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SR 520 Bridge Replacement and HOV Project Draft EIS

6-Lane Alternative Options

Addendum to Air Quality Discipline Report

Washington State Department of Transportation

SoundTransit

U.S. Department of Transportation Federal Highway Administration

SR 520 Bridge Replacement and HOV Project EIS
6-Lane Alternative Options

Addendum to Air Quality Discipline Report

Prepared for

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Federal Highway Administration
Sound Transit

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Acronyms and Abbreviations

CO	carbon monoxide
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
NAAQS	National Ambient Air Quality Standards
PM_{10}	particulate matter smaller than PM_{10} microns in diameter
$PM_{2.5}$	particulate matter smaller than $PM_{2.5}$ microns in diameter
ppm	parts per million
PSCAA	Puget Sound Clean Air Agency
WSDOT	Washington State Department of Transportation

Introduction

This addendum to the *Air Quality Discipline Report* (CH2M HILL 2005; Appendix C to the Draft Environmental Impact Statement [EIS]) describes the affected environment and environmental consequences of three options to the 6-Lane Alternative. Two of these options are in Seattle and one is on the Eastside. These options are described below.

What are the key points of this report?

The effects of the options on regional and local air quality would not change from the original 6-Lane Alternative.

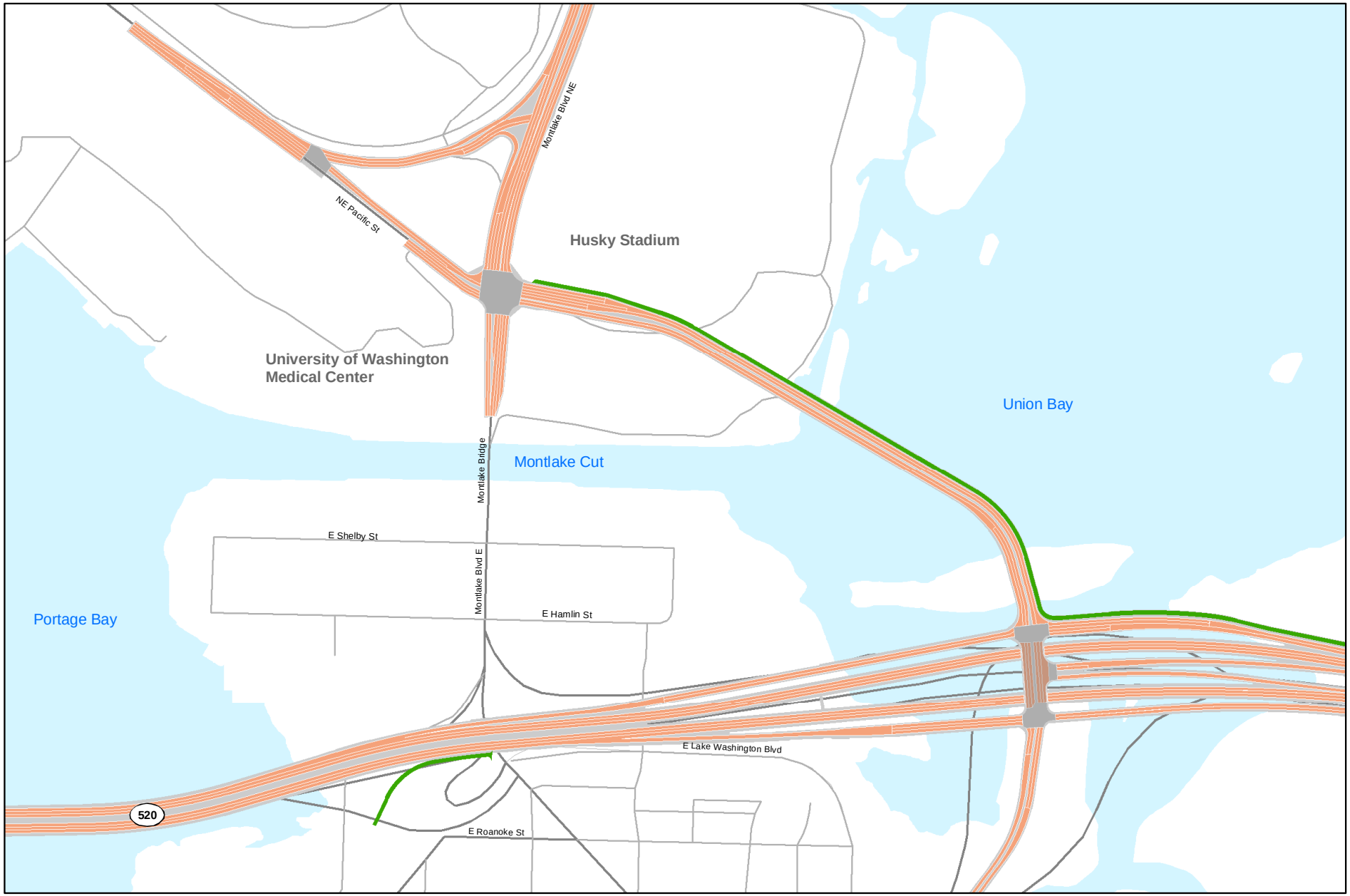
What options are being considered in this addendum?

6 Lanes with Pacific Street Interchange Option

This option would remove the Montlake interchange along SR 520 and would construct a new interchange at Pacific Street, just east of the Montlake interchange. Exhibit 1 shows the proposed lane configuration for this option.

The new interchange would be primarily located over the WSDOT-owned peninsula near the Washington Park Arboretum. A new on- and off-ramp to and from the north would extend to Pacific Street at the University of Washington. A column-supported ramp of four general-purpose lanes (two lanes in each direction) extending over Union Bay (referred to as the Union Bay Bridge in this addendum) from the new interchange would touch down at the University of Washington Husky Stadium parking lot before joining the intersection of Pacific Street and Montlake Boulevard. At that intersection, the roadway would be lowered 8 to 10 feet from the existing elevation to provide vehicle-only access. The intersection would be covered to allow pedestrian access above and away from vehicular traffic.

The roadway on Montlake Boulevard north of Pacific Street would be widened to the east until just south of Northeast 45th Street. The navigational channel crossed by the new Union Bay Bridge would be the same width as the existing Union Bay reach (175 feet), with a



Option Lane Configuration
Bicycle/Pedestrian Path
Shoulders and Barriers
Intersections

N

0 125 250 500 Feet

Exhibit 1. **Lane Configuration of the 6 Lanes with Pacific Street Interchange Option**
SR 520 Bridge Replacement and HOV Project

File Path: \\Simba\proj\Parametrix\168395\180171 SR 520 Bridge Replacement\GIS\Layouts\Addendum\Graphics\PacificIC_LaneConfig.mxd, Date: December 5, 2005 2:04:22 PM

vertical clearance of either 70 or 110 feet.[1] Columns would be placed just outside the width of the ship canal to not block boat traffic.

Ramps to and from Lake Washington Boulevard would still be included in this option; however, their footprint would be slightly different from the original 6-Lane Alternative. The ramp connections to and from Lake Washington Boulevard and to and from the Union Bay Bridge would construct a full diamond interchange, as opposed to a partial diamond interchange under the original 6-Lane Alternative. This full diamond interchange would provide more access to and from Lake Washington Boulevard. No access to or from SR 520 would be provided at Montlake Boulevard.

From Montlake Boulevard to I-5, SR 520 would be six lanes wide (three in either direction). The profile of the Portage Bay Bridge would not differ under this option from the original 6-Lane Alternative. Buses would access SR 520 via the Union Bay Bridge through the University area, providing for a more direct connection between buses and the proposed Sound Transit North Link Station at Husky Stadium. Instead of connecting to the Montlake interchange as in the original 6-Lane Alternative, the bicycle/pedestrian path would follow the Union Bay Bridge from SR 520 and would end at the Pacific Street interchange, close to the Burke-Gilman Trail.

Second Montlake Bridge Option

The intent of the Second Montlake Bridge option is to narrow the SR 520 footprint through the Montlake neighborhood, while providing for transit (bus) access from SR 520 to the University of Washington. Exhibit 2 shows the propose lane configuration for this option, which would be the same as the No Montlake Freeway Transit Stop option, except that it would also include a second Montlake bridge across the Montlake Cut. This bridge would be a parallel bascule (draw) bridge located just east of the existing Montlake Bridge. One bridge would carry northbound traffic, and one would carry southbound traffic.

[1] The establishment of a new governing clearance would prevent any vessel with a higher clearance requirement from traveling east from the Montlake Cut to Lake Washington north of the Evergreen Point Bridge. Before establishing a new governing clearance, the Coast Guard will consider whether vessels requiring a higher clearance have an essential use in north Lake Washington. Two vessels with a vertical clearance higher than 70 feet are known to travel this part of the lake. No vessels with a vertical clearance higher than 110 feet travel this part of the lake.

Option Lane Configuration

Bicycle/Pedestrian Path

Shoulders and Barriers

Intersections

N

0 125 250 500 Feet

Exhibit 2. **Lane Configuration of the Second Montlake Bridge Option**

SR 520 Bridge Replacement and HOV Project

South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast Option

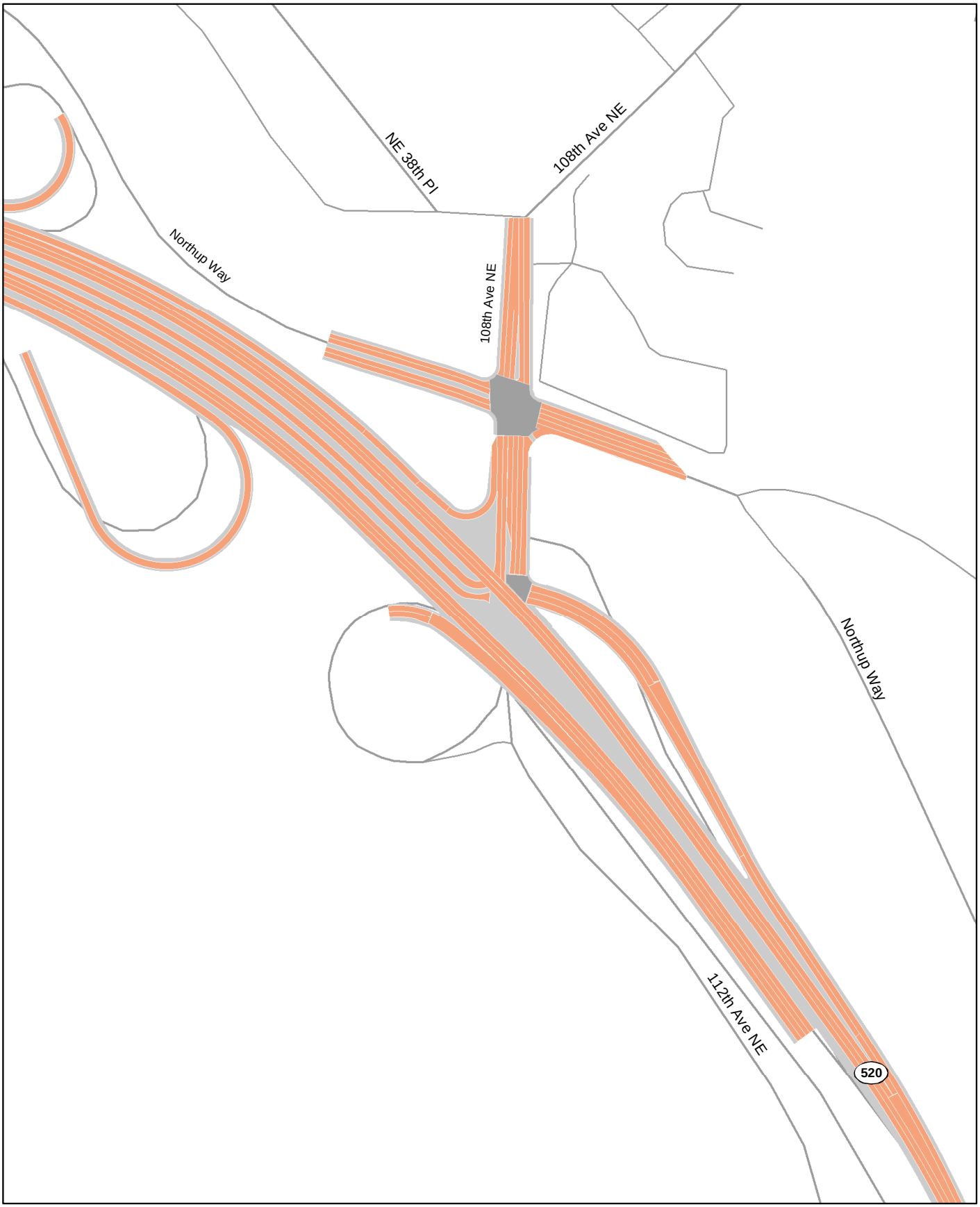
The intent of the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option is to improve access for buses to the South Kirkland Park-and-Ride from eastbound SR 520 and from the South Kirkland Park-and-Ride to westbound SR 520. This option, which is shown in Exhibit 3, would add a new transit/HOV-only westbound on-ramp from 108th Avenue Northeast and a new transit/HOV-only eastbound off-ramp to 108th Avenue Northeast.

The footprint of SR 520 east of Bellevue Way would be widened slightly to accommodate the new ramps. Both 108th Avenue Northeast and Northup Way would be widened and improved under this option. One lane would be added to 108th Avenue Northeast between the eastbound on-ramp and 38th Place Northeast. Along with the additional through lane on 108th Avenue Northeast, the northbound leg of the 108th Avenue Northeast/Northup Way intersection would be channelized to include two exclusive left-turn lanes, a through lane, and a shared through/right-turn lane.

There is also a possibility for adding a westbound second left-turn lane at the 108th Avenue Northeast/Northup Way intersection to facilitate clearing the left-turn queue and serving a higher number of westbound left-turn and through trips.

What additional information was collected for this analysis?

The air quality discipline team updated air monitoring data available from the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA) for various pollutants of concern. An additional year of data (2004) is now available, and is presented in the following section to document how current air quality compares to the applicable air quality standards.



Option Lane Configuration
Shoulders and Barriers
Intersections

N

0 125 250 500 Feet

Exhibit 3. **Lane Configuration for the South Kirkland Park-and-Ride Transit Access - 108th Avenue Northeast Option**
SR 520 Bridge Replacement and HOV Project

Affected Environment

How was the information collected?

The air quality discipline team collected information for this addendum using the same methodology described for the original 6-Lane Alternative in Appendix C, *Air Quality Discipline Report*. In that report, the discipline team identified the air quality standards and regulations of EPA, Ecology, and PSCAA that apply to the project area.

How does air quality compare with current standards in the project area?

Ambient air concentrations of the monitored pollutants in the project area and Puget Sound have been well below the National Ambient Air Quality Standards (NAAQS) for the last several years, as shown in Exhibit 4, which shows the most current 3 years of pollutant monitoring data.

Exhibit 4. Ambient Criteria Pollutant Concentration Levels Measured from 2002 to 2004

		Maximum Concentration			
Monitoring Location	**Parameter**	**2002 [a]**	**2003[b]**	**2004 [b]**	**NAAQS**
Particulate Matter (PM_{10})					
Duwamish	Annual Arithmetic Mean (µg/m^3)	23	22	25	**50**
	24-Hour Average (µg/m^3)	73	65	57	**150**
Particulate Matter ($PM_{2.5}$)					
Duwamish	Annual Arithmetic Mean (µg/m^3)	11.3	10.7	11.7	**50**
	24-Hour Average (µg/m^3)	45	37	43	**150**
Carbon Monoxide					
Beacon Hill	8-Hour Average (ppm)	2.0	1.9	1.8	**9**
	1-Hour Average (ppm)	2.4	2.8	2.7	**35**
University District	8-Hour Average (ppm)	5.6	7.1	3.4	**9**
	1-Hour Average (ppm)	7.5	9.1	4.9	**35**
Downtown Bellevue	8-Hour Average (ppm)	4.2	5.8	N/A	**9**
	1-Hour Average (ppm)	6.2	6.9	N/A	**35**

Exhibit 4. Ambient Criteria Pollutant Concentration Levels Measured from 2002 to 2004

Monitoring Location	Parameter	Maximum Concentration 2002 [a]	2003 [b]	2004 [b]	NAAQS
Ozone					
Beacon Hill Reservoir	1-Hour Average (ppm)	0.053	0.072	0.064	**0.12**
	8-Hour Average (ppm)	0.046	0.055	0.058	**0.08**
Nitrogen Dioxide					
Beacon Hill Reservoir	Annual Arithmetic Average (ppm)	0.019	0.018	0.018	**0.05**
Sulfur Dioxide					
Beacon Hill Reservoir	Annual Arithmetic Average (ppm)	0.0027	0.003	0.003	**0.02**
	24-Hour Average (ppm)	0.016	0.010	0.019	**0.10**
	3-Hour Average (ppm)	0.042	0.026	0.045	**0.40**

[a]Ecology (2004b).
[b]U.S. EPA (2004). Bellevue Station data not available for 2004.

$\mu g/m^3$ = micrograms per cubic mater
$PM_{2.5}$ = Particulate matter smaller than $PM_{2.5}$ microns in diameter
PM_{10} = Particulate matter smaller than PM_{10} microns in diameter
ppm = parts per million

CO concentrations are measured at three sites close to the project area—the University District, Beacon Hill, and Bellevue. As shown in Exhibit 5, the 8-hour CO concentrations for the period of 2001 to 2003 have been below the standards. In fact, the most recent exceedance of a CO standard was in 1992, when the CO 8-hour NAAQS was exceeded only once.

Exhibit 5. Carbon Monoxide Levels Measured in the Project Vicinity between 2002 and 2004

Potential Effects of the Project

What methods were used to evaluate air quality effects?

The air quality discipline team analyzed potential effects of the options using the same methodology described in Appendix C, *Air Quality Discipline Report*.

Because transportation projects can have localized effects where heavy traffic congestion occurs, the air quality discipline team performed an analysis at intersections with the greatest potential for localized effects, sometimes called a "hot-spot" analysis. This analysis was performed according to current applicable guidance. The discipline team obtained information about the intersections from the *Addendum to Transportation Discipline Report*, which predicted intersections that would have different traffic volumes and delays compared to the original 6-Lane Alternative.

How would the project permanently affect regional and local air quality?

Regional Air Quality

The air quality discipline team determined that the effect of the options on regional air quality would be the same as the original 6-Lane Alternative.

Local Air Quality

The 6 Lanes with Pacific Street Interchange and Second Montlake Bridge options would shift traffic patterns on local streets because roadway capacity crossing the Montlake Cut would be increased (see *Addendum to Transportation Discipline Report)*. This could increase the amount of traffic traveling through the area, which would affect air quality near the highest volume intersections. Because of this, the air quality discipline team performed additional air quality modeling to

determine whether the Seattle options would result in a violation of the carbon monoxide standard.

On the Eastside, the South Kirkland Park-and-Ridge Transit Access – 108th Avenue Northeast option would reduce transit travel times by 15 to 16 minutes for eastbound buses traveling to and from the South Kirkland Park-and-Ride during the p.m. peak hour. This option would not adversely affect the local intersections; therefore, air quality analysis for this option would be the same as the original 6-Lane Alternative.

6 Lanes with Pacific Street Interchange Option

The discipline team determined that the Pacific Street/Montlake Boulevard intersection could experience the highest air quality effects from motor vehicle exhaust. We performed a CO "hot-spot" analysis at this intersection to identify whether emissions would cause a violation of the ambient air quality standard. The modeling results shown in Exhibit 6 indicate that this option would not result in a violation of the CO air quality standard and therefore would not cause an adverse effect on air quality.

Second Montlake Bridge Option

Similar to the original 6-Lane Alternative, localized effects from motor vehicle exhaust are anticipated near the Montlake Boulevard/Lake Washington Boulevard intersection. We performed modeling at this intersection; the results are shown in Exhibit 7. When compared to the original 6-Lane Alternative, the modeling results show that this option would not adversely affect air quality.

South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast Option

The results of this option are the same as those described for the original 6-Lane Alternative.

Summary of Results

Exhibits 6 and 7 summarize the CAL3QHC modeling results. These results indicate that neither option would result in a violation of the CO NAAQS in the future. The years analyzed represent project opening year (2016) and design year (2030). The results for subsequent years show a decreasing trend in CO concentrations.

The project would also not cause new violations of the 1-hour or 8-hour CO NAAQS in future years, or increase the frequency or severity of any existing violation.

Exhibit 6. Pacific Street/Montlake Boulevard Maximum Carbon Monoxide Concentrations

Scenario	1-hour CO (ppm)	8-hour CO (ppm)
2016 – No Build Alternative	12.7	8.9
2016 – Pacific Street Interchange Option	12.4	8.7
2030 – No Build Alternative	9.1	6.4
2030 – Pacific Street Interchange Option	10.7	7.5
CO NAAQS	**35 ppm**	**9 ppm**

ppm = parts per million

Exhibit 7. Montlake Boulevard/Lake Washington Boulevard Maximum Carbon Monoxide Concentrations

Scenario	1-hour CO (ppm)	8-hour CO (ppm)
2016 – No Build Alternative	11.6	8.1
2016 – Original 6-Lane Alternative	11.4	8.0
2016 – Second Montlake Bridge Option	11.5	8.1
2030 – No Build Alternative	10.5	7.4
2030 – Original 6-Lane Alternative	10.3	7.2
2030 – Second Montlake Bridge Option	9.8	6.9
CO NAAQS	**35 ppm**	**9 ppm**

ppm = parts per million

The results for CO show that the roadway improvements proposed by this project would not adversely affect air quality from other pollutants, including greenhouse gases and toxic air pollutants. Roadway improvements would have the overall effect of improving traffic flow and reducing idling time, which is when motor vehicle emissions are highest.

Attachment 1 contains the CAL3QHC model output files for the air quality analysis.

Does the project meet project-level conformity requirements?

Because the project is not anticipated to create any new violations, or increase the frequency of an existing violation of the CO standard, it is determined to conform with the purpose of the current State Implementation Plan and the requirements of the Clean Air Act and the Washington Clean Air Act. There is currently no prescribed guidance for conducting a quantitative conformity analysis for ozone. This is due to the regional nature of this pollutant and to the lack of modeling mechanisms to evaluate project contributions to ozone concentrations.

The proposed project is included in the Regional Transportation Plan, *Destination 2030* (PSRC 2001), and in the 2003-2005 Transportation Improvement Plan (PSRC 2004a). The Regional Transportation Plan and the Transportation Improvement meet the conformity requirements identified by federal and state regulations for both CO and ozone. Because the project is included in these plans, which conform to federal and state regulations, the project is also considered to demonstrate project-level conformity for ozone.

How would project construction temporarily affect air quality?

The discipline team evaluated the potential effects of the options on air quality due to construction. The following sections discuss these effects.

Effects Common to the Entire Project Area

During construction of roadway projects, soil-disturbing activities, heavy-duty equipment, commuting workers, and the laying of asphalt may generate emissions that can temporarily affect air quality. The total emissions and the timing of the emissions from these sources would vary depending on the phasing of the project and options chosen for the project.

Typical sources of emissions during construction of transportation projects include the following:

- Fugitive dust generated during excavation, grading, loading and unloading activities
- Dust generated during demolition of structures and pavement

- Engine exhaust emissions from construction vehicles, worker vehicles, and diesel fuel-fired construction equipment
- Increased motor vehicle emissions associated with increased traffic congestion during construction
- VOC and odorous compounds emitted during asphalt paving

The regulated pollutant of concern for the first two source types is $PM_{2.5}$ and PM_{10}. Engine and motor vehicle exhaust would result in emissions of volatile organic compounds (VOC), oxides of nitrogen, PM_{10}, air toxics, and greenhouse gases. The following sections address the relative differences in the potential construction emissions that could occur for the different alternatives.

Seattle

Pacific Street Interchange Option

The effects of this option are described in the *Effects Common to the Entire Project Area* section above. The air quality effects of the 6 Lanes with Pacific Street Interchange option would be greater than the original 6-Lane Alternative because of construction of the new interchange. This option would require more land clearing, more materials be transported to the area, more worker and truck trips, and greater usage of diesel-fueled equipment. There is also the potential for air quality effects during periods when traffic detours will be required to reconfigure affected intersections.

Second Montlake Bridge Option

The effects of this option are described in the *Effects Common to the Entire Project Area* section above. The air quality effects of the Second Montlake Bridge option would be greater than those of the original 6-Lane Alternative because of construction of the second bridge. Additional vehicle trips associated with material transport and construction workers would increase the amount of vehicle exhaust. This option would also require greater usage of diesel-fueled equipment. This option would result in less delay and detour requirements than the 6 Lanes with Pacific Street Interchange option.

Eastside

The effects of construction of the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would be similar to the original 6-Lane Alternative.

Mitigation

The mitigation concepts for the three options described in this addendum would be the same as the original 6-Lane Alternative.

References

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PSRC. 2004b. *Air Quality Conformity Analysis, 2004 Destination 2030 Progress Report*. Puget Sound Regional Council, Seattle, WA. March 11, 2004.

U.S. EPA. 2003. *National Ambient Air Quality Standards*. http://www.epa.gov/air/criteria.html, last updated December 10, 2003, accessed on February 12, 2004. U.S. Environmental Protection Agency.

U.S. EPA. 2004. *AirData Website*. http://www.epa.gov/air/data/reports.html, report generated December 7, 2005.

Attachment 1

Model Output Files

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Pacific Pl and Montlake RUN: No Build 2016

DATE : 12/ 7/ 5
TIME : 15:46:24

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

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 5.0 PPM

LINK VARIABLES

	LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
		*	X1	Y1	X2	Y2	*	(M)	(DEG)			(G/MI)	(M)	(M)		(VEH)
1.	NBA	*	11.0	-304.8	11.0	.0	*	305.	360.	AG	3270.	14.9	.0	13.4		
2.	NBD	*	11.0	.0	11.0	304.8	*	305.	360.	AG	2530.	14.9	.0	13.4		
3.	SBA	*	-3.7	304.8	-3.7	.0	*	305.	180.	AG	4220.	14.9	.0	13.4		
4.	SBD	*	-3.7	.0	-3.7	-304.8	*	305.	180.	AG	2390.	14.9	.0	13.4		
5.	EBA	*	-304.8	-3.7	.0	-3.7	*	305.	90.	AG	850.	14.9	.0	13.4		
6.	WBD	*	.0	3.7	-304.8	3.7	*	305.	270.	AG	880.	14.9	.0	13.4		
7.	NBL	*	3.7	-7.3	3.7	-38.3	*	31.	180.	AG	271.	100.0	.0	7.3	.67	5.2
8.	NBT	*	11.0	-7.3	11.0	-761.2	*	754.	180.	AG	112.	100.0	.0	7.3	1.21	125.6
9.	SBT	*	-3.7	7.3	-3.7	145.5	*	138.	360.	AG	218.	100.0	.0	7.3	1.02	23.0
10.	SBR	*	-9.1	7.3	-9.1	17.6	*	10.	360.	AG	109.	100.0	.0	3.7	.22	1.7
11.	EBL	*	-7.3	-3.7	-54.2	-3.7	*	47.	270.	AG	271.	100.0	.0	7.3	.93	7.8

JOB: Pacific Pl and Montlake RUN: No Build 2016

DATE : 12/ 7/ 5
TIME : 15:46:24

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC	SIGNAL TYPE	ARRIVAL RATE

```
(gm/hr)

------------------------*-------------------------------------------------------------
---------------------
       7. NBL                 *      90       51       3.0       730       1442
89.24      2        3
       8. NBT                 *      90       21       3.0      2540       1476
89.24      2        3
       9. SBT                 *      90       41       3.0      1540       1540
89.24      2        3
      10. SBR                 *      90       41       3.0       150       1425
89.24      2        3
      11. EBL                 *      90       51       3.0       850       1212
89.24      2        3

       RECEPTOR LOCATIONS
       ------------------
                              *           COORDINATES (M)           *
         RECEPTOR             *      X          Y          Z        *
     -------------------------*-------------------------------------*
      1. Rcpt_1               *       -64.0       10.4        1.8   *
      2. Rcpt_2               *       -39.0       10.4        1.8   *
      3. Rcpt_3               *       -14.0       10.4        1.8   *
      4. Rcpt_4               *       -14.0       35.4        1.8   *
      5. Rcpt_5               *       -14.0       60.4        1.8   *
      6. Rcpt_6               *        17.7       60.4        1.8   *
      7. Rcpt_7               *        17.7       35.4        1.8   *
      8. Rcpt_8               *        17.7       10.4        1.8   *
      9. Rcpt_9               *        17.7      -10.4        1.8   *
     10. Rcpt_10              *        17.7      -35.4        1.8   *
     11. Rcpt_11              *        17.7      -60.4        1.8   *
     12. Rcpt_12              *       -10.4      -60.4        1.8   *
     13. Rcpt_13              *       -10.4      -35.4        1.8   *
     14. Rcpt_14              *       -10.4      -10.4        1.8   *
     15. Rcpt_15              *       -35.4      -10.4        1.8   *
     16. Rcpt_16              *       -60.4      -10.4        1.8   *
```


JOB: Pacific Pl and Montlake RUN: No Build 2016

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 5.-360.

```
 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16

------*-------------------------------------------------------------------------------
-------------------
   5.  *   5.4   6.1   9.2   9.2   8.9   7.1   7.2   7.3   7.5   7.7   7.8  10.2
10.6  12.5   7.8   6.1
  10.  *   5.7   6.6  10.0   9.8   9.6   6.2   6.3   6.3   6.3   6.4   6.6  10.4
10.6  12.7   8.4   6.5
  15.  *   6.0   7.0  10.2  10.0   9.9   5.6   5.6   5.7   5.7   5.8   5.9   9.9
```

9.9	12.0	8.8	6.9														
20.	*	6.3	7.2	9.9	9.8	9.8	5.3	5.3	5.3	5.4	5.4	5.5	9.2	9.3	11.1	8.9	7.2
25.	*	6.4	7.1	9.6	9.5	9.4	5.2	5.2	5.2	5.2	5.2	5.3	8.8	8.9	10.3	8.8	7.4
30.	*	6.4	7.1	9.3	9.1	9.1	5.2	5.2	5.2	5.1	5.2	5.2	8.6	8.5	9.5	8.9	7.4
35.	*	6.4	6.9	9.1	8.9	8.9	5.1	5.1	5.1	5.1	5.2	5.2	8.3	8.4	9.0	8.9	7.6
40.	*	6.4	6.9	8.8	8.6	8.6	5.1	5.1	5.1	5.1	5.2	5.2	8.0	8.3	8.6	8.7	7.7
45.	*	6.3	6.8	8.8	8.5	8.5	5.1	5.1	5.1	5.1	5.2	5.2	7.8	8.2	8.2	8.9	7.8
50.	*	6.3	6.8	8.6	8.3	8.3	5.1	5.1	5.1	5.1	5.1	5.1	7.6	8.2	8.0	8.7	7.8
55.	*	6.3	6.8	8.6	8.3	8.3	5.1	5.1	5.1	5.1	5.1	5.1	7.5	8.1	7.7	8.6	8.0
60.	*	6.4	6.8	8.5	8.2	8.2	5.1	5.1	5.1	5.1	5.1	5.1	7.4	8.0	7.6	8.5	8.2
65.	*	6.4	6.8	8.4	8.0	8.0	5.1	5.1	5.1	5.1	5.1	5.1	7.3	7.9	7.5	8.4	8.2
70.	*	6.2	6.7	8.3	7.9	7.9	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.9	7.6	8.1	8.3
75.	*	6.3	6.7	8.3	7.9	7.9	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.8	7.7	7.9	8.1
80.	*	6.4	6.8	8.3	7.9	7.9	5.0	5.0	5.0	5.0	5.0	5.0	7.2	7.7	7.6	7.6	8.0
85.	*	6.5	6.9	8.4	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.8	7.8	7.3	7.6
90.	*	6.9	7.0	8.4	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.8	7.9	7.2	7.2
95.	*	7.1	7.3	8.5	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.7	7.9	6.9	6.8
100.	*	7.4	7.1	8.4	7.9	7.9	5.0	5.0	5.0	5.0	5.0	5.0	7.2	7.5	7.8	6.9	6.5
105.	*	7.6	7.5	8.4	7.9	7.9	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.5	8.0	6.7	6.3
110.	*	7.7	7.6	8.4	7.9	7.9	5.0	5.0	5.0	5.0	5.0	5.0	7.3	7.5	7.9	6.6	6.3
115.	*	8.0	7.8	8.3	8.0	8.0	5.1	5.1	5.0	5.1	5.1	5.1	7.3	7.4	7.9	6.7	6.2
120.	*	7.9	7.9	8.6	8.2	8.2	5.1	5.1	5.1	5.1	5.1	5.1	7.4	7.5	8.0	6.6	6.2
125.	*	7.7	8.1	8.4	8.4	8.3	5.1	5.1	5.1	5.1	5.1	5.1	7.5	7.5	8.1	6.5	6.0
130.	*	7.7	8.1	8.7	8.3	8.3	5.1	5.1	5.1	5.1	5.1	5.1	7.5	7.5	8.1	6.5	6.0
135.	*	7.4	8.0	9.1	8.5	8.4	5.1	5.1	5.1	5.2	5.2	5.2	7.7	7.7	8.3	6.5	6.0
140.	*	7.2	8.0	9.2	8.5	8.6	5.1	5.1	5.1	5.2	5.2	5.2	7.8	7.8	8.4	6.4	6.1
145.	*	7.2	7.9	9.2	9.0	8.8	5.1	5.1	5.1	5.2	5.2	5.2	8.0	8.0	8.5	6.5	6.2
150.	*	7.1	7.9	9.4	9.3	9.2	5.2	5.2	5.1	5.2	5.2	5.2	8.2	8.2	8.6	6.7	6.2
155.	*	7.0	8.0	9.6	9.8	9.6	5.2	5.2	5.2	5.3	5.3	5.3	8.5	8.5	8.9	6.8	6.2
160.	*	6.9	8.0	9.9	10.1	9.8	5.4	5.3	5.3	5.4	5.4	5.4	8.9	8.9	9.1	6.8	6.1
165.	*	6.6	7.9	9.9	10.2	10.3	5.6	5.8	5.8	5.9	5.9	5.8	9.2	9.2	9.4	6.7	5.9
170.	*	6.4	7.6	9.7	9.9	10.2	6.4	6.6	6.7	6.7	6.7	6.7	9.2	9.3	9.5	6.5	5.7

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 175.  *   6.1   7.2   9.2   9.2   9.3   7.6   7.7   7.9   8.0   7.9   7.8   8.9
9.0   9.0   6.1   5.4
 180.  *   5.8   6.9   8.3   8.3   8.3   8.9   9.0   9.2   9.2   9.2   9.1   8.0
8.1   8.2   5.6   5.2
 185.  *   5.7   6.5   7.5   7.1   7.0   9.5   9.7  10.0  10.1  10.1   9.9   7.0
7.1   7.2   5.2   5.0
 190.  *   5.7   6.3   6.8   6.3   6.0   9.8   9.9  10.3  10.5  10.3  10.2   6.1
6.1   6.1   5.0   5.0
 195.  *   5.7   6.3   6.5   5.8   5.6   9.8   9.6  10.1  10.2  10.1  10.0   5.5
5.6   5.6   5.0   5.0
 200.  *   5.7   6.3   6.4   5.7   5.4   9.6   9.1   9.5   9.8   9.6   9.6   5.3
5.3   5.3   5.0   5.0
 205.  *   5.7   6.3   6.3   5.7   5.4   9.4   9.1   9.1   9.5   9.2   9.1   5.2
5.2   5.2   5.0   5.0
 210.  *   5.7   6.2   6.3   5.7   5.3   9.1   8.7   8.7   9.3   8.8   8.8   5.2
5.2   5.2   5.0   5.0
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 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16

------*-------------------------------------------------------------------------------
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 215.  *   5.8   6.3   6.4   5.7   5.4   9.0   8.8   8.2   9.0   8.5   8.5   5.1
5.1   5.1   5.0   5.0
 220.  *   5.8   6.2   6.4   5.6   5.4   8.8   8.8   8.1   8.9   8.3   8.3   5.1
5.1   5.1   5.0   5.0
 225.  *   5.9   6.3   6.5   5.6   5.3   8.8   8.9   7.9   8.7   8.1   8.1   5.1
5.1   5.1   5.0   5.0
 230.  *   6.0   6.3   6.6   5.5   5.4   8.6   8.8   7.9   8.5   7.9   7.9   5.1
5.1   5.1   5.0   5.0
 235.  *   6.0   6.2   6.6   5.5   5.4   8.5   8.8   7.9   8.5   7.8   7.8   5.1
5.1   5.1   5.0   5.0
 240.  *   6.0   6.1   6.6   5.5   5.4   8.4   8.7   8.0   8.3   7.8   7.7   5.1
5.1   5.2   5.1   5.1
 245.  *   6.1   6.2   6.6   5.5   5.4   8.3   8.6   8.3   8.2   7.7   7.6   5.1
5.1   5.2   5.1   5.1
 250.  *   6.3   6.3   6.7   5.5   5.4   8.2   8.3   8.6   8.1   7.7   7.5   5.0
5.0   5.1   5.1   5.1
 255.  *   6.4   6.4   6.7   5.5   5.3   8.1   8.3   9.0   8.3   7.7   7.5   5.0
5.0   5.3   5.2   5.2
 260.  *   6.5   6.5   6.7   5.4   5.2   8.0   8.3   9.1   8.5   7.8   7.5   5.0
5.0   5.6   5.5   5.5
 265.  *   6.3   6.4   6.5   5.3   5.1   8.0   8.1   9.1   9.0   8.1   7.6   5.0
5.0   6.1   5.9   5.8
 270.  *   6.1   6.1   6.1   5.2   5.0   7.9   8.1   9.0   9.5   8.4   7.7   5.0
5.2   6.6   6.2   6.1
 275.  *   5.8   5.8   5.8   5.0   5.0   7.8   7.9   8.5   9.8   8.4   7.8   5.1
5.3   7.1   6.6   6.3
 280.  *   5.5   5.5   5.5   5.0   5.0   7.8   7.8   8.1   9.6   8.5   7.7   5.2
5.4   7.4   6.8   6.4
 285.  *   5.2   5.2   5.2   5.0   5.0   7.8   7.8   7.9   9.3   8.7   7.8   5.3
5.5   7.5   7.0   6.4
 290.  *   5.1   5.1   5.1   5.0   5.0   7.8   7.8   7.8   9.0   8.9   7.9   5.4
5.5   7.4   7.0   6.3
 295.  *   5.1   5.1   5.1   5.0   5.0   7.9   7.9   7.9   8.9   8.9   8.0   5.5
5.7   7.3   7.0   6.2
 300.  *   5.1   5.1   5.1   5.0   5.0   8.0   8.0   8.0   8.6   9.1   8.2   5.5
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5.7   7.2   6.9   6.0
 305.  *   5.0   5.0   5.0   5.0   5.0   8.0   8.0   8.1   8.6   9.1   8.3   5.5
5.7   7.2   6.9   6.0
 310.  *   5.0   5.0   5.0   5.0   5.0   8.1   8.1   8.1   8.6   9.3   8.6   5.5
5.8   7.0   6.8   5.9
 315.  *   5.0   5.0   5.0   5.0   5.0   8.3   8.3   8.3   8.8   9.5   8.7   5.5
5.8   7.0   6.8   5.9
 320.  *   5.0   5.0   5.0   5.0   5.0   8.4   8.4   8.4   8.8   9.6   9.0   5.4
5.8   6.9   6.8   5.9
 325.  *   5.0   5.0   5.0   5.0   5.0   8.6   8.6   8.6   8.9   9.8   9.2   5.5
5.9   6.9   6.8   5.9
 330.  *   5.0   5.0   5.0   5.0   5.0   8.9   9.0   9.0   9.1   9.9   9.9   5.5
5.9   6.7   6.6   5.7
 335.  *   5.0   5.0   5.0   5.0   5.0   9.1   9.3   9.2   9.6  10.4  10.1   5.6
6.0   6.7   6.5   5.7
 340.  *   5.0   5.0   5.1   5.1   5.1   9.5   9.5   9.6   9.9  10.6  10.7   5.8
6.1   6.9   6.5   5.7
 345.  *   5.0   5.0   5.3   5.3   5.3   9.7   9.9   9.9  10.3  10.8  11.5   6.2
6.5   7.5   6.5   5.7
 350.  *   5.0   5.1   5.9   5.9   5.9   9.7   9.8  10.0  10.2  11.0  11.2   7.0
7.4   8.5   6.6   5.7
 355.  *   5.0   5.2   6.9   6.8   6.7   9.1   9.4   9.4   9.8  10.3  10.8   8.1
8.7  10.1   6.8   5.7
 360.  *   5.1   5.5   8.1   8.0   7.8   8.2   8.4   8.4   8.8   9.1   9.4   9.6
9.9  11.6   7.3   5.8

------*-------------------------------------------------------------------------------
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 MAX   *   8.0   8.1  10.2  10.2  10.3   9.8   9.9  10.3  10.5  11.0  11.5  10.4
10.6  12.7   8.9   8.3
 DEGR. *  115   125    15   165   165   190   190   190   190   350   345    10
10    10    20    70

 THE HIGHEST CONCENTRATION OF   12.70 PPM OCCURRED AT RECEPTOR REC14.
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2016

DATE : 12/ 7/ 5
TIME : 16:59:58

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

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 5.0 PPM

LINK VARIABLES

	LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
		*	X1	Y1	X2	Y2	*	(M)	(DEG)		(G/MI)	(M)	(M)	(VEH)		
1.	NBA	*	5.5	-304.8	5.5	.0	*	305.	360.	AG	1830.	14.9	.0	17.1		
2.	NBD	*	5.5	.0	5.5	304.8	*	305.	360.	AG	2970.	14.9	.0	17.1		
3.	SBA	*	-11.0	304.8	-11.0	.0	*	305.	180.	AG	2070.	14.9	.0	13.4		
4.	SBD	*	-11.0	.0	-11.0	-304.8	*	305.	180.	AG	1240.	14.9	.0	13.4		
5.	EBA	*	-304.8	-3.7	.0	-3.7	*	305.	90.	AG	1240.	14.9	.0	13.4		
6.	WBD	*	.0	7.3	-304.8	7.3	*	305.	270.	AG	1270.	14.9	.0	13.4		
7.	NBL	*	-1.8	-11.0	-1.8	-56.6	*	46.	180.	AG	178.	100.0	.0	3.7	.94	7.6
8.	NBT	*	5.5	-11.0	5.5	-161.7	*	151.	180.	AG	519.	100.0	.0	11.0	1.08	25.1
9.	SBT	*	-12.8	7.3	-12.8	37.3	*	30.	360.	AG	455.	100.0	.0	11.0	.62	5.0
10.	SBL	*	-3.7	7.3	-3.7	282.0	*	275.	360.	AG	314.	100.0	.0	7.3	1.13	45.8
11.	EBR	*	-14.6	-9.1	-43.3	-9.1	*	29.	270.	AG	114.	100.0	.0	3.7	.56	4.8
12.	EBT	*	-14.6	-3.7	-287.3	-3.7	*	273.	270.	AG	356.	100.0	.0	7.3	1.19	45.4
13.	WBA	*	304.8	7.3	.0	7.3	*	305.	270.	AG	2680.	14.9	.0	13.4		
14.	EBD	*	.0	-3.7	304.8	-3.7	*	305.	90.	AG	2340.	14.9	.0	13.4		
15.	WBL	*	14.6	1.8	164.1	1.8	*	150.	90.	AG	221.	100.0	.0	3.7	2.05	24.9
16.	WBT	*	14.6	7.3	52.5	7.3	*	38.	90.	AG	314.	100.0	.0	7.3	.75	6.3
17.	WBR	*	14.6	14.6	142.4	14.6	*	128.	90.	AG	144.	100.0	.0	7.3	1.02	21.3
18.	NBR	*	12.8	-11.0	12.8	-47.1	*	36.	180.	AG	152.	100.0	.0	3.7	.77	6.0

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2016

DATE : 12/ 7/ 5
TIME : 16:59:58

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. NBL	90	67	3.0	310	1652	89.24	2	3
8. NBT	90	65	3.0	1140	1582	89.24	2	3
9. SBT	90	57	3.0	950	1639	89.24	2	3
10. SBL	90	59	3.0	1120	1717	89.24	2	3
11. EBR	90	43	3.0	400	1531	89.24	2	3
12. EBT	90	67	3.0	840	1770	89.24	2	3
15. WBL	90	83	3.0	80	1770	89.24	2	3
16. WBT	90	59	3.0	770	1770	89.24	2	3
17. WBR	90	27	3.0	1830	1394	89.24	2	3
18. NBR	90	57	3.0	380	1583	89.24	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-71.3	17.7	1.8
2. Rcpt_2	-46.3	17.7	1.8
3. Rcpt_3	-21.3	17.7	1.8
4. Rcpt_4	-21.3	42.7	1.8
5. Rcpt_5	-21.3	67.7	1.8
6. Rcpt_6	14.0	71.3	1.8
7. Rcpt_7	14.0	46.3	1.8
8. Rcpt_8	14.0	21.3	1.8
9. Rcpt_9	17.7	-10.4	1.8
10. Rcpt_10	17.7	-35.4	1.8
11. Rcpt_11	17.7	-60.4	1.8
12. Rcpt_12	-17.7	-64.0	1.8
13. Rcpt_13	-17.7	-39.0	1.8
14. Rcpt_14	-17.7	-14.0	1.8
15. Rcpt_15	-42.7	-14.0	1.8
16. Rcpt_16	-67.7	-14.0	1.8
17. Rcpt_17	39.0	21.3	1.8
18. Rcpt_18	64.0	21.3	1.8
19. Rcpt_19	42.7	-10.4	1.8

20. Rcpt_20 * 67.7 -10.4 1.8 *

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2016

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
5.	*	5.3	5.9	8.2	7.9	7.7	7.0	7.2	7.3	9.3	8.0	7.9	9.5	10.0	11.8	8.1	7.1	5.1	5.0	8.3	7.6
10.	*	5.5	6.3	9.2	8.4	8.3	6.1	6.3	6.3	8.8	7.2	7.0	9.5	9.8	12.0	8.7	7.6	5.0	5.0	8.1	7.6
15.	*	5.8	6.6	9.5	8.6	8.6	5.6	5.6	5.6	8.4	6.8	6.4	9.4	9.4	11.7	9.1	7.9	5.0	5.0	8.1	7.6
20.	*	6.1	6.8	9.6	8.5	8.5	5.3	5.3	5.3	8.3	6.7	6.3	9.1	8.9	10.8	9.3	8.0	5.0	5.0	8.0	7.6
25.	*	6.2	6.8	9.5	8.3	8.3	5.2	5.2	5.2	8.2	6.6	6.3	9.1	8.6	10.0	9.3	8.1	5.0	5.0	8.0	7.6
30.	*	6.2	6.8	9.4	8.0	8.0	5.2	5.2	5.2	8.3	6.7	6.2	9.1	8.7	9.5	9.4	8.2	5.0	5.0	8.0	7.7
35.	*	6.2	6.6	9.4	7.9	7.9	5.2	5.2	5.2	8.3	6.8	6.2	9.1	8.7	9.0	9.5	8.2	5.0	5.0	7.9	7.7
40.	*	6.2	6.5	9.2	7.7	7.7	5.1	5.1	5.1	8.4	6.8	6.1	9.2	8.8	8.8	9.6	8.3	5.0	5.0	7.9	7.8
45.	*	6.2	6.6	9.1	7.6	7.6	5.1	5.1	5.1	8.7	6.7	6.1	9.0	9.0	8.6	9.5	8.4	5.0	5.0	8.2	8.1
50.	*	6.0	6.6	8.9	7.4	7.4	5.1	5.1	5.1	8.9	6.8	6.2	8.9	9.5	8.7	9.4	8.6	5.0	5.0	8.3	8.3
55.	*	6.0	6.7	8.9	7.4	7.4	5.1	5.1	5.1	9.0	6.8	6.3	8.7	9.4	8.9	9.8	8.7	5.0	5.0	8.5	8.5
60.	*	6.1	6.8	8.7	7.3	7.3	5.1	5.1	5.1	9.1	6.9	6.3	8.7	9.6	9.0	9.3	8.5	5.0	5.0	8.6	8.5
65.	*	6.1	6.8	8.6	7.3	7.3	5.1	5.1	5.1	9.3	6.8	6.1	8.6	9.5	9.6	9.4	9.2	5.0	5.0	9.0	8.9
70.	*	6.2	6.7	8.6	7.2	7.2	5.0	5.0	5.0	9.5	6.8	6.0	8.2	9.3	10.0	9.7	9.4	5.0	5.0	9.2	9.2
75.	*	6.4	7.0	8.8	7.2	7.2	5.0	5.0	5.2	9.7	6.8	5.8	8.0	9.1	10.2	10.0	9.6	5.2	5.2	9.6	9.3
80.	*	7.1	7.7	9.4	7.2	7.2	5.0	5.0	5.6	9.8	6.3	5.5	7.5	8.7	10.4	9.9	9.7	5.5	5.4	9.5	9.4
85.	*	7.7	8.3	10.4	7.5	7.3	5.0	5.1	6.2	9.3	5.9	5.3	7.3	8.3	10.0	9.4	9.2	6.2	5.9	9.1	8.8
90.	*	8.4	9.3	11.5	7.8	7.4	5.1	5.3	7.1	8.4	5.5	5.1	7.1	7.9	9.2	8.7	8.5	6.9	6.8	8.2	8.1
95.	*	9.1	9.7	12.4	8.3	7.6	5.2	5.7	8.1	7.2	5.2	5.0	7.0	7.6	8.4	7.5	7.3	7.7	7.6	7.1	7.1
100.	*	9.1	9.9	12.4	8.8	7.7	5.5	6.2	8.7	6.3	5.0	5.0	7.0	7.4	7.9	6.8	6.9	8.4	8.2	6.3	6.1

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 105.  *   8.8   9.5  12.2   9.3   8.2   5.7   6.5   8.9   5.6   5.0   5.0   7.0
7.4   7.7   6.5   6.2   8.6   8.5   5.5   5.5
 110.  *   8.3   8.9  11.6   9.7   8.3   6.0   6.7   9.0   5.3   5.0   5.0   7.1
7.5   7.7   6.5   6.2   8.5   8.5   5.3   5.3
 115.  *   8.2   8.6  10.9   9.9   8.7   6.2   6.7   9.1   5.2   5.0   5.0   7.1
7.4   7.6   6.5   6.1   8.5   8.3   5.2   5.2
 120.  *   8.0   8.1  10.6  10.1   8.7   6.2   6.7   8.9   5.2   5.0   5.0   7.1
7.4   7.6   6.6   6.1   8.2   8.1   5.2   5.2
 125.  *   8.0   8.0  10.2  10.1   8.8   6.3   6.8   8.8   5.1   5.0   5.0   7.2
7.5   7.7   6.5   6.1   8.2   8.0   5.1   5.1
 130.  *   8.0   8.3   9.8  10.1   8.9   6.4   6.7   8.6   5.1   5.0   5.0   7.3
7.5   7.7   6.4   6.0   8.1   7.8   5.1   5.1
 135.  *   7.9   8.2   9.7  10.3   9.0   6.4   6.8   8.5   5.1   5.0   5.0   7.3
7.5   7.7   6.5   6.0   8.0   7.7   5.1   5.1
 140.  *   7.7   8.2   9.8  10.0   9.0   6.2   6.8   8.4   5.1   5.0   5.0   7.5
7.6   7.9   6.5   6.0   8.0   7.6   5.1   5.1
 145.  *   7.6   8.2   9.8  10.2   9.1   6.3   6.9   8.2   5.1   5.0   5.0   7.6
7.7   7.9   6.5   6.0   8.0   7.5   5.1   5.1
 150.  *   7.6   8.2   9.7  10.5   9.3   6.4   6.9   8.1   5.1   5.0   5.0   7.7
7.9   8.1   6.5   6.0   8.0   7.4   5.1   5.1
 155.  *   7.5   8.2   9.9  10.4   9.7   6.4   6.9   8.1   5.0   5.0   5.0   7.8
7.9   8.2   6.5   5.9   7.9   7.3   5.0   5.0
 160.  *   7.2   8.0   9.7  10.6   9.6   6.4   6.9   8.3   5.0   5.0   5.0   7.9
8.0   8.3   6.4   5.8   7.9   7.3   5.0   5.0
 165.  *   7.0   7.8   9.6  10.4   9.7   6.7   7.2   8.5   5.2   5.2   5.2   7.9
8.1   8.3   6.1   5.5   7.9   7.3   5.0   5.0
 170.  *   6.8   7.4   9.2   9.7   9.6   7.3   7.9   8.9   5.7   5.5   5.5   7.7
7.9   8.2   5.9   5.3   7.8   7.2   5.0   5.0
 175.  *   6.7   7.1   8.7   8.9   8.7   8.4   8.7  10.0   6.5   6.1   6.0   7.1
7.5   7.6   5.6   5.2   8.1   7.3   5.1   5.0
 180.  *   6.5   6.7   7.8   8.1   8.0   9.5   9.7  10.9   7.5   7.0   6.9   6.6
6.9   6.9   5.2   5.0   8.4   7.4   5.3   5.0
 185.  *   6.5   6.6   7.3   7.1   7.0   9.9  10.4  11.4   8.4   8.0   7.7   6.1
6.1   6.2   5.1   5.0   8.8   7.7   5.6   5.1
 190.  *   6.5   6.5   6.9   6.6   6.2  10.1  10.3  11.6   9.2   8.6   8.3   5.6
5.6   5.6   5.0   5.0   9.1   7.8   6.1   5.4
 195.  *   6.5   6.5   6.7   6.1   6.0  10.0   9.7  10.8   9.5   8.9   8.6   5.3
5.3   5.3   5.0   5.0   9.7   8.2   6.3   5.6
 200.  *   6.5   6.5   6.6   6.0   5.7   9.9   9.5  10.2   9.3   8.9   8.5   5.2
5.2   5.2   5.0   5.0  10.0   8.4   6.7   5.9
 205.  *   6.5   6.5   6.6   5.9   5.7   9.7   9.5   9.4   9.3   8.8   8.4   5.1
5.1   5.1   5.0   5.0  10.0   8.6   6.6   6.0
 210.  *   6.6   6.6   6.7   5.9   5.7   9.5   9.3   9.2   9.1   8.6   8.2   5.1
5.1   5.1   5.0   5.0   9.9   8.8   6.8   6.2
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JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2016

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 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

------*-------------------------------------------------------------------------------
-----------------------------------------
 215.  *   6.6   6.6   6.7   5.9   5.7   9.3   9.5   8.9   8.9   8.5   8.0   5.1
5.1   5.1   5.0   5.0   9.8   9.1   6.8   6.3
 220.  *   6.6   6.6   6.7   5.9   5.7   9.1   9.5   8.8   8.8   8.5   7.9   5.1
5.1   5.1   5.0   5.0   9.9   9.3   6.8   6.2
 225.  *   6.7   6.7   6.7   6.0   5.7   8.8   9.5   8.8   8.6   8.4   7.7   5.1
5.1   5.1   5.0   5.0   9.5   9.4   6.8   6.2
 230.  *   6.8   6.8   6.8   6.0   5.7   8.6   9.5   9.0   8.3   8.1   7.5   5.1
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5.1   5.1   5.0   5.0   9.3   9.6   6.8   6.2
 235.  *   6.8   6.8   6.8   6.1   5.8   8.5   9.3   9.3   8.3   8.1   7.5   5.0
5.0   5.0   5.0   5.0   9.3   9.6   6.7   6.3
 240.  *   7.1   7.1   7.1   6.2   5.9   8.4   9.3   9.6   8.2   8.1   7.5   5.0
5.0   5.0   5.0   5.0   9.2   9.7   6.8   6.3
 245.  *   7.1   7.1   7.1   6.2   5.9   8.3   9.2   9.8   8.0   7.9   7.3   5.0
5.0   5.0   5.0   5.0   9.1   9.7   6.9   6.4
 250.  *   7.3   7.3   7.3   6.2   5.7   8.2   9.1  10.0   8.1   7.9   7.3   5.0
5.0   5.0   5.0   5.0   9.4   9.8   6.8   6.5
 255.  *   7.4   7.4   7.5   6.1   5.5   8.1   8.9  10.1   8.1   7.9   7.3   5.0
5.0   5.2   5.2   5.2   9.4   9.7   7.0   6.8
 260.  *   7.2   7.3   7.3   5.8   5.3   7.9   8.4  10.2   8.6   7.9   7.3   5.0
5.0   5.6   5.6   5.5   9.2   9.3   7.5   7.4
 265.  *   6.8   6.9   7.0   5.5   5.2   7.7   8.1   9.9   9.2   8.1   7.3   5.0
5.1   6.2   6.1   6.1   8.7   8.8   8.4   8.1
 270.  *   6.2   6.3   6.4   5.3   5.0   7.5   7.8   9.3   9.9   8.6   7.5   5.0
5.4   7.1   6.9   6.7   8.1   8.0   9.4   9.0
 275.  *   5.7   5.7   5.7   5.0   5.0   7.5   7.5   8.8  10.3   8.8   7.8   5.2
5.6   7.8   7.5   7.4   7.5   7.1   9.5   9.8
 280.  *   5.3   5.3   5.4   5.0   5.0   7.5   7.5   8.4  10.0   9.2   8.0   5.4
6.0   8.3   7.8   7.8   7.0   6.7   9.8  10.1
 285.  *   5.1   5.1   5.1   5.0   5.0   7.5   7.5   8.2   9.7   9.3   8.2   5.7
6.3   8.5   8.1   7.8   6.7   6.2   9.8  10.3
 290.  *   5.0   5.0   5.0   5.0   5.0   7.5   7.5   8.1   9.2   9.4   8.4   5.8
6.3   8.2   7.8   7.8   6.5   6.2   9.8  10.4
 295.  *   5.0   5.0   5.0   5.0   5.0   7.5   7.5   8.0   8.9   9.3   8.4   5.8
6.3   8.0   7.6   7.6   6.6   6.1   9.7  10.3
 300.  *   5.0   5.0   5.0   5.0   5.0   7.6   7.6   8.0   9.2   9.5   8.6   5.8
6.2   7.8   7.4   7.4   6.6   6.1  10.1  10.3
 305.  *   5.0   5.0   5.0   5.0   5.0   7.7   7.7   8.0   9.4   9.5   8.6   5.8
6.1   7.7   7.3   7.3   6.5   6.1  10.1  10.1
 310.  *   5.0   5.0   5.0   5.0   5.0   7.8   7.8   8.0   9.7   9.5   8.7   5.9
6.2   7.6   7.1   7.1   6.5   6.1  10.3   9.9
 315.  *   5.0   5.0   5.0   5.0   5.0   7.9   7.9   8.0   9.9   9.6   8.9   5.9
6.2   7.5   7.0   7.0   6.6   6.2  10.3   9.6
 320.  *   5.0   5.0   5.0   5.0   5.0   8.1   8.1   8.1  10.1   9.6   8.9   5.8
6.3   7.4   6.9   6.9   6.6   6.2  10.1   9.3
 325.  *   5.0   5.0   5.0   5.0   5.0   8.3   8.3   8.3  10.2   9.7   9.2   5.8
6.3   7.3   6.9   6.9   6.7   6.2   9.9   9.1
 330.  *   5.0   5.0   5.0   5.0   5.0   8.5   8.5   8.5  10.3  10.0   9.6   5.8
6.2   7.3   6.9   6.9   6.9   6.2   9.9   9.0
 335.  *   5.0   5.0   5.0   5.0   5.0   8.8   8.8   8.8  10.4  10.0   9.9   5.8
6.1   7.3   6.8   6.8   6.9   6.2  10.1   8.9
 340.  *   5.0   5.0   5.1   5.0   5.0   9.2   9.2   9.2  10.6  10.4  10.1   5.9
6.2   7.4   6.9   6.8   7.0   6.2  10.1   8.8
 345.  *   5.0   5.0   5.1   5.1   5.1   9.5   9.5   9.6  11.1  10.4  10.4   6.2
6.6   7.8   6.9   6.8   6.8   5.9   9.9   8.5
 350.  *   5.0   5.0   5.5   5.5   5.5   9.5   9.5   9.6  11.2  10.3  10.5   6.9
7.2   8.5   6.9   6.8   6.4   5.6   9.5   8.2
 355.  *   5.0   5.1   6.3   6.1   6.0   9.0   9.1   9.3  10.7   9.7   9.8   7.8
8.1   9.6   7.2   6.7   6.0   5.4   9.0   8.0
 360.  *   5.0   5.4   7.3   7.1   6.8   8.1   8.2   8.4  10.2   8.9   8.8   8.7
9.2  10.9   7.6   6.8   5.5   5.1   8.8   7.8

------*-------------------------------------------------------------------------------
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 MAX   *   9.1   9.9  12.4  10.6   9.7  10.1  10.4  11.6  11.2  10.4  10.5   9.5
10.0  12.0  10.0   9.7  10.0   9.8  10.3  10.4
 DEGR. *   95   100   100   160   155   190   185   190   350   340   350     5
5    10    75    80   200   250   310   290
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THE HIGHEST CONCENTRATION OF 12.40 PPM OCCURRED AT RECEPTOR REC3 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Pacific Pl and Montlake RUN: No Build 2030

DATE : 12/ 7/ 5
TIME : 15:58:13

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

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 5.0 PPM

LINK VARIABLES

	LINK DESCRIPTION		LINK COORDINATES (M)					LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
			X1	Y1	X2	Y2		(M)	(DEG)			(G/MI)	(M)	(M)		(VEH)
1.	NBA	*	11.0	-304.8	11.0	.0	*	305.	360.	AG	3270.	11.1	.0	13.4		
2.	NBD	*	11.0	.0	11.0	304.8	*	305.	360.	AG	2530.	11.1	.0	13.4		
3.	SBA	*	-3.7	304.8	-3.7	.0	*	305.	180.	AG	1690.	11.1	.0	13.4		
4.	SBD	*	-3.7	.0	-3.7	-304.8	*	305.	180.	AG	2390.	11.1	.0	13.4		
5.	EBA	*	-304.8	-3.7	.0	-3.7	*	305.	90.	AG	850.	11.1	.0	13.4		
6.	WBD	*	.0	3.7	-304.8	3.7	*	305.	270.	AG	930.	11.1	.0	13.4		
7.	NBL	*	3.7	-7.3	3.7	-38.3	*	31.	180.	AG	207.	100.0	.0	7.3	.67	5.2
8.	NBT	*	11.0	-7.3	11.0	-761.2	*	754.	180.	AG	85.	100.0	.0	7.3	1.21	125.6
9.	SBT	*	-3.7	7.3	-3.7	145.5	*	138.	360.	AG	166.	100.0	.0	7.3	1.02	23.0
10.	SBR	*	-9.1	7.3	-9.1	17.6	*	10.	360.	AG	83.	100.0	.0	3.7	.22	1.7
11.	EBL	*	-7.3	-3.7	-54.2	-3.7	*	47.	270.	AG	207.	100.0	.0	7.3	.93	7.8

JOB: Pacific Pl and Montlake RUN: No Build 2030

DATE : 12/ 7/ 5
TIME : 15:58:13

ADDITIONAL QUEUE LINK PARAMETERS

	LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC	SIGNAL TYPE	ARRIVAL RATE

(gm/hr)

7.	NBL	90	51	3.0	730	1442	67.95	2	3
8.	NBT	90	21	3.0	2540	1476	67.95	2	3
9.	SBT	90	41	3.0	1540	1540	67.95	2	3
10.	SBR	90	41	3.0	150	1425	67.95	2	3
11.	EBL	90	51	3.0	850	1212	67.95	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-64.0	10.4	1.8
2. Rcpt_2	-39.0	10.4	1.8
3. Rcpt_3	-14.0	10.4	1.8
4. Rcpt_4	-14.0	35.4	1.8
5. Rcpt_5	-14.0	60.4	1.8
6. Rcpt_6	17.7	60.4	1.8
7. Rcpt_7	17.7	35.4	1.8
8. Rcpt_8	17.7	10.4	1.8
9. Rcpt_9	17.7	-10.4	1.8
10. Rcpt_10	17.7	-35.4	1.8
11. Rcpt_11	17.7	-60.4	1.8
12. Rcpt_12	-10.4	-60.4	1.8
13. Rcpt_13	-10.4	-35.4	1.8
14. Rcpt_14	-10.4	-10.4	1.8
15. Rcpt_15	-35.4	-10.4	1.8
16. Rcpt_16	-60.4	-10.4	1.8

PAGE 3

JOB: Pacific Pl and Montlake RUN: No Build 2030

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16
5.	5.2	5.5	6.9	6.8	6.7	6.4	6.4	6.4	6.7	6.8	7.0	8.2	8.1	9.1	6.7	5.7
10.	5.2	5.7	7.3	7.2	7.0	5.8	5.9	5.9	6.0	6.0	6.2	8.3	8.3	9.1	7.1	5.9
15.	5.4	6.0	7.3	7.3	7.3	5.4	5.4	5.4	5.5	5.5	5.5	8.2				

8.2	8.9	7.1	6.1														
20.	*	5.6	6.0	7.3	7.2	7.2	5.3	5.3	5.3	5.2	5.3	5.3	8.1	7.9	8.4	7.4	6.4
25.	*	5.7	6.0	7.2	7.1	7.1	5.2	5.2	5.2	5.2	5.2	5.2	7.8	7.6	8.1	7.4	6.5
30.	*	5.6	6.1	7.1	7.0	7.0	5.1	5.1	5.1	5.1	5.1	5.2	7.6	7.5	7.8	7.4	6.6
35.	*	5.7	5.9	7.0	6.8	6.8	5.1	5.1	5.1	5.1	5.1	5.1	7.5	7.6	7.6	7.4	6.6
40.	*	5.7	5.9	7.0	6.8	6.8	5.1	5.1	5.1	5.1	5.1	5.1	7.2	7.4	7.3	7.4	6.7
45.	*	5.7	5.9	6.9	6.7	6.7	5.1	5.1	5.1	5.1	5.1	5.1	7.1	7.4	7.2	7.3	6.8
50.	*	5.7	5.9	6.7	6.5	6.5	5.1	5.1	5.1	5.1	5.1	5.1	6.9	7.2	7.0	7.4	6.9
55.	*	5.7	5.9	6.7	6.5	6.5	5.1	5.1	5.1	5.1	5.1	5.1	6.7	7.1	7.1	7.4	7.0
60.	*	5.7	5.8	6.7	6.5	6.5	5.1	5.1	5.1	5.1	5.1	5.1	6.7	7.1	6.7	7.2	7.1
65.	*	5.8	5.9	6.6	6.4	6.4	5.0	5.0	5.0	5.0	5.1	5.1	6.6	7.0	6.9	7.2	7.2
70.	*	5.8	5.9	6.6	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.6	7.0	6.8	7.2	7.2
75.	*	5.6	5.9	6.7	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.6	7.0	6.9	6.9	7.1
80.	*	5.7	6.0	6.7	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.6	7.0	7.0	6.9	6.8
85.	*	5.8	6.1	6.7	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.7	7.1	7.2	6.6	6.9
90.	*	6.2	6.1	6.7	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.7	7.0	7.1	6.6	6.6
95.	*	6.4	6.2	6.7	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.7	7.0	7.2	6.4	6.4
100.	*	6.7	6.5	6.7	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.6	6.8	7.1	6.3	6.1
105.	*	6.9	6.5	6.8	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.6	6.8	7.0	6.2	6.0
110.	*	7.1	6.7	6.8	6.4	6.4	5.0	5.0	5.0	5.0	5.0	5.0	6.6	6.7	7.0	6.2	5.9
115.	*	7.1	7.0	6.8	6.4	6.4	5.0	5.0	5.0	5.1	5.1	5.1	6.6	6.7	7.1	6.2	6.0
120.	*	7.1	7.2	7.0	6.5	6.5	5.1	5.1	5.0	5.1	5.1	5.1	6.7	6.7	7.1	6.2	5.9
125.	*	7.1	7.3	6.9	6.5	6.5	5.1	5.1	5.1	5.1	5.1	5.1	6.8	6.8	7.3	6.1	5.8
130.	*	7.0	7.4	7.2	6.6	6.5	5.1	5.1	5.1	5.1	5.1	5.1	6.9	6.9	7.3	6.2	5.8
135.	*	6.9	7.4	7.4	6.8	6.7	5.1	5.1	5.1	5.1	5.1	5.1	7.1	7.1	7.5	6.2	5.8
140.	*	6.8	7.3	7.6	6.8	6.8	5.1	5.1	5.1	5.1	5.1	5.1	7.1	7.1	7.5	6.1	5.8
145.	*	6.7	7.3	7.8	7.2	6.8	5.1	5.1	5.1	5.1	5.1	5.1	7.3	7.3	7.7	6.1	5.9
150.	*	6.6	7.0	8.0	7.3	6.9	5.1	5.1	5.1	5.2	5.2	5.2	7.4	7.4	7.7	6.2	5.9
155.	*	6.5	7.1	8.2	7.5	7.4	5.1	5.1	5.2	5.2	5.2	5.2	7.6	7.6	7.9	6.3	5.9
160.	*	6.5	7.1	8.4	8.0	7.6	5.3	5.3	5.3	5.3	5.3	5.3	7.8	7.8	8.0	6.3	5.9
165.	*	6.2	7.0	8.5	8.1	7.9	5.5	5.5	5.6	5.7	5.7	5.7	8.1	8.2	8.3	6.3	5.7
170.	*	6.0	6.9	8.4	8.1	8.0	6.1	6.1	6.2	6.3	6.3	6.3	8.2	8.2	8.3	6.0	5.5

175.	*	5.8	6.6	8.1	7.8	7.6	6.9	6.9	7.1	7.2	7.2	7.1	7.9	7.9	8.0	5.8	5.3
180.	*	5.7	6.4	7.6	7.2	7.0	7.8	7.9	8.1	8.1	8.1	8.1	7.3	7.4	7.4	5.4	5.1
185.	*	5.5	6.0	6.8	6.4	6.5	8.3	8.4	8.7	8.8	8.8	8.7	6.5	6.6	6.6	5.1	5.0
190.	*	5.5	5.9	6.3	5.9	5.8	8.4	8.6	9.0	9.0	8.9	8.9	5.8	5.8	5.9	5.0	5.0
195.	*	5.5	5.9	6.0	5.6	5.5	8.2	8.3	8.8	8.9	8.8	8.8	5.4	5.4	5.4	5.0	5.0
200.	*	5.5	5.9	5.9	5.5	5.4	8.0	7.9	8.4	8.6	8.4	8.4	5.2	5.2	5.2	5.0	5.0
205.	*	5.5	5.9	5.9	5.5	5.3	7.7	7.8	8.0	8.4	8.1	8.1	5.2	5.2	5.2	5.0	5.0
210.	*	5.5	5.9	5.9	5.5	5.3	7.5	7.5	7.8	8.2	7.9	7.9	5.1	5.1	5.1	5.0	5.0

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16
215.	*	5.7	6.1	6.1	5.5	5.3	7.5	7.2	7.5	7.9	7.6	7.6	5.1	5.1	5.1	5.0	5.0
220.	*	5.7	6.0	6.2	5.5	5.2	7.3	7.2	7.2	7.8	7.4	7.4	5.1	5.1	5.1	5.0	5.0
225.	*	5.7	6.0	6.2	5.4	5.2	7.1	7.3	7.1	7.8	7.3	7.3	5.1	5.1	5.1	5.0	5.0
230.	*	5.7	5.9	6.2	5.5	5.2	7.1	7.3	7.1	7.6	7.2	7.2	5.1	5.1	5.1	5.0	5.0
235.	*	5.8	6.0	6.3	5.5	5.2	7.0	7.3	7.2	7.5	7.1	7.1	5.1	5.1	5.1	5.0	5.0
240.	*	5.8	5.9	6.3	5.4	5.2	6.8	7.2	7.1	7.4	7.0	7.0	5.1	5.1	5.1	5.0	5.0
245.	*	5.9	6.0	6.3	5.4	5.2	6.8	7.1	7.1	7.4	7.1	7.0	5.0	5.0	5.1	5.1	5.1
250.	*	6.0	6.0	6.3	5.4	5.2	6.8	7.1	7.4	7.3	7.0	6.9	5.0	5.0	5.1	5.1	5.1
255.	*	6.1	6.1	6.3	5.4	5.2	6.8	7.0	7.6	7.4	7.0	6.8	5.0	5.0	5.1	5.1	5.1
260.	*	6.2	6.2	6.4	5.3	5.2	6.8	7.0	7.6	7.7	7.0	6.8	5.0	5.0	5.5	5.4	5.4
265.	*	6.0	6.1	6.2	5.2	5.0	6.7	6.9	7.4	8.0	7.2	6.9	5.0	5.0	5.8	5.6	5.5
270.	*	5.8	5.9	5.9	5.2	5.0	6.7	6.9	7.5	8.2	7.4	6.9	5.0	5.2	6.3	6.0	5.8
275.	*	5.6	5.6	5.6	5.0	5.0	6.6	6.6	7.1	8.5	7.5	7.0	5.0	5.2	6.6	6.3	6.0
280.	*	5.4	5.4	5.4	5.0	5.0	6.6	6.6	7.0	8.3	7.6	7.0	5.2	5.4	6.8	6.4	6.1
285.	*	5.2	5.2	5.2	5.0	5.0	6.6	6.6	6.7	8.2	7.7	7.0	5.2	5.4	6.9	6.5	6.1
290.	*	5.1	5.1	5.1	5.0	5.0	6.6	6.6	6.6	7.9	7.7	7.1	5.2	5.4	6.9	6.5	6.0
295.	*	5.1	5.1	5.1	5.0	5.0	6.6	6.6	6.6	7.6	8.0	7.2	5.2	5.5	6.8	6.5	5.9
300.	*	5.0	5.0	5.0	5.0	5.0	6.6	6.6	6.7	7.3	8.0	7.2	5.3				

```
5.6   6.6   6.5   5.8
 305.  *   5.0   5.0   5.0   5.0   5.0   6.7   6.7   6.7   7.3   8.2   7.4   5.3
5.7   6.6   6.4   5.7
 310.  *   5.0   5.0   5.0   5.0   5.0   6.8   6.8   6.8   7.0   8.2   7.5   5.3
5.7   6.6   6.4   5.7
 315.  *   5.0   5.0   5.0   5.0   5.0   6.8   6.8   6.8   7.2   8.3   7.8   5.4
5.7   6.5   6.4   5.7
 320.  *   5.0   5.0   5.0   5.0   5.0   6.9   6.9   6.9   7.3   8.2   7.9   5.4
5.8   6.5   6.4   5.7
 325.  *   5.0   5.0   5.0   5.0   5.0   7.1   7.1   7.1   7.2   8.3   8.1   5.4
5.8   6.4   6.3   5.6
 330.  *   5.0   5.0   5.0   5.0   5.0   7.2   7.3   7.3   7.4   8.4   8.5   5.5
5.6   6.4   6.3   5.6
 335.  *   5.0   5.0   5.0   5.0   5.0   7.3   7.4   7.4   7.7   8.4   8.8   5.5
5.6   6.3   6.2   5.6
 340.  *   5.0   5.0   5.0   5.0   5.0   7.5   7.5   7.6   7.8   8.4   9.1   5.6
5.7   6.4   6.2   5.6
 345.  *   5.0   5.0   5.1   5.1   5.1   7.7   7.9   7.9   8.2   8.6   9.1   5.8
6.0   6.5   6.1   5.5
 350.  *   5.0   5.0   5.4   5.4   5.3   7.8   7.8   7.9   8.1   8.6   8.9   6.3
6.3   7.1   6.1   5.5
 355.  *   5.0   5.1   5.8   5.8   5.6   7.5   7.6   7.7   7.8   8.1   8.5   6.9
6.9   7.7   6.2   5.5
 360.  *   5.0   5.2   6.3   6.3   6.1   6.9   7.2   7.2   7.3   7.7   7.9   7.6
7.6   8.6   6.5   5.6

------*-------------------------------------------------------------------------------
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 MAX   *   7.1   7.4   8.5   8.1   8.0   8.4   8.6   9.0   9.0   8.9   9.1   8.3
8.3   9.1   7.4   7.2
 DEGR. *  110   130   165   165   170   190   190   190   190   190   340    10
10     5    20    65

 THE HIGHEST CONCENTRATION OF    9.10 PPM OCCURRED AT RECEPTOR REC14.
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CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2030

DATE : 12/ 7/ 5
TIME : 17: 1:16

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

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 5.0 PPM

LINK VARIABLES

	LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
		*	X1	Y1	X2	Y2	*	(M)	(DEG)			(G/MI)	(M)	(M)		(VEH)
1.	NBA	*	5.5	-304.8	5.5	.0	*	305.	360.	AG	1830.	11.1	.0	17.1		
2.	NBD	*	5.5	.0	5.5	304.8	*	305.	360.	AG	2970.	11.1	.0	17.1		
3.	SBA	*	-11.0	304.8	-11.0	.0	*	305.	180.	AG	2070.	11.1	.0	13.4		
4.	SBD	*	-11.0	.0	-11.0	-304.8	*	305.	180.	AG	1240.	11.1	.0	13.4		
5.	EBA	*	-304.8	-3.7	.0	-3.7	*	305.	90.	AG	1240.	11.1	.0	13.4		
6.	WBD	*	.0	7.3	-304.8	7.3	*	305.	270.	AG	1270.	11.1	.0	13.4		
7.	NBL	*	-1.8	-11.0	-1.8	-68.3	*	57.	180.	AG	137.	100.0	.0	3.7	.88	9.6
8.	NBT	*	5.5	-11.0	5.5	-119.5	*	109.	180.	AG	398.	100.0	.0	11.0	1.02	18.1
9.	SBT	*	-12.8	7.3	-12.8	53.1	*	46.	360.	AG	340.	100.0	.0	11.0	.56	7.6
10.	SBL	*	-3.7	7.3	-3.7	142.0	*	135.	360.	AG	234.	100.0	.0	7.3	1.02	22.4
11.	EBR	*	-14.6	-9.1	-56.6	-9.1	*	42.	270.	AG	82.	100.0	.0	3.7	.51	7.0
12.	EBT	*	-14.6	-3.7	-91.0	-3.7	*	76.	270.	AG	258.	100.0	.0	7.3	.92	12.7
13.	WBA	*	304.8	7.3	.0	7.3	*	305.	270.	AG	2680.	11.1	.0	13.4		
14.	EBD	*	.0	-3.7	304.8	-3.7	*	305.	90.	AG	2340.	11.1	.0	13.4		
15.	WBL	*	14.6	1.8	179.8	1.8	*	165.	90.	AG	172.	100.0	.0	3.7	2.22	27.5
16.	WBT	*	14.6	7.3	73.0	7.3	*	58.	90.	AG	237.	100.0	.0	7.3	.69	9.7
17.	WBR	*	14.6	14.6	96.2	14.6	*	82.	90.	AG	104.	100.0	.0	7.3	.97	13.6
18.	NBR	*	12.8	-11.0	12.8	-70.5	*	60.	180.	AG	122.	100.0	.0	3.7	.82	9.9

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2030

DATE : 12/ 7/ 5
TIME : 17: 1:16

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. NBL	140	105	3.0	310	1652	67.95	2	3
8. NBT	140	102	3.0	1140	1582	67.95	2	3
9. SBT	140	87	3.0	950	1639	67.95	2	3
10. SBL	140	90	3.0	1120	1717	67.95	2	3
11. EBR	140	63	3.0	400	1531	67.95	2	3
12. EBT	140	99	3.0	840	1770	67.95	2	3
15. WBL	140	132	3.0	80	1717	67.95	2	3
16. WBT	140	91	3.0	770	1770	67.95	2	3
17. WBR	140	40	3.0	1830	1394	67.95	2	3
18. NBR	140	94	3.0	380	1583	67.95	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-71.3	17.7	1.8
2. Rcpt_2	-46.3	17.7	1.8
3. Rcpt_3	-21.3	17.7	1.8
4. Rcpt_4	-21.3	42.7	1.8
5. Rcpt_5	-21.3	67.7	1.8
6. Rcpt_6	14.0	71.3	1.8
7. Rcpt_7	14.0	46.3	1.8
8. Rcpt_8	14.0	21.3	1.8
9. Rcpt_9	17.7	-10.4	1.8
10. Rcpt_10	17.7	-35.4	1.8
11. Rcpt_11	17.7	-60.4	1.8
12. Rcpt_12	-17.7	-64.0	1.8
13. Rcpt_13	-17.7	-39.0	1.8
14. Rcpt_14	-17.7	-14.0	1.8
15. Rcpt_15	-42.7	-14.0	1.8
16. Rcpt_16	-67.7	-14.0	1.8
17. Rcpt_17	39.0	21.3	1.8
18. Rcpt_18	64.0	21.3	1.8
19. Rcpt_19	42.7	-10.4	1.8

20. Rcpt_20 * 67.7 -10.4 1.8 *

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2030

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
5.	*	5.2	5.5	7.6	7.0	6.7	6.4	6.5	6.5	8.2	7.2	7.1	8.3	8.7	10.1	7.2	6.5	5.1	5.0	7.5	7.3
10.	*	5.3	5.8	8.3	7.5	7.2	5.8	5.8	5.8	7.5	6.6	6.5	8.3	8.6	10.2	7.7	6.7	5.0	5.0	7.3	7.2
15.	*	5.4	6.1	8.8	7.8	7.4	5.4	5.4	5.4	7.3	6.4	6.1	8.0	8.5	10.0	7.9	7.0	5.0	5.0	7.3	7.1
20.	*	5.6	6.2	8.8	7.8	7.4	5.3	5.3	5.3	7.4	6.4	6.0	8.1	8.0	9.4	8.2	7.1	5.0	5.0	7.4	7.2
25.	*	5.8	6.3	8.7	7.8	7.3	5.2	5.2	5.2	7.4	6.4	6.0	8.1	7.7	9.0	8.3	7.2	5.0	5.0	7.4	7.1
30.	*	5.8	6.3	8.6	7.8	7.2	5.1	5.1	5.1	7.5	6.4	6.0	8.3	7.5	8.1	8.4	7.4	5.0	5.0	7.5	7.2
35.	*	5.9	6.3	8.4	7.7	7.1	5.1	5.1	5.1	7.6	6.4	5.9	8.3	7.7	7.9	8.3	7.4	5.0	5.0	7.5	7.1
40.	*	5.9	6.4	8.2	7.7	7.0	5.1	5.1	5.1	7.7	6.4	5.9	8.3	8.0	7.9	8.4	7.5	5.0	5.0	7.7	7.1
45.	*	5.9	6.5	8.2	7.8	7.0	5.1	5.1	5.1	7.8	6.4	5.9	8.0	8.0	7.7	8.4	7.7	5.0	5.0	7.7	7.2
50.	*	5.9	6.5	7.9	7.7	6.8	5.1	5.1	5.1	8.0	6.5	5.7	7.8	8.1	7.7	8.4	7.6	5.0	5.0	7.9	7.4
55.	*	5.9	6.5	7.9	7.7	6.8	5.1	5.1	5.1	8.1	6.4	5.9	7.8	8.4	7.9	8.2	7.8	5.0	5.0	8.0	7.5
60.	*	6.0	6.5	7.8	7.6	6.7	5.1	5.1	5.1	8.3	6.4	5.9	7.7	8.4	8.0	8.3	7.8	5.0	5.0	7.9	7.5
65.	*	6.0	6.5	7.7	7.7	6.7	5.0	5.0	5.0	8.4	6.2	5.9	7.7	8.2	8.6	8.5	8.3	5.0	5.0	8.0	7.7
70.	*	6.0	6.5	7.6	7.5	6.6	5.0	5.0	5.0	8.6	6.3	5.8	7.6	8.1	8.7	8.6	8.4	5.0	5.0	8.3	8.1
75.	*	6.1	6.6	7.7	7.5	6.6	5.0	5.0	5.1	8.7	6.3	5.6	7.5	8.0	9.2	8.8	8.5	5.1	5.1	8.4	8.2
80.	*	6.5	7.1	8.2	7.6	6.6	5.0	5.0	5.4	8.8	6.0	5.4	7.2	7.8	9.1	8.5	8.6	5.3	5.2	8.3	8.2
85.	*	7.0	7.5	9.0	7.7	6.6	5.0	5.1	5.9	8.2	5.8	5.2	7.1	7.5	8.8	8.4	8.1	5.6	5.6	8.0	8.0
90.	*	7.7	8.2	9.7	7.9	6.7	5.0	5.3	6.6	7.6	5.3	5.1	7.0	7.2	8.4	7.7	7.6	6.3	6.2	7.3	7.3
95.	*	8.0	8.6	10.4	8.4	6.8	5.2	5.5	7.3	6.6	5.1	5.0	6.9	7.0	7.7	7.2	6.9	7.1	6.8	6.6	6.6
100.	*	8.2	8.8	10.7	8.7	7.1	5.3	5.8	7.9	5.9	5.0	5.0	6.7	6.8	7.1	6.4	6.3	7.6	7.2	5.9	5.8

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 105.  *   7.7   8.4  10.4   8.9   7.3   5.5   6.1   8.1   5.4   5.0   5.0   6.7
6.8   6.9   6.2   5.9   7.9   7.5   5.4   5.4
 110.  *   7.6   7.8  10.0   9.2   7.4   5.8   6.3   8.2   5.2   5.0   5.0   6.6
6.8   6.8   6.0   5.8   7.9   7.5   5.2   5.2
 115.  *   7.5   7.5   9.4   9.4   7.7   5.8   6.4   8.1   5.2   5.0   5.0   6.5
6.8   6.8   6.2   6.0   7.9   7.4   5.1   5.1
 120.  *   7.3   7.2   9.1   9.4   7.7   5.9   6.4   8.0   5.1   5.0   5.0   6.6
6.9   6.9   6.2   6.0   7.8   7.3   5.1   5.1
 125.  *   7.2   7.2   8.8   9.3   8.1   6.0   6.6   7.9   5.1   5.0   5.0   6.6
6.9   6.9   6.2   5.9   7.7   7.2   5.1   5.1
 130.  *   7.4   7.4   8.5   9.3   8.0   6.1   6.6   7.8   5.1   5.0   5.0   6.6
7.0   7.0   6.2   5.9   7.6   7.2   5.1   5.1
 135.  *   7.3   7.5   8.6   9.2   8.3   6.0   6.6   7.8   5.1   5.0   5.0   6.8
7.1   7.1   6.2   5.7   7.6   7.2   5.1   5.1
 140.  *   7.3   7.5   8.4   9.1   8.3   6.0   6.5   7.5   5.1   5.0   5.0   6.9
7.2   7.3   6.2   5.7   7.5   7.1   5.1   5.1
 145.  *   7.0   7.4   8.3   9.3   8.6   6.0   6.4   7.5   5.1   5.0   5.0   6.9
7.1   7.4   6.2   5.6   7.4   7.1   5.1   5.1
 150.  *   6.8   7.4   8.7   9.2   8.6   6.0   6.4   7.4   5.1   5.0   5.0   6.9
7.2   7.5   6.0   5.5   7.3   7.1   5.1   5.1
 155.  *   6.6   7.3   8.6   9.5   8.7   6.1   6.5   7.4   5.0   5.0   5.0   6.9
7.2   7.6   5.9   5.5   7.3   7.2   5.0   5.0
 160.  *   6.6   7.1   8.6   9.3   9.2   6.1   6.4   7.4   5.0   5.0   5.0   6.8
7.2   7.4   5.8   5.4   7.2   7.1   5.0   5.0
 165.  *   6.5   7.0   8.5   9.1   9.2   6.4   6.6   7.5   5.2   5.1   5.1   6.9
7.1   7.5   5.7   5.4   7.2   7.1   5.0   5.0
 170.  *   6.3   6.7   8.1   8.3   9.0   6.8   7.1   8.0   5.5   5.4   5.3   6.6
6.8   7.2   5.5   5.2   7.2   7.2   5.0   5.0
 175.  *   6.3   6.5   7.8   7.9   8.1   7.5   7.8   8.6   6.0   5.9   5.6   6.5
6.6   6.8   5.3   5.1   7.3   7.2   5.1   5.0
 180.  *   6.1   6.4   7.2   7.2   7.2   8.4   8.6   9.4   6.7   6.5   6.0   6.2
6.3   6.3   5.2   5.0   7.5   7.2   5.1   5.0
 185.  *   6.1   6.2   6.7   6.5   6.3   8.7   8.8   9.8   7.5   7.2   6.7   5.7
5.7   5.8   5.0   5.0   7.8   7.3   5.4   5.1
 190.  *   6.1   6.2   6.4   6.1   5.8   8.9   8.7   9.8   8.2   7.8   7.2   5.4
5.5   5.5   5.0   5.0   8.2   7.6   5.6   5.3
 195.  *   6.1   6.2   6.3   5.8   5.5   8.8   8.7   9.3   8.3   8.1   7.5   5.2
5.2   5.2   5.0   5.0   8.5   7.7   5.9   5.3
 200.  *   6.1   6.2   6.2   5.8   5.4   8.5   8.3   9.0   8.3   8.1   7.6   5.1
5.1   5.1   5.0   5.0   8.7   7.8   6.1   5.5
 205.  *   6.1   6.1   6.2   5.8   5.5   8.5   8.1   8.5   8.3   8.2   7.7   5.1
5.1   5.1   5.0   5.0   8.8   8.1   6.2   5.6
 210.  *   6.1   6.1   6.2   5.7   5.5   8.4   8.1   8.1   8.2   8.0   7.7   5.1
5.1   5.1   5.0   5.0   8.7   8.3   6.4   5.9
```

PAGE 4

JOB: Pacific Pl and Montlake RUN: Pacific St Interchange 2030

```
 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

------*-------------------------------------------------------------------------------
-----------------------------------------
 215.  *   6.0   6.2   6.3   5.7   5.5   8.4   8.4   8.3   8.0   7.9   7.5   5.1
5.1   5.1   5.0   5.0   8.7   8.5   6.5   5.8
 220.  *   6.1   6.3   6.4   5.7   5.5   8.3   8.4   7.8   7.9   7.8   7.5   5.0
5.0   5.0   5.0   5.0   8.6   8.5   6.5   5.9
 225.  *   6.0   6.3   6.4   5.7   5.4   8.2   8.4   8.0   7.8   7.8   7.6   5.0
5.0   5.0   5.0   5.0   8.5   8.6   6.4   5.9
 230.  *   5.9   6.3   6.4   5.6   5.5   8.0   8.4   7.9   7.6   7.5   7.3   5.0
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5.0   5.0   5.0   5.0   8.3   8.6   6.4   6.0
 235.  *   5.9   6.2   6.3   5.7   5.4   7.8   8.2   8.3   7.5   7.5   7.3   5.0
5.0   5.0   5.0   5.0   8.0   8.5   6.4   6.0
 240.  *   6.0   6.4   6.5   5.6   5.4   7.5   7.9   8.4   7.4   7.5   7.4   5.0
5.0   5.0   5.0   5.0   8.1   8.5   6.4   6.0
 245.  *   6.0   6.3   6.5   5.6   5.4   7.3   8.0   8.4   7.4   7.4   7.3   5.0
5.0   5.0   5.0   5.0   8.1   8.3   6.3   6.0
 250.  *   6.1   6.3   6.5   5.5   5.3   7.2   7.9   8.6   7.3   7.2   7.1   5.0
5.0   5.0   5.0   5.0   8.3   8.6   6.3   6.1
 255.  *   6.1   6.2   6.4   5.5   5.2   7.1   7.9   8.6   7.3   7.2   7.1   5.0
5.0   5.1   5.1   5.1   8.0   8.3   6.6   6.2
 260.  *   6.1   6.2   6.3   5.4   5.2   7.0   7.7   8.4   7.7   7.2   7.2   5.0
5.0   5.3   5.2   5.1   7.7   8.0   6.8   6.6
 265.  *   5.9   5.9   6.0   5.3   5.1   6.9   7.6   8.2   8.0   7.4   7.3   5.0
5.0   5.7   5.5   5.4   7.5   7.5   7.3   7.1
 270.  *   5.7   5.7   5.7   5.1   5.0   6.9   7.5   8.1   8.4   7.5   7.3   5.0
5.1   6.2   5.9   5.7   7.1   7.1   7.8   7.6
 275.  *   5.4   5.4   5.4   5.0   5.0   6.8   7.2   7.6   8.8   7.7   7.5   5.1
5.3   6.6   6.3   6.0   6.8   6.6   8.1   8.2
 280.  *   5.1   5.2   5.2   5.0   5.0   6.8   7.1   7.4   8.5   7.8   7.4   5.2
5.4   7.1   6.7   6.3   6.6   6.3   8.5   8.8
 285.  *   5.1   5.1   5.1   5.0   5.0   6.8   7.1   7.3   8.2   7.9   7.5   5.2
5.6   7.2   6.8   6.3   6.4   6.0   8.5   8.9
 290.  *   5.0   5.0   5.0   5.0   5.0   6.8   7.0   7.3   8.0   8.2   7.7   5.3
5.6   7.3   7.0   6.5   6.4   6.0   8.4   9.2
 295.  *   5.0   5.0   5.0   5.0   5.0   6.8   6.9   7.3   8.2   8.3   7.9   5.4
5.7   7.2   7.0   6.5   6.4   5.9   8.8   9.1
 300.  *   5.0   5.0   5.0   5.0   5.0   6.8   6.9   7.3   8.2   8.5   8.1   5.4
5.8   7.1   7.0   6.6   6.3   5.9   8.6   9.1
 305.  *   5.0   5.0   5.0   5.0   5.0   7.0   7.0   7.5   8.2   8.4   8.1   5.5
5.7   6.9   6.9   6.4   6.3   5.8   9.0   9.1
 310.  *   5.0   5.0   5.0   5.0   5.0   7.1   7.1   7.6   8.4   8.5   8.3   5.5
5.8   6.9   6.8   6.5   6.3   5.8   9.0   8.9
 315.  *   5.0   5.0   5.0   5.0   5.0   7.2   7.2   7.6   8.7   8.4   8.4   5.6
5.8   6.8   6.8   6.5   6.2   5.8   9.0   8.7
 320.  *   5.0   5.0   5.0   5.0   5.0   7.3   7.3   7.6   8.8   8.5   8.3   5.5
5.8   6.7   6.6   6.3   6.2   5.8   8.9   8.5
 325.  *   5.0   5.0   5.0   5.0   5.0   7.4   7.4   7.6   9.0   8.8   8.3   5.6
5.9   6.6   6.6   6.3   6.2   6.0   8.7   8.4
 330.  *   5.0   5.0   5.0   5.0   5.0   7.5   7.6   7.7   9.1   8.9   8.8   5.6
5.9   6.7   6.6   6.3   6.3   5.9   8.8   8.5
 335.  *   5.0   5.0   5.0   5.0   5.0   7.8   7.9   8.0   9.1   9.0   9.1   5.6
5.9   6.6   6.5   6.3   6.4   5.9   8.7   8.3
 340.  *   5.0   5.0   5.0   5.0   5.0   8.0   8.0   8.1   9.2   8.9   9.2   5.6
6.0   6.8   6.5   6.3   6.3   5.7   8.6   8.0
 345.  *   5.0   5.0   5.1   5.1   5.1   8.1   8.2   8.2   9.4   9.0   9.5   5.9
6.1   7.0   6.5   6.3   6.1   5.6   8.5   7.9
 350.  *   5.0   5.0   5.5   5.4   5.2   8.0   8.1   8.3   9.5   8.9   9.0   6.3
6.7   7.7   6.5   6.3   5.9   5.4   8.2   7.7
 355.  *   5.0   5.1   6.0   5.8   5.6   7.7   7.8   7.9   9.2   8.4   8.5   6.9
7.4   8.6   6.6   6.3   5.5   5.1   7.9   7.5
 360.  *   5.0   5.2   6.8   6.2   6.2   7.1   7.1   7.4   8.7   7.8   8.0   7.6
8.1   9.3   6.8   6.4   5.3   5.1   7.7   7.5

------*-------------------------------------------------------------------------------
-----------------------------------------
 MAX   *   8.2   8.8  10.7   9.5   9.2   8.9   8.8   9.8   9.5   9.0   9.5   8.3
8.7  10.2   8.8   8.6   8.8   8.6   9.0   9.2
 DEGR. *  100   100   100   155   160   190   185   185   350   335   345     5
5    10    75    80   205   225   305   290

 THE HIGHEST CONCENTRATION OF   10.70 PPM OCCURRED AT RECEPTOR REC3 .
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JOB: Montlake and Lake Wash RUN: 2016 2nd Montlake Bridge

DATE : 12/ 7/ 5
TIME : 17: 4:45

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

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 5.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(FT)	(DEG)			(G/MI)	(FT)	(FT)	(VEH)	
1. EBA1	*	-1000.0	-192.0	-204.0	-192.0	*	796.	90.	AG	1090.	14.9	.0	32.0		
2. EBA2	*	-204.0	-192.0	-6.0	.0	*	276.	46.	AG	1090.	14.9	.0	32.0		
3. EBD	*	.0	-6.0	1000.0	-6.0	*	1000.	90.	AG	420.	14.9	.0	32.0		
4. WBA	*	1000.0	6.0	.0	6.0	*	1000.	270.	AG	660.	14.9	.0	32.0		
5. WBD1	*	-48.0	.0	-180.0	-132.0	*	187.	225.	AG	1180.	14.9	.0	44.0		
6. WBD2	*	-180.0	-132.0	-240.0	-72.0	*	85.	315.	AG	1180.	14.9	.0	44.0		
7. WBD3	*	-240.0	-72.0	-120.0	48.0	*	170.	45.	DP	1180.	14.9	.0	44.0		
8. NBA	*	736.0	-700.0	36.0	.0	*	990.	315.	AG	1440.	14.9	.0	44.0		
9. NBD1	*	36.0	.0	-168.0	204.0	*	288.	315.	AG	2460.	14.9	.0	44.0		
10. NBD2	*	-168.0	204.0	-168.0	1000.0	*	796.	360.	AG	2460.	14.9	.0	44.0		
11. SBA1	*	-216.0	1000.0	-216.0	204.0	*	796.	180.	AG	2080.	14.9	.0	44.0		
12. SBA2	*	-216.0	204.0	-12.0	.0	*	288.	135.	AG	2080.	14.9	.0	44.0		
13. SBD	*	-12.0	.0	688.0	-700.0	*	990.	135.	AG	1210.	14.9	.0	44.0		
14. EBL	*	-30.0	-12.0	-703.7	-685.7	*	953.	225.	AG	360.	100.0	.0	24.0	1.24	48.4
15. EBT	*	-18.0	-12.0	-564.4	-558.4	*	773.	225.	AG	181.	100.0	.0	12.0	1.19	39.3
16. WBT	*	48.0	6.0	102.7	6.0	*	55.	90.	AG	198.	100.0	.0	12.0	.58	2.8
17. WBR	*	48.0	18.0	1331.6	18.0	*	1284.	90.	AG	150.	100.0	.0	12.0	1.22	65.2
18. NBL	*	30.0	-12.0	227.0	-209.0	*	279.	135.	AG	422.	100.0	.0	24.0	1.16	14.2
19. NBT	*	48.0	-12.0	1001.5	-965.5	*	1348.								

```
135. AG    309. 100.0    .0 24.0 1.21  68.5
      20. SBL                 *    -18.0      24.0    -352.7     358.7 *     473.
315. AG    194. 100.0    .0 12.0 1.13  24.0
      21. SBT                 *    -36.0      24.0    -144.4     132.4 *     153.
315. AG    274. 100.0    .0 24.0  .79   7.8
      22. SBR                 *    -54.0      24.0   -4987.7    4957.7 *    6977.
315. AG    181. 100.0    .0 12.0 3.27 354.4
```


JOB: Montlake and Lake Wash RUN: 2016 2nd Montlake Bridge

DATE : 12/ 7/ 5
TIME : 17: 4:45

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
14. EBL	*	110	83	3.0	740	1494	89.04	2	3
15. EBT	*	110	83	3.0	350	1478	89.24	2	3
16. WBT	*	110	91	3.0	110	1486	89.24	2	3
17. WBR	*	110	69	3.0	550	1377	89.24	2	3
18. NBL	*	110	97	3.0	250	1494	89.24	2	3
19. NBT	*	110	71	3.0	1190	1589	89.24	2	3
20. SBL	*	110	89	3.0	260	1593	89.24	2	3
21. SBT	*	110	63	3.0	890	1475	89.24	2	3
22. SBR	*	110	83	3.0	930	1425	89.24	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z	*
1. R1	*	-58.0	12.0	5.9	*
2. R2	*	-116.0	70.0	5.9	*
3. R3	*	-174.0	128.0	5.9	*
4. R4	*	-85.0	146.0	5.9	*
5. R5	*	-27.0	88.0	5.9	*
6. R6	*	31.0	34.0	5.9	*
7. R7	*	113.0	34.0	5.9	*
8. R8	*	195.0	34.0	5.9	*
9. R9	*	255.6	-22.0	5.9	*
10. R10	*	172.5	-20.9	5.9	*
11. R11	*	91.6	-22.0	5.9	*
12. R12	*	137.1	-68.6	5.9	*
13. R13	*	195.1	-126.6	5.9	*

14.	R14	*	98.3	-141.8	5.9 *
15.	R15	*	40.3	-85.0	5.9 *
16.	R16	*	-13.1	-31.5	5.9 *
17.	R17	*	-70.0	-77.0	5.9 *
18.	R18	*	-128.0	-135.0	5.9 *
19.	R19	*	-174.0	-104.0	5.9 *
20.	R20	*	-116.0	-46.0	5.9 *

JOB: Montlake and Lake Wash RUN: 2016 2nd Montlake Bridge

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
5.	*	8.8	9.4	9.8	5.5	5.3	5.1	5.0	5.0	5.8	5.8	6.2	5.6	5.4	8.2	7.9	7.6	10.5	10.7	7.5	7.4
10.	*	8.6	9.0	9.2	5.3	5.2	5.1	5.0	5.0	5.8	5.8	6.1	5.5	5.3	7.9	7.9	7.4	10.3	10.7	7.2	7.2
15.	*	8.4	8.7	8.7	5.1	5.1	5.1	5.0	5.0	5.8	5.8	6.1	5.5	5.3	7.9	8.1	7.2	10.2	10.5	7.0	7.1
20.	*	8.3	8.6	8.2	5.1	5.1	5.1	5.0	5.0	5.8	5.8	6.0	5.5	5.3	7.9	8.1	7.1	10.1	10.4	6.6	7.0
25.	*	8.1	8.4	7.9	5.1	5.1	5.1	5.0	5.0	5.8	5.8	6.0	5.5	5.3	7.9	8.2	7.1	9.8	10.6	6.5	7.0
30.	*	8.1	8.5	7.8	5.1	5.1	5.0	5.0	5.0	5.8	5.8	5.9	5.5	5.3	7.9	8.3	7.0	9.7	10.4	6.5	7.1
35.	*	8.0	8.6	7.9	5.0	5.0	5.0	5.0	5.0	5.8	5.8	5.9	5.5	5.3	7.9	8.2	7.0	9.2	10.1	6.8	7.1
40.	*	8.0	8.6	7.8	5.0	5.0	5.0	5.0	5.0	5.9	5.9	5.9	5.5	5.3	7.9	8.2	7.0	8.4	9.5	7.0	7.2
45.	*	7.9	8.6	7.8	5.0	5.0	5.0	5.0	5.0	5.9	5.9	5.9	5.5	5.4	7.9	8.1	7.3	8.2	8.9	7.3	7.2
50.	*	7.7	8.6	7.8	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.5	5.4	8.0	8.1	7.2	7.9	8.5	7.5	7.2
55.	*	7.6	8.6	7.8	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.5	5.4	8.0	8.1	7.6	7.6	7.4	8.2	7.3
60.	*	7.4	8.5	7.8	5.1	5.1	5.0	5.0	5.0	6.1	6.1	6.1	5.6	5.5	8.0	8.1	7.7	7.4	7.4	8.6	7.6
65.	*	7.3	8.4	7.7	5.1	5.1	5.0	5.0	5.0	6.2	6.2	6.2	5.7	5.5	8.1	8.1	7.9	7.3	6.9	8.9	8.0
70.	*	7.4	8.6	8.0	5.1	5.1	5.1	5.0	5.0	6.3	6.3	6.3	5.7	5.5	8.1	8.3	8.1	7.5	6.8	9.6	8.6
75.	*	7.7	8.6	8.1	5.1	5.1	5.2	5.1	5.1	6.5	6.5	6.5	5.8	5.4	8.0	8.3	8.4	7.3	6.8	9.4	9.2
80.	*	8.1	8.9	8.3	5.2	5.2	5.5	5.4	5.4	6.5	6.5	6.5	5.7	5.4	8.0	8.1	8.6	7.4	6.6	9.2	9.5
85.	*	8.8	9.2	8.6	5.2	5.4	5.9	5.8	5.8	6.3	6.4	6.4	5.6	5.4	8.1	8.3	8.8	7.2	6.5	9.2	9.5

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  90.  *   8.9   9.7   9.0   5.3   5.6   6.4   6.3   6.3   6.0   6.2   6.3   5.4
5.2   8.0   8.2   8.7   7.0   6.3   8.8   9.3
  95.  *   8.8   9.9   9.4   5.6   5.8   6.7   6.5   6.5   5.7   5.8   5.8   5.3
5.1   8.1   8.3   8.4   6.9   6.2   8.4   9.0
 100.  *   9.0  10.6  10.0   5.6   5.8   6.8   6.6   6.5   5.4   5.4   5.5   5.1
5.1   8.2   8.2   8.5   6.9   6.2   8.3   9.0
 105.  *   8.9  10.8  10.2   5.8   5.9   6.9   6.6   6.6   5.1   5.2   5.2   5.1
5.1   8.3   8.4   8.5   6.9   6.3   8.2   8.9
 110.  *   9.5  10.6  10.8   5.9   6.0   6.8   6.4   6.4   5.1   5.1   5.2   5.1
5.1   8.5   8.6   8.7   6.9   6.2   8.3   9.0
 115.  *   9.5  10.9  11.1   6.0   6.4   7.0   6.2   6.2   5.0   5.1   5.3   5.3
5.3   8.5   8.8   8.9   6.7   6.0   8.3   8.9
 120.  *   9.9  10.9  11.5   6.6   6.8   7.3   6.2   6.2   5.0   5.0   5.5   5.5
5.5   8.4   8.7   9.0   6.5   5.8   7.8   8.6
 125.  *  10.0  11.1  11.4   7.4   7.6   8.0   6.3   6.2   5.0   5.1   6.2   6.3
6.1   8.3   8.6   8.8   6.3   5.7   7.7   8.2
 130.  *   9.8  10.2  11.0   8.5   8.8   9.3   6.5   6.2   5.1   5.3   7.2   7.1
7.0   7.9   8.2   8.4   5.9   5.4   7.4   7.9
 135.  *   9.1   9.1   9.8   9.8  10.0  10.4   6.8   6.3   5.3   5.7   8.2   8.2
8.0   7.2   7.4   7.5   5.5   5.1   7.1   7.5
 140.  *   8.1   7.8   8.2  10.3  10.5  11.0   7.3   6.6   5.6   6.2   9.3   9.1
8.7   6.3   6.4   6.5   5.2   5.0   7.1   7.2
 145.  *   7.5   6.9   7.0  10.1  10.2  11.4   7.7   6.9   5.7   6.5   9.8   9.7
9.0   5.7   5.7   5.8   5.0   5.0   7.1   7.0
 150.  *   7.2   6.5   6.4  10.0   9.7  11.1   8.0   7.0   6.0   6.7   9.8   9.8
9.2   5.3   5.2   5.2   5.0   5.0   7.1   7.1
 155.  *   7.1   6.2   6.3   9.4   8.9  10.3   8.0   7.1   6.1   6.9   9.7   9.6
9.0   5.2   5.1   5.1   5.1   5.0   7.2   7.2
 160.  *   7.2   6.3   6.1   9.6   8.4   9.7   8.1   7.2   6.2   6.9   9.4   9.5
9.0   5.1   5.1   5.1   5.1   5.1   7.3   7.2
 165.  *   7.2   6.4   6.2   9.6   8.4   9.3   8.0   7.2   6.1   6.8   9.1   9.1
8.7   5.1   5.1   5.1   5.1   5.1   7.3   7.2
 170.  *   7.2   6.5   6.2   9.6   8.3   8.6   7.9   7.0   5.9   6.9   8.9   8.9
8.7   5.1   5.1   5.1   5.1   5.1   7.4   7.2
 175.  *   7.2   6.5   6.2   9.6   8.2   8.3   7.9   7.0   6.0   7.0   8.7   8.7
8.6   5.1   5.1   5.1   5.1   5.1   7.4   7.3
 180.  *   7.4   6.6   6.3   9.5   8.6   8.1   7.8   7.2   6.0   6.8   8.4   8.5
8.5   5.1   5.1   5.1   5.1   5.1   7.6   7.4
 185.  *   7.6   6.7   6.4   9.6   8.7   7.6   7.7   7.1   6.1   6.8   8.3   8.3
8.2   5.1   5.0   5.0   5.1   5.1   7.6   7.6
 190.  *   7.8   6.7   6.2   9.7   9.1   7.4   7.7   7.2   6.2   6.8   8.2   8.2
8.2   5.0   5.0   5.0   5.1   5.1   7.8   7.8
 195.  *   7.8   6.9   6.0   9.7   9.6   7.3   7.9   7.3   6.2   6.8   8.1   8.1
8.1   5.0   5.0   5.0   5.2   5.1   7.7   7.9
 200.  *   8.0   6.9   6.0   9.6   9.7   7.3   7.9   7.3   6.2   6.8   8.0   8.0
8.0   5.0   5.0   5.1   5.3   5.2   7.8   7.9
 205.  *   8.3   6.9   5.7   9.3   9.7   7.6   8.0   7.1   6.2   6.7   8.0   8.0
8.0   5.0   5.0   5.2   5.5   5.5   8.0   8.2
 210.  *   8.5   6.9   5.6   9.2  10.0   7.9   8.0   7.1   6.2   6.8   8.0   8.0
8.0   5.0   5.0   5.5   6.1   6.0   8.1   8.3
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PAGE 4

JOB: Montlake and Lake Wash RUN: 2016 2nd Montlake Bridge

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 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

------*-------------------------------------------------------------------------------
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 215.  *   8.6   6.8   5.4   8.9   9.9   8.9   8.1   7.2   6.2   6.8   8.1   8.0
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8.0   5.0   5.0   6.0   6.9   6.7   8.0   8.2
 220.  *   8.2   6.6   5.2   8.7   9.5   9.5   8.6   7.3   6.2   6.9   8.3   8.0
8.0   5.0   5.1   6.9   8.1   7.8   7.9   8.1
 225.  *   7.5   6.4   5.1   8.3   9.3  10.3   8.8   7.5   6.3   7.0   8.4   8.1
8.0   5.1   5.4   7.9   9.2   8.8   7.4   7.5
 230.  *   7.2   6.0   5.1   8.1   8.9  10.3   9.5   8.0   6.5   7.2   8.8   8.3
8.1   5.2   5.7   8.8   9.9   9.6   6.8   6.9
 235.  *   6.4   5.7   5.1   8.0   8.7  10.0   9.6   8.2   6.6   7.4   9.2   8.5
8.3   5.4   6.0   9.3  10.5   9.9   6.5   6.3
 240.  *   6.1   5.6   5.1   8.0   8.5   9.3   9.7   8.8   6.7   7.7   9.5   8.7
8.4   5.5   6.2   9.5  10.4   9.9   6.2   6.0
 245.  *   5.9   5.5   5.1   8.0   8.5   9.0   9.3   8.8   7.0   7.7   9.7   8.9
8.4   5.6   6.3   9.2  10.2   9.8   6.1   5.9
 250.  *   5.8   5.3   5.1   8.1   8.4   8.4   8.9   8.9   7.2   8.1   9.8   8.9
8.7   5.8   6.5   9.0  10.0   9.4   6.2   5.8
 255.  *   5.8   5.2   5.0   8.1   8.6   8.1   8.3   8.8   7.3   8.2   9.9   9.3
8.8   5.9   6.7   8.8   9.6   9.3   6.1   5.8
 260.  *   5.6   5.1   5.0   8.0   8.5   8.0   7.9   7.8   7.6   8.4   9.9   9.5
9.2   5.9   6.8   8.6   9.4   9.1   6.0   5.6
 265.  *   5.7   5.1   5.1   8.1   8.6   8.1   7.5   7.7   7.6   8.2   9.9   9.7
9.1   6.2   6.6   8.4   9.1   8.9   5.9   5.6
 270.  *   5.6   5.1   5.1   8.0   8.5   8.3   7.1   7.1   7.7   8.1   9.8   9.7
9.5   6.3   6.6   8.2   8.8   8.7   5.8   5.5
 275.  *   5.5   5.1   5.1   8.2   8.7   8.6   7.2   6.8   8.0   8.4   9.5   9.7
9.6   6.2   6.7   7.9   8.4   8.3   5.9   5.4
 280.  *   5.5   5.1   5.1   8.2   8.9   9.0   7.1   6.6   7.8   8.2   9.7   9.8
9.7   6.4   6.6   7.9   8.4   8.3   5.8   5.5
 285.  *   5.5   5.1   5.1   8.4   9.1   9.2   7.1   6.5   7.7   8.4   9.6   9.9
9.9   6.3   6.5   7.8   8.2   8.3   5.9   5.5
 290.  *   5.5   5.1   5.1   8.6   9.2   9.4   7.2   6.5   7.7   8.3   9.8  10.3
10.2   6.0   6.5   7.6   8.1   8.3   5.8   5.5
 295.  *   5.5   5.3   5.2   8.5   9.3   9.6   7.1   6.3   7.6   8.5   9.7  10.4
10.5   6.0   6.4   7.8   7.9   8.2   5.8   5.5
 300.  *   5.7   5.4   5.4   8.7   9.4   9.6   6.9   6.1   7.3   8.0  10.2  10.4
10.8   6.3   6.5   7.9   7.8   8.1   5.8   5.3
 305.  *   6.3   6.0   5.8   8.6   9.3   9.5   6.5   6.0   7.1   7.8  10.0  10.1
10.8   6.8   7.2   8.4   8.0   8.2   5.8   5.4
 310.  *   7.4   6.9   6.5   8.4   9.0   9.0   6.2   5.8   6.9   7.2   9.9   9.7
10.1   7.7   8.0   9.4   8.1   8.2   5.8   5.5
 315.  *   8.4   7.7   7.1   8.3   8.5   8.5   6.1   5.7   6.6   7.0   9.1   8.8
9.2   8.4   8.7  10.4   8.4   8.3   5.8   5.6
 320.  *   9.4   8.6   7.6   7.8   7.9   7.5   5.8   5.6   6.5   6.6   8.1   7.9
7.9   8.9   9.3  11.1   8.6   8.3   5.8   5.8
 325.  *  10.3   9.2   8.0   7.2   7.2   6.8   5.7   5.5   6.3   6.3   7.6   7.3
7.1   9.3   9.3  11.3   8.7   8.2   5.7   6.0
 330.  *  10.9   9.9   8.3   7.0   6.8   6.5   5.7   5.5   6.3   6.3   7.2   6.7
6.3   9.2   9.1  11.0   9.2   8.2   5.8   6.3
 335.  *  11.2  10.3   8.5   7.0   6.5   6.2   5.6   5.5   6.1   6.3   7.1   6.3
5.9   9.4   8.9  10.8   9.9   8.6   6.0   6.7
 340.  *  11.1  10.6   8.9   6.8   6.4   6.1   5.5   5.3   6.0   6.1   6.9   6.2
5.7   9.4   8.5  10.4  10.4   8.8   6.0   7.2
 345.  *  11.0  10.9   9.5   6.7   6.2   5.8   5.3   5.1   5.9   6.0   6.8   6.0
5.6   9.0   8.3   9.7  11.1   9.6   6.4   7.7
 350.  *  10.5  10.9  10.0   6.4   5.9   5.6   5.2   5.0   5.8   5.9   6.6   5.8
5.5   8.8   8.1   9.0  11.2  10.3   6.9   8.1
 355.  *   9.9  10.6  10.1   6.1   5.6   5.4   5.0   5.0   5.8   5.8   6.4   5.6
5.4   8.5   7.7   8.4  10.8  10.3   7.2   8.0
 360.  *   9.4  10.1  10.2   5.7   5.4   5.3   5.0   5.0   5.8   5.8   6.3   5.6
5.4   8.2   7.8   8.0  10.6  10.7   7.6   7.9

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 MAX   *  11.2  11.1  11.5  10.3  10.5  11.4   9.7   8.9   8.0   8.5  10.2  10.4
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10.8   9.4   9.3  11.3  11.2  10.7   9.6   9.5
 DEGR. *  335   125   120   140   140   145   240   250   275   295   300   295
300   335   320   325   350    10    70    80

 THE HIGHEST CONCENTRATION OF   11.50 PPM OCCURRED AT RECEPTOR REC3 .
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JOB: Montlake and Lake Wash RUN: 2030 2nd Montlake Bridge

DATE : 12/ 7/ 5
TIME : 17: 6: 9

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

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 5.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT)				*	LENGTH	BRG	TYPE	VPH	EF	H	W	V/C	QUEUE
	*	X1	Y1	X2	Y2	*	(FT)	(DEG)			(G/MI)	(FT)	(FT)	(VEH)	
1. EBA1	*	-1000.0	-192.0	-204.0	-192.0	*	796.	90.	AG	1090.	11.1	.0	32.0		
2. EBA2	*	-204.0	-192.0	-6.0	.0	*	276.	46.	AG	1090.	11.1	.0	32.0		
3. EBD	*	.0	-6.0	1000.0	-6.0	*	1000.	90.	AG	420.	11.1	.0	32.0		
4. WBA	*	1000.0	6.0	.0	6.0	*	1000.	270.	AG	660.	11.1	.0	32.0		
5. WBD1	*	-48.0	.0	-180.0	-132.0	*	187.	225.	AG	1180.	11.1	.0	44.0		
6. WBD2	*	-180.0	-132.0	-240.0	-72.0	*	85.	315.	AG	1180.	11.1	.0	44.0		
7. WBD3	*	-240.0	-72.0	-120.0	48.0	*	170.	45.	DP	1180.	11.1	.0	44.0		
8. NBA	*	736.0	-700.0	36.0	.0	*	990.	315.	AG	1440.	11.1	.0	44.0		
9. NBD1	*	36.0	.0	-168.0	204.0	*	288.	315.	AG	2460.	11.1	.0	44.0		
10. NBD2	*	-168.0	204.0	-168.0	1000.0	*	796.	360.	AG	2460.	11.1	.0	44.0		
11. SBA1	*	-216.0	1000.0	-216.0	204.0	*	796.	180.	AG	2080.	11.1	.0	44.0		
12. SBA2	*	-216.0	204.0	-12.0	.0	*	288.	135.	AG	2080.	11.1	.0	44.0		
13. SBD	*	-12.0	.0	688.0	-700.0	*	990.	135.	AG	1210.	11.1	.0	44.0		
14. EBL	*	-30.0	-12.0	-638.7	-620.7	*	861.	225.	AG	275.	100.0	.0	24.0	1.19	43.7
15. EBT	*	-18.0	-12.0	-512.4	-506.4	*	699.	225.	AG	137.	100.0	.0	12.0	1.15	35.5
16. WBT	*	48.0	6.0	114.8	6.0	*	67.	90.	AG	156.	100.0	.0	12.0	.69	3.4
17. WBR	*	48.0	18.0	4500.8	18.0	*	4453.	90.	AG	156.	100.0	.0	12.0	3.72	226.2
18. NBL	*	30.0	-12.0	112.2	-94.2	*	116.	135.	AG	320.	100.0	.0	24.0	.99	5.9
19. NBT	*	48.0	-12.0	792.5	-756.5	*	1053.								

```
135. AG    230. 100.0    .0 24.0 1.14  53.5
      20. SBL                 *    -18.0      24.0    -150.3     156.3 *     187.
315. AG    144. 100.0    .0 12.0  .97   9.5
      21. SBT                 *    -36.0      24.0    -158.2     146.2 *     173.
315. AG    199. 100.0    .0 24.0  .73   8.8
      22. SBR                 *    -54.0      24.0   -4957.7    4927.7 *    6935.
315. AG    137. 100.0    .0 12.0 3.15 352.3
```


JOB: Montlake and Lake Wash RUN: 2030 2nd Montlake Bridge

DATE : 12/ 7/ 5
TIME : 17: 6: 9

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
14. EBL	*	130	98	3.0	740	1494	67.95	2	3
15. EBT	*	130	98	3.0	350	1471	67.95	2	3
16. WBT	*	130	111	3.0	110	1486	67.95	2	3
17. WBR	*	130	111	3.0	550	1377	67.95	2	3
18. NBL	*	130	114	3.0	250	1494	67.95	2	3
19. NBT	*	130	82	3.0	1190	1587	67.95	2	3
20. SBL	*	130	103	3.0	260	1593	67.95	2	3
21. SBT	*	130	71	3.0	890	1475	67.95	2	3
22. SBR	*	130	98	3.0	930	1425	67.95	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z
1. R1	*	-58.0	12.0	5.9
2. R2	*	-116.0	70.0	5.9
3. R3	*	-174.0	128.0	5.9
4. R4	*	-85.0	146.0	5.9
5. R5	*	-27.0	88.0	5.9
6. R6	*	31.0	34.0	5.9
7. R7	*	113.0	34.0	5.9
8. R8	*	195.0	34.0	5.9
9. R9	*	263.7	-22.0	5.9
10. R10	*	177.8	-22.0	5.9
11. R11	*	91.9	-23.3	5.9
12. R12	*	135.8	-68.4	5.9
13. R13	*	195.0	-126.4	5.9

14.	R14	*	97.5	-142.8	5.9 *
15.	R15	*	40.8	-83.5	5.9 *
16.	R16	*	-13.3	-33.2	5.9 *
17.	R17	*	-70.0	-77.0	5.9 *
18.	R18	*	-128.0	-135.0	5.9 *
19.	R19	*	-174.0	-104.0	5.9 *
20.	R20	*	-116.0	-46.0	5.9 *

JOB: Montlake and Lake Wash RUN: 2030 2nd Montlake Bridge

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 5.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
5.	*	7.9	8.3	8.3	5.2	5.1	5.1	5.0	5.0	5.7	5.7	6.0	5.4	5.3	7.4	7.2	6.9	9.0	9.1	6.7	7.0
10.	*	7.6	7.9	7.9	5.1	5.1	5.1	5.0	5.0	5.7	5.7	6.0	5.4	5.3	7.2	7.3	6.5	8.9	9.1	6.6	6.7
15.	*	7.6	7.8	7.5	5.1	5.1	5.1	5.0	5.0	5.7	5.7	6.0	5.4	5.3	6.9	7.4	6.6	9.0	9.1	6.4	6.5
20.	*	7.4	7.7	7.2	5.1	5.1	5.1	5.0	5.0	5.7	5.7	6.0	5.4	5.3	6.8	7.5	6.6	8.7	9.3	6.5	6.6
25.	*	7.4	7.6	7.0	5.1	5.1	5.0	5.0	5.0	5.7	5.7	6.0	5.4	5.3	6.7	7.5	6.5	8.7	9.2	6.2	6.2
30.	*	7.3	7.6	7.0	5.0	5.0	5.0	5.0	5.0	5.7	5.7	5.9	5.4	5.3	6.5	7.3	6.4	8.5	9.1	6.3	6.4
35.	*	7.2	7.6	7.0	5.0	5.0	5.0	5.0	5.0	5.7	5.7	5.9	5.4	5.3	6.5	7.3	6.5	8.1	8.9	6.4	6.6
40.	*	7.2	7.7	7.2	5.0	5.0	5.0	5.0	5.0	5.7	5.7	5.9	5.4	5.4	6.4	7.3	6.5	7.6	8.2	6.5	6.6
45.	*	7.2	7.7	7.3	5.0	5.0	5.0	5.0	5.0	5.8	5.8	5.8	5.4	5.4	6.5	7.5	6.6	7.4	7.9	6.7	6.6
50.	*	7.1	7.7	7.4	5.0	5.0	5.0	5.0	5.0	5.8	5.8	5.9	5.5	5.4	6.5	7.2	6.7	7.2	7.3	6.9	6.5
55.	*	6.9	7.6	7.4	5.0	5.0	5.0	5.0	5.0	5.9	5.9	5.8	5.5	5.4	6.5	7.2	6.8	7.0	7.1	7.2	6.7
60.	*	6.8	7.6	7.4	5.0	5.0	5.0	5.0	5.0	5.9	5.9	5.9	5.5	5.4	6.5	7.3	7.1	6.8	6.7	7.7	6.9
65.	*	6.7	7.6	7.4	5.1	5.1	5.0	5.0	5.0	6.0	6.0	6.0	5.6	5.4	6.6	7.4	7.3	6.9	6.4	8.1	7.4
70.	*	6.9	7.7	7.7	5.1	5.1	5.0	5.0	5.0	6.2	6.2	6.0	5.6	5.4	6.6	7.5	7.5	6.8	6.4	8.2	7.7
75.	*	6.8	7.8	7.8	5.1	5.1	5.2	5.1	5.1	6.3	6.3	6.2	5.6	5.4	6.6	7.6	7.7	6.7	6.3	8.3	8.3
80.	*	7.3	7.9	7.8	5.1	5.2	5.5	5.4	5.4	6.4	6.4	6.3	5.7	5.5	6.7	7.7	7.9	6.8	6.4	8.4	8.5
85.	*	8.0	8.2	8.0	5.2	5.3	6.0	5.9	5.9	6.3	6.3	6.2	5.5	5.3	6.6	7.5	8.1	6.7	6.2	8.3	8.6

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  90.  *   8.1   8.7   8.4   5.4   5.6   6.3   6.2   6.2   6.1   6.1   6.1   5.6
5.2   6.6   7.4   7.8   6.5   6.0   7.8   8.2
  95.  *   8.2   8.9   8.7   5.6   5.8   6.7   6.4   6.4   5.7   5.7   5.7   5.2
5.1   6.6   7.1   7.6   6.3   5.8   7.6   8.1
 100.  *   8.0   9.1   8.8   5.7   5.9   6.7   6.5   6.5   5.4   5.4   5.3   5.2
5.0   6.5   6.9   7.6   6.3   5.7   7.3   8.0
 105.  *   8.0   9.2   9.0   5.7   5.9   6.7   6.4   6.4   5.1   5.1   5.2   5.1
5.1   6.7   7.1   7.4   6.1   5.8   7.4   7.7
 110.  *   8.0   9.6   9.4   5.7   5.9   6.7   6.3   6.3   5.1   5.1   5.1   5.1
5.1   6.8   7.0   7.5   6.1   5.7   7.3   7.7
 115.  *   8.3   9.4   9.5   5.8   6.2   6.7   6.2   6.2   5.0   5.0   5.1   5.2
5.1   6.9   7.1   7.4   6.0   5.7   7.3   7.7
 120.  *   8.2   9.4   9.8   6.2   6.3   7.0   6.1   6.1   5.0   5.0   5.3   5.3
5.3   7.1   7.3   7.6   6.0   5.6   7.1   7.5
 125.  *   8.4   9.1   9.5   6.9   7.0   7.3   6.0   6.0   5.0   5.0   5.8   5.8
5.8   7.1   7.2   7.3   5.8   5.4   6.9   7.3
 130.  *   8.4   8.6   8.9   7.6   7.7   8.0   6.1   5.9   5.0   5.2   6.4   6.4
6.4   6.8   7.1   7.0   5.6   5.3   6.8   7.1
 135.  *   7.8   7.9   8.2   8.4   8.5   8.7   6.5   6.1   5.1   5.5   7.2   7.3
7.0   6.5   6.6   6.6   5.3   5.0   6.5   6.8
 140.  *   7.3   7.0   7.5   8.6   8.8   9.2   6.7   6.2   5.2   5.8   7.7   7.8
7.5   5.9   6.0   5.9   5.2   5.0   6.6   6.6
 145.  *   6.9   6.5   6.5   8.5   8.7   9.3   6.9   6.4   5.5   6.1   8.0   7.9
7.7   5.5   5.6   5.5   5.0   5.0   6.6   6.5
 150.  *   6.6   6.0   6.0   8.4   8.4   9.2   7.1   6.6   5.6   6.1   8.0   7.9
7.8   5.2   5.2   5.2   5.0   5.0   6.6   6.5
 155.  *   6.6   5.8   5.8   8.3   7.8   8.8   6.9   6.6   5.8   6.2   7.8   7.5
7.5   5.1   5.1   5.1   5.0   5.0   6.7   6.6
 160.  *   6.6   6.0   5.9   8.4   7.6   8.4   6.9   6.6   5.8   6.2   7.7   7.4
7.3   5.1   5.1   5.1   5.0   5.0   6.7   6.6
 165.  *   6.7   6.0   5.9   8.4   7.3   8.0   7.0   6.5   5.8   6.0   7.7   7.2
7.2   5.0   5.1   5.0   5.1   5.0   6.7   6.6
 170.  *   6.6   6.1   5.9   8.3   7.4   7.7   6.9   6.5   5.7   5.9   7.6   7.0
7.0   5.0   5.1   5.0   5.1   5.1   6.8   6.7
 175.  *   6.7   6.2   5.9   8.3   7.4   7.4   7.0   6.4   5.7   5.9   7.5   7.0
6.8   5.0   5.0   5.0   5.1   5.1   6.9   6.8
 180.  *   6.7   6.3   6.0   8.3   7.6   7.2   7.0   6.4   5.7   5.9   7.5   6.7
6.7   5.0   5.0   5.0   5.1   5.1   6.9   6.8
 185.  *   6.9   6.3   5.9   8.4   7.9   6.9   7.1   6.4   5.7   5.9   7.5   6.7
6.7   5.0   5.0   5.0   5.1   5.1   7.0   7.0
 190.  *   7.0   6.2   5.8   8.4   8.1   6.8   7.3   6.4   5.7   5.9   7.4   6.7
6.6   5.0   5.0   5.0   5.1   5.1   7.0   7.0
 195.  *   7.2   6.4   5.8   8.5   8.3   6.7   7.3   6.4   5.7   5.9   7.3   6.5
6.5   5.0   5.0   5.0   5.1   5.1   7.1   7.1
 200.  *   7.3   6.6   5.7   8.5   8.4   6.7   7.3   6.4   5.7   5.8   7.3   6.5
6.5   5.0   5.0   5.0   5.2   5.1   7.1   7.2
 205.  *   7.5   6.7   5.6   8.5   8.7   6.8   7.2   6.4   5.6   5.8   7.3   6.6
6.5   5.0   5.0   5.1   5.5   5.4   7.1   7.4
 210.  *   7.6   6.4   5.4   8.3   8.7   7.2   7.3   6.5   5.5   5.9   7.3   6.6
6.5   5.0   5.0   5.3   5.8   5.7   7.5   7.6
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JOB: Montlake and Lake Wash RUN: 2030 2nd Montlake Bridge

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 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

------*-------------------------------------------------------------------------------
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 215.  *   7.7   6.4   5.2   8.1   8.8   7.9   7.5   6.7   5.5   5.9   7.1   6.7
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6.4   5.0   5.0   5.7   6.4   6.3   7.3   7.4
 220.  *   7.4   6.2   5.2   7.8   8.6   8.5   7.7   6.8   5.5   6.0   7.3   6.8
6.5   5.0   5.1   6.2   7.2   7.0   7.1   7.2
 225.  *   6.9   5.9   5.1   7.6   8.3   8.9   8.1   7.1   5.5   6.2   7.5   7.0
6.5   5.0   5.3   7.0   8.2   7.8   6.7   6.9
 230.  *   6.4   5.7   5.1   7.5   8.1   8.9   8.3   7.3   5.6   6.4   7.9   7.3
6.6   5.1   5.4   7.6   8.8   8.5   6.4   6.4
 235.  *   6.0   5.5   5.1   7.4   7.8   8.6   8.5   7.6   5.9   6.6   7.9   7.5
6.5   5.3   5.6   8.0   9.0   8.7   6.0   6.0
 240.  *   5.7   5.4   5.1   7.4   7.7   8.3   8.4   7.9   6.0   6.9   8.3   7.6
6.8   5.4   5.9   8.3   9.3   8.7   5.9   5.8
 245.  *   5.6   5.3   5.1   7.4   7.5   7.7   8.4   7.8   6.2   7.0   8.5   8.0
6.8   5.4   5.9   8.1   8.9   8.5   5.9   5.7
 250.  *   5.5   5.2   5.1   7.5   7.7   7.4   7.9   8.0   6.4   7.1   8.6   8.1
6.9   5.5   6.2   8.0   8.7   8.4   5.8   5.7
 255.  *   5.5   5.2   5.0   7.4   7.7   7.3   7.6   7.8   6.7   7.3   8.7   8.3
7.0   5.5   6.3   7.9   8.4   8.2   5.8   5.5
 260.  *   5.5   5.0   5.0   7.4   7.6   7.3   7.2   7.6   6.7   7.2   8.7   8.5
7.2   5.7   6.3   7.8   8.3   8.1   5.7   5.5
 265.  *   5.4   5.0   5.0   7.4   7.6   7.3   6.8   7.3   7.0   7.5   8.8   8.4
7.4   5.7   6.2   7.5   8.0   7.9   5.8   5.5
 270.  *   5.5   5.1   5.1   7.3   7.6   7.5   6.5   6.5   7.2   7.1   8.5   8.5
7.4   5.8   6.3   7.4   7.9   7.8   5.7   5.3
 275.  *   5.4   5.1   5.1   7.4   7.7   7.8   6.6   6.5   7.1   7.4   8.5   8.4
7.5   5.8   6.2   7.2   7.7   7.6   5.5   5.4
 280.  *   5.4   5.1   5.1   7.4   7.8   7.9   6.6   6.2   7.3   7.5   8.5   8.5
7.8   5.7   6.2   7.2   7.7   7.5   5.5   5.4
 285.  *   5.4   5.1   5.1   7.5   8.1   8.0   6.6   6.0   6.8   7.5   8.7   8.7
8.0   5.7   6.2   7.1   7.4   7.4   5.6   5.4
 290.  *   5.3   5.1   5.1   7.5   8.0   8.2   6.6   6.1   6.9   7.5   8.6   9.0
8.4   5.8   6.2   7.1   7.4   7.4   5.6   5.4
 295.  *   5.4   5.2   5.2   7.4   8.2   8.3   6.4   6.0   7.1   7.5   8.5   9.1
8.7   5.8   6.1   7.0   7.3   7.5   5.6   5.3
 300.  *   5.5   5.4   5.3   7.4   8.1   8.3   6.2   5.7   6.6   7.2   8.9   8.8
8.9   5.9   6.3   7.2   7.3   7.5   5.6   5.3
 305.  *   6.0   5.7   5.6   7.4   8.0   8.3   6.0   5.6   6.5   7.1   8.7   8.9
8.9   6.3   6.5   7.4   7.4   7.4   5.6   5.4
 310.  *   6.7   6.4   6.0   7.3   7.8   7.8   6.0   5.6   6.4   6.7   8.7   8.5
8.7   6.8   7.2   8.3   7.5   7.5   5.6   5.4
 315.  *   7.4   6.8   6.5   7.1   7.4   7.5   5.7   5.5   6.3   6.5   8.1   7.9
8.0   7.6   8.0   8.9   7.6   7.6   5.6   5.5
 320.  *   8.2   7.6   6.8   7.0   7.0   6.8   5.6   5.5   6.2   6.2   7.4   7.3
7.3   7.7   8.0   9.1   7.7   7.6   5.6   5.6
 325.  *   8.8   8.0   7.0   6.8   6.6   6.4   5.5   5.4   6.1   6.1   6.9   6.6
6.6   8.1   8.2   9.6   7.8   7.5   5.6   5.8
 330.  *   9.4   8.4   7.1   6.5   6.3   6.1   5.5   5.4   6.0   6.1   6.8   6.3
6.2   8.0   8.1   9.5   8.1   7.5   5.6   5.8
 335.  *   9.5   8.9   7.3   6.4   6.2   6.0   5.5   5.3   5.9   6.0   6.7   6.2
5.8   8.0   7.7   9.3   8.6   7.7   5.5   6.2
 340.  *   9.6   9.2   7.5   6.4   6.1   5.8   5.3   5.2   5.9   6.0   6.6   5.9
5.7   8.3   7.7   9.1   8.9   8.0   5.7   6.5
 345.  *   9.3   9.6   8.0   6.3   5.9   5.6   5.3   5.1   5.7   5.9   6.2   5.9
5.6   8.1   7.5   8.6   9.3   8.4   5.9   7.0
 350.  *   9.0   9.4   8.3   6.1   5.7   5.4   5.1   5.0   5.7   5.7   6.2   5.7
5.4   7.9   7.4   8.0   9.6   8.7   6.1   7.4
 355.  *   8.8   9.2   8.6   5.9   5.5   5.2   5.0   5.0   5.7   5.7   6.1   5.5
5.3   7.7   7.2   7.6   9.6   9.2   6.6   7.3
 360.  *   8.3   8.7   8.5   5.6   5.3   5.1   5.0   5.0   5.7   5.7   6.0   5.5
5.3   7.5   7.3   7.2   9.5   9.2   6.8   7.1

------*-------------------------------------------------------------------------------
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 MAX   *   9.6   9.6   9.8   8.6   8.8   9.3   8.5   8.0   7.3   7.5   8.9   9.1
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8.9   8.3   8.2   9.6   9.6   9.3   8.4   8.6
 DEGR. *  340   110   120   140   140   145   235   250   280   265   300   295
300   340   325   325   350    20    80    85

 THE HIGHEST CONCENTRATION OF    9.80 PPM OCCURRED AT RECEPTOR REC3 .
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