function Class		VMT		VHT	Avg. Speed	CO EF	NOX EF	VOC EF	PM EF	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
				(Veh. Miles Traveled)		(Veh. Hours Travele	(MPH)	g/veh-mile	g/veh-mile	g/veh-mile	g/veh-mile	lbs	lbs	lbs	lbs
2014M	Brooklyn	1-2, 11-12, 20	0.28%	862,451	1.03%	52,269	16.5	9.075	0.593	0.405	0.017	17,239.5	1,125.6	768.4	32.7
		6-9, 14-19	0.44%	1,587,660	0.87%	141,430	11.2	10.094	0.699	0.513	0.017	35,299.2	2,444.4	1,794.0	60.1
	Staten Islan	1-2, 11-12, 20	0.78%	499,897	2.76%	23,190	21.6	8.835	0.573	0.362	0.017	9,728.2	630.4	398.6	18.9
		6-9, 14-19	1.24%	509,215	2.23%	28,619	17.8	9.044	0.596	0.405	0.017	10,143.6	668.0	453.8	19.3
	Hudson	1-2, 11-12, 20	0.40%	1,071,909	1.65%	63,908	16.8	11.897	0.749	0.608	0.018	28,088.5	1,768.6	1,436.0	42.3
		6-9, 14-19	0.95%	502,422	1.85%	48,424	10.4	13.917	0.901	0.858	0.018	15,401.3	997.1	949.5	19.8
	Essex	1-2, 11-12, 20	0.48%	2,602,914	1.61%	122,010	21.3	11.585	0.725	0.528	0.018	66,420.8	4,155.5	3,024.9	102.6
		6-9, 14-19	0.78%	814,771	1.46%	62,528	13.0	12.972	0.826	0.740	0.018	23,280.2	1,482.4	1,328.0	32.1
	Union	1-2, 11-12, 20	0.51%	2,093,027	1.56%	88,205	23.7	11.468	0.715	0.509	0.018	52,870.6	3,297.2	2,347.0	82.5
		6-9, 14-19	0.93%	829,058	1.71%	59,459	13.9	12.738	0.808	0.710	0.018	23,261.1	1,475.5	1,296.5	32.7
	Middlesex	1-2, 11-12, 20	0.76%	4,245,672	2.65%	224,956	18.9	11.736	0.737	0.565	0.018	109,751.6	6,892.2	5,281.8	167.4
		6-9, 14-19	1.22%	1,127,428	2.58%	99,935	11.3	13.551	0.872	0.813	0.018	33,651.5	2,165.5	2,018.9	44.5
Total		1-2, 11-12, 20		11,375,870		574,537	19.8								
		6-9, 14-19		5,370,555		440,395	12.2					425,136.1	27,102.4	21,097.6	654.9
Grand Total															

/ Peak Period (4-8) PM

Alternative	County	Function Class		VMT		VHT	Avg. Speed	CO EF	NOX EF	VOC EF	PM EF	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
				(Veh. Mile Traveled)		(Veh. Hour Travele	(MPH)	g/veh-mile	g/veh-mile	g/veh-mile	g/veh-mile	lbs	lbs	lbs	lbs
2014M	Brooklyn	1-2, 11-12, 20	0.20%	1,054,721	0.81%	68,251	15.5	9.180	0.602	0.418	0.017	21,327.2	1,399.0	972.0	40.0
		6-9, 14-19	0.41%	2,194,225	0.86%	213,691	10.3	10.373	0.726	0.541	0.017	50,133.7	3,508.8	2,614.7	83.1
	Staten Islan	1-2, 11-12, 20	0.69%	556,612	2.70%	23,022	24.2	8.745	0.564	0.349	0.017	10,721.5	691.2	427.3	21.1
		6-9, 14-19	1.04%	687,096	1.87%	39,486	17.4	9.076	0.599	0.408	0.017	13,736.5	906.8	617.8	26.0
	Hudson	1-2, 11-12, 20	0.32%	1,269,249	1.49%	72,580	17.5	11.839	0.745	0.593	0.018	33,097.8	2,081.7	1,656.7	50.0
		6-9, 14-19	0.73%	637,907	1.67%	61,345	10.4	13.917	0.901	0.858	0.018	19,554.5	1,266.0	1,205.6	25.2
	Essex	1-2, 11-12, 20	0.36%	3,075,495	1.12%	137,289	22.4	11.528	0.720	0.519	0.018	78,095.9	4,880.1	3,514.5	121.3
		6-9, 14-19	0.48%	1,069,464	0.91%	86,828	12.3	13.177	0.842	0.766	0.018	31,040.4	1,983.5	1,804.4	42.2
	Union	1-2, 11-12, 20	0.40%	2,507,773	1.28%	105,766	23.7	11.468	0.715	0.509	0.018	63,347.2	3,950.6	2,812.1	98.9
		6-9, 14-19	0.71%	1,096,016	1.34%	85,569	12.8	13.028	0.831	0.747	0.018	31,451.3	2,006.1	1,803.4	43.2
	Middlesex	1-2, 11-12, 20	0.69%	4,986,433	2.34%	246,642	20.2	11.647	0.730	0.541	0.018	127,918.5	8,017.8	5,944.2	196.6
		6-9, 14-19	1.01%	1,481,109	2.07%	140,993	10.5	13.831	0.894	0.848	0.018	45,121.6	2,916.5	2,766.5	58.4
Total		1-2, 11-12, 20		13,450,283		653,551	20.6								
		6-9, 14-19		7,165,818		627,912	11.4					525,546.1	33,608.3	26,139.1	805.9
Grand Total															
				22,228,797		1,505,801	14.8				TOTAL	950,682.2	60,710.7	47,236.7	1,460.8

Forecast Travel Demand Performance Measure
Future Year (2034) No Build

Peak Period (6-10)

Alternative	County	Function Class	VMT GROWTH	VMT	VHT GROWTH	VHT	Avg. Speed	CO EF	NOX EF	VOC EF	PM EF	2034 No Build CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
			(Veh. Miles Traveled)		(Veh. Hours Travel		(MPH)	g/veh-mile	g/veh-mile	g/veh-mile	g/veh-mile	lbs	lbs	lbs	lbs
2034M	Brooklyn	1-2, 11-12, 20	0.28%	909,892	1.03%	62,436	14.6	8.016	0.166	0.282	0.013	16,065.4	332.7	565.2	25.5
		6-9, 14-19	0.44%	1,722,555	0.87%	164,785	10.5	8.907	0.226	0.356	0.013	33,794.7	857.5	1,350.7	48.2
	Staten Islan	1-2, 11-12, 20	0.78%	574,596	2.76%	34,293	16.8	7.821	0.159	0.262	0.013	9,898.0	201.2	331.2	16.1
		6-9, 14-19	1.24%	626,732	2.23%	39,928	15.7	8.062	0.191	0.282	0.013	11,129.9	263.7	389.0	17.5
	Hudson	1-2, 11-12, 20	0.40%	1,155,559	1.65%	83,116	13.9	10.705	0.264	0.481	0.013	27,247.3	672.0	1,224.3	31.8
		6-9, 14-19	0.95%	592,849	1.85%	64,604	9.2	12.537	0.364	0.679	0.013	16,371.3	475.3	886.7	16.3
	Essex	1-2, 11-12, 20	0.48%	2,844,124	1.61%	157,899	18.0	10.190	0.246	0.399	0.013	63,836.2	1,541.1	2,499.6	78.3
		6-9, 14-19	0.78%	936,259	1.46%	79,364	11.8	11.566	0.331	0.566	0.013	23,851.9	682.6	1,167.2	25.8
	Union	1-2, 11-12, 20	0.51%	2,298,089	1.56%	113,476	20.3	10.071	0.245	0.367	0.013	50,976.1	1,239.1	1,857.7	63.3
		6-9, 14-19	0.93%	975,633	1.71%	77,977	12.5	11.347	0.322	0.541	0.013	24,384.4	692.0	1,162.6	26.9
	Middlesex	1-2, 11-12, 20	0.76%	4,866,040	2.65%	328,807	14.8	10.537	0.256	0.462	0.013	112,937.1	2,743.8	4,951.8	134.0
		6-9, 14-19	1.22%	1,384,751	2.58%	145,059	9.5	12.355	0.360	0.657	0.013	37,684.1	1,098.0	2,003.9	38.1
Total		1-2, 11-12, 20		18,887,079		1,351,744									
		6-9, 14-19													
Grand Total												428,176.3	10,799.1	18,389.9	521.7

l Peak Period (4-8)

Alternative	County	Function Class		VMT		VHT	Avg. Speed	CO EF	NOX EF	VOC EF	PM EF	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
			(Veh. Mile Traveled)		(Veh. Hour Travel		(MPH)	g/veh-mile	g/veh-mile	g/veh-mile	g/veh-mile	lbs	lbs	lbs	lbs
2034M	Brooklyn	1-2, 11-12, 20	0.20%	1,096,238	0.81%	78,780	13.9	8.100	0.170	0.289	0.013	19,558.4	410.5	697.8	30.7
		6-9, 14-19	0.41%	2,368,916	0.86%	248,797	9.5	9.144	0.234	0.380	0.013	47,712.3	1,221.0	1,982.8	66.3
	Staten Islan	1-2, 11-12, 20	0.69%	630,717	2.70%	33,822	18.6	7.734	0.157	0.247	0.013	10,745.0	218.7	342.9	17.6
		6-9, 14-19	1.04%	821,204	1.87%	52,807	15.6	8.074	0.192	0.283	0.013	14,604.4	346.4	511.9	23.0
	Hudson	1-2, 11-12, 20	0.32%	1,348,845	1.49%	92,499	14.6	10.578	0.258	0.467	0.013	31,427.5	766.5	1,387.5	37.1
		6-9, 14-19	0.73%	726,961	1.67%	80,021	9.1	12.584	0.366	0.685	0.013	20,150.0	586.1	1,096.8	20.0
	Essex	1-2, 11-12, 20	0.36%	3,293,062	1.12%	166,146	19.8	10.090	0.245	0.372	0.013	73,190.1	1,777.1	2,696.8	90.7
		6-9, 14-19	0.48%	1,169,271	0.91%	101,732	11.5	11.656	0.335	0.576	0.013	30,019.9	862.8	1,483.5	32.2
	Union	1-2, 11-12, 20	0.40%	2,703,246	1.28%	131,007	20.6	10.052	0.244	0.363	0.013	59,851.3	1,455.2	2,161.4	74.4
		6-9, 14-19	0.71%	1,244,647	1.34%	106,877	11.6	11.596	0.333	0.569	0.013	31,790.6	912.9	1,559.9	34.3
	Middlesex	1-2, 11-12, 20	0.69%	5,649,044	2.34%	348,700	16.2	10.312	0.247	0.431	0.013	128,315.4	3,073.4	5,365.3	155.5
		6-9, 14-19	1.01%	1,763,717	2.07%	193,210	9.1	12.537	0.364	0.679	0.013	48,704.2	1,414.1	2,637.8	48.6
Total				22,815,867		1,634,398									
												516,069.0	13,044.6	21,924.5	630.4
				41,702,946		2,986,143									
											TOTAL	944,245.3	23,843.6	40,314.4	1,152.1

Forecast Travel Demand Performance Measure
Future Year (2014) Build - 6 Lane Configuration

AM Peak Period (6-10)

Alternative	County	Function Class	VMT	VHT	Avg. Speed	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens	Changes in Pollutant Burdens under 6 Lane Replacement (2014) CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
			(Veh. Miles Travele	Veh. Hours Travele	(MPH)	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
2014G	Brooklyn	1-2, 11-12, 20	859,950	54,338	15.8	17,296.4	1,131.6	781.9	32.6	56.8	6.0	13.5	-0.1
		6-9, 14-19	1,579,984	139,779	11.3	35,041.5	2,425.7	1,778.4	59.9	-257.7	-18.8	-15.6	-0.3
	Staten Island	1-2, 11-12, 20	496,176	23,677	21.0	9,681.1	627.8	399.8	18.8	-47.1	-2.6	1.2	-0.1
		6-9, 14-19	506,558	28,209	18.0	10,066.3	661.9	448.8	19.2	-77.3	-6.2	-5.0	-0.1
	Hudson	1-2, 11-12, 20	1,062,633	63,329	16.8	27,845.4	1,753.3	1,423.6	41.9	-243.1	-15.3	-12.4	-0.4
		6-9, 14-19	495,212	48,209	10.3	15,229.4	986.1	942.4	19.5	-172.0	-11.0	-7.1	-0.3
	Essex	1-2, 11-12, 20	2,597,347	120,830	21.5	66,248.4	4,144.3	3,013.8	102.4	-172.4	-11.2	-11.0	-0.2
		6-9, 14-19	810,838	61,940	13.1	23,167.8	1,475.2	1,321.6	32.0	-112.4	-7.2	-6.4	-0.2
	Union	1-2, 11-12, 20	2,093,664	87,932	23.8	52,866.4	3,296.4	2,344.5	82.5	-4.2	-0.8	-2.5	0.0
		6-9, 14-19	828,137	59,320	14.0	23,235.3	1,473.9	1,295.1	32.7	-25.8	-1.6	-1.4	0.0
	Middlesex	1-2, 11-12, 20	4,242,125	225,798	18.8	109,725.3	6,891.1	5,295.2	167.3	-26.3	-1.1	13.3	-0.1
		6-9, 14-19	1,124,585	99,643	11.3	33,566.6	2,160.0	2,013.8	44.3	-84.9	-5.5	-5.1	-0.1
Total		1-2, 11-12, 20	11,351,894	575,902	19.7								
		6-9, 14-19	5,345,313	437,101	12.2				2014 AM SubTotal	-1,166.1	-75.2	-38.7	-1.9
Grand Total													

Peak Period (4-8)

F

Alternative	County	Function Class	VMT	VHT	Avg. Speed	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens	Changes in Pollutant Burdens under 6 Lane Replacement (2014) CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
			(Veh. Mile Traveled	Veh. Hour Travele	(MPH)	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
2014G	Brooklyn	1-2, 11-12, 20	1,052,406	67,361	15.6	21,223.8	1,390.4	963.4	39.9	-103.4	-8.6	-8.6	-0.1
		6-9, 14-19	2,183,124	210,815	10.4	49,731.0	3,476.6	2,587.1	82.7	-402.7	-32.2	-27.7	-0.4
	Staten Island	1-2, 11-12, 20	555,747	22,045	25.2	10,665.2	687.2	419.9	21.1	-56.3	-4.0	-7.4	0.0
		6-9, 14-19	685,435	39,148	17.5	13,686.8	902.8	614.5	26.0	-49.7	-4.0	-3.3	-0.1
	Hudson	1-2, 11-12, 20	1,265,772	71,074	17.8	32,920.1	2,069.3	1,628.8	49.9	-177.6	-12.4	-28.0	-0.1
		6-9, 14-19	632,499	59,583	10.6	19,209.0	1,241.3	1,173.0	24.9	-345.5	-24.7	-32.5	-0.2
	Essex	1-2, 11-12, 20	3,074,712	136,961	22.4	78,076.0	4,878.9	3,513.6	121.2	-19.9	-1.2	-0.9	0.0
		6-9, 14-19	1,065,680	86,155	12.4	30,930.5	1,976.4	1,798.0	42.0	-109.8	-7.0	-6.4	-0.1
	Union	1-2, 11-12, 20	2,512,344	104,719	24.0	63,414.0	3,953.3	2,809.5	99.1	66.8	2.8	-2.6	0.2
		6-9, 14-19	1,096,428	85,590	12.8	31,463.2	2,006.9	1,804.0	43.2	11.8	0.8	0.7	0.0
	Middlesex	1-2, 11-12, 20	4,978,068	243,848	20.4	127,578.9	7,993.4	5,903.5	196.3	-339.6	-24.4	-40.7	-0.3
		6-9, 14-19	1,476,954	139,851	10.6	44,995.1	2,908.4	2,758.7	58.2	-126.6	-8.2	-7.8	-0.2
Total		1-2, 11-12, 20	13,439,049	646,008	20.8	ot 947,863.5	60,512.2	47,032.9	1,457.5				
		6-9, 14-19	7,140,121	621,143	11.5				2014 PM SubTotal	-1,652.5	-123.2	-165.1	-1.4
Grand Total													
			22,228,797	1,505,801	14.8				Grand Total 2014	-2,818.6	-198.5	-203.8	-3.3
									% Change	-0.30%	-0.33%	-0.43%	-0.23%

Forecast Travel Demand Performance Measure
Future Year (2034) Build - 6 Lane Configuration

AM Peak Period (6-10)

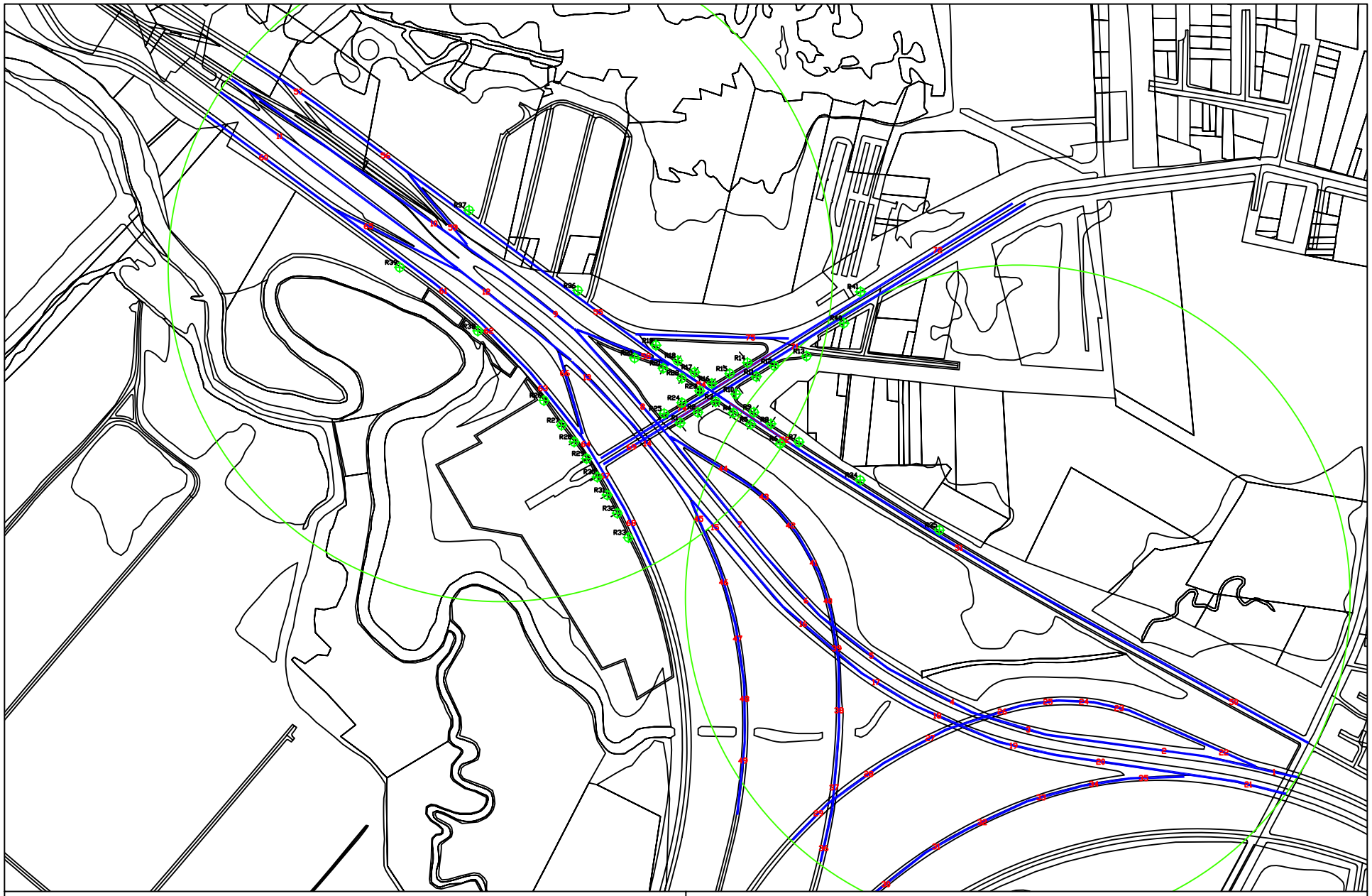
Alternative	County	Function Class	VMT	VHT	Avg. Speed	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens	Changes in Pollutant Burdens under 6 Lane Replacement (2034) CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
			(Veh. Miles Travele	Veh. Hours Travele	(MPH)	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
2034G	Brooklyn	1-2, 11-12, 20	903,098	68,425	13.2	16,357.2	350.1	596.8	25.3	291.8	17.4	31.6	-0.2
		6-9, 14-19	1,701,490	160,132	10.6	33,201.5	839.5	1,319.2	47.6	-593.2	-18.0	-31.5	-0.6
	Staten Island	1-2, 11-12, 20	564,150	35,853	15.7	9,800.9	199.4	336.8	15.8	-97.1	-1.8	5.5	-0.3
		6-9, 14-19	619,042	38,671	16.0	10,930.1	257.7	377.7	17.3	-199.8	-6.0	-11.3	-0.2
	Hudson	1-2, 11-12, 20	1,130,196	81,397	13.9	26,704.0	659.7	1,202.4	31.1	-543.3	-12.3	-21.9	-0.7
		6-9, 14-19	572,429	63,959	8.9	15,928.4	462.7	870.0	15.8	-442.9	-12.6	-16.7	-0.6
	Essex	1-2, 11-12, 20	2,828,793	154,406	18.3	63,383.7	1,530.9	2,456.2	77.9	-452.5	-10.2	-43.4	-0.4
		6-9, 14-19	925,213	77,640	11.9	23,454.3	670.5	1,139.2	25.5	-397.6	-12.1	-28.0	-0.3
	Union	1-2, 11-12, 20	2,299,848	112,668	20.4	50,967.5	1,239.1	1,849.0	63.3	-8.6	-0.1	-8.7	0.0
		6-9, 14-19	973,019	77,561	12.5	24,319.0	690.1	1,159.5	26.8	-65.3	-1.9	-3.1	-0.1
	Middlesex	1-2, 11-12, 20	4,856,076	331,472	14.7	112,919.8	2,748.9	4,963.0	133.7	-17.3	5.1	11.3	-0.3
		6-9, 14-19	1,376,525	144,140	9.5	37,460.3	1,091.5	1,992.0	37.9	-223.8	-6.5	-11.9	-0.2
Total		1-2, 11-12, 20	18,749,880	1,346,324	13.9								
		6-9, 14-19							2034 AM SubTotal (lbs	-2,749.6	-58.8	-128.2	-3.8
Grand Total													

PM Peak Period (4-8)

Alternative	County	Function Class	VMT	VHT	Avg. Speed	CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens	Changes in Pollutant Burdens under 6 Lane Replacement (2034) CO Burdens	NOx Burdens	VOC Burdens	PM2.5 Burdens
			(Veh. Mile Traveled	Veh. Hour Travele	(MPH)	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
2034G	Brooklyn	1-2, 11-12, 20	1,089,983	76,283	14.3	19,343.6	403.3	686.6	30.5	-214.8	-7.1	-11.2	-0.2
		6-9, 14-19	2,338,513	240,699	9.7	46,811.5	1,200.2	1,926.4	65.4	-900.8	-20.8	-56.4	-0.9
	Staten Island	1-2, 11-12, 20	628,299	30,766	20.4	10,611.0	216.7	324.7	17.6	-133.9	-1.9	-18.2	-0.1
		6-9, 14-19	816,454	51,791	15.8	14,478.2	342.6	504.6	22.8	-126.2	-3.8	-7.3	-0.1
	Hudson	1-2, 11-12, 20	1,339,374	88,091	15.2	30,825.1	745.2	1,332.9	36.9	-602.4	-21.3	-54.6	-0.3
		6-9, 14-19	711,842	74,820	9.5	19,371.8	564.5	1,030.1	19.6	-778.1	-21.6	-66.7	-0.4
	Essex	1-2, 11-12, 20	3,290,920	165,203	19.9	73,104.8	1,775.9	2,684.9	90.6	-85.3	-1.2	-11.9	-0.1
		6-9, 14-19	1,158,851	99,827	11.6	29,599.2	850.0	1,452.4	31.9	-420.7	-12.8	-31.1	-0.3
	Union	1-2, 11-12, 20	2,715,783	127,974	21.2	59,965.0	1,459.6	2,139.1	74.8	113.7	4.4	-22.3	0.3
		6-9, 14-19	1,245,800	106,938	11.6	31,820.0	913.8	1,561.4	34.3	29.5	0.8	1.4	0.0
	Middlesex	1-2, 11-12, 20	5,625,669	340,059	16.5	127,513.1	3,060.7	5,272.5	154.9	-802.3	-12.7	-92.8	-0.6
		6-9, 14-19	1,751,864	189,732	9.2	48,195.6	1,400.7	2,596.9	48.2	-508.7	-13.4	-40.9	-0.3
Total			22,713,351	1,592,184		937,065.6	23,673.3	39,774.4	1,145.4				
									2034 PM SubTota	-4,430.1	-111.4	-411.8	-2.8
			41,463,231	2,938,508					Grand Total 2034 (lbs	-7,179.7	-170.3	-540.0	-6.6
			-0.57%	-1.60%					% change	-0.77%	-0.72%	-1.36%	-0.58%

Representative Figures

Goethals Bridge Toll Plaza



R1 - Receptor

3 - Free Flow Link

- Qeue Link

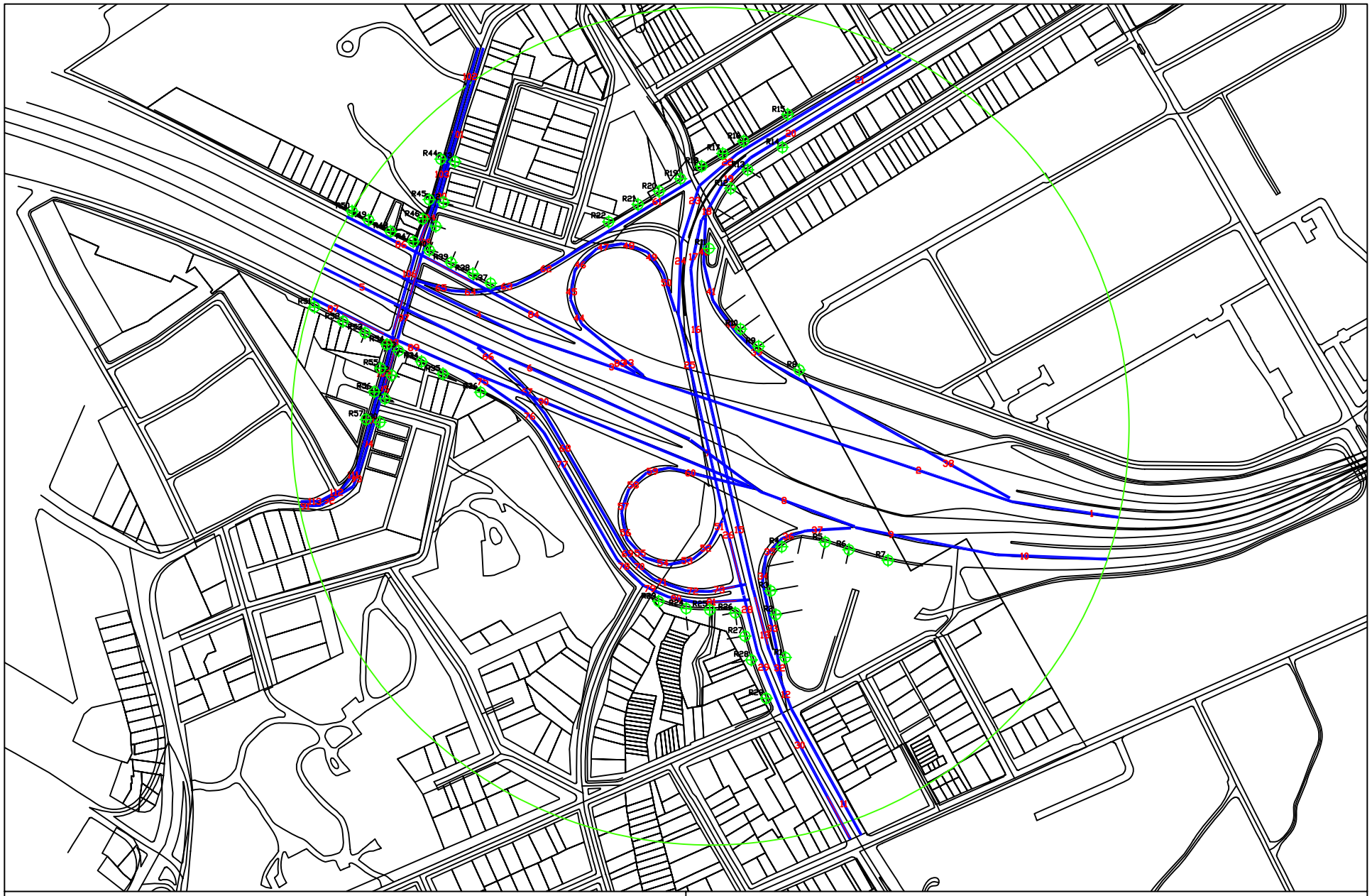
File name: GB 2000.dwg

Title: Goethals Br Forest Ave & Goethals

Created by: PB | PBQD Inc.

Date: 12/13/2007 | Scale 1cm : 65m

Verrazano Bridge Toll Plaza



R1 - Receptor

3 - Free Flow Link

- Qeue Link

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Title: Verrazano Narrows Rd & Lilypond	
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Date: 12/13/2007	Scale 1cm : 55m

Appendix N.2
Technical Report for GBR Construction-Phase Air Quality Impact Analysis

Appendix N.2
Technical Report for GBR Construction-Phase Air Quality Impact Analysis (March 2010)

TECHNICAL REPORT

Goethals Bridge Replacement
Final Environmental Impact Statement
Construction-Phase Analysis: Air Quality

MARCH 2010

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1.0 Introduction

The proposed Goethals Bridge Replacement (GBR) Project, sponsored by the Port Authority of New York and New Jersey (Port Authority), would replace the existing Goethals Bridge, which spans the Arthur Kill between Staten Island, New York, and Elizabeth, New Jersey. As the project requires a United States Coast Guard (USCG) Bridge Permit for its construction over the Arthur Kill, a navigable water of the United States, such action constitutes a major federal action triggering compliance with the requirements of the National Environmental Policy Act (NEPA). The GBR Draft Environmental Impact Statement (DEIS) was issued by the U.S. Coast Guard (USCG), the lead federal agency, in July 2009. The GBR EIS is being prepared to also satisfy New York State Environmental Quality Act (SEQRA) and City of New York City Environmental Quality Review (CEQR) requirements.

In accordance with consultation conducted by the USCG with the U.S. Environmental Protection Agency (EPA) Region 2 and concurrence from the New York City Department of Environmental Protection (NYCDEP), the GBR Final EIS (FEIS) includes documentation of quantitative construction-phase air quality analysis of the project's Preferred Alternative. The Preferred Alternative was identified on the basis of the GBR DEIS and consideration of agency and public comments received during the DEIS formal public meetings and comment period.

The GBR would be constructed over an approximate 5-year period. In addition, the New York Container Terminal (NYCT) at the Howland Hook Marine Terminal in the northwestern portion of Staten Island proposes to construct its Berth 4 Expansion Project (Berth 4) during the same approximate time period. Given the two projects' geographic proximity and anticipated concurrent construction, the construction-phase air quality analysis for the GBR FEIS evaluated the potential cumulative air quality impact of the two projects' construction activities.

2.0 Assumptions and Methodology

2.1 Construction-Related Activities Considered

The following activities associated with the construction of the replacement bridge would generate air pollutant emissions within and near the major construction areas:

- Demolition and grading;
- Handling and transport of construction material and debris;
- Operation of heavy-duty diesel-powered construction equipment; and
- Operation of heavy-duty diesel trucks for transport of construction materials within construction areas and on the area's roadways.

These construction activities would affect local ambient air quality levels near the construction sites (i.e., primarily within 200 to 300 feet of the activities). Pollutant emissions generated by construction activities and from truck trips were estimated on an annual and monthly basis for the entire construction period, and potential air quality impacts were estimated during peak construction periods.

Annual estimated emissions generated during the construction period in each State were also compared with EPA General Conformity emission thresholds to determine whether a Conformity determination is applicable.

2.2 Methodology

The analysis to estimate the potential air quality impacts caused by on-site (e.g., demolition activities, construction equipment operations, and truck movements) and off-site (e.g., motor vehicle traffic effects due to truck trips and ramp closures) construction-phase activities includes the following:

- Estimation of emissions generated by the construction activities (e.g., deconstruction, concrete and steel construction), including fugitive dust emissions and emissions released from diesel-powered equipment and trucks based on the hours of operation of each piece of equipment;
- Determination of the distances between major construction activities and nearby sensitive land uses (e.g., residences, schools, parks);
- Identification of heavily traveled truck routes to estimate the cumulative effects of on-site construction activity emissions and off-site traffic emissions;
- An "on-site" dispersion modeling analysis of the two major construction areas – one on either side of the bridge (i.e., one in Elizabeth, New Jersey, and the other in Staten Island, New York);
- An "off-site" dispersion modeling analysis of the roadway intersections/interchanges adjacent to the construction areas using traffic data that include construction-related vehicles and background traffic;
- Determination of future baseline concentrations, which are the sum of modeled future No-Build traffic concentrations and ambient background values; results of the construction–phase analysis is the sum of these future baseline values and project-related construction impacts;
- A comparison of the cumulative (on-site and off-site) modeling results to the applicable National Ambient Air Quality Standards (NAAQS) for the applicable pollutants and, for the New York-side analysis, the NYCDEP significant threshold values and *de minimis* impact levels. (See GBR FEIS Section 4.20.1 for a discussion of these items.)

2.3 Pollutants of Concern

The principal pollutant associated with dust-generating construction activities and exhaust from construction equipment is particulate matter. Both PM_{10} (particulate matter with aerodynamic diameter less than or equal to 10 micrometers) and $PM_{2.5}$ (particulate matter with aerodynamic diameter less than or equal to 2.5 micrometers) were considered. PM_{10} emissions are primarily related to grading, construction and deconstruction, land clearing, blasting and drilling, material loading operations, and movement of heavy-duty vehicles and equipment; $PM_{2.5}$ emissions are related primarily to exhaust from diesel-powered construction equipment and trucks.

The other pollutant of concern associated with construction activities is nitrogen dioxide (NO_2), which is emitted from diesel-fueled engines of construction equipment and truck activities within and near construction sites. Diesel engines emit nitrogen oxides (NO_x) primarily as nitrogen oxide (NO), which is then slowly converted to NO_2 in the presence of sunlight. While diesel engines emit relatively small quantities of carbon monoxide (CO), this pollutant also was considered, to assess the combined effect of on-site and off-site emission sources.

Two other pollutants, sulfur dioxide (SO_2) and volatile organic compounds (VOCs), were considered on a regional basis to determine whether annual construction-phase emission rates would exceed *de minimis* thresholds established in EPA's Conformity Rule (40 CFR Parts 51 and 93). SO_2 emissions are generated primarily from the combustion of sulfur containing fuels (oil and coal) largely from power-generating

facilities, heating systems, and industrial facilities. VOCs are principally emitted from the storage, handling, and use of fossil fuels, and are of concern primarily because of their role in the formation of photochemical oxidants (ozone).

In summary:

- The on-site analysis evaluated the effects of construction activities on ambient PM_{10}, $PM_{2.5,}$ CO, and NO_2 concentrations;
- The off-site analysis, which estimated emissions associated with truck traffic on public roads used for the transportation of construction material, rock, debris removal, and cement, and their effect on traffic flow at the most affected roadway locations, were analyzed for their effects on ambient CO, PM_{10} and $PM_{2.5}$ concentrations; and
- Annual emission rates of CO, PM_{10} and $PM_{2.5}$, NO_x, SO_2, and VOCs were estimated.

3.0 Emissions (On-Site and Off-Site)

3.1 Emission Sources

On-site construction activities that could potentially affect air quality levels at nearby sensitive land uses include:

- Earth grading and deconstruction/demolition activities;
- The handling and transport of material and debris;
- Operations of heavy-duty diesel-powered construction equipment;
- Heavy-duty diesel trucks operating within construction areas, as well as traveling to the sites to deliver construction materials and from the sites transporting construction materials; and
- Re-entrained dust resulting from trucks and equipment traveling on paved public roads, and unpaved roads within the construction sites.

Emission rates for these activities were estimated based on the following:

- The number of hours per day and duration of each construction activity;
- The number and type of construction equipment to be used;
- Horsepower (HP) and utilization rates (hours per day) for each piece of equipment;
- The quantities of construction/demolition material produced and removed from each site; and
- The number of truck trips needed to remove construction/demolition material, and to bring the supply materials to each site.

Emissions from the off-site trucks and general traffic affected by construction truck traffic were estimated using the same methodology and assumptions as were used to estimate existing off-site (mobile source) conditions (see GBR FEIS Section 4.20.3). Mileage assumptions used to estimate annual regional emission rates are provided in Section 3.5.2 of this report.

3.2 Emission Control Measures

The Port Authority's sustainability design guidelines will be followed during construction of the proposed GBR project to minimize construction-phase emissions. In accordance with these guidelines, construction activities would incorporate measures designed to minimize air quality impacts. The following assumptions were incorporated into the air quality analysis:

- **Emission Control Measures for Diesel Equipment Exhaust**
  - Ultra-low sulfur diesel fuel would be used for construction vehicles and equipment;
  - Engines for non-road construction equipment with a horsepower (HP) rating above 50 HP would be in compliance with EPA's Tier 2 standards;
  - Eighty percent of construction equipment with engines above 50 HP would be retrofitted with best available control technology (BACT) verified by EPA and/or the California Air Resources Board, which reduce PM emissions up to 90 percent (without increasing NOx emissions), using diesel particulate filters, diesel oxidation catalysts, flow through filter technology, etc.;
  - Idling of diesel-fueled vehicles would be limited (maximum of 3 minutes per vehicle);
  - Diesel equipment exhausts would be located away from sensitive land uses; and
  - Electric compressors and pumps would be used where possible, instead of diesel-powered equipment.
- **Emission Control Measures for Fugitive Dust**
  - Wet suppression, with or without approved binding agents, would be used on-site on a routine basis with hoses or a sprinkler system during deconstruction and material-handling activities aimed at a 10-percent moisture content in the ground;
  - Wet spray power vacuum street sweeper would be used on paved roadways;
  - Calcium chloride would be used instead of wet suppression when freezing conditions exist;
  - Wheel-wash stations or crushed stone at construction ingress/egress areas would be used;
  - Dump trucks during material transport on public roadways would be covered;
  - Idling times on diesel-powered engines would be limited to 3 minutes; and
  - Truck speed within the construction sites would be limited to less than 5 miles per hour (mph).

These control measures (for both diesel engines and fugitive dust) would be translated into construction specifications to ensure that the goals identified during the environmental review process are met during the construction phase.

3.3 Emission Estimates

3.3.1 Operating Scenarios

Emission rates of each pollutant were estimated for each type of construction activity. Because different construction activities could range from a few months to several years in duration, separate analyses were conducted to estimate short-term (24 hours or less) and long-term (annual average) pollutant levels. Short-term emission estimates, based on peak-period activity levels at each site (defined as emissions per month), were used to compare the modeling results to short-term exposure standards (i.e., 8 hours and

24 hours). Annual average activity levels were used to compare modeling results to annual exposure standards.

3.3.2 Assumptions and Emission Factors

Project-specific information regarding the deployment and operation of construction equipment was applied to identify site-specific emission source parameters for use in the emission estimates and dispersion analysis. The following assumptions and emission factors were utilized:

- Construction operations would occur 40 hours per week;
- Estimated hourly emission rates of each pollutant from construction equipment, dust-generating activities, and project trucks operating each construction site were summed to compute the total monthly emission rate by pollutant, reflecting the contribution of each type of emission source;
- Only diesel-powered construction equipment was considered in the analysis; emissions generated outside the project area to generate electricity for the electric-powered equipment were not considered;
- Construction-related dump trucks were considered as heavy-duty diesel vehicles with a 12 to 18 cubic-yard capacity;
- NO_2, PM_{10} and $PM_{2.5}$, and CO emission factors for moving vehicles (i.e., exhaust, brakes, and tires) and queuing vehicles were estimated using the EPA MOBILE 6.2.03 vehicular emission factor model;
- Total daily on-site vehicular emission rates of NO_2, CO, PM_{10}, and $PM_{2.5}$ were estimated by multiplying emission factors for moving vehicles (in grams per vehicle-mile) by the distance that an average vehicle would travel within the site, and by the number of on-site operating vehicles during the activity period;
- Re-entrained dust from the movement of trucks and vehicles within each construction analysis site was estimated using the current EPA equation for fugitive dust sources for PM_{10} and $PM_{2.5}$ emissions. Because of low vehicular speeds within the construction areas (i.e., less than 5 mph), a speed reduction factor was applied, where appropriate;
- Emission rates of NO_2, CO, PM_{10} and $PM_{2.5}$ from diesel engines of construction equipment were estimated using the EPA NONROAD Emission Model (Report No. NR-009C, April 2004, EPA 420-P-04-009). Zero-hour emission factors were adjusted for transient operation, deterioration factors, and diesel-fuel sulfur content, following the EPA NONROAD Model guidance;
- As recommended in EPA's NONROAD Emission Mode, $PM_{2.5}$ emission factors for construction equipment were assumed to be 97 percent of the estimated PM_{10} emission factors for each type of equipment;
- Engine HP rating was provided by the project design team and utilization factors (peak usage during the working hours) for the different types of equipment were estimated based on the EPA NONROAD Model guidance. These values were used to produce an average HP usage per day; and
- Fugitive-dust emission factors for demolition, excavation, truck loading, and re-entrained dust were based on the equations recommended in EPA's AP-42 Report "Compilation of Air Pollutant Emission Factors," Sections 13.2.3.1/2/3 Heavy Construction Operations, 11.9.1 Uncontrolled Open Fugitive Dust Sources, and 13.2.1 Fugitive Dust from Paved Roads. The $PM_{2.5}$ to PM_{10} ratios varied depending on the type of activity performed.

3.4 Equipment Estimates

Table 1 lists the approximate numbers and types of pieces of equipment and Table 2 lists the approximate numbers and types of marine vessels and support equipment that would be operating over the project's entire approximately 5-year construction period at each construction site. These lists are provided for information purposes to indicate the types and sizes of equipment anticipated at each site. The analysis documented in this report was conducted using equipment projections specifically for the peak monthly and peak annual periods at each site.

TABLE 1
ESTIMATED NUMBERS OF DIESEL-POWERED CONSTRUCTION EQUIPMENT OPERATING OVER THE FULL CONSTRUCTION PERIOD AT NEW YORK AND NEW JERSEY CONSTRUCTION SITES

Equipment Type	Rated HP	Approximate Number of Units	
		New Jersey	New York
Air Compressor (175 CFM)	55	98	64
Asphalt Compactor DBL Drum 8-11.2	110	1	2
Asphalt Material Transfer Self Propel	395	1	2
Backhoe/Loader	138	5	6
Bridge Deck Screed (60Ft)	25	5	3
Bulldozer	80	2	3
Bulldozer/Crawler	173	9	6
Concrete Paver (12 Ft)	335	1	2
Concrete Pump Trailer	95	5	6
Concrete Pump Truck	250	26	19
Concrete Saw	5	4	2
Core Drill	5	4	2
Crane Mount Foundation Drill	450	3	3
Crawler Crane (150 Ton)	335	11	10
Crawler Crane (200 Ton)	335	27	15
Crawler Crane (275 Ton)	450	23	14
Crawler Crane (60 Ton)	207	1	1
Crawler Crane (70-80 Ton)	205	13	9
DSL Hammer	75	9	11
Dump Truck (70,000 LB 12-18 CY)	325	54	36
Excavator (.62 CY)	138	1	2
Excavator (1-1/4 CY)	395	12	7
Fixed Leads W/ Spotter	30	4	5
Flatbed Truck F350	210	5	6
Forklift 5000-LB	78	3	1
Fuel Truck 2000 Gal	170	1	2
Generator (20 KW)	60	2	0
Generator (4 KW)	10	29	43

TABLE 1 (CONTINUED)
ESTIMATED NUMBERS OF DIESEL-POWERED CONSTRUCTION EQUIPMENT OPERATING OVER THE FULL CONSTRUCTION PERIOD AT NEW YORK AND NEW JERSEY CONSTRUCTION SITES

Equipment Type	Rated HP	Approximate Number of Units	
		New Jersey	New York
Grader 12 Ft Blade	140	1	2
Grader 14 Ft Blade	220	1	1
Grinding and Grooving Machine	152	5	3
Hydraulic Crane (55 Ton)	174	15	10
Light	20	0	4
Lube Truck	170	1	1
Mixer (96" Stab/Mixer x15")	450	1	2
Motorized Deck Finishing Bridge	10	5	3
Pick-Up Truck 1/2 Ton	130	22	21
Pile Cutter W/ Power Pack	200	5	5
Pile Hammer	100	4	0
Pressure Washer	8	4	2
Pump 6 IN Trash	65	37	32
Ready Mix Concrete Truck	300	97	62
Road Widener-Self Propelled	150	1	2
Roller (84"SM DRUM VIB)	185	1	0
Sedan	165	1	1
Semi Tractor/Trailer	400	11	8
Slipform Barrier Machine	145	5	3
Track-Type Loader	90	6	3
Trucks (Delivery)	400	24	16
Vacuum Sweeper	250	5	3
VIB Concr Screed	10	5	3
VIB Driver/Extractor	450	9	8
Water Truck 2500 Gal	175	2	1
Welder (400 Amp)	48	52	35
Wire Saw	5	4	2

TABLE 2
ESTIMATED NUMBERS OF DIESEL-POWERED MARINE VESSELS AND SUPPORT EQUIPMENT OPERATING OVER THE FULL CONSTRUCTION PERIOD AT THE NEW YORK AND NEW JERSEY CONSTRUCTION SITES

Equipment Type	Rated HP	Approximate Number of Units	
		New Jersey	New York
Tugboat	650	1	1
Generator (100 KW)	150	1	1
Crew Boat (45 Ft)	330	1	1
Deck Winch	260	1	1
Survey Skiff	40	1	1
Workboat (Aluminum, 18-Ft)	50	2	2
Sedan	165	1	1
½ Ton Pick-Up Truck	130	9	9
Light	30	2	2
Delivery Trucks	400	1	1

Note:

It was conservatively assumed, for the purpose of estimating annual emission rates, that the number of units shown in this table would be operating both in New York and in New Jersey for the entire construction period.

3.5 GBR Construction Activities and Estimated Annual Emission Rates

3.5.1 On-Site Emissions

To determine when peak construction activities (and greatest emissions) would occur, emissions were estimated on a monthly and then on an annual basis at each of the two construction sites (New Jersey and New York).

Table 3 provides the estimated annual emission rates, with implementation of the anticipated emission control measures, of each applicable pollutant during each year of the project's construction phase. This table presents annual estimated emission rates; impact modeling analyses, however, were based on both peak-yearly and peak-monthly emission rates on a pollutant-by-pollutant basis for each year in which construction would occur.

While the emission rates for total NO_x, which are used in the regional analysis, are provided in the table, dispersion modeling results, which are used to estimate localized pollutant levels, were multiplied by a value of 0.38 to account for the fact that most of the NO_x emissions are released from diesel engines in the form of NO (nitrogen oxides) and convert in the atmosphere to NO_2.

TABLE 3
ANNUAL EMISSIONS FROM CONSTRUCTION EQUIPMENT AND ACTIVITIES AT NEW JERSEY AND NEW YORK CONSTRUCTION SITES

Pollutant	Construction Site	Emissions (Tons/Year)				
		2011	2012	2013	2014	2015
CO	New Jersey	16.53	25.06	16.20	13.06	12.62
	New York	27.13	39.47	34.24	22.38	18.93
NO_2	New Jersey	43.98	68.86	45.60	36.57	36.06
	New York	53.47	67.23	67.10	42.97	39.38
PM_{10}	New Jersey	2.60	2.38	1.67	1.60	0.70
	New York	1.81	1.38	1.65	1.04	0.78
$PM_{2.5}$	New Jersey	1.59	1.73	1.25	1.15	0.65
	New York	1.26	1.21	1.35	0.90	0.72
SO_2	New Jersey	2.79	4.79	3.24	2.32	2.43
	New York	3.65	4.86	4.81	3.04	2.80
VOCs	New Jersey	0.03	0.06	0.04	0.03	0.03
	New York	0.06	0.08	0.08	0.05	0.05

3.5.2 Off-Site Emissions

Annual estimated off-site emissions generated within the New York-New Jersey-Connecticut metropolitan area during the project's peak trucking year, which was determined based on traffic projections to be 2012, are provided in Table 4. Emission factors were estimated using the EPA MOBILE6.1 emission algorithm and the same input assumptions used for the project's operational phase. The values presented are based on the daily estimated number of trucks and employees coming to and leaving the construction sites during this peak year. The following conservative assumptions were applied:

- All dump trucks, girder delivery trucks, rebar delivery trucks, pipe pile trucks, and steel demolition trucks traveling to and from the construction sites were assumed to travel 60 miles each way within the region;
- All trucks delivering concrete to the construction sites were assumed to travel 10 miles each way;
- Construction workers were assumed to travel 50 miles each way to and from the construction site; and
- The highest estimated annual emission rates would be emitted during every year of the approximately 5-year construction period.

TABLE 4
ANNUAL PEAK YEAR (2012) OFF-SITE EMISSIONS FROM CONSTRUCTION-RELATED VEHICLES

Construction Site	Annual Emissions (Tons/Year)					
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Regional Totals	4.3	16.9	105.0	.7	0.4	0.1

3.5.3 Total (On-Site plus Off-Site) Emissions

Total annual estimated emissions generated within the entire New York-New Jersey-Connecticut region during the project's construction period, rounded to the nearest whole number, are provided in Table 5. These values are the peak on-site emissions during each analysis year plus the peak off-site emissions for 2012.

TABLE 5
TOTAL ANNUAL ON-SITE PLUS OFF-SITE EMISSIONS FROM CONSTRUCTION EQUIPMENT AND ACTIVITIES

Pollutant	Emissions (Tons/Year)				
	2011	2012	2013	2014	2015
CO	149	170	155	140	137
NO_x	114	153	130	96	92
PM_{10}	5	4	3	3	2
$PM_{2.5}$	3	3	3	2	2
SO_2	7	10	8	5	5
VOCs	4	4	4	4	4

3.6 Berth 4 Emissions

Dispersion Analysis

The New York Container Terminal Berth 4 project's construction is planned to occur over approximately the same time period as construction of the Goethals Bridge Replacement. Therefore, emissions from Berth 4 construction were considered for the analysis of the New York construction site. However, while Berth 4 traffic-related impacts were included in the mobile source analysis, on-site emissions would be generated more than 1 mile from the sensitive receptor sites evaluated and would not measurably affect total predicted pollution levels. Therefore, on-site Berth 4 emissions were not included in the modeling analysis for the GBR Project.

4.0 On-Site Dispersion Modeling Analysis

4.1 Modeling Approach

An atmospheric dispersion analysis was conducted to estimate pollutant levels at receptor sites near the selected GBR construction analysis areas at points beyond the fence lines of these areas. The EPA AERMOD model was used for this analysis. AERMOD, which is EPA's regulatory model, is generally applied to estimate impacts from point-source emissions from stacks, as well as emissions from volume and area sources. Emission sources within the construction sites were modeled using the area source algorithm incorporated in the model.

Since each piece of construction equipment could move around the entire construction site, depending on the nature of the activity performed, and specific locations of cranes or other large pieces of equipments will not be determined until later project-development phases, emissions from diesel-powered equipment assigned to specific activities were conservatively represented as area sources that would cover the entire site (i.e., these emissions were modeled as being uniformly distributed throughout each construction site).

Four distinct construction areas were considered for analysis:

1. Approaches to the bridge (New Jersey);
2. Footings and structures (New Jersey);
3. Main span of the bridge; and
4. Approaches to the bridge and footings and structures (Staten Island).

However, emissions from only three of these areas were used in the dispersion analysis. Emissions from the construction of the main span were not considered because this area is located far (more than one-half mile) from any of the sensitive land uses considered (see Section 4.2 of this report). Since two construction sites in New Jersey are near each other (and have nearby sensitive land uses), these two sites were evaluated together in one modeling run for each pollutant. Additionally, it was assumed that on-site trucks would travel at 5 miles per hour.

Table 6 shows the analysis year for each pollutant for each construction site; the analysis years were selected based on peak-period emission rates.

TABLE 6
YEARS SELECTED FOR DISPERSION ANALYSIS

Analysis Site	Pollutant				
	CO	NO_x	PM_{10}	$PM_{2.5}$	
	8-Hour	Annual	24-Hour	24-Hour	Annual
New Jersey Approaches	2015	2015	2011	2011	2011
New Jersey Structures	2012	2012	2012	2012	2012
New York Approaches	2013	2013	2011	2013	2013

4.2 Receptor Sites

Receptor locations (i.e., locations where pollutant concentrations are estimated) considered at each analysis site include all nearby sensitive land uses (i.e., residences, parks, and sidewalks open to pedestrian traffic). The receptor sites and construction areas considered in New York and New Jersey are shown on Figures 1 and 2, respectively.

4.3 Meteorological Data

Meteorological data used for this analysis include five years (2004 to 2008) of data for Newark Liberty International Airport for the analysis in New Jersey and five years (2004 to 2006) of data from LaGuardia Airport for analysis in Staten Island, NY.

FIGURE 1: RECEPTOR SITES AND CONSTRUCTION AREAS (NEW YORK)

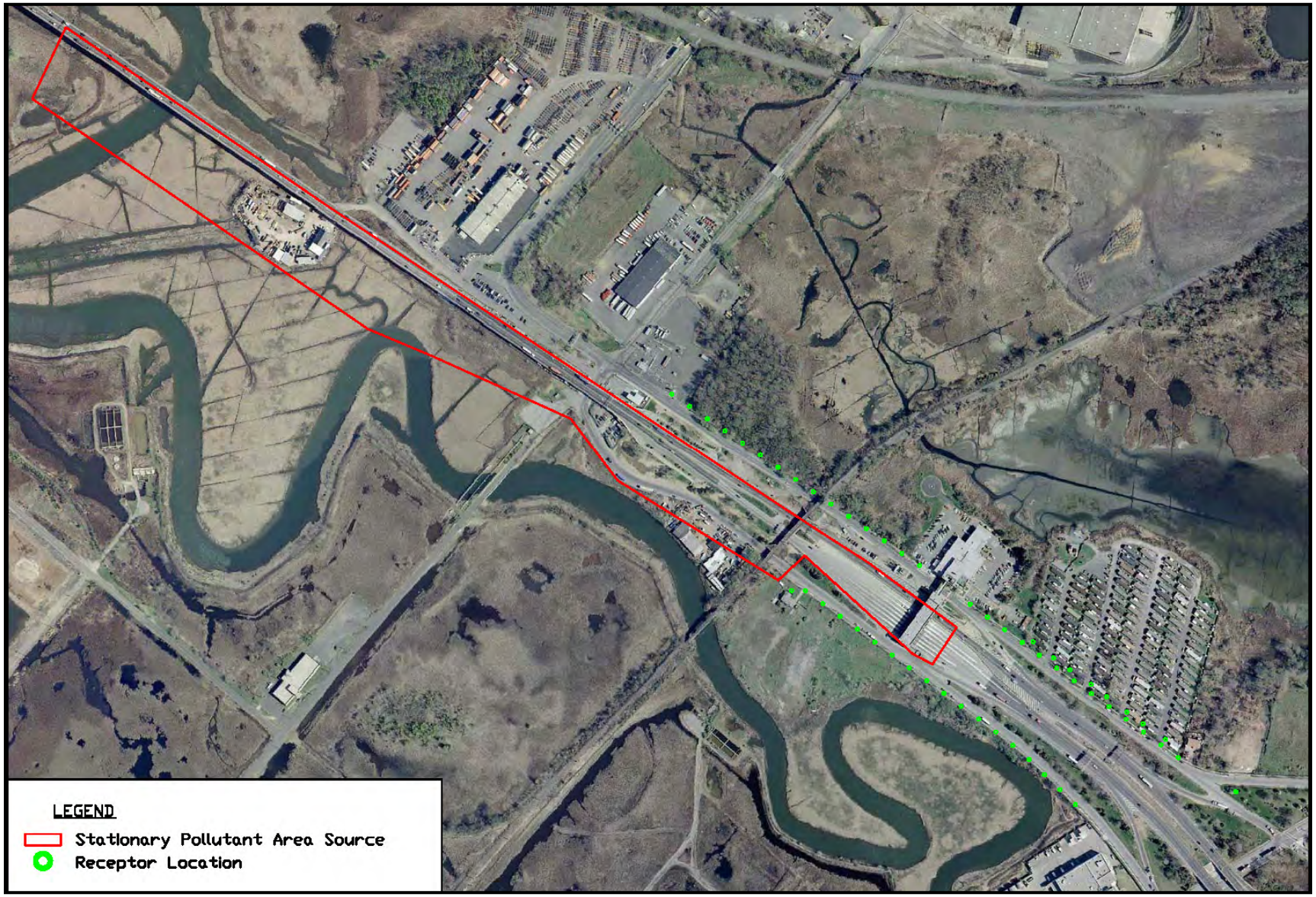

FIGURE 2: RECEPTOR SITES AND CONSTRUCTION AREAS (NEW JERSEY)

4.4 Background Values

Background pollutant concentrations used for the construction-phase analysis are provided in Table 7, and were determined as follows:

- CO values for New York and New Jersey are the same as those used in the operations- phase analysis;
- PM_{10} and NO_2 values in New York were obtained from NYCDEP (in a memorandum dated January 6, 2010). PM_{10} values are a combination of 2006–2007 monitored levels at PS219 and 2008 levels at Queens College 2 station; NO_2 values are based on 2006–2008 monitored concentrations at Queens College 2 station;
- $PM_{2.5}$ values in New York were based on the 2006–2008 levels monitored at a post office located at 364 Richmond Avenue in Staten Island;
- PM_{10} and $PM_{2.5}$ values in New Jersey were obtained from 2006–2008 levels monitored at a Jersey City monitor (located at the fire house at 355 Newark Avenue); and
- NO_2 background concentration in New Jersey was based on 2006–2008 levels monitored at the Veteran's Park monitor on Newark Bay in Bayonne.

TABLE 7
BACKGROUND VALUES USED IN THE DISPERSION MODELING ANALYSIS

Pollutant	Period	Unit	New York	New Jersey	NAAQS
CO	8 Hour	PPM	2.3	3.5	9
NO_2	1 Year	$\mu g/m^3$	47.0	43.2	100
PM_{10}	24 hour	$\mu g/m^3$	55	67	150
$PM_{2.5}$	24 hour	$\mu g/m^3$	32.6	**38.0***	35
	1 Year	$\mu g/m^3$	12.8	13.4	15

* Exceeds the NAAQS.

4.5 $PM_{2.5}$ Impact Assessment

4.5.1 New York

In addition to the analyses conducted for estimating pollutant concentrations for comparison to the NAAQS, a $PM_{2.5}$ impact analysis for the construction site in New York was conducted in accordance with NYCDEP's "Interim Guidelines for $PM_{2.5}$ Analysis," dated March 3, 2008, as follows:

- Highest 24-hour concentrations were compared to the 24-hour NAAQS, and the highest estimated $PM_{2.5}$ increments were compared with the NYSDEC and NYCDEP significant threshold value (STV) of 2 to 5 $\mu g/m^3$;
- Neighborhood annual mobile $PM_{2.5}$ impacts of the vehicles entering and exiting the construction sites were estimated at receptors located 15 meters from the edge of the affected roadways;
- Maximum annual concentrations were compared to the annual NAAQS, and the highest estimated 24-hour impacts were compared to the NYSDEC annual STV of 0.3 $\mu g/m^3$; and
- Neighborhood annual stationary $PM_{2.5}$ impacts were estimated based on a neighborhood average analysis using a 1 kilometer by 1 kilometer (approximately 0.6 mile by 0.6 mile) Cartesian

receptor grid, centered on the receptor having the highest estimated maximum annual concentration, with 25-meter (approximately 80 feet) spacing in all directions, excluding every receptor within the site fence line or within 15 meters (approximately 50 feet) of any construction source. The $PM_{2.5}$ concentrations estimated at receptors within the receptor grid were averaged over the grid and compared to the annual STV of 0.1 $\mu g/m^3$.

Estimated maximum $PM_{2.5}$ construction impacts in New York were compared to these STVs to determine whether project increments are considered significant.

4.5.2 New Jersey

In addition to the analyses conducted for estimating pollutant concentrations for comparison to the NAAQS, a 24-hour $PM_{2.5}$ impact analysis for the construction site in New Jersey was also conducted because the applicable 24-hour background value already exceeds the NAAQS.

Even though NJDEP has not specified an impact threshold that is applicable for estimating the significance of construction-phase impacts, this analysis was conducted, per consultation with NJDEP for guidance, by comparing estimated 24-hour $PM_{2.5}$ impacts with the NYSDEC and NYCDEP STV of 2 to 5 $\mu g/m^3$. Estimated maximum $PM_{2.5}$ construction impacts in New Jersey, therefore, were compared to these values to determine whether project increments are considered significant.

5.0 Off-Site (Mobile Source) Analysis

Potential construction-phase air quality impacts associated with the operation of vehicles (including trucks used for the transportation of rock and debris removal, and transport of construction materials and cement, and construction workers' vehicles) on the roadway network and changes in ramp configurations (as a result of lane closures in New Jersey during peak construction periods) were estimated.

The following intersections/areas were evaluated:

- New Jersey - Bayway Avenue/Atlantic Street and NJ Turnpike Interchange 13; and
- New York - Forrest Avenue and Goethals Road and Staten Island Expressway.

The analysis was performed for CO, PM_{10} and $PM_{2.5}$. The CAL3QHC dispersion model was applied for the CO analysis and the CAL3QHCR version for the PM_{10} and $PM_{2.5}$ analyses. (These models are discussed in GBR FEIS Section 4.20.3.8.) Emission factors were estimated using the EPA Mobile 6.2.03 emission algorithm and the same input assumptions as were used for the project's operational phase. AM and PM peak traffic conditions were considered.

The analysis was performed for future year conditions with the proposed construction scenario and future conditions without the proposed action to obtain the increment due to truck movement and the effect of lane closings in New Jersey. Traffic under the future No-Action scenario in New York includes vehicles associated with Berth 4 construction activities.

6.0 Total Construction-Related Impacts

The highest project-generated increments from on-site and off-site construction activities, the highest total increments, and the maximum estimated total concentrations (including the background concentrations)

of each pollutant of concern, with the implementation of the anticipated emission control measures, are shown in Table 8 for New York and Table 9 for New Jersey.

6.1.1 New York

Total concentrations estimated near the New York site would not exceed the NAAQS for any pollutant analyzed. In addition, project-generated $PM_{2.5}$ increments would not exceed the NYSDEC and NYCDEP significant threshold values.

TABLE 8
MAXIMUM PREDICTED PROJECT INCREMENTS AND TOTAL CONCENTRATIONS IN NEW YORK

Pollutant	Average Period	Maximum Increment			Total Concentration	Applicable NAAQS	STV
		On-Site	Off-Site[1]	Total			
CO (ppm)	8-Hour	0.15	0.3	0.45	2.8	9.0	
NO_2 ($\mu g/m^3$)	Annual	0.9	n/a	0.9	47.9	100	
PM_{10} ($\mu g/m^3$)	24-Hour	1.08	4.55	5.63	60.6	150	
$PM_{2.5}$ ($\mu g/m^3$)	24-Hour	0.74	0.47	1.21	33.8	35	2 to 5
	Annual Max	0.12	0.049	0.169	13.0	15	0.3
	Annual Neighborhood[2]	0.03	0.031	0.061	N/A		0.1

Notes:
1. The off-site increments are the result of differences in future traffic conditions with and without construction activities. Vehicular traffic associated with Berth 4 construction activities is included in both sets of analyses.
2. Increments were estimated following NYCDEP procedures for a "neighborhood" level analysis for comparison with applicable NYCDEP STV.

6.1.2 New Jersey

While total concentrations estimated near Bayway Ave/Atlantic Street/NJ Turnpike Interchange 13 receptor sites would not exceed the NAAQS for CO, NO_2, PM_{10}, and annual $PM_{2.5}$, construction operations would impact an area that already exceeds the 24-hour $PM_{2.5}$ standard. As there are no STVs defined for New Jersey for purposes of assessing construction-phase impacts, NJDEP advised that the increments could be compared to the NYCDEP STV to determine impact significance. On that basis, the maximum project-generated 24-hour increment (on-site plus off-site) of 3.83 $\mu g/m^3$ is within the range (2 to 5 $\mu g/m^3$) that could be considered marginally significant. However, per the consultation with NJDEP, impacts within this range should be evaluated on a case-by-case basis to determine their significance. As such, the conservative assumptions used in this analysis and the temporary nature of construction activities were considered in determining whether this impact is significant.

The construction-phase analyses for the GBR project are conservative due to the following assumptions:

1. The analysis assumed peak annual emission rates would occur during the entire construction period;

2. The short-term (8- and 24-hour) analyses assumed that peak-hour emission rates would occur 24-hours per day for the entire construction period; and
3. The analysis assumed that the on-site emissions would be spread out uniformly throughout the sites although, during actual construction, efforts will be made to maximize distances between the heavy-duty diesel equipment and nearby sensitive land uses.

Therefore, due to the conservative nature of the analysis and that the construction activities will be temporary, the potential 24-hour $PM_{2.5}$ construction-phase effects in New Jersey are not considered significant.

TABLE 9
MAXIMUM PREDICTED TOTAL PROJECT INCREMENTS AND TOTAL CONCENTRATIONS IN NEW JERSEY

Pollutant	Average Period	Maximum Increment			Total Concentration	Applicable NAAQS	STV
		On-Site	Off-Site[1]	Total			
CO (ppm)	8-Hour	0.84	0.3	1.14	4.6	9.0	
NO_2 ($\mu g/m^3$)	Annual	3.39	n/a	3.39	46.6	100	
PM_{10} ($\mu g/m^3$)	24-Hour	8.84	3.68	12.52	79.5	150	
$PM_{2.5}$ ($\mu g/m^3$)	24-Hour	3.34	0.49	3.83	**41.8**[2]	35	2 to 5
	Annual Max	0.55	0.032	0.58	14.0	15	0.3

Notes:
1 Off-site increments are the result of differences in future traffic conditions with and without construction activities.
2 Exceeds NAAQS

7.0 General Conformity

For projects that may be subject to the General Conformity Rule, the EPA has established *de minimis* levels (in tons per year) for each of the criteria pollutants for each type of designated nonattainment and maintenance area. If the emissions generated by a project (on an area-wide basis) are less than these levels, the project's impacts are not considered to be significant, the Conformity Rule is not applicable, and no additional conformity-related analyses are required.

The GBR Project is located in an area that is designated as a moderate nonattainment area for the 8-hour ozone standard, nonattainment for $PM_{2.5}$, and a maintenance area for carbon monoxide. The applicable threshold levels for general conformity for this area (which is located within an ozone transport region), according to 40 CFR Part 93, are as follows:

- Carbon Monoxide (CO) = 100 tons per year
- Volatile Organic Compounds (VOCs) = 50 tons per year
- Nitrogen Oxides (NO_x) = 100 tons per year

- $PM_{2.5}$ (Direct Emissions) = 100 tons per year
- Sulfur Dioxide (as a $PM_{2.5}$ Precursor) = 100 tons per year

As the regional emissions for all of the applicable pollutants are lower during the operations phase of the Build Alternative than with the No-Build Alternative, only emissions generated during the construction phase were compared to these threshold levels to determine conformity compliance. As shown in Table 5, construction-phase emissions (in New Jersey and New York combined) are less than the General Conformity applicability rates, with the following two exceptions:

- Annual estimated NOx emissions are greater than the applicability rate of 100 tons per year for three years of the construction phase; and
- Annual estimated CO emissions are greater than the applicability rate of 100 tons per year for the 4 1/2 years of the construction phase;.

As such, a General Conformity determination is required for these pollutants for these years. This determination, which will be prepared prior to the Record of Decision, will include:

- A commitment from the PANYNJ that all construction-phase NOx emissions for these years will be offset by the utilization of excess credits from the Harbor Deepening Project; and
- A discussion, based on the results of areawide and microscale CO analyses, demonstrating that the CO emissions generated during the project's construction-phase meet the requirements of the Conformity rule.

No additional analyses are required for the other pollutants.

Appendix N.3
NYCDEP Review of Construction-Phase Air Quality Analysis (May 14, 2010)

Environmental Protection

Caswell F. Holloway
Commissioner

Carter Strickland
Deputy Commissioner
Carter.Strickland@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373

(718) 595-4418 tel
(718) 595-4479 fax

May 14, 2010

Robert R. Kulikowski, Ph.D
Director
New York City Office of Environmental Coordination
253 Broadway, 14th Floor
New York NY

RE: Goethals Bridge Replacement
05DEPTECH055R

Dear Mr. Kulikowski:

New York City Environmental Protection (DEP) has reviewed the draft *Final Environmental Impact Statement* and the Technical Reports for the Air Quality and Noise Construction-Phase Analysis dated February and March 2010 along with the backup materials for the above project.

The above project includes both on-site stationary sources (equipment and activities) and off-site mobile sources (employees' cars and construction trucks).

Noise:

Construction work associated with the proposed project would result in some potential adverse impacts at the Goethals Garden Homes, but only for intermittent occurrences within three distinct periods out of the overall 4.5 years of construction period. Specifically, only the on-site equipment would elevate the ambient noise levels by 3 dBA or more during the months of September to December of 2011, March to November 2013, and March to October 2014. These exceedances are considered short term and temporary in nature.

Air Quality:

The cumulative (on-site and off-site) modeling results were compared to the applicable National Ambient Air Quality Standards (NAAQS) for the criteria pollutants, the NYCDEP interim guidance criteria for PM2.5 and the CEQR *de minimis* for CO. The results are depicted in the table below:

Maximum Air Quality Cumulative Impacts from Construction of Goethals Bridge

Pollutant	Time period	Unit	Impact			Background	Total	NAAQS	Interim Criteria
			Stationary	Mobile	Total				
CO	8-hour	ppm	0.15	1.2	1.35	2.3	3.7	9	
NO2	Annual	ug/m^3	0.9		0.9	47	47.9	100	
PM10	24-hour	ug/m^3	1.08	57.8	58.9	55	113.9	150	
PM2.5	24-hour	ug/m^3	0.74	0.51	1.25				2
	Annual	ug/m^3	0.12 (*)						0.3 (*)
	Annual neighborhood	ug/m^3	0.03	0.031	0.061				0.1

Note: (*) 0.3 ug/m^3 threshold is applicable only for stationary sources.

As indicated in the table, there are no exceedances of the applicable air quality standards.

If you have any questions or comments please feel free to contact Mitchell Wimbish at (718) 595-4451.

Sincerely,

Gary C. Heath
Director of Bureau Operations and Environmental Analysis

cc: C. Chan
S. Vafadari
M. Wimbish

Appendix N.4
Draft General Conformity Determination

U.S. Coast Guard

Draft

General Conformity Determination

Goethals Bridge Replacement Project

July 2010

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Attachment A: Memorandum of Understanding, Staten Island Ferries Retrofit Project

1.0 Introduction

The federal Clean Air Act (CAA) defines nonattainment areas as geographic regions that have been designated as not meeting one or more of the National Ambient Air Quality Standards (NAAQS). The CAA requires that a State Implementation Plan (SIP) be prepared for each non-attainment area, and a maintenance plan be prepared for each former non-attainment area that subsequently demonstrated compliance with the standards. The SIP is a state's plan for how it will meet the NAAQS by the deadlines established by the CAA.

The US Environmental Protection Agency's (USEPA) Transportation Conformity Rule requires SIP conformity determinations on transportation plans, programs, and projects before they are approved or adopted. Conformity is defined as conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. The Conformity Rule also establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval, such as the proposed Goethals Bridge Replacement (GBR) Project. This determination must demonstrate that the Proposed Action would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment.

1.1 Transportation Conformity Requirements

The USEPA promulgated regulations to address the conformity requirements of the Clean Air Act. On November 24, 1993, the USEPA promulgated final transportation conformity regulations at 40 C.F.R. Part 93 Subpart A to address transportation plans, programs, and projects developed, funded or approved under title 23 U.S.C. or the Federal Transit Act, 49 U.S.C 1601 et seq. These regulations have been revised several times since they were first issued to clarify and simplify them.

A Transportation Improvement Program (TIP) is a staged, multiyear, intermodal program of transportation projects covering a metropolitan planning area, consistent with that area's Transportation Plan (also known as a Long Range Transportation Plan or LRTP). A TIP includes projects (planned and future) anticipated within 3 to 5 years. The planning horizon for the LRTP is at least 20 years.

The Metropolitan Planning Organization (MPO) is the organization responsible, together with the state, for preparing the TIP and LRTP for a region. The MPO for the northern New Jersey segment of the New York-New Jersey-Connecticut (NY-NJ-CT) region, within which the project site lies, is the North Jersey Transportation Planning Authority (NJTPA); the MPO for the New York segment of the region is the New York Metropolitan Transportation Council (NYMTC).

In New Jersey, the GBR Project is included in the 2010-2013 TIP for the NJTPA portion of the NY-NJ-CT region, as well as NJTPA's latest Regional Transportation Plan (PLAN 2035), which was approved by the NJTPA Board of Trustees on August 24, 2009. In New York, the GBR Project is included in NYMTC's "Draft Conformity Determination," dated September 17, 2009, for the 2008-2012 TIP and the 2010-2035 RTP, with a project number of X770.47 and a project completion date of June 15, 2015.

1.2 General Conformity Requirements

On November 30, 1993 (revised March 24, 2010), the USEPA promulgated final general conformity regulations at 40 C.F.R. Part 93 Subpart B for all federal activities except those covered under transportation conformity. Since the GBR project requires approval by the U.S. Coast Guard (USCG), but will not be funded or require approval under title 23 U.S.C. or the Federal Transit Act, 49 U.S.C 1601 et

seq, general conformity requirements are applicable. General conformity regulations apply to a federal action in a nonattainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutants caused by the federal action equal or exceed certain *de minimis* rates, thus requiring the federal agency to make a determination of general conformity.

The study areas defined in the environmental impact statement (EIS) for the GBR Project in New Jersey and New York are currently designated as nonattainment for both ozone and particulate matter (PM) smaller than 2.5 microns ($PM_{2.5}$) and maintenance for CO. Therefore, conformity regulations apply to these pollutants, and annual emissions of these pollutants generated by the proposed project in the entire New Jersey-New York study area were compared to the general conformity *de minimis* thresholds.

The general conformity regulations incorporate a stepwise process, beginning with an applicability analysis. According to USEPA guidance (USEPA 1994), before any approval is given for a federal action to go forward, the regulating federal agency must apply the applicability requirements found at 40 C.F.R. § 93.153(b) to the federal action and/or determine the regional significance of the federal action to evaluate whether, on a pollutant-by-pollutant basis, a determination of general conformity is required. The guidance states that the applicability analysis can be (but is not required to be) completed concurrently with any analysis required under the National Environmental Policy Act (NEPA). If the regulating federal agency determines that the general conformity regulations do not apply to the federal action, no further analysis or documentation is required. If the general conformity regulations do apply to the federal action, the regulating federal agency must next conduct a conformity evaluation in accord with the criteria and procedures in the implementing regulations; publish a draft determination of general conformity for public review; and then publish the final determination of general conformity.

As discussed in a February 25, 2010, meeting with the USEPA, construction of the GBR project is estimated to exceed USEPA-established *de minimis* levels (in tons per year) for NOx (nitrogen oxides, a precursor to ozone) in the New York/New Jersey region, a nonattainment area. Therefore, the GBR project requires a General Conformity Determination to show how its construction will conform to the New Jersey and New York State Implementation Plans (SIP).

The Port Authority of New York & New Jersey (Port Authority), the project sponsor, plans to use emission credits from the Harbor Deepening Project to offset the increased emissions from the GBR project construction. As a result, the Port Authority will be initiating the first mobile source (i.e., vessels) trading program in the United States to satisfy its General Conformity requirements. The Harbor Deepening Project (HDP) has generated excess credits as part of its Staten Island Ferry retrofit and marine vessel engine replacement programs. The Port Authority has requested the utilization of the credits for the GBR through the HDP Regional Air Team (comprised of the USEPA, the US Army Corps of Engineers [USACE], New York State Department of Environmental Conservation [NYSDEC], New Jersey Department of Environmental Protection [NJDEP] and New York City Department of Transportation [NYCDOT]) and is working with the USACE in establishing the methodology by which NOx will be accounted for, both in terms of generation and offsets. It is estimated that the GBR will need approximately 160 tons per year over a 3-year period.

2.0 Description of the Federal Action

In accordance with applicable general conformity regulations and guidance, when a general conformity determination is necessary, the lead federal agency, which for this project is the USCG, is required to conduct a general conformity evaluation and then issue a positive conformity determination before the federal action is approved. Each federal agency is responsible for determining conformity of those proposed actions over which it has jurisdiction. This final general conformity determination is related only to those activities included in the USCG's federal action pertaining to the GBR Project, which is issuance of a Bridge Permit. The Project is more fully described in Section 2.1, below.

General conformity requirements only apply to federal actions proposed in nonattainment areas (i.e., areas where one or more NAAQS are not being achieved at the time of the proposed action and requiring SIP provisions to demonstrate how attainment will be achieved) and in maintenance areas (i.e., areas recently reclassified from nonattainment to attainment and requiring SIP provisions to demonstrate how attainment will be maintained). The attainment status in the vicinity of the GBR Project area is discussed in Section 3.

2.1 Goethals Bridge Project

The GBR Project, proposed and sponsored by the Port Authority of New York and New Jersey (Port Authority), is replacement and demolition of the existing Goethals Bridge. Based on the New Alignment South alternative, which has been identified in the Final EIS (FEIS) as the preferred alternative, the Proposed Project consists of a cable-stayed, 6-lane replacement bridge in an alignment south of the existing 4-lane Goethals Bridge, and removal of the existing bridge after construction of the new bridge. The replacement bridge project right-of-way would be a maximum width of 310 feet, including a 210-foot-wide bridge structure and two 50-foot buffer areas on either side of the bridge structure. The replacement bridge includes the following components:

- six 12-foot-wide travel lanes, three on each roadway deck (i.e., one roadway for eastbound traffic and one roadway for westbound traffic);
- a 12-foot-wide outer shoulder on each roadway;
- a 5-foot-wide inner shoulder on each roadway;
- a minimum 10-foot-wide sidewalk/bikeway along the northern edge of the westbound roadway; and
- a central area to be maintained between the eastbound and westbound roadway decks with sufficient width to accommodate the provision of future transit service, should future conditions warrant inclusion of such service during the service life of the bridge.

The total out-to-out width of the main span of the replacement bridge would be a maximum of 210 feet. Part of that width comprises a 65-foot-wide central area between the eastbound and westbound decks, which accommodates the towers and support cables, as well as the 27-foot-wide potential mass transit corridor. Navigational clearance beneath the new bridge is proposed to be a minimum of 135 feet above mean high water (MHW), which is unchanged from the clearance of the existing bridge. The top elevation of the two bridge towers is proposed to be 272 feet above mean sea level (MSL), which is higher than the 248 feet above MSL associated with the existing bridge's truss superstructure.

Other elements of the Proposed Project include:

- new approach spans with similar dimensions as the bridge itself on both the New Jersey and the New York ends of the new bridge;
- a 50-foot wide buffer on both sides of the replacement bridge and its approach spans;
- permanent fencing at ground level along both sides of the right-of-way of the proposed replacement bridge approach spans, including the adjacent buffer areas, except through open waters;
- a permanent access road located generally below the proposed replacement bridge approach spans for purposes of construction, maintenance and security;
- replacement of the Travis Branch railroad bridge over I-278 in Staten Island in order to accommodate the wider roadway;
- re-alignment of Gulf Avenue in Staten Island; and
- construction staging areas of approximately five acres on each side of the Arthur Kill, which are required for storage of the materials, pre-assembly activities and office space for the construction effort.

The existing bridge, including its main truss span, New Jersey and New York approach spans and abutments, would be entirely demolished and removed, after construction of the new bridge is completed.

The Port Authority anticipates that the construction period for the new bridge and demolition of the existing bridge would range between 52 and 60 months, depending on the type of superstructure (i.e., steel girder, pre-cast/stressed concrete, or segmental concrete) to be selected for the main bridge span and its approaches. The FEIS assumed initiation of construction in 2011 and opening of the new bridge to traffic in late 2015.[1]

As part of the environmental review of the GBR Project, the USCG has prepared this final general conformity determination to demonstrate compliance with the general conformity requirements in support of the USCG's issuance of a Bridge Permit.

The FEIS for the GBR Project includes a list of construction mitigation measures that will be implemented as part of the Project; these measures are considered part of project construction as designed. The Port Authority's sustainability design guidelines will be followed during construction of the Proposed Project to minimize construction-phase emissions. In addition, the Port Authority will incorporate the following measures designed to minimize air quality impacts.

Emission Control Measures for Diesel Equipment Exhaust:

- Ultra-low sulfur diesel fuel would be used for construction vehicles and equipment;
- Engines for non-road construction equipment with a horsepower (HP) rating above 50 HP would be in compliance with USEPA's Tier 2 standards;
- Eighty percent of construction equipment with engines above 50 HP would be retrofitted with best available control technology (BACT) that has been verified by USEPA and/or the California Air Resources Board, which reduce PM emissions up to 90 percent (without increasing nitrogen

1 The timing of construction has recently been determined to be on a two-year delayed schedule (i.e., 2013-2017). The difference between the construction period assessed for impacts and the currently anticipated construction schedule should not result in a significant difference in impacts.

oxide [NOx] emissions), using diesel particulate filters, diesel oxidation catalysts, flow-through filter technology, etc.;

- Idling of diesel-fueled vehicles would be limited (maximum of 3 minutes per vehicle);
- Diesel equipment exhausts would be located away from sensitive land uses; and
- Electric compressors and pumps would be used where possible, instead of diesel-powered equipment.

Emission Control Measures for Fugitive Dust:

- Wet suppression, with or without approved binding agents, would be used on-site on a routine basis with hoses or a sprinkler system during deconstruction and material-handling activities aimed at a 10-percent moisture content in the ground;
- Wet spray power vacuum street sweepers would be used on paved roadways;
- Calcium chloride would be used instead of wet suppression when freezing conditions exist;
- Wheel-wash stations or crushed stone at construction ingress/egress areas would be used;
- Dump trucks during material transport on public roadways would be covered; and
- Truck speed within the construction sites would be limited to less than 5 miles per hour (mph).

These mitigation measures specified by the USCG in this final general conformity determination are mitigation measures that have been expressly adopted by the USCG in approving the overall project and certifying the FEIS, and have been committed to by the Port Authority as project sponsor. These provisions ensure that the measures will be properly implemented through incorporating mitigation measures into all construction bid specifications for the GBR Project.

2.2 Relationship to Other Environmental Analyses

A Draft Environmental Impact Statement (DEIS) was published for public review and comment in May 2009 providing an analysis of four build alternatives and a No-Build alternative. The Final EIS (FEIS) will be published in August 2010 documenting the integrated analysis of all alternatives considered and identification of the New Alignment South as the preferred alternative (and this Conformity Determination will be included as part of the FEIS). The USCG is the lead agency for the NEPA analysis documented in the EIS. The EIS was prepared to also be sufficient for purposes of the City of New York's City Environmental Quality Review (CEQR) and Uniform Land Use Review Procedure (ULURP).

NEPA requires that the air quality impacts of the Proposed Project's implementation be analyzed and disclosed. Regulatory guidance implementing this statute requires that the air quality impacts from the project be determined by identifying the project's associated incremental emissions and air pollutant concentrations and comparing them, respectively, to emissions thresholds and state and national ambient air quality standards. The air quality impacts of the GBR Project under future Build conditions were also compared in the FEIS to the future No-Build conditions for NEPA purposes. The general conformity determination is discussed in the FEIS.

This final general conformity determination is being published with the USCG Record of Decision (ROD) for the Federal Action.

3.0 Regulatory Procedures

The general conformity regulations establish certain procedural requirements that must be followed when preparing a general conformity evaluation. This section addresses the major applicable procedural issues and specifies how these requirements are met for the evaluation of the Federal Action. The procedures required for the general conformity evaluation are similar but not identical to those for conducting an air quality impact analysis pursuant to NEPA regulations.

3.1 Use of Latest Planning Assumptions

The general conformity regulations require the use of the latest planning assumptions for the area encompassing the federal action, derived from the estimates of population, employment, travel, and congestion most recently approved by the metropolitan planning organizations (MPOs) in both New Jersey and New York (40 C.F.R. § 93.159(a)). The traffic data used in this air quality analysis (see FEIS Sections 5.20 and 5.21 and Appendix J) are consistent with the most recent estimates made by NYMTC and the NJTPA for traffic volume growth rates, including forecast changes in vehicle miles traveled (VMT) and vehicle hours traveled (VHT). NYMTC and NJTPA developed these estimates from their traffic assignment models based on current and future population, employment, and travel and congestion information. These assumptions are consistent with those in the current conformity determinations for the New Jersey and New York Transportation Plans and TIPs.

3.2 Use of Latest Emission Estimation Techniques

The general conformity regulations require the use of the latest and most accurate emission estimation techniques available, unless such techniques are inappropriate (40 C.F.R. § 93.159(b)). Vehicular emission factors were estimated using USEPA's MOBILE 6.2.03 (EPA420-R-03-010) emission factor algorithm. This version includes the effects of the new vehicle standards, vehicle turnover, and emission factors for particulate matter. The following modeling inputs were applied:

- New Jersey
  - New Jersey Department of Environmental Protection (NJDEP) input files with 2003 New Jersey State registration distribution by age, as provided by the New Jersey Department of Transportation (NJDOT);
  - New Jersey inspection/maintenance, anti-tampering and low emission vehicle (LEV) programs;
  - Silt loading factors as per NJDEP guidance;
  - USEPA default diesel sales fractions, mileage accumulation rates and natural gas vehicle fractions; and
  - In estimating PM emissions from diesel engines, the following sulfur contents were used: 400 parts per million (ppm) for 2004 (i.e., existing conditions), and 15 ppm for future analysis years (to account for the future required use of ultra-low sulfur diesel [ULSD] diesel fuel).
- New York
  - New York State Department of Environmental Conservation (NYSDEC) input files, with engine-operating start and distribution parameters and VMT for Richmond, Kings and New York counties;
  - New York State inspection/maintenance, anti-tampering and LEV programs;
  - Silt loading factors as per NYSDOT guidance;

  - New York State 2006 vehicle registration and national default mileage accumulation data;
  - New York State 2006 diesel sales fraction data; and
  - In estimating PM emissions from diesel engines, the following sulfur contents were used: 400 ppm for 2004 (existing conditions), and 15 ppm for future analysis years (to account for the future required use of ULSD diesel fuel).

- Off-Road Emissions
  - Fugitive dust emission factors for demolition, excavation, truck loading, and re-entrained dust were based on the equations recommended in USEPA's AP-42 Report "Compilation of Air Pollutant Emission Factors," Section 13.2.3.3, Heavy Construction Operations, 13.2.1 Fugitive Dust from Paved Roads;
  - Emission rates of PM_{10} and $PM_{2.5}$ from diesel engines of construction equipment were estimated using the USEPA NONROAD Emission Model (Report No. NR-009A, November 2002, USEPA 420-P-02-016). $PM_{2.5}$ emission factors for diesel powered construction equipment were assumed to be 92 percent of the estimated PM_{10} emission factors for each type of equipment, which is the recommended percentage from both USEPA's NONROAD and Mobile 6.2 emission factor models; and
  - Re-entrained dust from moving delivery vehicles was estimated using the current USEPA AP-42 equations for fugitive dust sources for PM_{10} and $PM_{2.5}$ emissions.

3.3 Emission Scenarios

The general conformity regulations require that the evaluation must reflect certain emission scenarios (40 C.F.R. §93.159(d)). Specifically, these scenarios generally include the evaluation of emissions from a proposed project for the following years: (1) for nonattainment areas, the year mandated in the CAA for attainment and for maintenance areas, the farthest year for which emissions are projected in the approved maintenance plan; (2) the year during which the total of direct and indirect emissions for the Federal Action are projected to be the greatest on an annual basis; and (3) any year for which the applicable SIP specifies an emissions budget. Both the operational and construction phases of a project have to be considered, and the following applies to the Proposed Project.

- Emissions generated during the operational phase of the Proposed Project would clearly meet the emission requirements for the years associated with Items 1 and 3 for the following reasons:
  - The Proposed Project is included in the approved TIPs for both New Jersey and New York and are, therefore, included in the regional emission budgets for both states; and
  - Emissions generated during the operational phase of the Proposed Project would be less than those emitted in the No-Build scenario (see FEIS Section 5.21.4).

  In addition, microscale analyses conducted for the EIS demonstrate that the operational phase of the Proposed Project would not cause or exacerbate a violation of the NAAQS for all applicable pollutants.

- Emissions generated during the Proposed Project's construction phase, which would include the year with the greatest amount of total direct and indirect emissions (Item 2), are subject to general conformity regulations because they will increase regional emission rates and, as such, have the potential to cause or exacerbate an exceedance of an NAAQS. Therefore, analyses were conducted to estimate the amounts of emissions that would be generated during the Proposed Project's construction phase (for comparison with the general conformity applicability rates) and the potential impacts of these emissions on local air quality levels. Emissions generated at the

Proposed Project's construction sites (e.g., tailpipe emissions from the on-site heavy-duty diesel equipment and fugitive dust emissions generated by vehicles traveling within the construction sites) and on the area's roadways by vehicles traveling to and from these sites (by vehicles transporting materials and the workers traveling to and from work) were considered.

Annual emissions were estimated for each year of the Proposed Project's construction period and microscale analyses were conducted for the year with the highest emissions. These emissions are described in more detail in Section 5.

4.0 Applicability Analysis

As stated previously, the first step in a general conformity evaluation is an analysis of whether the requirements apply to a federal action proposed to be taken in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a federal action requires a general conformity determination for each pollutant where the total of direct and indirect emissions caused by the federal action would equal or exceed an annual *de minimis* emission rate.

4.1 Attainment Status of Project Area

The study areas in both New Jersey and New York that would be affected by the construction of the GBR Project are currently designated as nonattainment for both ozone and $PM_{2.5}$ and maintenance for CO. Therefore, the lead federal agency must demonstrate project-level compliance with the general conformity rule following requirements for each of these pollutants. As these areas are part of the New Jersey-New York-Connecticut nonattainment region for these pollutants, emissions generated within this entire region were considered in this demonstration.

4.2 Exemptions from General Conformity Requirements

As noted previously, the general conformity requirements apply to a federal action if the net project emissions equal or exceed certain *de minimis* emission rates. The only exceptions to this applicability criterion are the topical exemptions summarized below. However, the emissions caused by the Proposed Project do not meet any of these exempt categories.

- Actions that would result in no emissions increase or an increase in emissions that is clearly below the *de minimis* levels (40 C.F.R. § 93.153(c)(2)). Examples include administrative actions and routine maintenance and repair.
- Actions where the emissions are not reasonably foreseeable (40 C.F.R. § 93.153(c)(3)).
- Actions which implement a decision to conduct or carry out a conforming program (40 C.F.R. § 93.153 (c)(4)).
- Actions which include major new or modified sources requiring a permit under the New Source Review (NSR) program (40 C.F.R. § 93.153(d)(1)).
- Actions in response to emergencies or natural disasters (40 C.F.R. § 93.153(d)(2)).
- Actions which include air quality research not harming the environment (40 C.F.R. § 93.153(d)(3)).
- Actions which include modifications to existing sources to enable compliance with applicable environmental requirements (40 C.F.R. § 93.153(d)(4)).
- Actions which include emissions from remedial measures carried out under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) that comply with other applicable requirements (40 C.F.R. § 93.153(d)(5)).

In addition to these topical exemptions, the general conformity regulations allow each federal agency to establish a list of activities that are presumed to conform (40 C.F.R. § 93.153(f)). The USCG has not established a presumed-to-conform list of activities at the time of this evaluation.

4.3 *De minimis* Emission Rates

The general conformity requirements will apply to the Federal Action for each pollutant for which the total of direct and indirect emissions caused by the Federal Action equal or exceed the *de minimis* emission rates shown below. These emission rates are expressed in units of tons per year (tpy) and are compared to the total of direct and indirect emissions caused by the Proposed Project for the calendar year during which the net emissions are expected to be the greatest. The applicable threshold levels for general conformity for the project area (which is located within an ozone transport region), according to 40 CFR Part 93, are shown in Table 1.

TABLE 1
GENERAL CONFORMITY APPLICABILITY RATES

Pollutant	Applicability Threshold
Carbon Monoxide (CO)	100 tons per year
Volatile Organic Compounds (VOCs)	50 tons per year
Nitrogen Oxides (NOx)	100 tons per year
PM2.5 (Direct Emissions)	100 tons per year
Sulfur Dioxide (as a PM2.5 Precursor)	100 tons per year

It should be noted that, because O_3 is a secondary pollutant (i.e., it is not emitted directly into the atmosphere but is formed in the atmosphere from the photochemical reactions of VOC and NO_x in the presence of sunlight), its *de minimis* emission rate is based on primary emissions of its precursor pollutants - VOC and NO_x. If the net emissions of either VOC or NO_x exceeds the *de minimis* emission rate for O_3 (USEPA 1994), the Federal Action is subject to a general conformity evaluation for O_3.

4.4 Applicability for Federal Action

The applicability of the general conformity requirements to the Federal Action was evaluated by comparing the total of direct and indirect emissions for the calendar year of greatest emissions to the *de minimis* emission rates specified in Table 1. Where the total of direct and indirect emissions attributable to the Federal Action were found to be below the *de minimis* emission rates for a pollutant, that pollutant is excluded from general conformity requirements and no further analysis is required. Those pollutants that could not be excluded from applicability must undergo a general conformity evaluation.

4.4.1 Methodology

As shown in the GBR FEIS (Section 5.21.4), the results of the regional analyses conducted for the proposed project demonstrate that emissions generated during the operational phase would be less than those emitted in the No-Build scenario and that the microscale analyses demonstrate that the preferred alternative would not cause or exacerbate a violation of the NAAQS for these pollutants. As such, emissions generated during the Proposed Project's construction phase are the only emissions subject to this general conformity determination.

The analysis conducted for the FEIS to estimate potential air quality impacts caused by on-site (e.g., demolition activities, construction equipment operations, and truck movements) and off-site (e.g., motor vehicle traffic effects due to truck trips and ramp closures) construction-phase activities included the following:

- Estimation of emissions generated by the construction activities (e.g., deconstruction, concrete and steel construction), including fugitive dust emissions and emissions released from diesel-powered equipment and trucks based on the hours of operation of each piece of equipment;
- Identification of heavily traveled truck routes to estimate the cumulative effects of on-site construction activity emissions and off-site traffic emissions;
- An on-site dispersion modeling analysis of the two major construction areas, one in Elizabeth, New Jersey, and the other in Staten Island, New York;
- An off-site dispersion modeling analysis of the roadway intersections/interchanges adjacent to the construction areas using traffic data that include construction-related vehicles and background traffic; and
- A comparison of the cumulative (on-site and off-site) modeling results to the applicable NAAQS for the applicable pollutants.

Emission rates for these activities were estimated based on the following:

- The number of hours per day and duration of each construction activity;
- The number and type of construction equipment to be used;
- Horsepower (HP) and utilization rates (hours per day) for each piece of equipment;
- The quantities of construction/demolition material produced and removed from each site; and
- The number of truck trips needed to remove construction/demolition material, and to bring the supply materials to each site.

4.4.2 Estimated Emissions and Comparison to *De minimis* Thresholds

Total annual estimated emissions generated within the New York-New Jersey-Connecticut region during the Proposed Project's construction period, as presented in the GBR FEIS, are provided in Table 2. These values are the peak on-site emissions (including emissions generated by construction-related marine vessels) during each analysis year plus maximum annual off-site emissions. Peak off-site emission estimates are based on the following conservative assumptions that were developed by the GBR Project's design engineers:

- All dump trucks, girder delivery trucks, rebar delivery trucks, pipe pile trucks, and steel demolition trucks would travel 60 miles each way within the region, to and from the construction sites;
- All trucks delivering concrete to the construction sites would travel 10 miles each way; and
- Construction workers would travel 50 miles each way to and from the construction site.

The values presented in Table 2 are provided for comparison with the general conformity applicability threshold values.

TABLE 2
TOTAL ANNUAL EMISSIONS FROM CONSTRUCTION EQUIPMENT AND ACTIVITIES AT NEW JERSEY AND NEW YORK CONSTRUCTION SITES

Pollutant	Emissions (Tons/Year)					Conformity Applicability Thresholds (tons/year)
	2011	2012	2013	2014	2015	
CO	**149**	**170**	**155**	**140**	**137**	100
NO_x	**114**	**153**	**130**	96	92	100
PM_{10}	5	4	3	3	2	100
$PM_{2.5}$	3	3	3	2	2	100
SO_2	7	10	8	5	5	100
VOCs	4	4	4	4	4	50

Note: Bold values exceed applicability thresholds

4.4.3 Regional Effects

As the regional emissions for all of the applicable pollutants are lower during the operations phase of the GBR Project than under the No-Build Alternative, only emissions generated during the construction phase were compared to these threshold levels to determine conformity compliance. As shown in Table 2, construction-phase emissions (in New Jersey and New York combined) are less than the general conformity applicability rates, with the following two exceptions:

- Annual estimated NOx emissions are greater than the applicability rate of 100 tons per year for the first 3 years of the construction phase; and
- Annual estimated CO emissions are greater than the applicability rate of 100 tons per year for all years of the construction phase.

As such, a general conformity determination is required for this project for these pollutants for these years. This determination, which will be published coincident with the Record of Decision for the GBR Project, will include:

- A commitment from the Port Authority that all construction-phase NOx emissions for these years will be offset by the utilization of excess credits from the Harbor Deepening Project; and
- A demonstration, based on the results of area wide and microscale CO analyses that the CO emissions generated during the Proposed Project's construction phase meet the requirements of the Conformity Rule.

No additional analyses are required for the other pollutants.

5.0 General Conformity Evaluation

For federal actions subject to a general conformity evaluation, the regulations delineate several criteria that can be used to demonstrate conformity (40 C.F.R. § 93.158). In fact, a combination of these criteria may be used to support a positive general conformity determination (USEPA 1994). The approach taken to evaluate the Proposed Project relies on a combination of these available criteria. This section summarizes the findings to make the determination.

5.1 Conformity Requirement of Proposed Project

Based on the results shown in Table 2, construction-phase emissions (in New Jersey and New York combined) conformity determinations are required for:

- NOx – because annual estimated emissions are greater than the applicability rate of 100 tons per year for the first 3 years of the construction phase of the project; and
- CO – because annual estimated emissions are greater than the applicability rate of 100 tons per year for all years of the construction phase.

5.1.1 Compliance with Conformity Requirements for NOx Emissions

To support the general conformity compliance determination, the USCG demonstrates herein that the emissions of NO_x (a precursor to O_3 and $PM_{2.5}$) caused by the construction of the Proposed Project will not result in an increase in regional NOx emissions. This will be achieved by off-setting all of the NOx emissions generated by the construction of the GBR for the 3 years when the conformity applicability thresholds are exceeded. The Port Authority, which is the sponsor of the Proposed Project, will accomplish this through the use of excess NOx credits generated as part of the Port Authority's Harbor Deepening Project (HDP), under the auspices of the USACE and the Port Authority, for use during the construction of the GBR Project. These HDP credits have been generated from two main sources: the Staten Island Ferry Retrofit Program and marine vessel engine replacement projects. Pursuant to the *Memorandum of Understanding for the Staten Island Ferries Retrofit Project* (January 19, 2006), the Port Authority is entitled to 70 percent of the excess credits associated with the Staten Island Ferry Retrofit Project. In the event that insufficient credits would be available from the Staten Island Ferry Retrofit Program, credits associated with the marine vessel engine replacement projects would be considered as a source of excess credits.

Upon the initiation of project construction, the project contractor will monitor construction equipment emissions and will provide regular reports (at a timetable yet to be established) to an agent agreed to by the USACE and the Port Authority who will keep a Mobile Source Trading Inventory, in effect a balance sheet of the offset credit generation and utilization.

5.1.2 Compliance with Conformity Requirements for CO Emissions

As discussed in the GBR FEIS, CO is a pollutant that is of concern on a microscale basis. As such, a detailed mobile source dispersion analysis was conducted for the FEIS (see Section 5.21.2) that demonstrated that the CO emissions generated during the Proposed Project's construction phase would not cause or exacerbate a localized violation of an ambient CO standard near any of the roadways that would be affected by project-related changes in traffic. Potential construction-phase air quality impacts associated with the operation of vehicles (including trucks used for the transportation of rock and debris removal, transport of construction materials and cement, and construction workers' vehicles) on the roadway network and changes in ramp configurations (as a result of lane closures in New Jersey during peak construction periods) were estimated.

"Hot-spot" (intersection-level) modeling analyses were conducted to estimate future CO levels with and without the Proposed Project. Analyses were conducted following USEPA's *Intersection Modeling Guidelines* (EPA-454/R-92-005) for CO modeling methodology and receptor placement. The following intersections/areas were evaluated:

- New Jersey - Bayway Avenue/Atlantic Street and New Jersey Turnpike Interchange 13; and
- New York - Forest Avenue/ Goethals Road North and Staten Island Expressway.

The CAL3QHC dispersion model was applied. Emission factors were estimated using the USEPA Mobile 6.2.03 emission algorithm and AM and PM peak traffic conditions were considered.

The result of this analysis is that the maximum estimated pollutant concentrations during the construction phase of the preferred alternative (i.e., with project-related vehicles and with emissions generated by the operation of construction-site equipment) is below the NAAQS for CO. The maximum estimated 8-hour concentration (including background levels) is 2.8 ppm in New York and 4.6 ppm in New Jersey. As these values are below the 8-hour (i.e., the critical averaging period for this pollutant) standard of 9 ppm, the result of this analysis is that the Proposed Project would not cause or exacerbate a violation of a CO standard.

6.0 Reporting

To support a decision concerning the Federal Action, the USCG is issuing this final general conformity determination with the ROD for the Goethals Bridge Replacement Project.

6.1 Draft General Conformity Determination

The USCG provided copies of the draft general conformity determination to the appropriate regional offices of USEPA, and to the New York State Department of Environmental Conservation and the New Jersey Department of Environmental Protection, for a 30-day review. The USCG also placed a notice in a daily newspaper of general circulation announcing the availability of the draft general conformity determination and requesting written public comments during a 30-day period.

6.2 Final General Conformity Determination

The USCG is providing copies of this final general conformity determination to the appropriate regional offices of USEPA within 30 days of its issuance. The USCG will also place a notice in a daily newspaper of general circulation announcing the availability of its final general conformity determination within 30 days of its promulgation. As part of the general conformity evaluation, the USCG has documented its responses to all comments received on the draft general conformity determination and will make both the comments and responses available upon request by any person within 30 days of the promulgation of the final general conformity determination.

6.3 Frequency of General Conformity

The general conformity regulations state that the status of a specific conformity determination lapses 5 years after the date of public notification for the final general conformity determination, unless the action has been completed or a continuous program has been commenced to implement the action (40 C.F.R. § 93.157(a)). Because the Federal Action, i.e., USCG issuance of a Bridge Permit to construction the Goethals Bridge Replacement, envisions a development program extending almost 5 years, it is important to note that the final general conformity determination will remain active only under this “continuous program to implement.”

7.0 Findings and Conclusions

As part of the environmental review of the Proposed Project, the USCG conducted a general conformity evaluation pursuant to 40 C.F.R. Part 93 Subpart B. The general conformity regulations apply at this time to the USCG issuance of a bridge permit because the project area is located in an area that is designated as a moderate nonattainment area for the 8-hour ozone standard, nonattainment for $PM_{2.5}$, and a maintenance area for CO. The USCG conducted the general conformity evaluation following all regulatory criteria and procedures and in coordination with USEPA. Based on this review, the USCG concluded that the Proposed Project's emissions can be accommodated in both the New Jersey and New York SIPs. USEPA reviewed and agreed with the regulatory analysis. The USCG has determined that the Proposed Project as designed will conform to the approved SIPs, based on the findings below:

- A commitment from the Port Authority, the project sponsor, that all construction-phase NOx emissions for the years that the conformity applicability thresholds will be exceeded will be offset by the utilization of excess credits from the Harbor Deepening Project;
- A determination that project-generated $PM_{2.5}$ emissions would not exceed the conformity applicability threshold for $PM_{2.5}$; and
- A demonstration, based on the results of microscale CO analyses, that the project would not cause or exacerbate a localized violation of a NAAQS.

Therefore, the USCG herewith concludes that the Proposed Project as designed conforms to the purpose of the approved SIPs and is consistent with all applicable requirements.

8.0 References

40 C.F.R. Part 93 Subpart A. *Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws.*

40 C.F.R. Part 93 Subpart B. *Determining Conformity of General Federal Actions to State or Federal Implementation Plans.*

U.S. Environmental Protection Agency (USEPA). 1994. General Conformity Guidance: Questions and Answers. July 13. Web site: http://www.epa.gov/ttn/oarpg/conform/gcgqa_71394.pdf.

U.S. Environmental Protection Agency (USEPA). 2010. Final Revisions to the General Conformity Regulations. March 24.

ATTACHMENT A

MEMORANDUM OF UNDERSTANDING

STATEN ISLAND FERRIES RETROFIT PROJECT

MEMORANDUM OF UNDERSTANDING

Staten Island Ferries Retrofit Project

AGREEMENT made as of this 19th day of January, 2006 by and between the Port Authority of New York and New Jersey ("PANY/NJ"), a body corporate and politic, created by Compact between the States of New York and New Jersey with the consent of Congress of the United States of America, having an office at 225 Park Avenue South, New York, New York 10003 and the City of New York, (the "City") acting by and through its Commissioner of the Department of Transportation (DOT) having an office at 40 Worth Street, New York, New York 10013.

BACKGROUND

WHEREAS, the PANY/NJ has proposed to the DOT the significant opportunity to use, implement and apply the benefits of certain air emissions control devices (the "Devices") that have been demonstrated through the results of a project (the "Demonstration Project") involving the installation of the Devices on one of the Staten Island ferries to significantly reduce emissions of Nitrogen Oxide ("NOx"), and, as an additional benefit, to moderately reduce Particulate Matter ("PM") (collectively, the "Pollutants") in the United States Environmental Protection Agency ("EPA")-designated New York, New Jersey, Long Island and Connecticut Non-Attainment Area (the "Area") all as more particularly described in a certain agreement (the "Demonstration Agreement") entered into between the parties and dated November 18, 2003; and

WHEREAS, the PANY/NJ, in conjunction with the United States Army Corps of Engineers – New York District ("ACOE-NYD"), on May 28, 2004, entered into a Project Cooperation Agreement ("PCA") pursuant to the Harbor Deepening Project ("HDP"), a project that will deepen federal channels in the New York and New Jersey Harbor to 50-feet, and in the course of the project, equipment will be used that will emit Pollutants in excess of amounts deemed acceptable in the Area by the State Implementation Plans ("SIPs") of the States of New York and New Jersey; and

WHEREAS, based on the success of the Demonstration Project, and as part of its efforts to offset the excess amount of Pollutants created as a result of the HDP, the PANY/NJ has proposed a project (the "Retrofit Project") to install the Devices on the

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remainder of the Staten Island Ferry fleet all as more fully described and set forth in the Scope of Work Staten Island Ferry Retrofit Project contained in the exhibit attached to this Agreement, hereby made a part hereof, and marked "Exhibit A" (the "Scope of Work"); and

WHEREAS, the Regional Air Team ("RAT")[1], a body of federal and state (New York and New Jersey) agencies formed to develop an implementable air emissions mitigation plan referred to as the Harbor Air Management Plan ("HAMP") for the HDP, has concurred that the Retrofit Project as herein described is a preferred and implementable air emissions mitigation component of the HAMP; and accordingly, the ACOE-NYD on the basis of the HAMP dated December 2003, issued a Statement of Conformity ("SOC"), dated April 14, 2004, recognizing the Retrofit Project as the preferred HAMP mitigation to meet General Conformity requirements for the HDP; and

WHEREAS, DOT has identified potential advantages resulting from the Retrofit Project; and

WHEREAS, the parties hereto have carefully assessed the results of the Demonstration Project, and have concluded that the implementation of the Retrofit Project is prudent and in their mutual interest, and has the potential to reduce air emissions of NOx and/or PM, thereby creating an offset of each such air emittent ("NOx Offset" and "PM Offset", respectively, and collectively, "Offsets"); and

WHEREAS, at its meeting on July 26, 2001 the Board of Commissioners of the PANY/NJ authorized the Executive Director of the PANY/NJ to execute the PCA with the ACOE-NYD for the HDP and to execute such other related contracts, agreements and documents as may be required to fulfill the PANY/NJ's responsibility under the PCA;

NOW, THEREFORE, in consideration of the premises and mutual covenants herein, the parties hereto agree as follows:

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[1] The RAT is comprised of the: United States Environmental Protection Agency-Region 2 (USEPA), the Army Corps of Engineers New York District (ACOE-NYD), New Jersey Department of Environmental Protection (NJDEP), New York State Department of Environmental Conservation (NYSDEC) and PANY/NJ.

ARTICLE I. PANY/NJ RESPONSIBILITIES

1.1 As set forth in the Scope of Work, the PANY/NJ, at its sole cost and expense, will make its best effort to select and utilize the services of an emissions consultant ("Consultant") to determine retrofit specifications for each applicable Staten Island ferry and to solicit vendors through a Request for Proposal ("RFP") process to provide turnkey services to retrofit with Emission Reduction Devices (the "Devices") the Molinari class (includes the Guy V. Molinari, the John J. Marchi, and the Spirit of America) and Barberi class (includes the Andrew J. Barberi and the Samuel I. Newhouse) Staten Island ferries deemed by the PANY/NJ suitable for the Devices. In accordance with the Scope of Work, the turnkey services will encompass the design, manufacture and installation of the Devices on the main engines of the suitable ferries, and commissioning the vessels, including obtainment of approval for the design, vessel modifications, installation and final inspection from the United States Coast Guard and the American Bureau of Shipping. Additionally, the PANY/NJ will make its best effort to enter into a cost effective agreement with Argillon, LLC to retrofit the John Noble, an Austen class vessel, with Selective Catalytic Reduction ("SCR") and Diesel Oxidation Catalyst Devices. Argillon, LLC retrofitted the demonstration vessel, the Alice Austen, an Austen class vessel. PANY/NJ will, to the best of its ability, insure that its vendors conduct retrofit activities in accordance with the vessel outages as identified in Article II, Section 2.1.

1.2 For the term of this MOU, repair of the Devices and material necessary for the operation of the Devices will be the responsibility of the PANY/NJ or its designated contractor, contingent upon Article II, Sections 2.6 and 2.10. The PANY/NJ will pay for the cost of repair associated with the Devices. During the term of the MOU, PANY/NJ shall respond promptly to any request of the DOT for technical assistance, modification or adjustments to the Devices and will keep DOT informed of the status of any request.

1.3 The PANY/NJ will, for the term of this MOU, collect emissions data and perform related monitoring/tracking and recordkeeping in accordance with methods, schedules, and reporting protocols to be developed by its Consultant in coordination with the RAT.

1.4 The PANY/NJ or its Consultant will, for the term of this MOU, periodically, in accordance with manufacturer specifications and recommendations, overhaul and/or replace essential elements of the Devices, contingent upon Article II, Sections 2.6 and 2.10.

Additionally the PANY/NJ will contract for service of the Devices for the term of this MOU.

1.5 The PANY/NJ will, for the term of this MOU and at its sole cost and expense, procure Urea, a chemical that is necessary for the functioning of the SCR Devices. A vendor for the supply of Urea will be selected by the PANY/NJ through its Consultant and a bid or RFP process. Further, if determined to be cost effective, the PANY/NJ will, at its sole cost and expense, install or caused to be installed, a permanent transfer station for the storage and dispensing of Urea at a location to be designated by DOT. The Urea transfer station will incorporate design and construction by the PANY/NJ or its contractor and the maintenance and repair of the Urea transfer station for the term of this MOU.

1.6 PANY/NJ will retain ownership of Devices and the Urea transfer station for the term of this MOUPANY/NJ will provide notification to DOT of transfer of ownership to DOT of the Devices and Urea transfer station upon completion of the HDP or at such time Offset needs are met for the HDP or any other PANY/NJ project where such Offsets are needed.

1.7 The PANY/NJ will comply with all applicable environmental laws with respect to its responsibilities under this MOU; however, it is the PANY/NJ's position that it is not subject to the New York State Environmental Quality Review Act ("SEQRA") or New York City Environmental Quality Review ("CEQR") and their respective regulatons. Should it be determined that the Retrofit Project constitutes an action by DOT requiring the preparation of an Environmental Assessment or an Environmental Impact Statement pursuant to SEQRA or CEQR, the PANY/NJ will provide reasonable and necessary assistance as requested by DOT.

1.8 PANY/NJ will, for the term of this MOU, be solely responsible for all costs associated with or related to damage to the Devices caused by PANY/NJ personnel and/or PANY/NJ contractors, including but not limited to repairs to the Devices and repairs to and cleaning of vessels.

ARTICLE II. DOT'S RESPONSIBILITIES

2.1 DOT agrees to grant and/or arrange for the PANY/NJ, or a contractor acting on its behalf, reasonable access to all of the ferries described in Article I for the purpose of performing the activities set forth in the Scope of Work including, but not limited to:

the installation of the Devices; construction and installation of the Urea transfer station; conducting monitoring/tracking and recordkeeping activities; performing overhaul and replacement of essential elements of the Devices. Such reasonable access shall be in accordance with DOT's U.S. Coast Guard-approved facility and vessel security plan as applicable. Depending on the Scope of Work options selected, it is anticipated that installation of the Devices, overhaul and replacement activities will be performed during short term and long term lay-up periods such as, but not limited to, the Staten Island Ferry Dry Dock Schedule as shown in Exbibit B. In order to coordinate the installation of Devices with the need for HDP Offsets, as shown on Exhibit C, United States Army Corps of Engineers – New York District Harbor Deepening Project Emissions Offsets Summary , DOT will, to the best of its ability, make the Barberi class Staten Island Ferries available for engine mechanical upgrades and adjustments for a period of up to two weeks for each vessel during the months of January and February, 2006. Additionally, DOT will, to the best of its ability, make the Barberi class Staten Island Ferries available for the installation of SCR Devices and PM reduction technology for a period of up to four months for each vessel during the months from April through September 2006, with no more than one vessel out of service at any one time.

2.2 If the Barberri class Staten Island Ferries can not be made available by DOT as indicated in Section 2.1, PANY/NJ reserves its right to adjust and/or terminate its solicited contracts for the work indicated in Section 2.1 and Article I, Section 1.1.

2.3 DOT will become the owner of the Devices and the Urea transfer station upon the expiration of the term of this MOU in accordance with the provisions in Article I, Section 1.6 .

2.4 DOT agrees to permit PANY/NJ, or a contractor acting on its behalf, to enter upon DOT premises upon fourteen (14) days prior written notice by PANY/NJ for the purpose of conducting any and all necessary installations of the Devices and the transfer station and all other work described in the Scope of Work provided that DOT, in its sole discretion, shall retain the right to delay such permission in the best interest of the City by giving PANY/NJ ten (10) days written notice. However, nothing herein shall limit DOT's or the City's right to delay such permission if it is deemed, in DOT's or the City's sole discretion, that there exists an emergency situation or a threat to life, property or public safety.

2.5 DOT agrees to provide such access as identified in Article II, Section 2.1 without cost to the PANY/NJ.

2.6 DOT will perform, at its sole cost and expense, routine maintenance and procedures necessary to keep the Devices in good working order and to ensure that the necessary Offsets are obtained, including:

2.6.1 Accept weekly Urea deliveries, perform vessel Urea filling, and operate and maintain the Urea transfer station upon its installation.

2.6.2 Provide and change air compressor filters associated with the air delivery system used for Urea injection at a frequency of no more than twice per year per vessel.

2.6.3 Perform annual catalyst inspections and rotations per vessel.

2.6.4 Perform quarterly inspection and cleaning of Urea injection lances.

2.6.5 For routine vessel fuel injector replacements, utilize fuel injectors certified to meet Tier 1 NOx emissions standards when these Devices have been deemed and approved by the RAT as an acceptable pollutant mitigation alternative for the generation of Offsets.

2.7 DOT agrees that if any work for which it is responsible pursuant to this MOU related to maintaining the Devices or the Urea transfer station is performed by a contractor acting on DOT's behalf, then such contractor shall possess and maintain insurance adding the City, DOT and PANY/NJ as additional insureds thereon.

2.8 DOT personnel will receive deliveries of equipment necessary for the installation and maintenance of the Devices and the construction of the Urea transfer station, and provide security for such equipment at a predesignated work site, to be selected at the sole discretion of DOT, at the sole cost and responsibility of DOT. However, DOT shall not be required to provide any increase to the level of staffing of security personnel that it currently provides.

2.9 Any labor cost and liability of DOT personnel for training, operations and maintenance, and possible assistance in the installation associated with the Devices will be the responsibility of the DOT.

2.10 DOT will keep the ferries used in the Retrofit Project in good working order.

2.11 DOT will cooperate and participate as necessary in the application for any permits and/or approvals, including but not limited to applications or other submittals for the legal recognition and obtainment of Offsets, needed to meet the objectives of the Retrofit Project and this MOU , including the execution of any application or other document.

2.12 If required, DOT will undertake, at its sole cost and expense and in a timely manner so as not to cause undue delay, all actions necessary for DOT and/or the City to comply with SEQRA and CEQR and their respective regulations, and any other applicable environmental laws with respect to DOT's or the City's responsibilities under this MOU.

2.13 DOT agrees to notify PANY/NJ of any changes in operations that may potentially affect the functionality of the Devices and/or the calculations of Offsets, such as a change in fuel quality, engine load rebalancing, or vessel schedules.

2.14 DOT will, for the term of this MOU, be solely responsible for all costs associated with or related to damage to the Devices caused by DOT personnel and/or DOT contractors, including but not limited to repairs to the Devices and repairs to and cleaning of vessels.

ARTICLE III. DETERMINATION AND ALLOCATION OF OFFSETS

The parties recognize that any NOx Offset and any PM Offset resulting from the Retrofit Project shall be applied to such emittents from the HDP, as permitted. However, should any NOx Offset or any PM Offset remain following such application, then the parties agree to allocate seventy percent (70%) of such remaining Offsets to PANY/NJ and thirty percent (30%) of such remaining Offsets to the DOT for application, as permitted, to projects other than the HDP that either PANY/NJ or the City of New York undertake and for which such Offsets are needed.

ARTICLE IV. TERM

4.1 This MOU, with respect to its terms and conditions as related specifically to the Pollutants, the Devices and Urea, shall continue in full force and affect from the date first written above and for so long as emissions reductions of the Pollutants are legally required for the HDP and sufficient Offsets are being produced and are legally recognized as available to meet the requirements of the HDP, and also for such time as Offsets are being utilized for any other PANY/NJ project.

4.2 At such time that the HDP is completed, which is currently estimated to be ten (10) years, or Offsets are no longer legally required and available to meet the requirements of the HDP with respect to the Pollutants or the PANY/NJ is not using Offsets for other projects, this MOU shall terminate and the respective rights and obligations of the parties shall end.

ARTICLE V. CONFIDENTIALITY

5.1 PANY/NJ and its vendors agree that any information, including but not limited to designs, plans, maps, drawings, or other data concerning the operation, location or functionality of DOT or City facilities and vessels, obtained during the term of this MOU shall be kept confidential and shall not be released to anyone without the DOT's prior approval. Further, PANY/NJ agrees to either safeguard or dispose of such information and material in a secure manner acceptable to the DOT.

5.2 Without disclosing its source, the parties to this MOU may use information gleaned from the Retrofit Project for the purpose of writing specifications to be used in any bid document or in any Requests for Proposals or any Requests for Information ("RFI") that may be issued at any time during or subsequent to this MOU.

ARTICLE VI. TERMINATION

This MOU shall terminate (i) by expiration of its term as set forth in Article IV or (ii) by mutual agreement of the parties herein.

ARTICLE VII. CONTACT PERSONS

Any notices to be given under this MOU shall be given in writing and delivered by hand or sent by certified mail, postage prepaid return receipt requested, addressed as follows:

If to PANY/NJ:

The Port Authority of New York & New Jersey
225 Park Ave. South -11th Floor
New York, New York 10003

Attn: Steve Dorrler

Manager – Waterways Planning and Development

Port Planning and Development Division

Port Commerce Department

[(212) 435 - 4273; sdorrler@panynj.gov]

With a copy to:

The Port Authority of New York & New Jersey
225 Park Ave. South - 15th Floor
New York, New York 10003
Attn: General Counsel

If to City/DOT:

N.Y.C. Department of Transportation
Division of Passenger Transport
59 Maiden Lane, 35th Floor
New York, NY 10013
Attn: Louis Calcagno, PhD.
Assistant Deputy Commissioner
Alternative Fuel Program
[(212) 487-6820; lcalcagno@dot.nyc.gov]

With a copy to:

NYCDOT
40 Worth Street
New York, N.Y. 10013
Attn: Office of General Counsel
[(212) 442-7730]

ARTICLE VIII. <u>SEVERABILITY</u>

Should any provision of this MOU be deemed to be invalid or unenforceable by any Court of competent jurisdiction, such provision shall be severed from this MOU and the remainder of this MOU shall continue in full force and effect.

ARTICLE IX. CLAIMS AND ACTIONS THEREON

9.1 No action shall lie or be maintained against the PANY/NJ or the City/DOT upon any claims arising from this MOU unless such action shall be commenced within six (6) months of the termination of or conclusion of this MOU or within six (6) months after the accrual of the Cause of Action, whichever occurs first.

9.2 In the event any claim is made or any action brought in any way relating to the MOU herein, the PANY/NJ and the City/DOT shall diligently render to the other, without additional compensation, any and all assistance, which either party may require of the other.

9.3 The PANY/NJ and the City/DOT shall report to the other in writing within thirty (30) working days of the initiation by or against it of any legal action or proceeding in connection with or relating to this MOU.

ARTICLE X. GENERAL

10.1 Failure to act upon any right or remedy contained in this MOU shall not constitute a waiver of such right or remedy nor shall it preclude a subsequent enforcement of such right or remedy.

10.2 Waiver by PANY/NJ or City/DOT of a breach of any provision of this MOU shall not be deemed to be a waiver of any other or subsequent breach and shall not be construed to be a modification of the terms of the MOU unless and until the same shall be agreed to in writing by the parties as required and attached to the original MOU.

10.3 City/DOT and PANY/NJ may waive their respective rights, powers or privileges under this MOU; provided that any such waiver shall be in writing and provided further, that no failure or delay on the part of any party to exercise any right, power or privilege under this MOU will operate as waiver thereof, nor will any single or partial exercise of any right, power or privilege under this MOU preclude any other or further exercise thereof or the exercise of any such waiver operate or be construed as a future waiver of such right, power or privilege thereunder.

10.4 All Exhibits to this MOU shall be deemed part of this MOU. All captions and headings contained in this MOU are for ease of identification only and do not constitute part of this MOU.

ARTICLE XI. FORUM PROVISION

This MOU shall be construed pursuant to the laws of the State of New York. Any dispute arising from this MOU shall be adjudicated in the courts of the State of New York.

ARTICLE XII. CONFLICT OF INTEREST

No officer, agent, employee, or representative of the City or DOT received any payment or other consideration for the making of this MOU nor has any legal interest, directly or indirectly, in this MOU.

ARTICLE XIII. MERGER

13.1 This MOU may only be amended by a written document, executed by both parties herein.

13.2 This written MOU contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this MOU shall be deemed to exist or to bind any of the parties hereto or to vary any of the terms contained herein.

ARTICLE XIV. INDEMNIFCATION

14.1 The PANY/NJ and the City/DOT hereby covenant and agree that with respect to the performance of this MOU, each will indemnify and save harmless the other, its Commissioners, officers, agents, representatives and employees against, any and all claims, demands, penalties, fines, settlements, damages, injuries, losses, costs, expenses and judgments of whatever kind or nature to the extent arising out of its respective negligent or wrongful acts or omissions or those of any of its Commissioners, officers, agents, representatives and employees, provided, that neither the PANY/NJ nor the City/DOT shall have any obligation with respect to damages to the extent caused by the negligence and/or intentional tortious acts of the other, its Commissioners, officers, agents, representatives and employees. The PANY/NJ and the City/DOT agree that each

shall be responsible for its own defense in connection with any claims or liabilities arising from the performance of this MOU. Neither the City/DOT nor the PANY/NJ will settle any such claim, liability or action without the other party's prior written consent, provided, that if the party whose consent is requested shall unreasonably refuse to consent to any such settlement or shall fail to do so within a reasonable time after such request is made, then, in addition to the obligation to indemnify the requesting party for all amounts, including those in excess of the proposed settlement, such non-consenting party shall also be responsible for any legal fees and expenses incurred by the other party in connection with its defense after the date of such non-consent

.

14.2 Notwithstanding any provisions of this MOU to the contrary, neither the PANY/NJ nor any of its contractors nor any Commissioner, officer, agent, representative or, employee thereof, shall be liable to the City or to the DOT, and neither the City/DOT nor any Commissioner, officer, agent, representative or employee thereof shall be liable to the PANY/NJ, for consequential damages of any kind or nature in any event whatsoever, even if arising from any act, omission or negligence of such party or from the breach by such party of its obligations under this MOU.

ARTICLE XV. INSURANCE

15.1 The PANY/NJ or a contractor acting on its behalf, agrees to procure, with companies authorized to do business in the State of New York, and maintain at its own cost and expense, during the term of this MOU, the following insurance adding DOT and the City as additional insured parties:

(a) Commercial General Liability Insurance to protect DOT and the City against claims for property damage and for personal injuries, including accidental death. Such insurance shall have a single combined limit of $10,000,000 per occurrence and $20,000,000 aggregate.

(b) Environmental Impairment Liability Insurance shall be procured by the contractor hired by the PANY/NJ to protect DOT and the City against any and all claims for property damage or personal injuries, including accidental death. Such insurance shall have a single combined limit of $1,000,000 per occurrence and $10,000,000 aggregate.

15.2 The liability policy or policies carried by the contractor and subcontractors must contain "Cross-Liability/Severability of Interests" coverage, providing that the protection afforded the contractor thereunder, with respect to any claim or action against the contractor by a third person, shall pertain and apply with like effect with respect to any claim or action against the contractor by the PANY/NJ, or against the PANY/NJ by the contractor, but said endorsement shall not limit, vary, change or affect the provisions afforded the PANY/NJ as an additional insured.

15.3 A copy of the certificate for such insurance shall be provided to the Commissioner of DOT, or his designee, before the commencement of any work by the contractor pursuant to this MOU. The policies shall not be canceled, terminated or modified unless fifteen (15) days prior written notice is sent by registered mail to the Commissioner, Department of Transportation, 40 Worth Street, Room 1001, New York, New York 10013.

15.4 Notwithstanding any provision of such policy to the contrary, notice by or on behalf of the City/DOT as Additional Insureds of any occurrence, offense, claim or suit, if such notice is required, will be deemed timely if given to the Insurance Company as soon as practicable after a Notice of Claim adequately specifying the occurrence, offense, claim or suit as one potentially covered under the policy has been filed with the Comptroller of the City of New York ("Comptroller"); however, in no event shall notice be deemed untimely so long as it is given within 180 days of the filing of the Notice of Claim.

15.5 Any notice, demand or other writing by or on behalf of the PANY/NJ or its Contractor to the Insurance Company relating to any occurrence, offense, claim or suit shall also be deemed to be a notice, demand or other writing on behalf of the City/DOT as Additional Insureds, and any response thereto on behalf of the Insurance Company shall be sent to the PANY/NJ or its Contractor, to the City/DOT at the New York City Law Department, Insurance Law Unit, Affirmative Litigation Division, 100 Church Street, New York, NY 10007, and to the Comptroller at NYC Comptroller's Office, Insurance Unit, 1 Centre Street, Room 1222, New York, NY 10007.

ARTICLE XVI. NO PERSONAL LIABILITIES

Neither the Commissioners of the PANY/NJ, nor the Commissioners of the City or the DOT, nor any of them, nor any officers, employees or representatives of the

PANY/NJ, the DOT or the City, shall be charged personally with any liability or held personally liable under any provision of this MOU, or because of its execution or attempted execution, or because of any breach or attempted or alleged breach of any provision of this MOU or otherwise.

IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the date first above written.

PORT AUTHORITY OF NY/NJ

By _____

Ernesto L. Butcher
Chief Operating Officer

NOTARY

_____

APPROVED
TERMS SK FORM

CITY OF NEW YORK

By _____

_____

Howard Altschuler
Deputy Commissioner

APPROVED AS TO FORM
CERTIFIED AS TO LEGAL AUTHORITY
Steve Stein Cash
ACTING CORPORATION COUNSEL
DEC 27 2005

NOTARY

SARAH L. WILKINS
Notary Public, State of New York
No. 31-4819596
Qualified in New York County
Commission Expires July 31, 20 06

Approved As To Form
Certified As To Legal Authority

_____

Acting Corporation Counsel

(PANY/NJ ACKNOWLEDGEMENT)

STATE OF NEW YORK)
): ss.
COUNTY OF NEW YORK)

On the day of Jan. 13 in the year 200~~5~~6, before me, the undersigned, a Notary Public in and for said state, personally appeared Ernesto L. Butcher, Chief Operating Officer, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument the person upon behalf of which the individual acted, executed the instrument.

LUCY AMBROSINO
NOTARY PUBLIC, STATE OF NEW YORK
No. 01AM6101070
QUALIFIED IN NEW YORK COUNTY
MY COMMISSION EXPIRES NOV. 3, 2007

(notarial seal and stamp)

(City/DOT ACKNOWLEDGEMENT)

STATE OF NEW YORK)
): ss.
COUNTY OF NEW YORK)

On the day of Jan. 19th in the year 200~~5~~6, before me, the undersigned, a Notary Public in and for said state, personally appeared Howard Altschuler, Deputy Commissioner, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument the person upon behalf of which the individual acted, executed the instrument.

(notarial seal and stamp)

SARAH L. WILKINS
Notary Public, State of New York
No. 31-4819596
Qualified in New York County
Commission Expires July 31, 2006

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EXHIBIT A
SCOPE OF WORK STATEN ISLAND FERRY RETROFIT PROJECT

The Retrofit Project involves tasks associated with the implementation of certain emissions reduction technologies and equipment (the "Devices") associated with those technologies whereby the selected Devices and instruments will be installed on the Staten Island Ferries ("SIF"), for a maximum total of six additional ferries. Individual ferries potentially included in this Retrofit Project are identified below:

1. John Noble (2nd Austen class vessel)
2. Andrew J. Barberi (Barberi class vessel)
3. Samuel I. Newhouse (Barberi class vessel)
4. Guy V. Molinari (1st Molinari class vessel)
5. Senator John J. Marchi (2nd Molinari class vessel)
6. Spirit of America (3rd Molinari class vessel)

Device selection will be predicated on the duty cycle, exhaust temperature profile, and technological feasibility of installing such devices on a given vessel. Request for Proposals will encompass soliciting for the following emission control technologies and associated Devices:

- OPTION 1 - Selective Catalytic Reduction ("SCR") and Diesel Oxidation Catalyst ("DOC") or other PM reduction technology (i.e. Diesel Particulate Filter ("DFP")), Partial Filter). SCR shall be specifically designed to operate with 32.5% Urea reagent.
- OPTION 2 – Engine manufacturer approved mechanical upgrades and adjustments to the main propulsion engines such as replacement, internally retarded injectors and revised power assemblies (pistons and liners) that achieve both reduced NOx and reduce lube oil consumption
- OPTION 3 – Other technologies, including but not limited to, NOx adsorbers or scrubbers to the extent they can provide a 25% minimum NOx reduction, are deemed cost effective and have a proven track record in a parallel application

The following tasks, which will require DOT's cooperation for successful completion, are included in the Scope of Work. The PANY/NJ's Consultant for the Retrofit Project will oversee each task:

1) **Information Gathering on Engines.**

a. **SIF Drawings, Specifications and Operational Parameters** - A list will be generated detailing existing vessel information (structural drawings, engine specification, operational parameters, etc.). This information will be used to provide vendors information on the Staten Island Ferries and for emission reduction calculations. DOT shall provide the most current information available, but makes no representation as to the accuracy of such information. Further, vendors shall be advised not to rely solely on such vessel information provided by DOT, but shall be obligated to conduct a detailed vessel ("field") survey to ensure system design comports with as-built vessel characteristics.

b. **Data Logging** – The Data Logging Protocol established for the Alice Austen ferry in the Demonstration Project will be implemented for the Retrofit Project.

c. **Instrument Installation** - Instruments (such as data loggers, temperature gauges, etc.) will be supplied by the consultant and installed on one Barberi and one Molinari class ferry.

2) **Emission Reduction Technologies (ERT) Devices ("Devices") and Consumables Vendor Selection** - The list of vendors/suppliers may be providers of any of the following

a. Selective Catalytic Reduction Devices;
b. SCR catalysts;
c. Diesel Oxidation Catalysts ;
d. Diesel particulate filters;

NOx Scrubbers or Adsorbers

e. Tier 1 Certified Engine Kits including fuel injectors and power assemblies, and
f. Urea

Vendor selection will be coordinated and reviewed by the PANY/NJ, DOT . Devices will be purchased by PANY/NJ.

3) **Device Installation and Commissioning.** Device installation will occur during vessel outages that are agreeable to both PANY/NJ and DOT. Tasks to be performed by the selected Device vendor include:

a) Complete vessel ("field") survey to confirm as-built vessel characteristics
b) Complete design of the emission control system
c) Naval engineering of the system
d) Removal of existing equipment that will be replaced by new equipment
e) Complete restoration of any interferiences removed
f) Bilge and vessel cleaning incurred during the installation, and return of vessel to a passenger-ready state
g) Complete system installation, including all necessary labor, materials and equipment and field supervision for the installation and support equipment onboard the ferry
h) Facilitate United States Coast Guard and American Bureau of Shipping plan review and surveys, and the issuance of all required approvals
i) Training of DOT personnel on new system

4) **Measuring and Monitoring ("M/M") Protocol Implementation.** As developed as part of the Demonstration Project, which used the Alice Austen ferry, the RAT-Approve M/M protocols will be implemented on Molinari and Barberi class vessels. System verification testing will be completed during regular revenue service.

EXHIBIT B
STATEN ISLAND FERRY DRY DOCK SCHEDULE

STATEN ISLAND FERRY DRY DOCK SCHEDULE

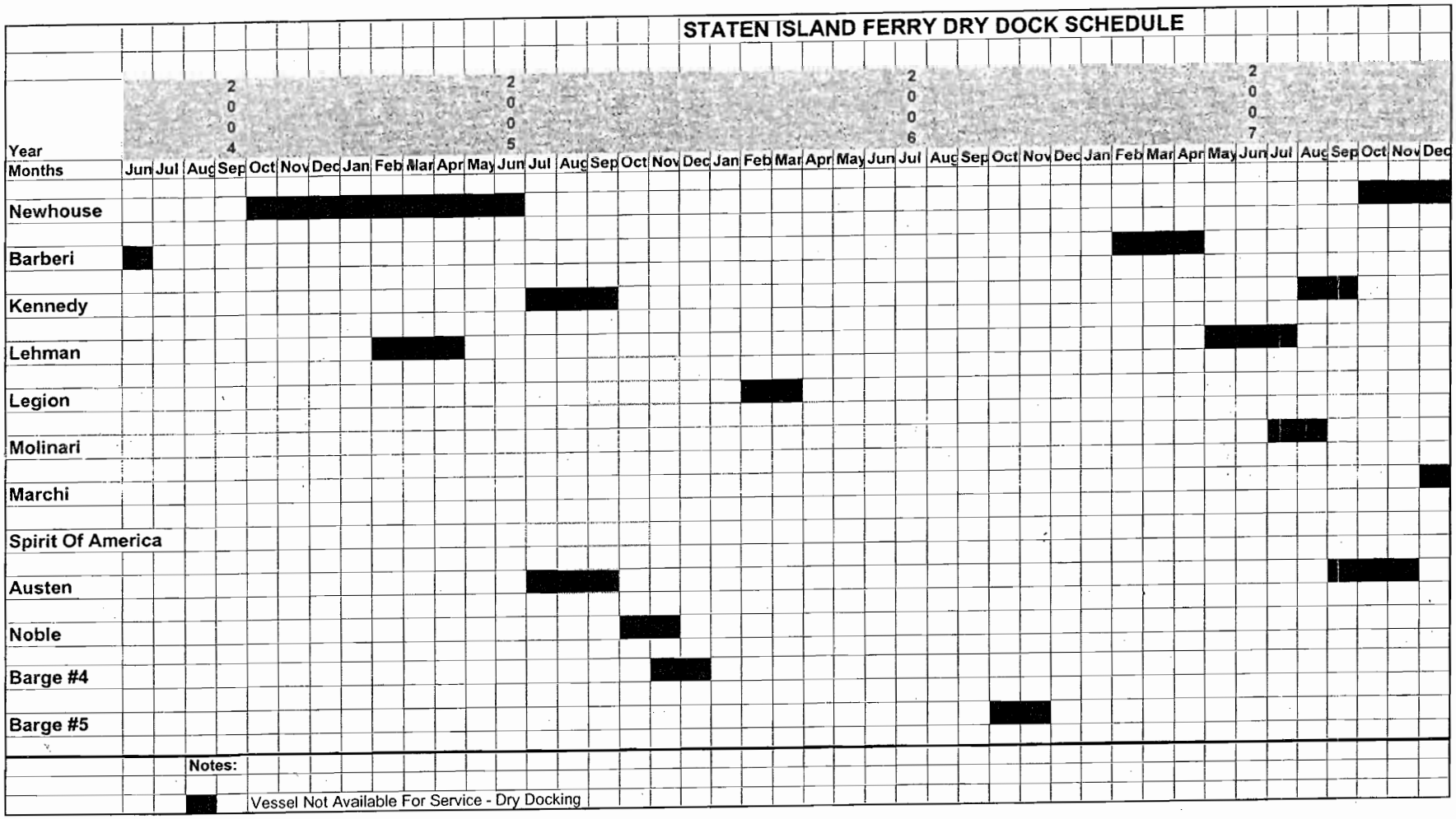

EXHIBIT C
UNITED STATES ARMY CORPS OF ENGINEERS – NEW YORK DISTRICT
HARBOR DEEPENING PROJECT EMISSIONS OFFSETS SUMMARY

USACE - New York District

Harbor Deepening Project

HDP Emissions/Offsets Summary

DRAFT **DRAFT**

NOx Emissions (Based on 12 Dec 2005 volume update)
w/10% contingency (S-AK-1 adjusted to 2007 start, Sept '05)

Channel/Contract	2005 (tons)	2006 (tons)	2007 (tons)	2008 (tons)	2009 (tons)	2010 (tons)	2011 (tons)	2012 (tons)	2013 (tons)	2014 (tons)
Ambrose 1	48.7	167.6	141.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ambrose 2	0.0	0.0	0.0	150.2	202.3	61.5	0.0	0.0	0.0	0.0
S-AK-1	0.0	0.0	78.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S-AK-2	0.0	0.0	0.0	36.9	48.3	0.0	0.0	0.0	0.0	0.0
S-AK-3	0.0	0.0	0.0	0.0	0.0	95.0	116.8	17.0	0.0	0.0
S-AN-1	0.0	18.5	38.5	20.1	0.0	0.0	0.0	0.0	0.0	0.0
S-AN-2	0.0	0.0	0.0	9.9	34.4	0.0	0.0	0.0	0.0	0.0
S-BR-1	0.0	0.0	0.0	0.0	0.0	6.6	38.9	72.7	100.7	16.0
S-E-1	0.0	0.0	0.0	0.0	0.0	0.0	30.4	82.6	0.0	0.0
S-KVK-1	0.0	0.0	0.0	125.5	65.4	27.9	0.0	0.0	0.0	0.0
S-KVK-2	163.8	235.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S-NB-1	0.0	49.2	131.0	16.5	0.0	0.0	0.0	0.0	0.0	0.0
S-NB-2	0.0	0.0	0.0	64.4	159.5	67.1	0.0	0.0	0.0	0.0
	212.5	**470.7**	**424.4**	**423.4**	**509.9**	**258.2**	**186.1**	**172.2**	**100.7**	**16.0**
Total Project Est. Emissions	**2,774.2**									

NOx Offsets (Based on 30 June 05 SIF Schedule & Mar 05 Port Jersey Projections & Dec '05 RAT updates)

Offset Source	2005 (tons)	2006 (tons)	2007 (tons)	2008 (tons)	2009 (tons)	2010 (tons)	2011 (tons)	2012 (tons)	2013 (tons)	2014 (tons)
KVK-5 Tugs	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	0.0
Alice Austen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
John Noble	0.0	12.4	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
Andrew Barberi	5.5	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
Samuel Newhouse	5.5	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
Guy V. Molinari	0.0	0.0	19.4	46.7	46.7	46.7	46.7	46.7	46.7	46.7
John J. Marchi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spirit of America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PJ Tugs	26.0	0.0	67.5	135.0	135.0	135.0	135.0	135.0	135.0	135.0
MVERP	0.0	66.7	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
Offset Subtotal (w/o P&G)	**87.0**	**261.2**	**485.6**	**580.3**	**580.3**	**580.3**	**580.3**	**580.3**	**580.3**	**530.3**
Total Offsets	**4,846.3**									
Surplus Offsets (w/o P&G)	**-125.5**	**-209.5**	**61.2**	**156.9**	**70.4**	**322.2**	**394.3**	**408.1**	**479.6**	**514.3**
P&G Credits (max)	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Offset Potential (incl P&G)	287.0	461.2	485.6	580.3	580.3	580.3	580.3	580.3	580.3	530.3
Surplus Offsets (incl P&G)	**74.5**	**-9.5**	**61.2**	**156.9**	**70.4**	**322.2**	**394.3**	**408.1**	**479.6**	**514.3**