APPENDIX C

Traffic Report

FINAL Traffic Impact Analysis

Chula Vista Urban Core

October 2005

Prepared for:
RRM Design Group

Project No. 095413000

FINAL Traffic Impact Analysis

Chula Vista Urban Core

October 2005

Prepared for:
RRM Design Group
31831 Camino Capistrano, Suite 200
San Juan Capistrano, CA 92675

Prepared by:
Kimley-Horn and Associates, Inc.
517 Fourth Avenue, Suite 301
San Diego, CA 92101

Project No. 095413000

Kimley-Horn
and Associates, Inc.

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

1.0 INTRODUCTION

This study evaluates the potential traffic-related impacts associated with the adoption of the Chula Vista Urban Core Specific Plan. This study determines the appropriate geometric design of the urban arterials, as defined in the Chula Vista General Plan. In addition, this study will recommend improvements to achieve acceptable LOS for any potential traffic impacts associated with the project. This study will serve as the traffic impact analysis for future redevelopment projects consistent with the Urban Core Specific Plan.

Project Description

The Chula Vista Urban Core is located in the northwestern portion of the City of Chula Vista, California. **Figure 1-1** illustrates the project study area in a regional context. The Urban Core Specific Plan (UCSP) Study Area covers approximately 1,700 acres within the northwestern portion of the City of Chula Vista. It is generally bordered by the San Diego Freeway (I-5) to the west, C Street to the north, Del Mar Street to the east, and L Street to the south. While there are 1,700 acres within the UCSP Study Area, it was determined that the proposed changes to land use designations be focused on areas more in need of revitalization. Therefore, the Specific Plan boundary focuses on the development and redevelopment of approximately 690 gross acres within the larger UCSP Study Area. **Figure 1-2** illustrates both the UCSP Study Area and the Focus Area.

Analysis Scenarios

A total of three scenarios were analyzed as part of the Urban Core project, which are listed below:

- ***Existing Conditions***
  - Existing Conditions: Represents the traffic conditions of the existing street network, primarily in the Urban Core Focus Area, but also includes key intersections and roadway segments within and near the Urban Core Specific Plan Study Area.
- ***Year 2030***
  - Year 2030 Conditions: Represents the traffic conditions of the street network consistent with the adopted general plan update, implementation of the regional transit vision, and full build-out of the Urban Core.
  - Year 2030 With Improvements Conditions: Represents the traffic conditions of the street network with improvements to several roadways and intersections.

It should be noted that due to urban revitalization, the timing, sequencing, and the extent of development is not predictable and is speculative. The Urban Core Specific Plan covers a large geographic area, which could redevelop in many different ways. As a result, the intermediate years were not analyzed; only the full buildout of the Urban Core was analyzed. As such, the impacts resulting from the full buildout of the Urban Core would be considered cumulative impacts.


Miramar Rd
Marine Corps
Air Station
Miramar
Santee Lakes
Mast Blvd
Lakeside
Santee
Pepper Dr
La Jolla Blvd
Mission Blvd
Ruffin Rd
Aero Dr
Navajo Rd
Fanita Dr
S A N D I E G O
Murray Reservoir
El Cajon
Fiesta Island
Friars Rd
Montezuma Rd
La Mesa
Casa de Oro
Spring Valley
C A L I F O R N I A
Lemon Grove
5th Ave
54th St
Chollas Reservoir
N Harbor Dr
B St
San Diego
Market St
Imperial Ave
Skyline Dr
North Island
Coronado
Paradise Valley Rd
Sweetwater Reservoir
National City
Lincoln Acres
San Diego
Bay
Bonita
Chula Vista
E H St
Otay Lakes Rd
Pacific Ocean
4th Ave
Oleander Ave
Imperial Beach
Main St
Palm Ave
Brown Field Municipal Airport
Urban Core Specific Plan
Imperial Beach Naval Air Station
San Ysidro Larsen Field
Tijuana
N
BAJA CALIFORNIA

Figure 1-2

Urban Core Specific Plan

KIMLEY-HORN and ASSOCIATES

2.0 METHODOLOGY

The following section describes the methodology used in the determination of study intersections, analysis process, and determination of significant impacts.

Study Intersections

The Urban Core is located in the Northwest Planning Subarea, located south of SR-54, west of I-805, north of L Street, and east of I-5. More specifically, the Urban Core Specific Plan is bounded by C Street, Del Mar Avenue, L Street, and I-5. The following intersections shown in **Table 2-1** were identified for evaluation. These intersections represent all key intersections in the Urban Core Specific Plan and others that could be influenced by land use intensifications within the Urban Core.

TABLE 2-1
STUDY INTERSECTIONS

	Intersection	Traffic Control (a)
1	Bay Blvd-I-5 SB Ramp @ E St (b)	Signal
2	I-5 NB Ramp @ E St	Signal
3	Woodlawn Ave @ E St	Signal
4	Broadway @ E St	Signal
5	5th Ave @ E St	Signal
6	4th Ave @ E St	Signal
7	3rd Ave @ E St	Signal
8	2nd Ave @ E St	Signal
9	1st Ave @ E St (b)	Signal
10	Flower St @ E St (b)	Signal
11	Bonita Glen Dr @ Bonita Rd (b)	Signal
12	Bay Blvd @ F St (b)	AWSC
13	Broadway @ F St	Signal
14	5th Ave @ F St	Signal
15	4th Ave @ F St	Signal
16	3rd Ave @ F St	Signal
17	2nd Ave @ F St	Signal
18	Broadway @ G St	Signal
19	5th Ave @ G St	Signal
20	4th Ave @ G St	Signal
21	3rd Ave @ G St	Signal
22	2nd Ave @ G St	AWSC
23	Hilltop Dr @ G St (b)	AWSC
24	I-5 SB Ramp @ H St	Signal
25	I-5 NB Ramp @ H St	Signal

Notes:
(a) Signal = Traffic signal, AWSC = All-way Stop Control, TWSC = Two-way Stop Control
(b) Outside of Urban Core Specific Plan study area, but due to proximity and ingress/egress patterns, these intersections were included as part of the study area.

TABLE 2-1
STUDY INTERSECTIONS (Continued)

	Intersection	Traffic Control (a)
26	Woodlawn Ave @ H St	Signal
27	Broadway @ H St	Signal
28	5th Ave @ H St	Signal
29	4th Ave @ H St	Signal
30	3rd Ave @ H St	Signal
31	2nd Ave @ H St	Signal
32	1st Ave @ H St (b)	Signal
33	Hilltop Dr @ H St (b)	Signal
34	Broadway @ SR-54 WB Ramp (b)	Signal
35	Broadway @ SR-54 EB Ramp (b)	Signal
36	Broadway @ C St	Signal
37	Broadway @ D Street	Signal
38	Broadway @ Flower St	Signal
39	Broadway @ I St	Signal
40	Broadway @ J St	Signal
41	Broadway @ K St	Signal
42	Broadway @ L St	Signal
43	4th Ave @ SR-54 WB Ramp (b)	Signal
44	4th Ave @ SR-54 EB Ramp (b)	Signal
45	4th Ave @ Brisbane St (b)	Signal
46	4th Ave @ C St	Signal
47	4th Ave @ D St	Signal
48	4th Ave @ I St	Signal
49	4th Ave @ J St	Signal
50	4th Ave @ K St	Signal
51	4th Ave @ L St	Signal
52	3rd Ave @ Davidson St	Signal
53	3rd Ave @ I St	Signal
54	3rd Ave @ J St	Signal
55	3rd Ave @ K St	Signal
56	3rd Ave @ L St	Signal
57	2nd Ave @ D St	AWSC
58	J St @ I-5 SB Ramp	Signal
59	J St @ I-5 NB Ramp	Signal
60	Woodlawn Ave @ J St	TWSC
61	L St @ Bay Blvd	TWSC
62	L St @ Industrial Blvd	Signal
63	Bay Blvd @ I-5 SB Ramp (b)	TWSC
64	Industrial Blvd @ I-5 NB Ramp (b)	AWSC

Notes:
(a) Signal = Traffic signal, AWSC = All-way Stop Control, TWSC = Two-way Stop Control
(b) Outside of Urban Core Specific Plan study area, but due to proximity and ingress/egress patterns, these intersections were included as part of the study area.

As shown in Table 2-1, 56 signalized intersections exist near and within the Urban Core Specific Plan study area under existing conditions. It should be noted that intersections 1, 9 through 12, 23, 32 through 35, 43 through 45, 63, and 64 are outside of the Urban Core Specific Plan study area, but are included in the analysis due to the proximity and ingress/egress patterns. **Figure 2-1** displays the location of the study intersections.

Analysis Process

The analysis process includes determining the operations at the study intersections for the a.m. and p.m. peak-hours and operations on roadway segments using ADT volumes. Intersections will be measured and quantified by using the Synchro traffic analysis software package. Roadway segments will be measured based on each segment's volume and assigned capacity. Results will be compared to the City's standards to determine the level of service (LOS).

Analysis Software

To analyze the operations of both signalized and unsignalized intersections, Synchro 6 (Trafficware) was used for the analysis. Synchro 6 uses the methodologies outlined in the 2000 *Highway Capacity Manual (HCM)*.

The default peak-hour factor (PHF) of 0.92 was used for the Existing Conditions and Year 2030 scenarios. Under the Year 2030 scenario, all signal timings and phasings at the study intersections were optimized as a network and a common cycle length was selected at all intersections. Also, it should be noted that at each interchange, the two ramp intersections were optimized separately and assumed to be coordinated.

Signalized Intersections

The 2000 *HCM* published by the Transportation Research Board establishes a system whereby highway facilities are rated for their ability to process traffic volumes. The terminology "level of service" is used to provide a "qualitative" evaluation based on certain "quantitative" calculations, which are related to empirical values.

LOS for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The criteria for the various levels of service designations are given in **Table 2-2**.

TABLE 2-2
LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS

LOS	Control Delay (sec/veh) (a)	Description
A	≤10.0	Operations with very low delay and most vehicles do not stop.
B	<10.0 and <20.0	Operations with good progression but with some restricted movement.
C	>20.0 and <35.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and <55.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55.0 and <80.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Notes:
(a) 2000 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2

Effects of At-Grade Trolley Crossings

As part of the General Plan Update transportation analysis, the effects of the trolley grade crossings at E Street and H Street were evaluated. The analysis replicated the effects of a trolley/rail crossing by assuming a signal at the trolley crossings. A summary of this analysis is included as an attachment to this report (see **Appendix A**). The analysis assumed that a trolley would cross once per every five minutes, using current trolley service and once every two and a half minutes using planned service increases. Field observations indicate that the trolley crossing guards stay down for about 54 seconds. This means that one-sixth of the time, the trolley crossings are down and with future service enhancements, the trolley crossing guards are down one-third of the time.

With the trolley crossings down, queues would start to form in the east-west direction and extend into adjacent intersections. This would cause additional delays and affect the operations at each impacted intersection. As such, delays shown in the respective intersection summary tables for the intersections affected by the trolley crossings would be increased between 17 and 40 seconds per vehicle, causing a drop in LOS grade.

Figure 2-1

Study Intersections

Roadway Segments

In order to determine the LOS for a street segment on a daily basis, the average daily traffic (ADT) volume is compared to its maximum acceptable volume for each type of roadway (arterial, collector, etc.) in the City. The roadway segment capacities of Circulation Element roadways (Class I Collectors and above) were evaluated under existing and proposed conditions using LOS thresholds published by the City of Chula Vista's adopted General Plan. Volume-to-Capacity (v/c) ratios were calculated for each segment. It should be noted that the capacity of a roadway is equal to the maximum LOS E volume, but the LOS is based on the acceptable volume for each respective type of facility. **Table 2-3** summarizes the acceptable volumes with its corresponding LOS for each Circulation Element and Urban Core Circulation Roadway. A more detailed discussion related to the development of the Urban Core Circulation Element is contained in Section 1.2 of the 2005 adopted General Plan.

TABLE 2-3
ROADWAY SEGMENT CAPACITY AND LEVEL OF SERVICE

FACILITY		ACCEPTABLE LOS	LEVEL OF SERVICE (LOS)				
CLASS (a)	LANES		A	B	C	D	E
CIRCULATION ELEMENT ROADWAYS							
Expressway	7/8	C	52,500	61,300	70,000	78,800	87,500
Prime	6	C	37,500	43,800	50,000	56,300	62,500
Major Street	6	C	30,000	35,000	40,000	45,000	50,000
	4	C	22,500	26,300	30,000	33,800	37,500
Class I Collector	4	C	16,500	19,300	22,000	24,800	27,500
URBAN CORE CIRCULATION ELEMENT ROADWAYS							
Gateway Street	6	D	40,800	47,600	54,400	61,200	68,000
	4	D	28,800	33,600	38,400	43,200	48,000
Urban Arterial	4	D	25,200	29,400	33,600	37,800	42,000
Commercial Boulevard	4	D	22,500	26,250	30,000	33,750	37,500
Downtown Promenade	4	D	22,500	26,250	30,000	33,750	37,500
	2	D	9,600	11,200	12,800	14,400	16,000

Note:
Shaded cells correspond to the acceptable traffic volumes for each respective roadway.
(a) The adopted Circulation Element roadways are considered to be Class I Collector Streets and above, and the Urban Core Circulation Element are considered to be 6-lane Gateway Streets and below.

Significance Determination

The significance criteria to evaluate the project impacts to intersections are based on the City of Chula Vista's *Guidelines for Traffic Impact Studies in the City of Chula Vista*, February 13, 2001 and on the City of Chula Vista's adopted General Plan. At intersections, the measurement of effectiveness (MOE) is based on allowable increases in delay. At roadway segments, the MOE is based on allowable increases in the ADT.

Within the City of Chula Vista, the goal is to achieve LOS D or better at all signalized and unsignalized intersections. A project specific impact would occur if the operations at intersections are at LOS E or F *and* the project trips comprise five percent or more of the entering volume. Entering volumes are defined as the number of vehicles "entering" an intersection during a peak-hour. A cumulative impact would occur if the operations at intersections are at LOS E or F only.

For non-Urban Core Circulation Element roadways (Expressway, Prime Arterial, Major Street, Town Center Arterial, Class I Collector), a roadway segment that currently operates at LOS C or better and with the proposed changes would operate at LOS D or worse at General Plan buildout is considered a significant impact. In addition, a roadway segment that currently operates at LOS D or E would operate at LOS E or F at General Plan buildout, respectively, or which operates at LOS D, E, or F and would worsen by five percent or more at General Plan buildout is considered a significant impact.

For Urban Core Circulation Element roadways (Gateway Street, Urban Arterial, Commercial Boulevard, Downtown Promenade), a roadway segment that currently operates at LOS D or better and with the proposed changes would operate at LOS E or F at General Plan buildout is considered a significant impact. In addition, a roadway segment that currently operates at LOS F and would worsen by five percent of more at General Plan buildout is considered a significant impact. **Table 2-4** shows the criteria for determining levels of significance at intersections and roadway segments.

TABLE 2-4
LEVELS OF SIGNIFICANCE CRITERIA FOR INTERSECTIONS AND ROADWAY SEGMENTS

Facility	Measurement of Effectiveness (MOE)	Significance Threshold
Intersection	Seconds of delay	LOS E or F and >5% of entering volume
Roadway Segment	ADT	Non Urban Core Circulation Element Roadways: LOS C or better → LOS D or worse at buildout or LOS D/E → LOS E/F at buildout and >5% of entering volume Urban Core Circulation Element Roadways: LOS D or better → LOS E/F at buildout or LOS E/F and >5% of entering volume

Source: *Guidelines for Traffic Impact Studies in the City of Chula Vista*, February 13, 2001 and City of Chula Vista Adopted General Plan.

3.0 EXISTING CONDITIONS

This section summarizes the existing roadway circulation network, peak-hour and daily traffic volumes, and operations at the study intersections and roadway segments.

Road Network

The following provides a description of the existing street system within the Urban Core study area. It should be noted that the street network is set up in a grid system, with "Streets" typically running east-west and "Avenues" typically running north-south. In addition, each section contains an exhibit of a typical cross section for each respective roadway segment.

E Street is an east-west roadway. E Street is classified as a four-lane gateway street between I-5 and I-805, with the exception of the segment between Broadway and First Avenue, which is classified as a four-lane urban arterial. E Street is four lanes between 3rd Avenue and Broadway, approximately 62 feet in width. Parallel parking is provided on both sides of the street in this section. E Street to the west of Broadway has four lanes, is approximately 70 feet in width, has a two-way left-turn lane, and has no on-street parking. Sidewalks are provided on both sides of the roadway in both sections. The posted speed limit is 30 mph.

F Street is an east-west roadway. F Street is classified as a four-lane downtown promenade between I-5 and Broadway and as a two-lane downtown promenade between Broadway and Third Avenue. F Street is four lanes between Third Avenue and Fourth Avenue with a raised median in the center and is approximately 65 feet in width. The only on-street parking provided in this segment is limited parallel parking on the north side of F Street between Third Avenue and Garret Avenue. Between Fourth Avenue and Broadway, F Street is a two-lane roadway, approximately 40 feet in width with parallel parking on both sides. F Street has four lanes between Broadway and I-5 with parallel parking on both sides and is approximately 66 feet in width. Sidewalks are provided on both sides of the roadway in all three sections. The posted speed limit is 30 mph.

H Street is an east-west roadway with a center two-way left turn lane. H Street is classified as a six-lane gateway street between I-5 and Broadway and between Hilltop Drive and I-805 and as a four-lane urban arterial between Broadway and Hilltop Drive; however, it should be noted that H Street is not built to its ultimate classification and functions as a four-lane roadway between I-5 and Broadway. Parking is provided on-street east of Third Avenue. H Street is approximately 70 feet in curb-to-curb width between Third Avenue and Broadway and 64 feet in curb-to-curb width between Broadway and I-5. Sidewalks are provided on both sides of the street. The posted speed limit is 35 mph.

Broadway is a north-south roadway. Broadway is classified as a four-lane gateway street between SR-54 and C Street and a four-lane commercial boulevard between C Street and L Street. Parallel parking is provided on both sides of the roadway. Between F Street and H Street, there is a two-way left turn lane and the roadway is approximately 82 feet in width. Broadway is approximately 68 feet in width between E Street and F Street. Sidewalks are provided on both sides of the street. The posted speed limit is 35 mph.

3rd Avenue is a north-south roadway. Third Avenue is classified as a four-lane commercial boulevard between C Street and E Street and between H Street and L Street and classified as a two/four-lane downtown promenade between E Street and H Street. Third Avenue is two lanes between E Street and F Street, approximately 72 feet in width. Between F Street and Madrona Street, Third Avenue is a four-lane roadway with a raised median, approximately 101 feet in width. Between Madrona Street and G Street, Third Avenue is four lanes and approximately 72 feet in width. Angled parking is provided in these first three sections. Third Avenue is a four-lane roadway with a center two-way left-turn lane between G Street and H Street; approximately 66 feet in width and including parallel parking. Sidewalks are provided on both sides of the street in all four sections. The posted speed limit is 35 mph.

Table 3-1 summarizes the existing roadway segment dimensions based on field observations and measurements by Kimley-Horn staff.

Figures 3-1 to **3-1.5** show the existing lane configurations and traffic control at the study intersections and **Figure 3-2** shows the number of lanes and street classification on each evaluated roadway segment within the vicinity of the project site.

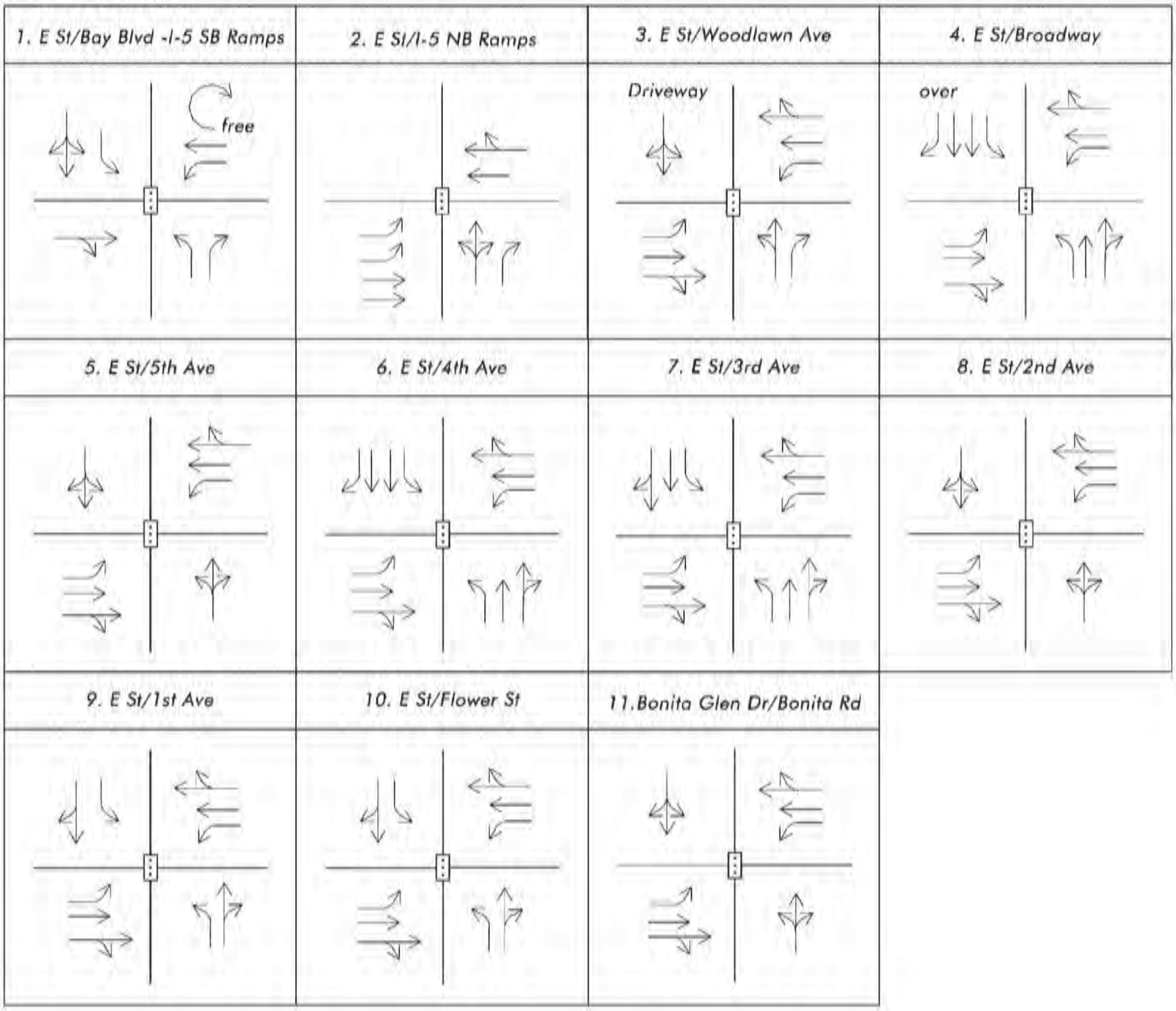
TABLE 3-1
EXISTING ROADWAY SEGMENT DIMENSIONS

Street Segment	Total Travel Lanes	Median/Turn Lane	Curb-to-Curb Width	Parking	Bike Lane
E St between I-5 and Woodlawn Ave	4	Two-Way Left Turn Lane	70'	N	N
E St between Woodlawn Ave and Broadway	4	Two-Way Left Turn Lane	70'	N	N
E St between Broadway and 1st Ave	4	N	62'	Y	N
E St between 1st Ave and I-805	4	Two-Way Left Turn Lane	71'	N	Y
F St between I-5 and Woodlawn Ave	4	N	66'	Y	N
F St between Woodlawn Ave and Broadway	4	N	66'	Y	N
F St between Broadway and 4th Ave	2	N	40'	Y	N
F St between 4th Ave and 3rd Ave	4	Raised Median	65'	N	N
H St between I-5 and Broadway	4	Two-Way Left Turn Lane	64'	N	N
H St between Broadway and 3rd Ave	4	Two-Way Left Turn Lane	64'	N	N
H St between 3rd Ave and Hilltop Dr	4	Two-Way Left Turn Lane	64'	N	Y
H St between Hilltop Dr and I-805	4	N	65'	N	N
J St between Bay Blvd and Broadway	4	Raised Median	67'	N	N
L St between I-5 and Broadway	4	Two-Way Left Turn Lane	63'	N	N
L St between Broadway and Hilltop Dr	4	N	64'	Y	N
Woodlawn Ave between E St and F St	2	N	36'	Y	N
Woodlawn Ave between G St and H St	2	N	33'	Y	N

TABLE 3-1
EXISTING ROADWAY SEGMENT DIMENSIONS (Continued)

Street Segment	Total Travel Lanes	Median/Turn Lane	Curb-to-Curb Width	Parking	Bike Lane
Broadway between SR-54 and C St	4	N	68'	N	N
Broadway between C St and E St	4	Two-Way Left Turn Lane	70'	Y	N
Broadway between E St and F St	4	N	68'	Y	N
Broadway between F St and H St	4	Two-Way Left Turn Lane	82'	Y	N
Broadway between H St and K St	4	Two-Way Left Turn Lane	80'	Y	N
Broadway between K St and L St	4	Two-Way Left Turn Lane	80'	Y	N
Broadway south of L St	4	Raised Median	82'	Y	N
4th Ave between SR-54 and C St	4	Raised Median Extended NB/SB RT Lanes	90'	N	N
4th Ave between C St and E St	4	N	64'	Y	N
4th Ave between E St and H St	4	Two-Way Left Turn Lane	64'	N	N
4th Ave between H St and L St	4	N	63'	Y	N
3rd Ave between C St and E St	4	N	64'	Y	N
3rd Ave between E St and F St	2	N	62'	Y	N
3rd Ave between F St and Madrona St	4	Raised Median	101'	Y	N
3rd Ave between Madrona St and G St	4	N	72'	Y	N
3rd Ave between G St and H St	4	Two-Way Left Turn Lane	66'	Y	N
3rd Ave between H St and L St	4	Two-Way Left Turn Lane	63'	N	N
3rd Ave south of L St	4	Two-Way Left Turn Lane	61'	N	N

E STREET CORRIDOR

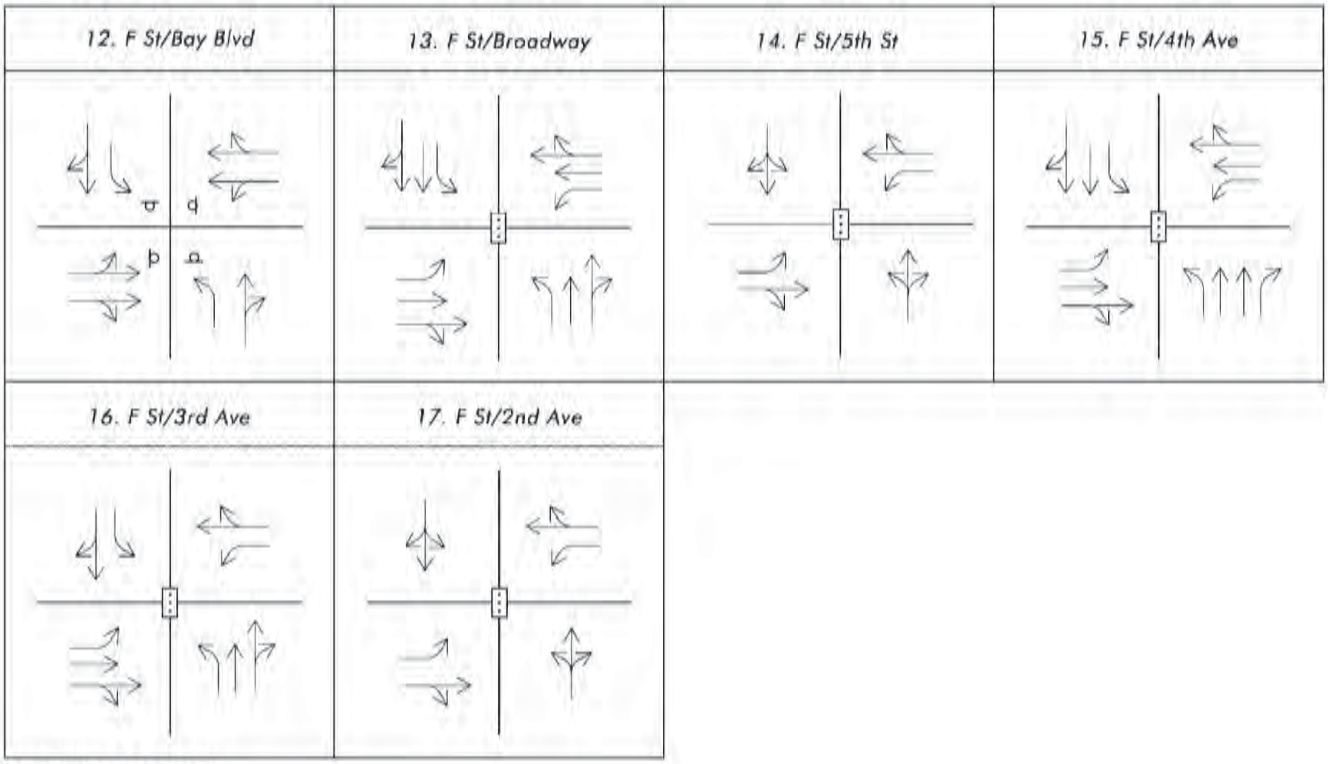


Legend:
Traffic Signal
over Overlap Phase

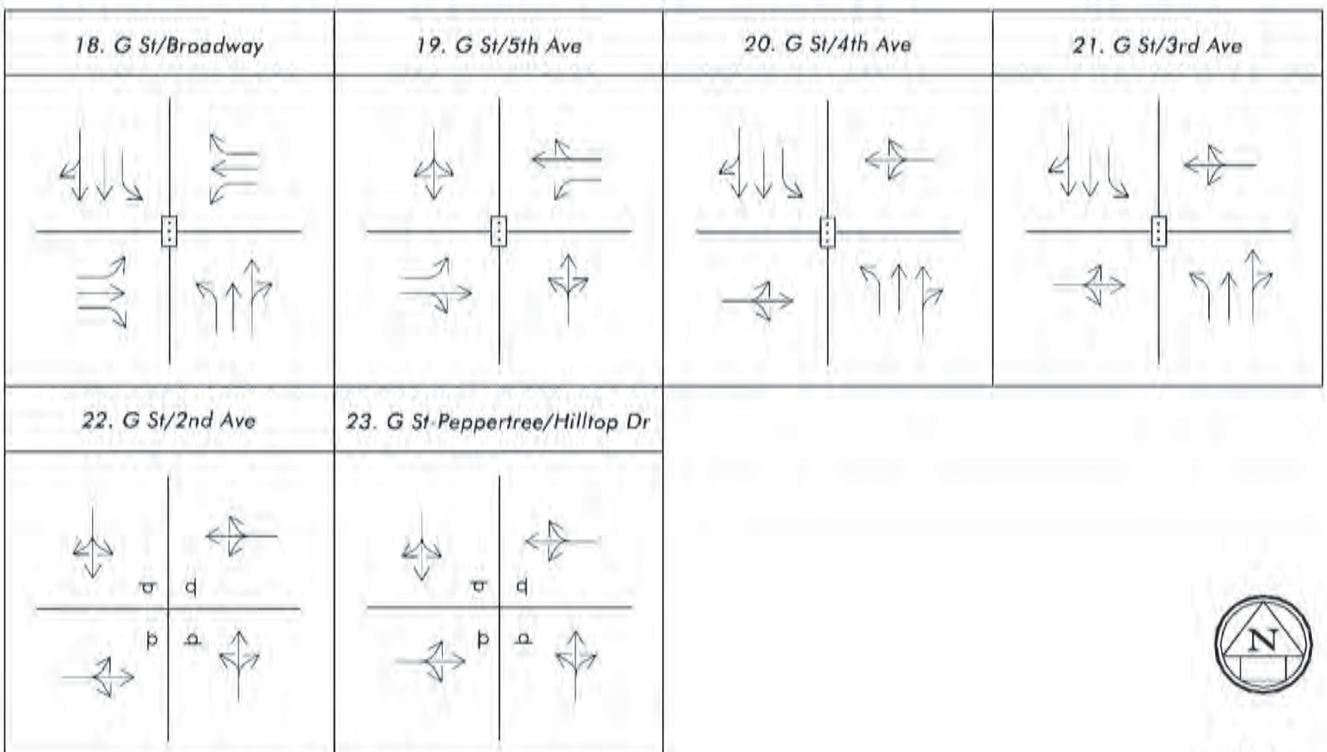
Figure 3-1

Existing Intersection Geometrics

F STREET CORRIDOR



G STREET CORRIDOR



Legend:

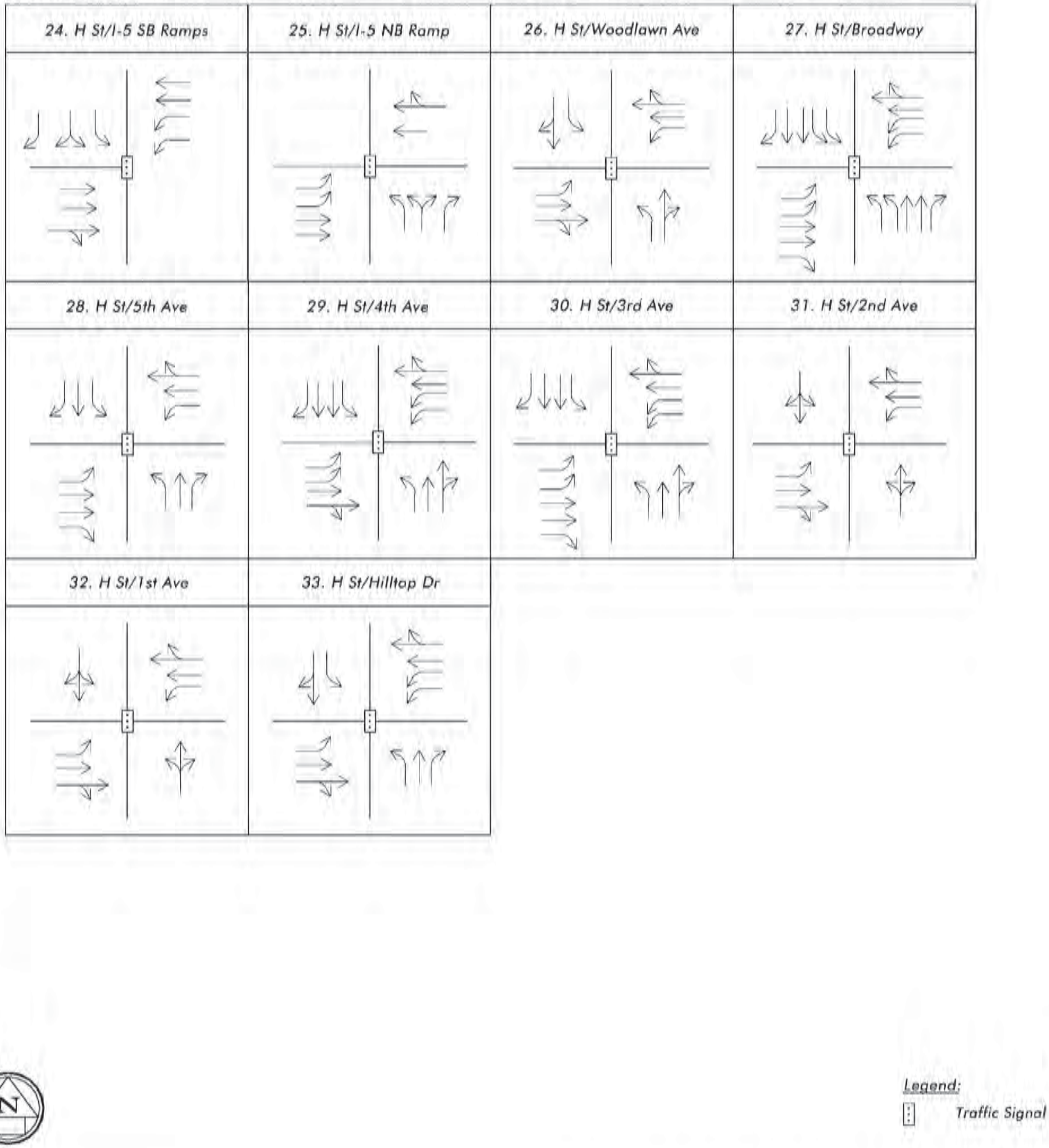
Traffic Signal

Stop Sign

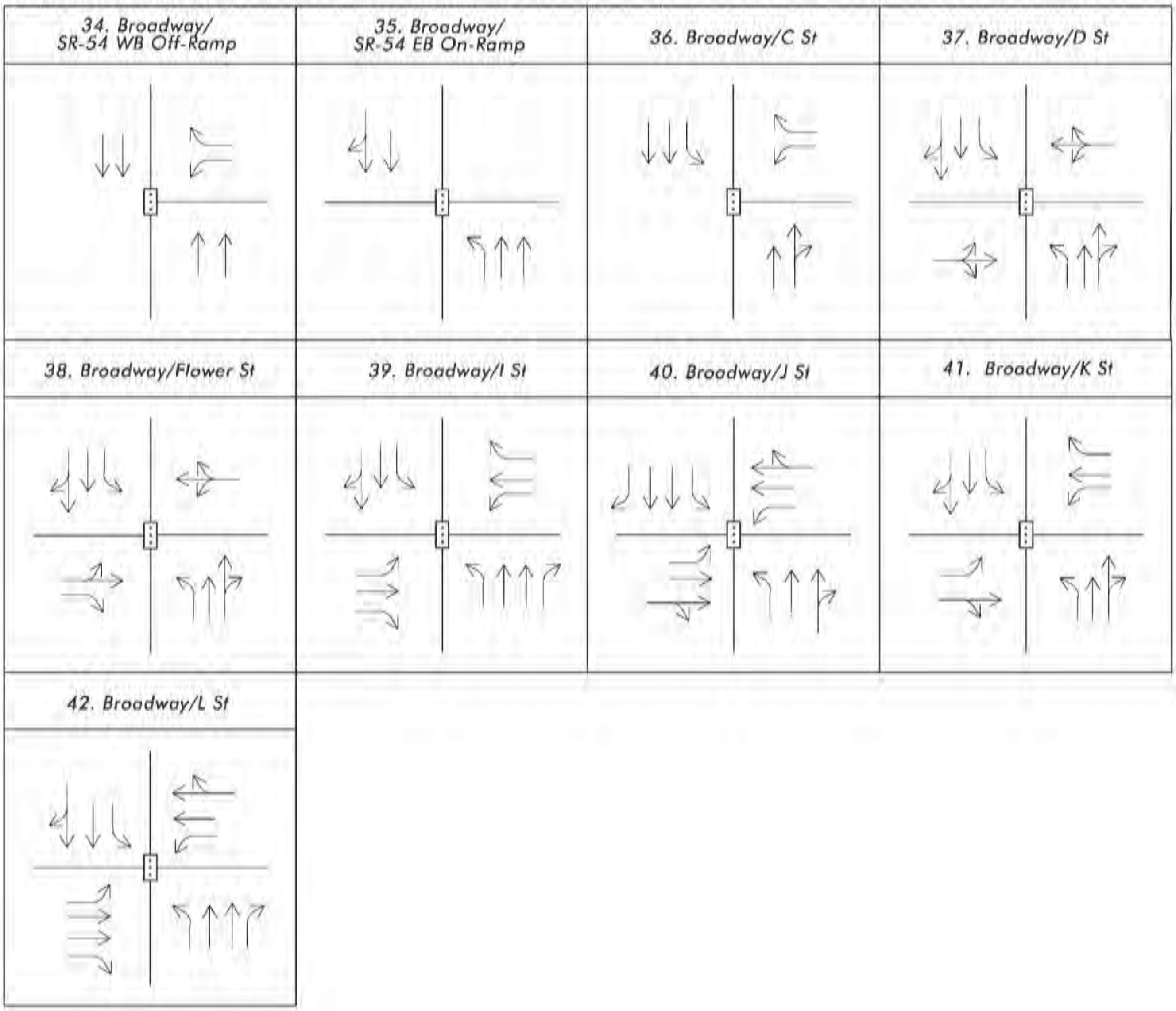
Figure 3-1.1

Existing Intersection Geometrics

H STREET CORRIDOR



BROADWAY CORRIDOR

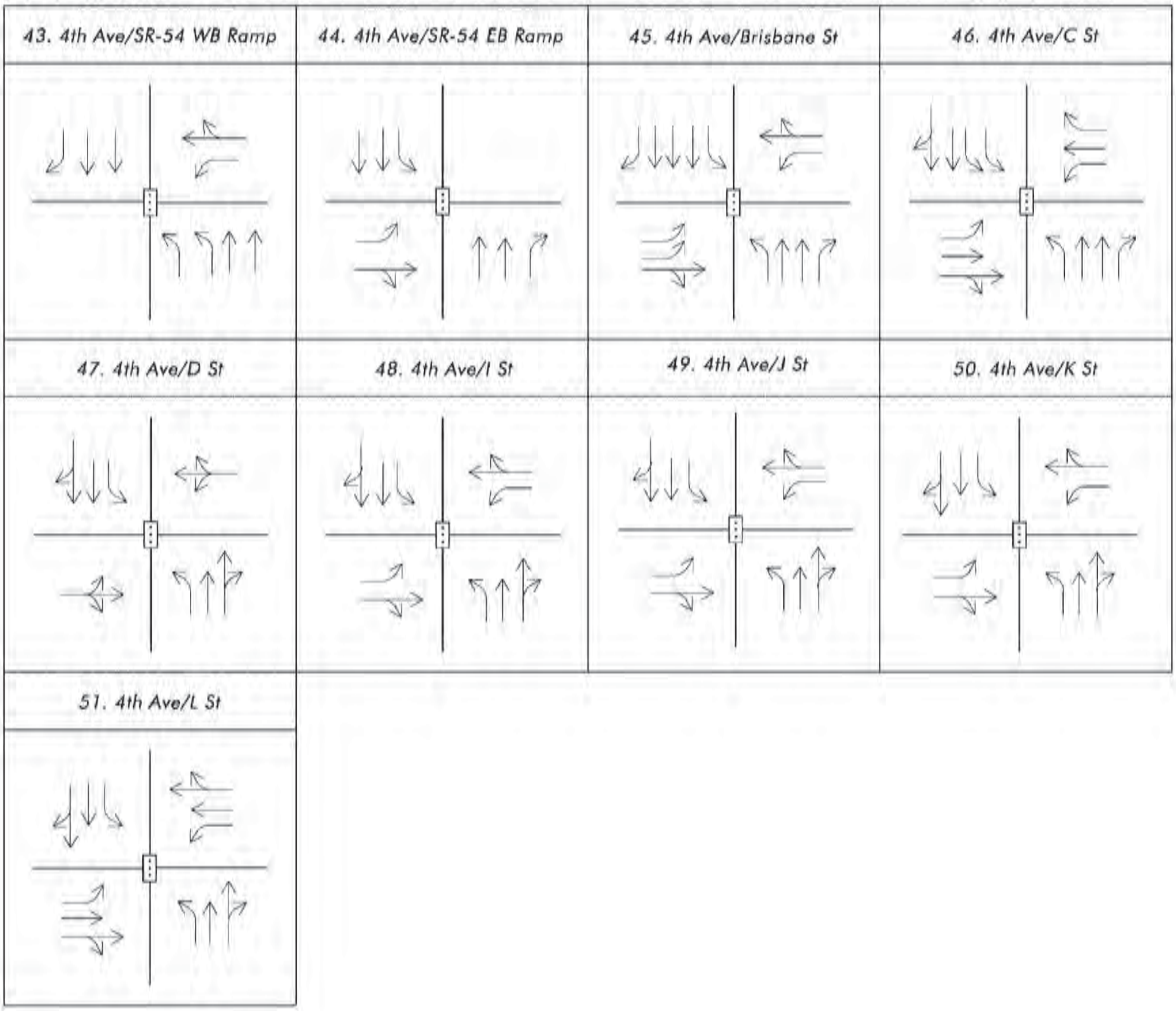


Legend:
Traffic Signal

Figure 3-1.3

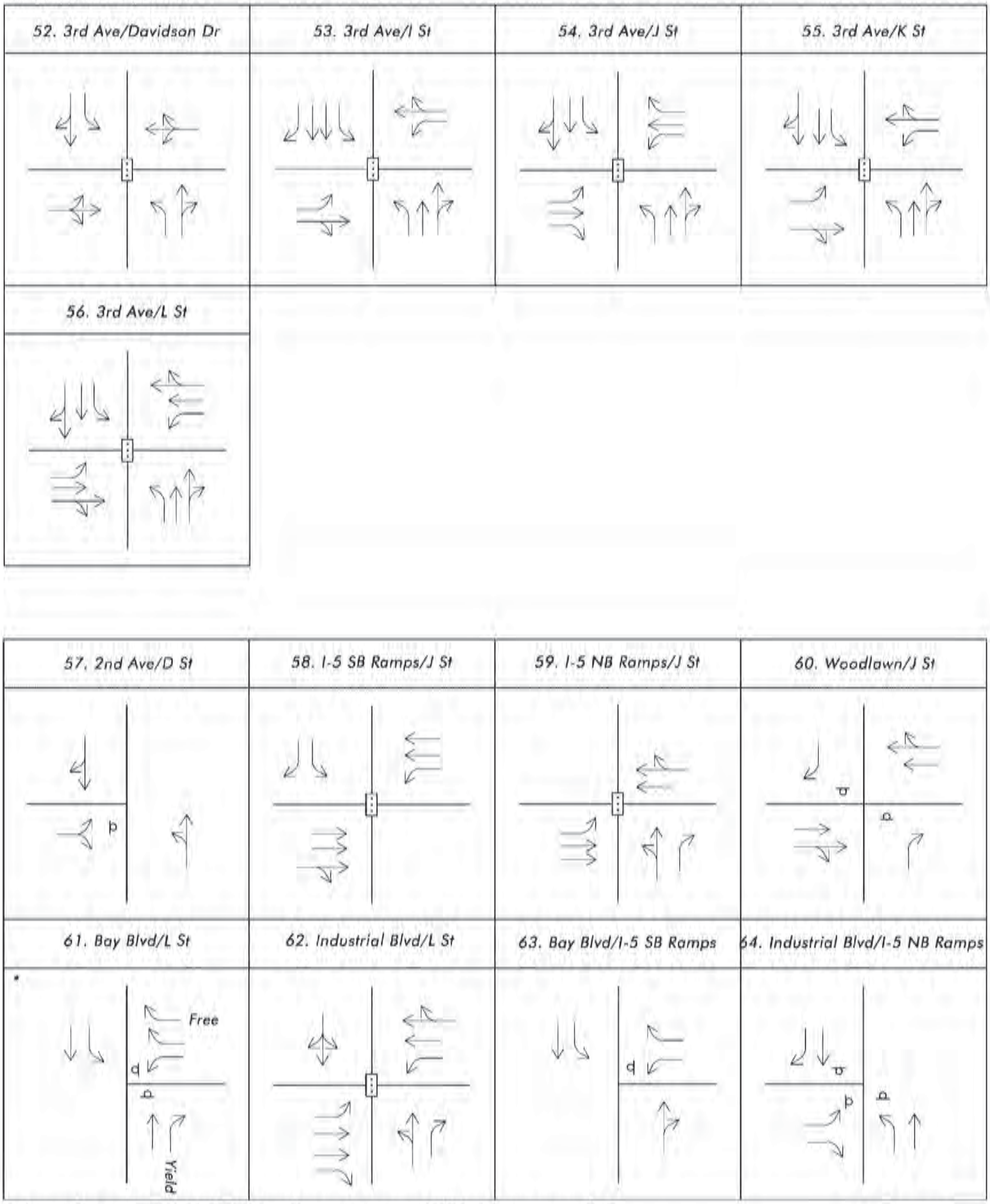
Existing Intersection Geometrics

4TH AVENUE CORRIDOR



Legend:
Traffic Signal

3RD AVENUE CORRIDOR



* Intersection analyzed with NB/SB free-flow movement and WB being stop-controlled.

Legend:

Traffic Signal

Stop Sign

Figure 3-1.5

Existing Intersection Geometrics

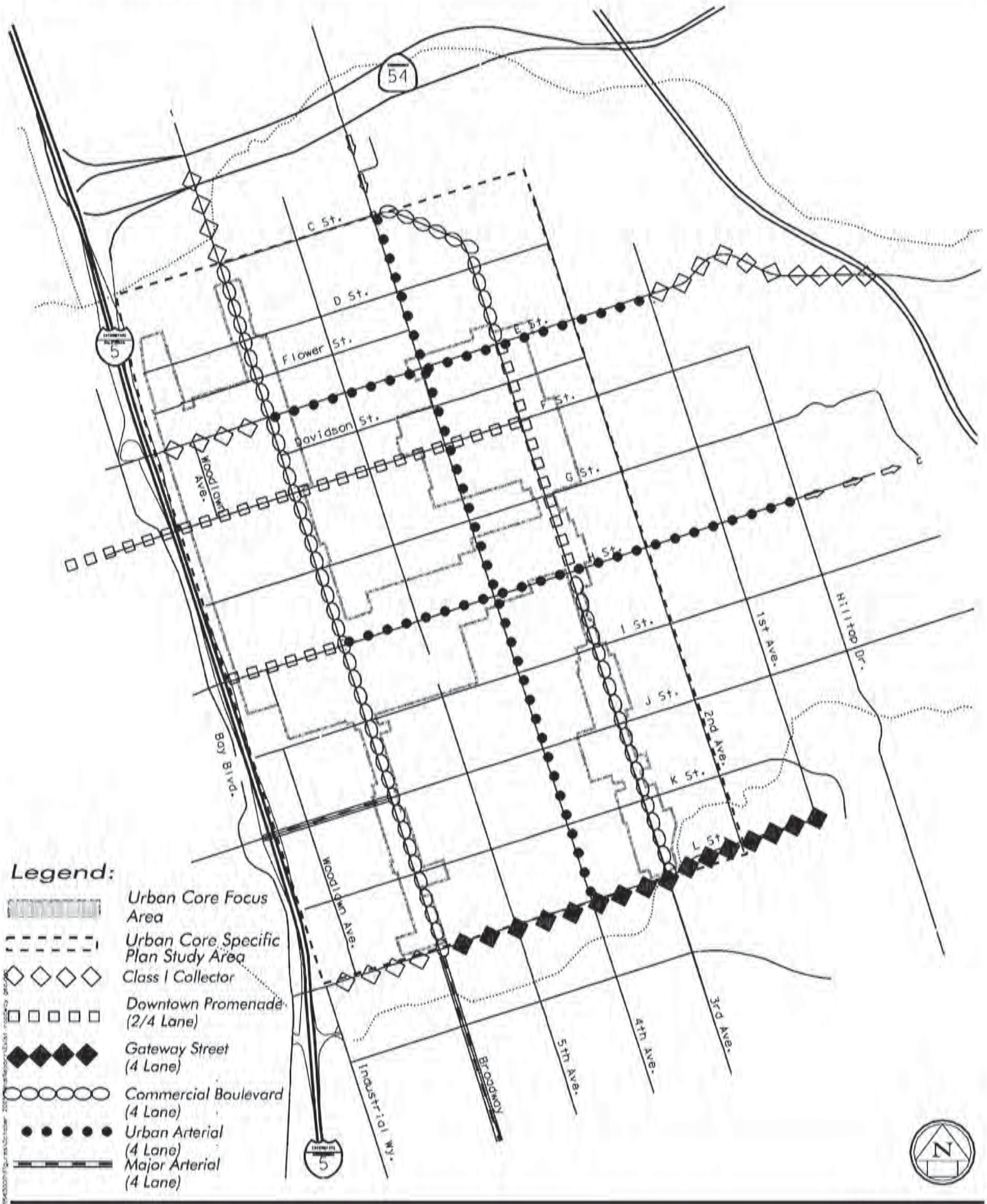


Figure 3-2

Existing Roadway Geometrics

Traffic Volumes

Existing a.m. (7:00 a.m. to 9:00 a.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak-hour turning movement counts were conducted by Southland Car Counters, Turning Point Traffic Service, and Traffic Data Service Southwest at the study intersections. These counts were taken during several different time periods in 2004/2005 and are summarized in **Table 3-2**. The existing ADT for the roadway segments were obtained from the City of Chula Vista. Dates of these counts ranged between 1995 and 2003 and are summarized in **Table 3-3**.

TABLE 3-2
INTERSECTION SEGMENT COUNT DATA SOURCE

	INTERSECTION	SOURCE	DATE
1	Bay Blvd-I-5 SB Ramp @ E St	TPTS	11/16/04
2	I-5 NB Ramp @ E St	TPTS	11/23/04
3	Woodlawn Ave @ E St	SCC	6/16/04
4	Broadway @ E St	SCC	6/22/04
5	5th Ave @ E St	SCC	6/23/04
6	4th Ave @ E St	SCC	6/22/04
7	3rd Ave @ E St	SCC	6/23/04
8	2nd Ave @ E St	SCC	6/23/04
9	1st Ave @ E St	SCC	6/23/04
10	Flower St @ E St	SCC	6/23/04
11	Bonita Glen Dr @ Bonita Rd	SCC	6/23/04
12	Bay Blvd @ F St	TPTS	11/18/04
13	Broadway @ F St	SCC	6/16/04
14	5th Ave @ F St	SCC	6/24/04
15	4th Ave @ F St	SCC	6/23/04
16	3rd Ave @ F St	SCC	6/16/04
17	2nd Ave @ F St	TDSS	4/20/05
18	Broadway @ G St	SCC	6/22/04
19	5th Ave @ G St	SCC	6/16/04
20	4th Ave @ G St	SCC	6/16/04
21	3rd Ave @ G St	SCC	6/22/04
22	2nd Ave @ G St	TDSS	4/20/05
23	Hilltop Dr @ G St	TDSS	4/20/05
24	I-5 SB Ramp @ H St	TPTS	11/18/04
25	I-5 NB Ramp @ H St	SCC	11/14/04
26	Woodlawn Ave @ H St	SCC	1/19/04
27	Broadway @ H St	SCC	1/15/04
28	5th Ave @ H St	SCC	1/15/04
29	4th Ave @ H St	SCC	1/14/04
30	3rd Ave @ H St	SCC	1/14/04
31	2nd Ave @ H St	SCC	1/14/04
32	1st Ave @ H St	SCC	1/15/04

Notes:
SCC = Southland Car Counters; TPTS = Turning Point Traffic Services, TDSS = Traffic Data Service Southwest

TABLE 3-2
INTERSECTION SEGMENT COUNT DATA SOURCE (Continued)

	INTERSECTION	SOURCE	DATE
33	Hilltop Dr @ H St	SCC	1/15/04
34	Broadway @ SR-54 WB Ramp	TDSS	4/20/05
35	Broadway @ SR-54 EB Ramp	TDSS	4/20/05
36	Broadway @ C St	SCC	6/16/04
37	Broadway @ D Street	SCC	6/16/04
38	Broadway @ Flower St	SCC	6/16/04
39	Broadway @ I St	TDSS	4/20/05
40	Broadway @ J St	TDSS	3/30/05
41	Broadway @ K St	TDSS	4/20/05
42	Broadway @ L St	TDSS	4/20/05
43	4th Ave @ SR-54 WB Ramp	TDSS	4/20/05
44	4th Ave @ SR-54 EB Ramp	TDSS	4/20/05
45	4th Ave @ Brisbane St	SCC	6/16/04
46	4th Ave @ C St	SCC	6/16/04
47	4th Ave @ D St	SCC	6/16/04
48	4th Ave @ I St	SCC	6/23/04
49	4th Ave @ J St	SCC	6/16/04
50	4th Ave @ K St	SCC	6/16/04
51	4th Ave @ L St	SCC	6/16/04
52	3rd Ave @ Davidson St	SCC	6/23/04
53	3rd Ave @ I St	SCC	6/23/04
54	3rd Ave @ J St	SCC	6/16/04
55	3rd Ave @ K St	SCC	6/16/04
56	3rd Ave @ L St	SCC	6/16/04
57	2nd Ave @ D St	TDSS	5/3/05
58	J St @ I-5 SB Ramp	TPTS	11/16/04
59	J St @ I-5 NB Ramp	TPTS	11/16/04
60	Woodlawn Ave @ J St	TDSS	4/20/05
61	L St @ Bay Blvd	TPTS	11/17/04
62	L St @ Industrial Blvd	TPTS	11/17/04
63	Bay Blvd @ I-5 SB Ramp	TPTS	11/17/04
64	Industrial Blvd @ I-5 NB Ramp	TPTS	11/17/04

Notes:
SCC = Southland Car Counters; TPTS = Turning Point Traffic Services, TDSS = Traffic Data Service Southwest

TABLE 3-3
ROADWAY SEGMENT COUNT DATA SOURCE

STREET	SEGMENT	COUNT SOURCE	COUNT DATE
E Street	I-5 - Woodlawn Avenue	City of Chula Vista	2003
	Woodlawn Avenue - Broadway	City of Chula Vista	2003
	Broadway - First Avenue	City of Chula Vista	2002/2003
F Street	Bay Boulevard - Broadway	City of Chula Vista	2000
	Broadway - 3rd Avenue	City of Chula Vista	1996/2000/2001
H Street	I-5 - Broadway	City of Chula Vista	2002
	Broadway - Hilltop Drive	City of Chula Vista	2002/2003
J Street	Bay Boulevard - Broadway	City of Chula Vista	2002/2003
L Street	I-5 - Broadway	City of Chula Vista	2002/2003
Woodlawn Avenue	E Street – F Street	City of Chula Vista	2002/2003
	G Street – H Street	City of Chula Vista	2002/2003
Broadway	C Street - E Street	City of Chula Vista	1997
	E Street - H Street	City of Chula Vista	1996/1997/2003
	H Street - L Street	City of Chula Vista	1997/2003
4th Avenue	C Street - E Street	City of Chula Vista	2000
	E Street - H Street	City of Chula Vista	1996/2002
	H Street - L Street	City of Chula Vista	1995/1996/2000/2003
3rd Avenue	C Street - E Street	City of Chula Vista	1995/1996
	E Street - H Street	City of Chula Vista	2002
	H Street - L Street	City of Chula Vista	2002/2003

Figures 3-3 to **3-3.5** illustrate the existing peak-hour traffic volumes at the study intersections and **Figure 3-4** illustrates the existing ADT volumes along the roadway segments.

Appendix B contains the existing peak-hour traffic volume data at the study intersections and the existing ADT volume data for the roadway segments.

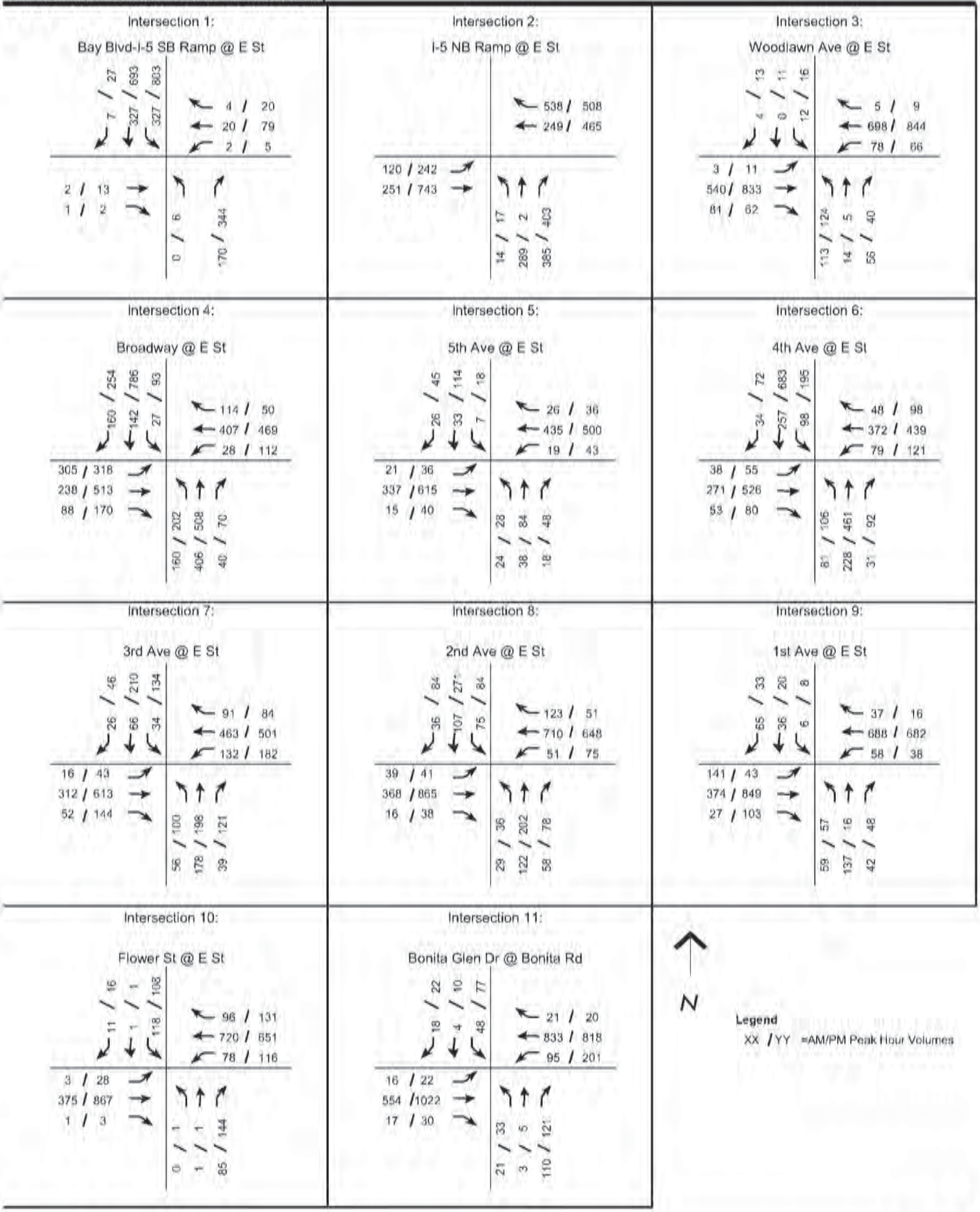


Figure 3-3
Existing Peak-Hour Traffic Volumes

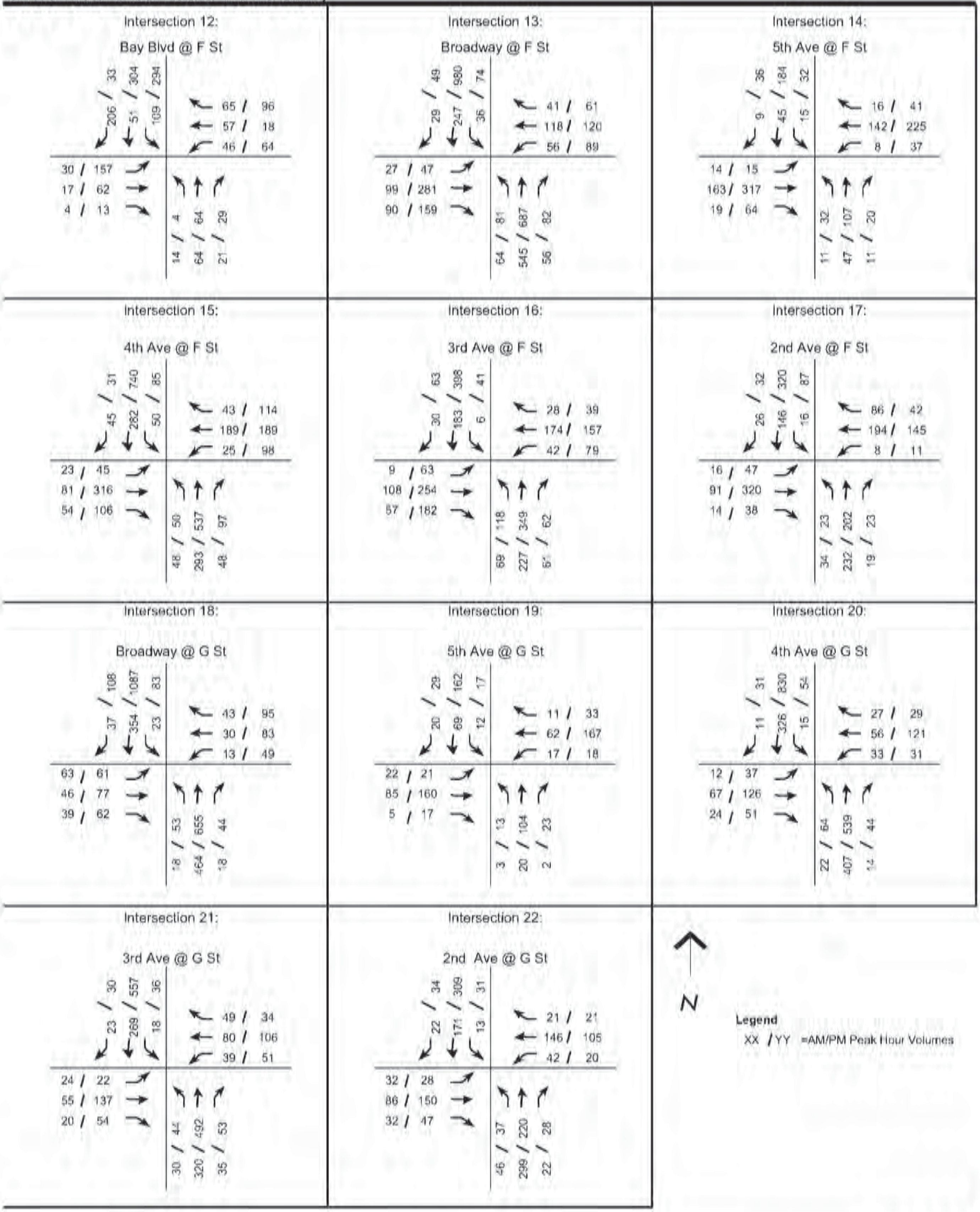


Figure 3-3.1

Existing Peak-Hour Traffic Volumes

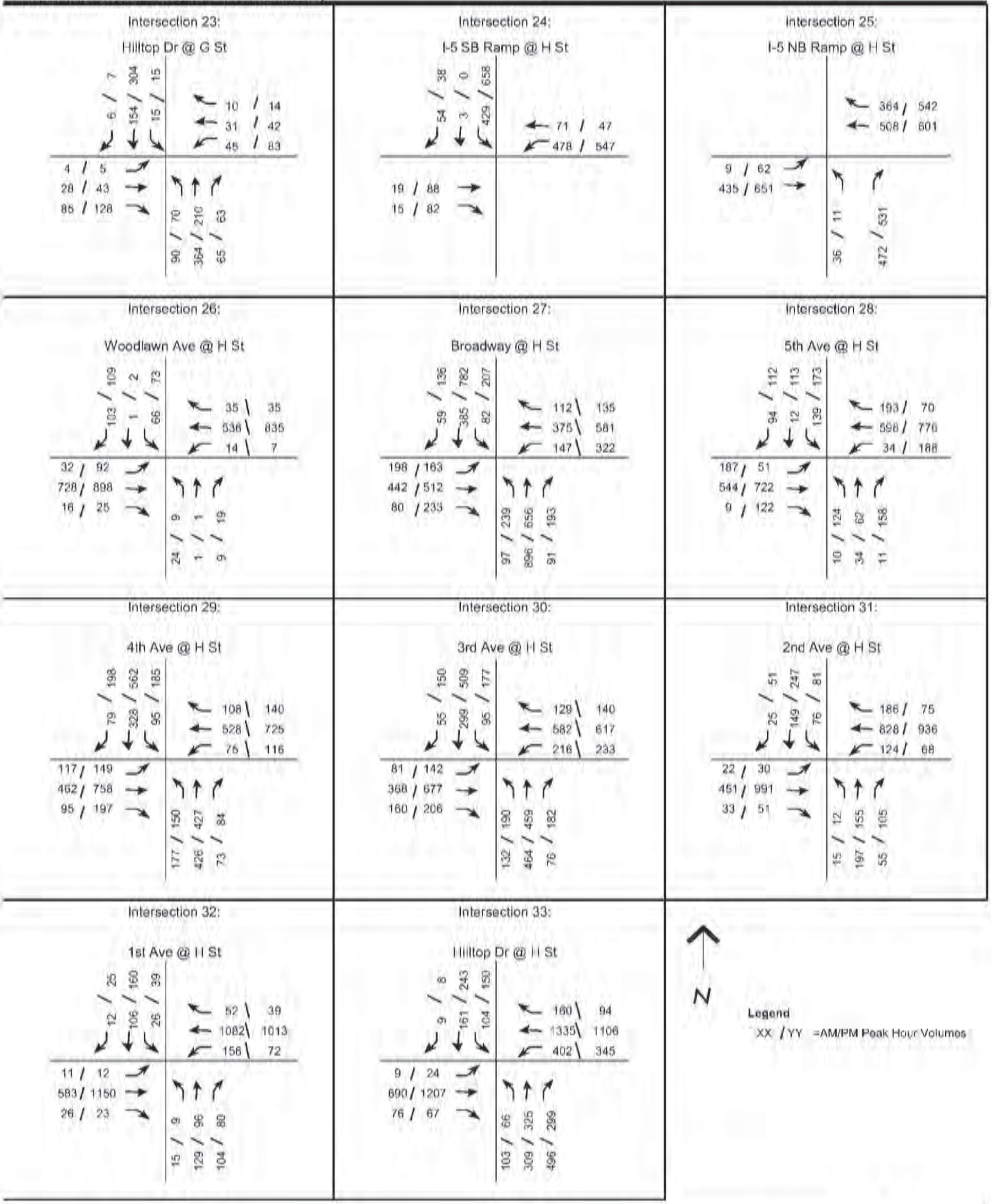


Figure 3-3.2
Existing Peak-Hour Traffic Volumes

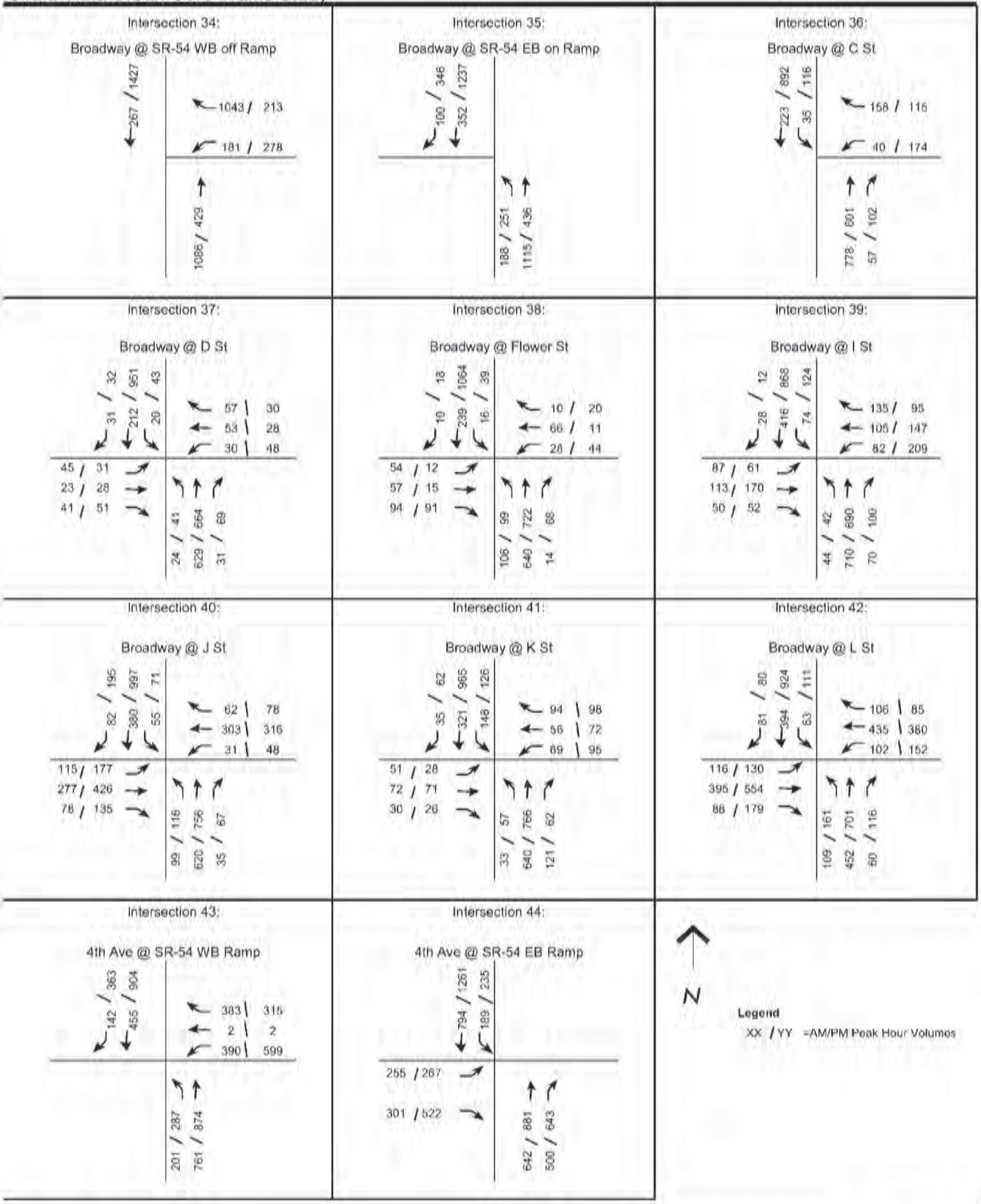


Figure 3-3.3
Existing Peak-Hour Traffic Volumes

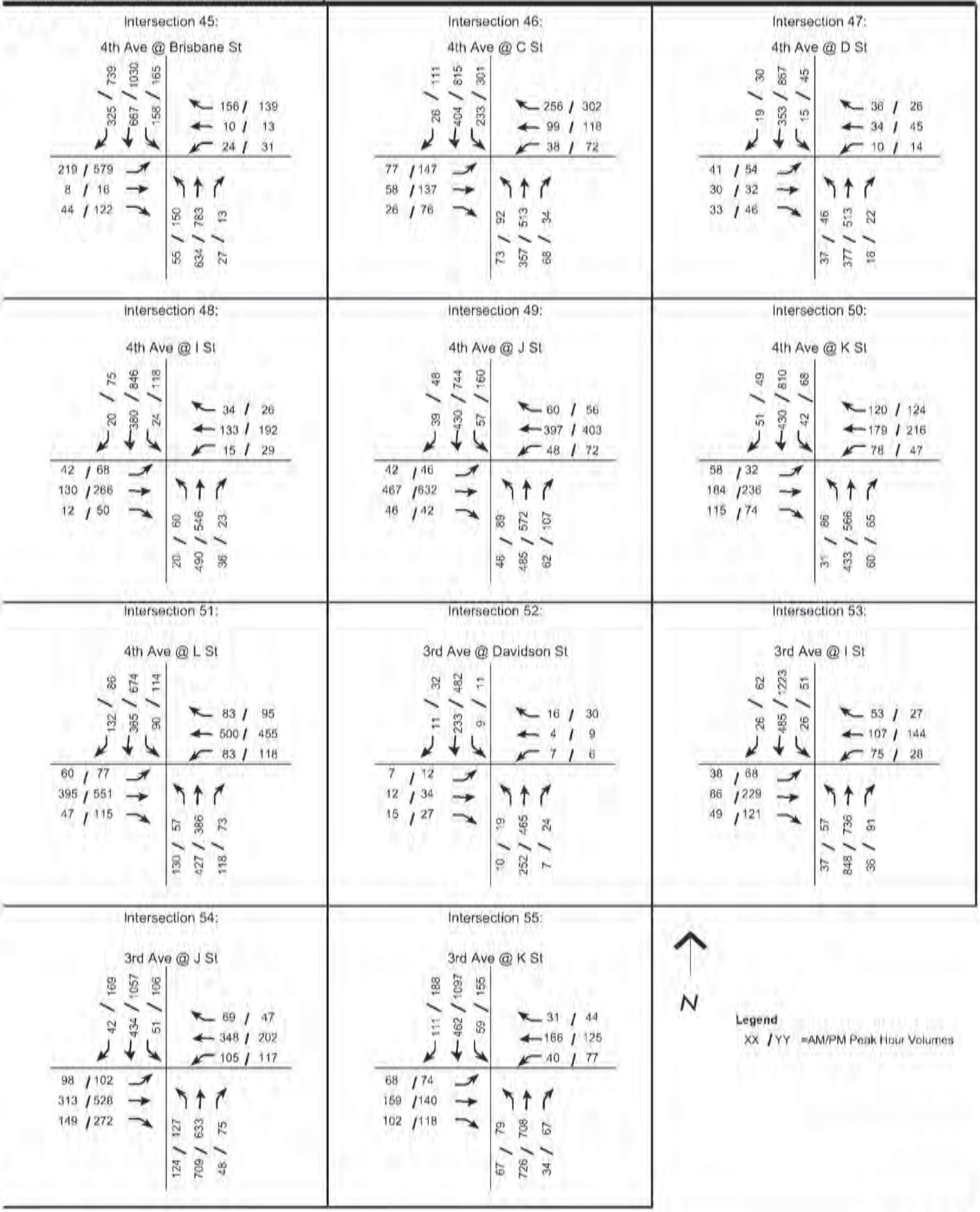


Figure 3-3.4
Existing Peak-Hour Traffic Volumes

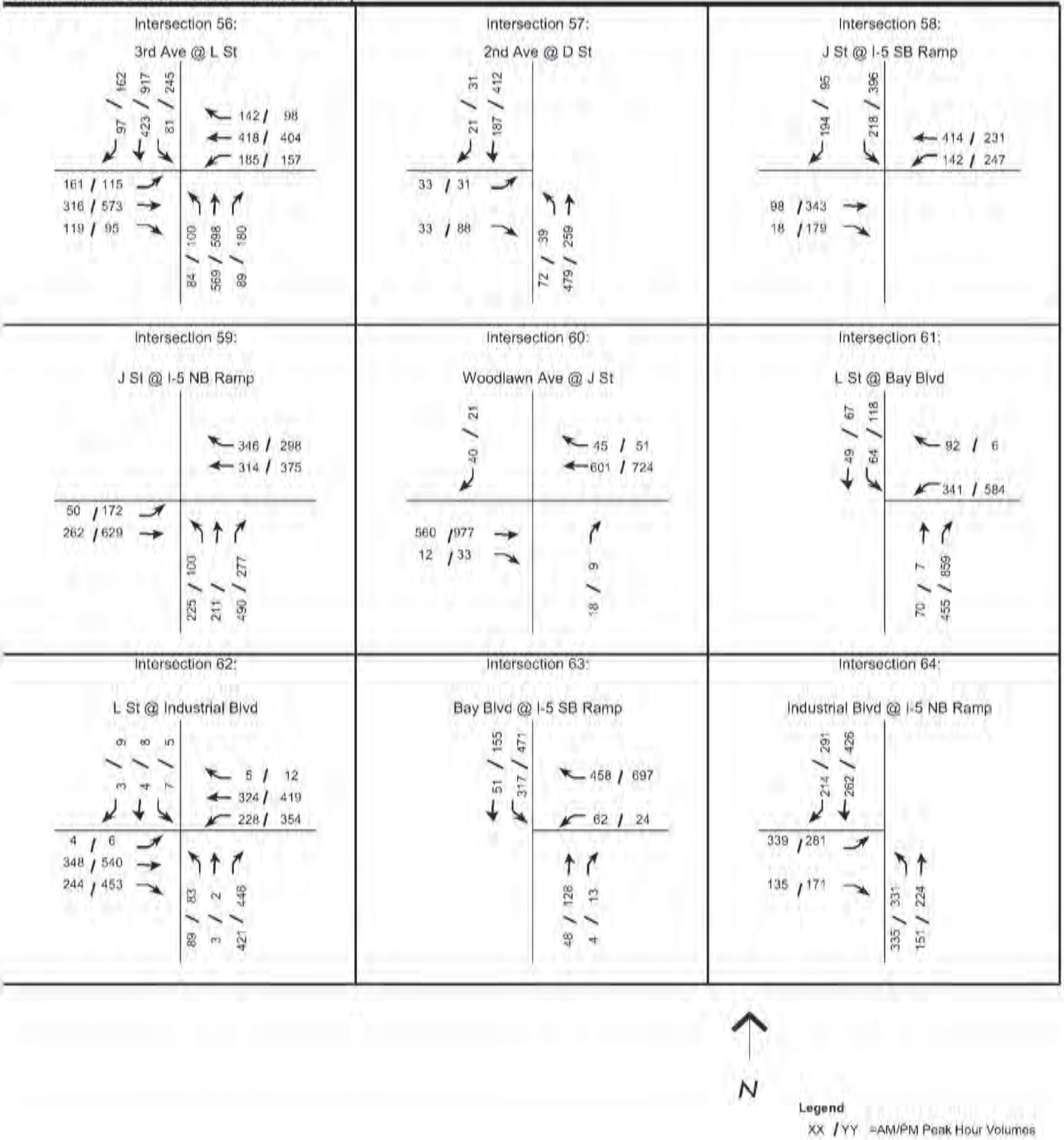


Figure 3-3.5
Existing Peak-Hour Traffic Volumes

Figure 3-4

Existing ADT Volumes

Intersection Analysis

Table 3-4 displays the LOS analysis results for the study intersections under Existing Conditions. As shown in this table, all study intersections operate at LOS D or better during both peak periods, except for the following intersections:

- #34 Broadway @ SR-54 WB Ramp (LOS F – AM Peak);
- #61 L Street @ Bay Boulevard (LOS F – PM Peak); and
- #63 Bay Boulevard @ I-5 SB Ramp (LOS E – PM Peak).

It should be noted that the E Street and H Street intersections at the I-5 interchange (including Woodlawn Avenue) do not take into account the queues associated with the at-grade trolley crossings at both of these locations. As noted in the methodology section, the E Street and H Street intersections affected by the trolley crossing would experience additional delay along the arterial and at adjacent intersections. Additional delays would be between 17 and 40 seconds per vehicle (depending on the direction and time of day) and drop the LOS by at least one grade.

Appendix C contains the peak-hour intersections LOS calculation worksheets.

Roadway Segment Analysis

Table 3-5 summarizes the existing condition LOS analysis for the roadway segments located in the Urban Core. The existing volume is compared to the acceptable volume as defined in the City of Chula Vista's General Plan. Roadway segments that are part of the Urban Core Circulation Element have an acceptable volume equal to LOS D or better. All other roadway segments within the City have an acceptable volume equal to LOS C or better. As shown in this table, all Urban Core roadways currently function at LOS D or better.

Existing Transit Service

The Urban Core of Chula Vista is currently served by 11 Chula Vista Transit (CVT) routes (Routes 701, 702, 703, 704, 705, 706, 707, 708, 709, 711, and 712), two Metropolitan Transit System (MTS) routes (Routes 929 and 932), and the San Diego Trolley's Blue Line. Several CVT transit routes circulate within the Urban Core and Bayfront area; others serve the greater Chula Vista area and provide connections to National City Transit and other transit providers. MTS route 929 runs along 3rd and 4th Avenues through the Urban Core; MTS transit route 932 runs along Broadway. The San Diego Trolley's Blue Line provides service between Qualcomm Stadium and San Ysidro/Tijuana and extends through the Urban Core parallel to and on the east side of I-5, with stations at Bayfront/E Street and H Street. Service is provided seven days a week with service starting around 5:00 a.m. and ending around 12:00 a.m. During the peak periods, service is provided with 7.5-minute headways and 15 minutes during the off-peak periods.

Figure 3-5 displays the existing transit routes in the Urban Core.

TABLE 3-4
EXISTING CONDITIONS
PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

INTERSECTION		PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
1	Bay Blvd-I-5 SB Ramp @ E St	AM	10.1	B
		PM	16.6	B
2	I-5 NB Ramp @ E St	AM	33.2	C
		PM	18.2	B
3	Woodlawn Ave @ E St	AM	21.7	C
		PM	15.5	B
4	Broadway @ E St	AM	16.9	B
		PM	26.3	C
5	5th Ave @ E St	AM	5.0	A
		PM	6.4	A
6	4th Ave @ E St	AM	13.5	B
		PM	18.8	B
7	3rd Ave @ E St	AM	11.9	B
		PM	15.2	B
8	2nd Ave @ E St	AM	7.3	A
		PM	11.0	B
9	1st Ave @ E St	AM	6.8	A
		PM	5.5	A
10	Flower St @ E St	AM	10.6	B
		PM	12.5	B
11	Bonita Glen Dr @ Bonita Rd	AM	12.1	B
		PM	16.5	B
12	Bay Blvd @ F St	AM	8.8	A
		PM	14.7	B
13	Broadway @ F St	AM	16.5	B
		PM	24.1	C
14	5th Ave @ F St	AM	5.7	A
		PM	8.2	A
15	4th Ave @ F St	AM	13.5	B
		PM	17.7	B
16	3rd Ave @ F St	AM	13.9	B
		PM	19.2	B
17	2nd Ave @ F St	AM	9.7	A
		PM	12.5	B
18	Broadway @ G St	AM	12.3	B
		PM	14.9	B
19	5th Ave @ G St	AM	6.3	A
		PM	7.5	A
20	4th Ave @ G St	AM	8.9	A
		PM	10.3	B

Notes:
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

K:\09541\3000\Excel\October 2005 Final Report\[4\3tables(MODIFIED).xls]Existing

TABLE 3-4
EXISTING CONDITIONS
PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

INTERSECTION		PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
21	3rd Ave @ G St	AM	8.6	A
		PM	9.2	A
22	2nd Ave @ G St	AM	14.1	B
		PM	16.3	C
23	Hilltop Dr @ G St	AM	16.7	C
		PM	14.4	B
24	I-5 SB Ramp @ H St	AM	28.8	C
		PM	21.1	C
25	I-5 NB Ramp @ H St	AM	12.7	B
		PM	14.8	B
26	Woodlawn Ave @ H St	AM	38.0	D
		PM	22.3	C
27	Broadway @ H St	AM	25.7	C
		PM	27.1	C
28	5th Ave @ H St	AM	10.8	B
		PM	11.3	B
29	4th Ave @ H St	AM	22.1	C
		PM	29.2	C
30	3rd Ave @ H St	AM	19.3	B
		PM	23.8	C
31	2nd Ave @ H St	AM	8.4	A
		PM	11.5	B
32	1st Ave @ H St	AM	7.6	A
		PM	8.2	A
33	Hilltop Dr @ H St	AM	32.2	C
		PM	41.3	D
34	Broadway @ SR-54 WB Ramp	AM	82.9	**F**
		PM	11.8	B
35	Broadway @ SR-54 EB Ramp	AM	3.3	A
		PM	6.3	A
36	Broadway @ C St	AM	18.1	B
		PM	15.1	B
37	Broadway @ D Street	AM	9.2	A
		PM	10.2	B
38	Broadway @ Flower St	AM	11.5	B
		PM	14.0	B
39	Broadway @ I St	AM	16.3	B
		PM	17.3	B
40	Broadway @ J St	AM	13.6	B
		PM	18.6	B

Notes:
Bold values indicate intersections operating at LOS E or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

K:\09541300\Excel\October 2005 Final Report\[413m08(MODIFIED).xls]Existing

TABLE 3-4
EXISTING CONDITIONS
PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

INTERSECTION		PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
41	Broadway @ K St	AM	11.7	B
		PM	13.2	B
42	Broadway @ L St	AM	15.5	B
		PM	20.4	C
43	4th Ave @ SR-54 WB Ramp	AM	14.7	B
		PM	25.9	C
44	4th Ave @ SR-54 EB Ramp	AM	13.4	B
		PM	27.2	C
45	4th Ave @ Brisbane St	AM	21.5	C
		PM	27.3	C
46	4th Ave @ C St	AM	23.2	C
		PM	31.4	C
47	4th Ave @ D St	AM	9.1	A
		PM	10.5	B
48	4th Ave @ I St	AM	8.8	A
		PM	10.1	B
49	4th Ave @ J St	AM	9.3	A
		PM	15.7	B
50	4th Ave @ K St	AM	8.5	A
		PM	10.1	B
51	4th Ave @ L St	AM	24.6	C
		PM	26.6	C
52	3rd Ave @ Davidson St	AM	9.9	A
		PM	13.2	B
53	3rd Ave @ I St	AM	10.1	B
		PM	12.2	B
54	3rd Ave @ J St	AM	18.8	B
		PM	35.9	D
55	3rd Ave @ K St	AM	9.5	A
		PM	11.0	B
56	3rd Ave @ L St	AM	18.1	B
		PM	27.0	C
57	2nd Ave @ D St	AM	14.9	B
		PM	14.9	B
58	J St @ I-5 SB Ramp	AM	8.9	A
		PM	15.1	B
59	J St @ I-5 NB Ramp	AM	10.6	B
		PM	8.2	A
60	Woodlawn Ave @ J St	AM	11.0	B
		PM	11.9	B

Notes:
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

K:\095413000\Excel\October 2005 Final Report\[413in08(MODIFIED).xls]Existing

TABLE 3-4
EXISTING CONDITIONS
PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

INTERSECTION		PEAK HOUR	EXISTING	
			DELAY (a)	LOS (b)
61	L St @ Bay Blvd	AM	16.8	C
		PM	**120.3**	**F**
62	L St @ Industrial Blvd	AM	18.9	B
		PM	25.4	C
63	Bay Blvd @ I-5 SB Ramp	AM	22.2	C
		PM	**48.6**	**E**
64	Industrial Blvd @ I-5 NB Ramp	AM	15.4	C
		PM	17.7	C

Notes:
Bold values indicate intersections operating at LOS E or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

K:\095413000\Excel\October 2005 Final Report\[413in08(MODIFIED).xls]Existing

TABLE 3-5

EXISTING CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE SUMMARY

STREET	SEGMENT	STREET CLASSIFICATION (b)	DAILY TRAFFIC VOLUME	ACCEPTABLE VOLUME	LOS E CAPACITY	VOLUME TO CAPACITY (V/C)	DAILY SEGMENT LOS
E Street	I-5 - Woodlawn Avenue	4 Lanes Gateway Street	26,924	43,200	48,000	0.56 (b)	A
	Woodlawn Avenue - Broadway	4 Lanes Gateway Street	21,997	43,200	48,000	0.46 (b)	A
	Broadway - 1st Avenue	4 Lanes Urban Arterial	17,493	37,800	42,000	0.42 (b)	A
	1st Avenue - I-805	4 Lanes Gateway Street	17,966	43,200	48,000	0.37 (b)	A
F Street	Bay Boulevard - Woodlawn Avenue	4 Lanes Downtown Promenade	5,336	33,750	37,500	0.14 (b)	A
	Woodlawn Avenue - Broadway	4 Lanes Downtown Promenade	9,263	33,750	37,500	0.25 (b)	A
	Broadway - 4th Avenue	2 Lanes Downtown Promenade	8,574	14,400	16,000	0.54 (b)	A
	4th Avenue - 3rd Avenue	4 Lanes Downtown Promenade	11,395	33,750	37,500	0.30 (b)	A
H Street	I-5 - Broadway	4 Lanes Gateway Street (c)	33,116	43,200	48,000	0.69 (b)	B
	Broadway - 3rd Avenue	4 Lanes Urban Arterial	24,637	37,800	42,000	0.59 (b)	A
	3rd Avenue - Hilltop Drive	4 Lanes Urban Arterial	27,474	37,800	42,000	0.65 (b)	A
	Hilltop Drive - I-805	4 Lanes Gateway Street (c)	40,184	43,200	48,000	0.84 (b)	D
J Street	Bay Boulevard - Broadway	4 Lanes Major Street	19,024	40,000	37,500	0.51 (b)	A
L Street	I-5 - Broadway	4 Lanes Gateway Street	15,450	43,200	48,000	0.32 (b)	A
	Broadway - Hilltop Drive	4 Lanes Class I Collector	16,430	22,000	27,500	0.60 (b)	A
Woodlawn Avenue	E Street - F Street	2 Lanes Downtown Promenade	4,900	14,400	16,000	0.31 (b)	A
	G Street - H Street	2 Lanes Downtown Promenade	2,600	14,400	16,000	0.16 (b)	A
Broadway	SR-54 - C Street	4 Lanes Gateway Street	22,107	43,200	48,000	0.46 (b)	A
	C Street - E Street	4 Lanes Commercial Boulevard	20,015	33,750	37,500	0.53 (b)	A
	E Street - H Street	4 Lanes Commercial Boulevard	23,208	33,750	37,500	0.62 (b)	B
	H Street - K Street	4 Lanes Commercial Boulevard	25,713	33,750	37,500	0.69 (b)	B
	K Street - L Street	4 Lanes Commercial Boulevard	26,599	33,750	37,500	0.71 (b)	C
	South of L Street	4 Lanes Major Street	27,053	40,000	37,500	0.72	C
4th Avenue	SR-54 - C Street	4 Lanes Gateway Street (c)	36,923	43,200	48,000	0.77 (b)	C
	C Street - E Street	4 Lanes Urban Arterial	17,812	37,800	42,000	0.42 (b)	A
	E Street - H Street	4 Lanes Urban Arterial	17,001	37,800	42,000	0.40 (b)	A
	H Street - L Street	4 Lanes Urban Arterial	16,101	37,800	42,000	0.38 (b)	A
3rd Avenue	C Street - E Street	4 Lanes Commercial Boulevard	7,220	33,750	37,500	0.19 (b)	A
	E Street - G Street	4 Lanes Downtown Promenade	14,413	33,750	37,500	0.38 (b)	A
	G Street - H Street	4 Lanes Downtown Promenade	18,071	33,750	37,500	0.48 (b)	A
	H Street - L Street	4 Lanes Commercial Boulevard	23,459	33,750	37,500	0.63 (b)	B
	South of L Street	4 Lanes Class I Collector	21,814	22,000	27,500	0.79	C

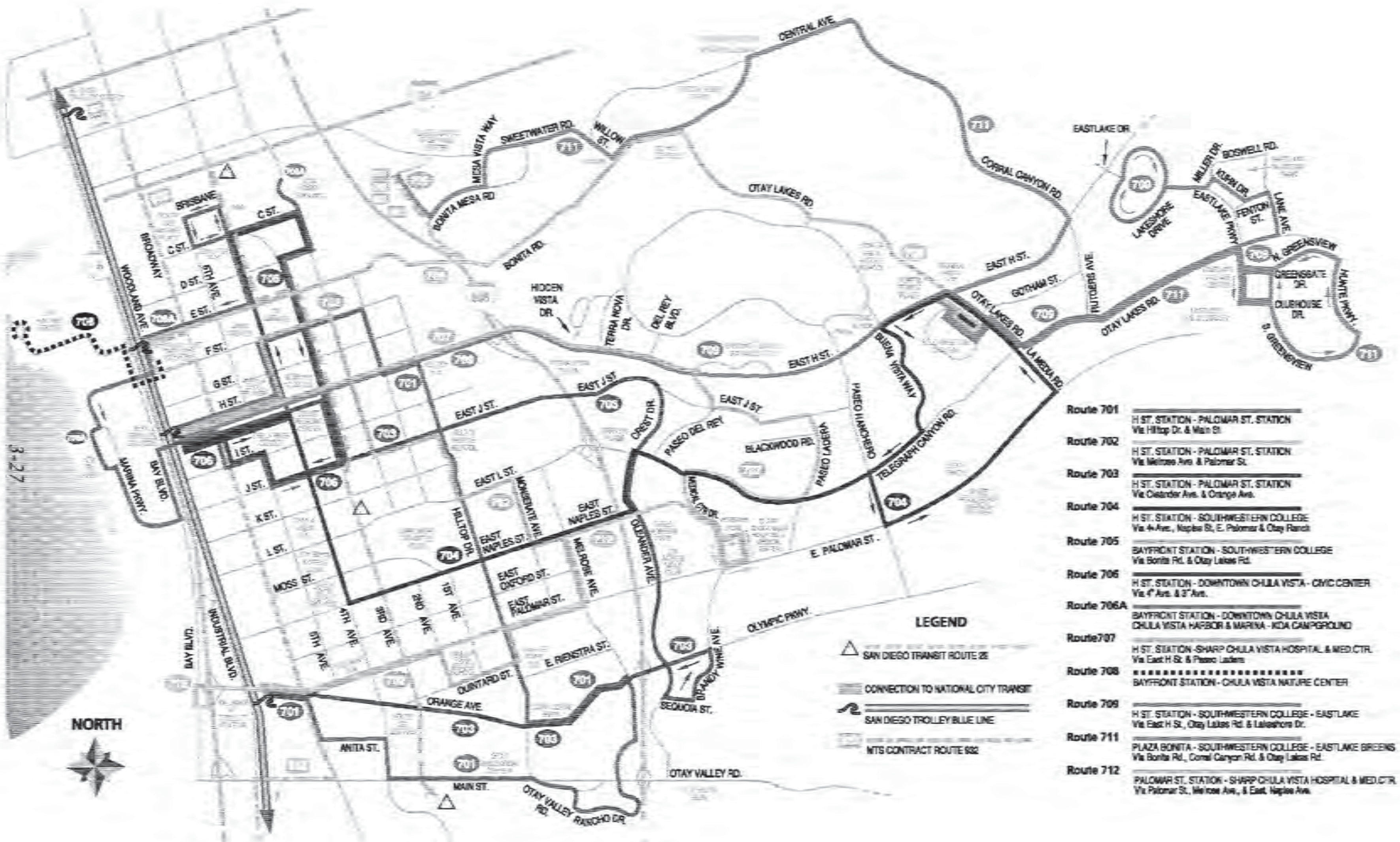
NOTE: Values in **bold** indicate roadway segments exceeding the City's minimum performance standard.

(a) Street classification is based on the standards provided in the 2005 Chula Vista General Plan, but will be analyzed with existing number of lanes for each respective roadway segment.

(b) This roadway segment is part of the Urban Core Circulation Element.

(c) This roadway segment is classified as a 6-lane roadway, but is assumed to function as a 4-lane roadway for this scenario.

K:\9134170803\Excel\October 2005 Final Report\[413ra050504.xls]Existing 10/11/2005 10:29



3-27

Kimley-Horn and Associates, Inc.

Figure 3-5
Existing Transit Routes

K:\095413000\Figures\October 2005 Final Report\Existing Transit.doc

4.0 URBAN CORE TRAFFIC

The following section describes the City of Chula Vista's Urban Core Specific Plan project including the projected land uses, Urban Core traffic generation, and transportation modeling assumptions.

Land Uses

In order to realize the vision for the urban core established by the updated General Plan, it was recognized that existing zoning for the Urban Core focus area or "subdistricts" needed "re-tooling". The 30+ year-old zoning regulations either precluded or created a cumbersome entitlement process to achieve the variety of living, employment, and service choices envisioned by the General Plan and quite common place in the 21st century. Therefore, the Specific Plan was prepared to provide a set of contemporary implementing tools to allow new development and redevelopment to occur over the next 20 to 25 years. To that end, the Specific Plan anticipates the following projected buildout over the life of the plan consistent with the General Plan, which is summarized in **Table 4-1**.

Figure 4-1 shows the location of the land uses assumed in the Urban Core.

TABLE 4-1
URBAN CORE SPECIFIC PLAN PROJECTED BUILDOUT

Land Use	Existing	Net Increase	Total
Residential	3,700 du	7,100 du	10,800 du
Retail	3,000,000 sf	1,000,000 sf	4,000,000 sf
Office	2,400,000 sf	1,300,000 sf	3,700,000 sf
Visitor Serving Commercial	--	1,300,000 sf	1,300,000 sf

Note:
All totals are approximate and may include a combination of new infill development and existing uses.

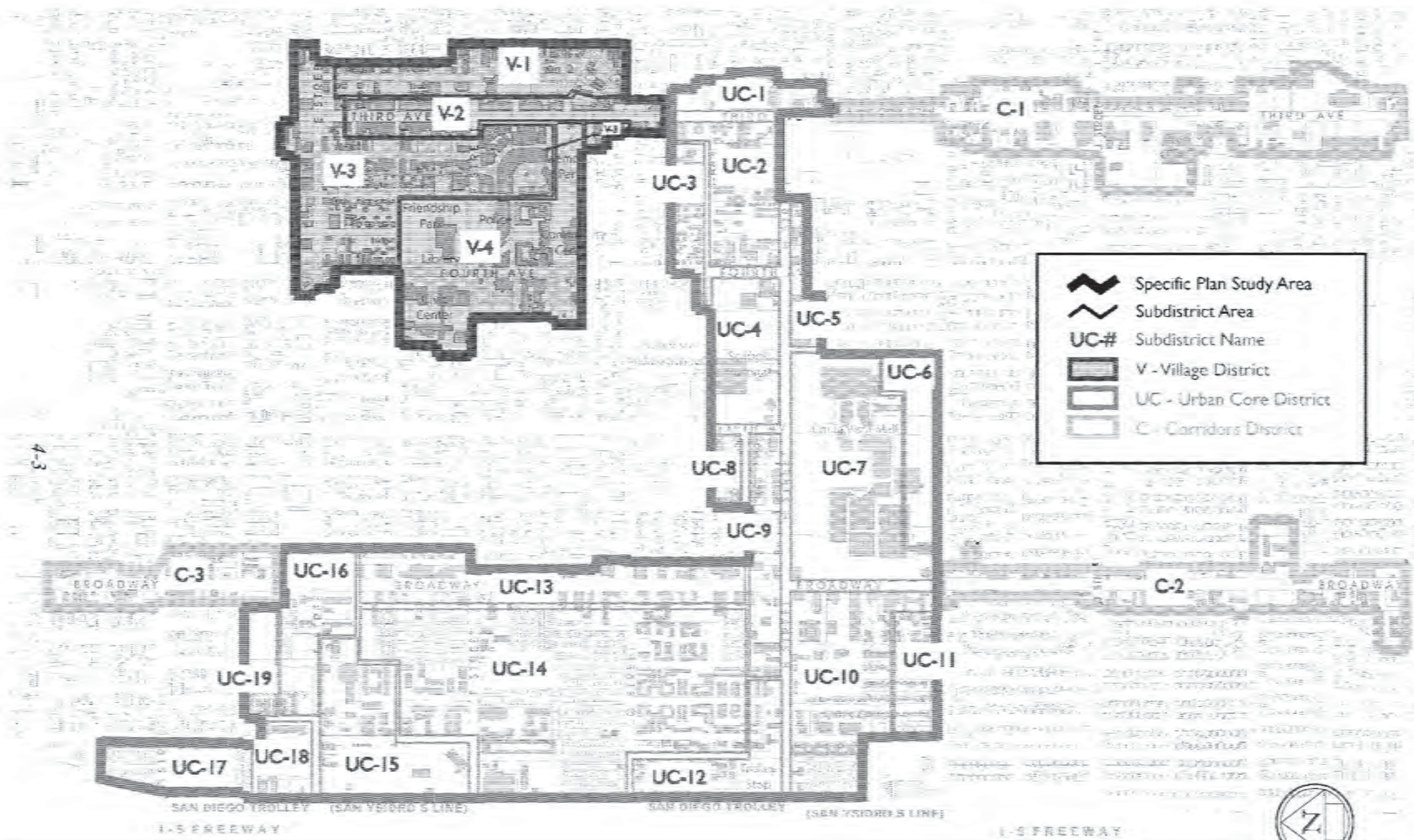
Urban Core Traffic Generation

The traffic associated with the Urban Core has been included in the traffic volumes used for the General Plan Update. The traffic forecasts from the General Plan Update were used for the UCSP transportation analysis because the trip generation for the Urban Core is generally consistent with the General Plan land uses associated projected traffic volumes and distribution patterns. Based on the Urban Core land uses shown in Figure 4-1, **Table 4-2** summarizes the trip generation for the Chula Vista Urban Core project. As shown in the table, a total of approximately 331,100 ADT is expected with the full build-out of the Urban Core. This would be an increase of 141,100 ADT over existing conditions. The largest percentage increase in ADT would occur from the residential land use, with an increase of approximately 100 percent.

TABLE 4-2
TRIP GENERATION SUMMARY

Land Use	Existing ADT	Net ADT Increase	Total ADT
Residential	22,200	42,600	64,800
Retail	120,000	40,000	160,000
Office	48,000	26,000	74,000
Visitor Serving Commercial	--	32,500	32,500
TOTALS	**190,200**	**141,100**	**331,100**

Note:
Trip generation values shown above were based rates referenced in the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, SANDAG, April 2002. (6 trips/du for residential, 40 trips/1,000 sf for retail, 20 trips/1,000 sf for office, and 50% hotel/50% retail for visitor serving commercial)



Kimley-Horn and Associates, Inc.

Figure 4-1
Location of Urban Core Land Uses

K:\095413000\Figures\October 2005 Final Report\Location of Urban Core Land Uses.doc

Transportation Modeling

Traffic volumes for of the proposed Urban Core Specific Plan were generated using the SANDAG TRANPLAN regional traffic model, which is based on Series 10 employment and population projections for the San Diego region. This computerized model takes land use and transportation network information as inputs and estimates the volumes of traffic on existing and future roadways under long-term future conditions using the four-step Urban Transportation Planning Process:

1) Trip generation;
2) Mode split;
3) Trip distribution; and
4) Traffic assignment.

Regional transportation infrastructure was modeled using SANDAG's "reasonably expected" Mobility 2030 assumptions and General Plan land use assumptions. The following list summarizes the land use and network assumptions evaluated in this study:

Land Use Assumptions

- Full build-out of planned future land uses in the City of Chula Vista
- 2030 Population and Employment in the region
- See General Plan for other/all considerations

Network Assumptions

- Woodlawn Avenue would not be connected between F Street and G Street. H Street between Broadway and Hilltop Drive would be reclassified from a six-lane major to four-lane major (Circulation element changes within Urban Core. For other changes in Chula Vista, refer to Figure 1.2-1 of the City of Chula Vista General Plan shown in **Appendix D**.)
- SR-125 is a four-lane toll road
- See General Plan for other/all considerations

Transit Assumptions

- Regional Transit Vision (RTV) described in the Regional Transportation Plan (RTP) emphasizes integration of transit service within communities and neighborhoods, makes use of high-occupancy vehicle (HOV) lanes and/or managed lanes, incorporates signal priority or transit-only lanes on arterials, increasing transit competitiveness with automobile trips, and improved transit customer service.

- Regional Comprehensive Plan (RCP) incorporates smart growth, which involves identifying appropriate land patterns and a complementary multi-modal transportation system so as to improve the viability of public transit and other travel modes for the whole range of trip types, including commuting, shopping, school, etc.
- A Yellow Car Bus Rapid Transit (BRT) route would be provided along I-5, additional Blue Line Light Rail Transit (LRT) service would be provided along the existing trolley tracks, and a BRT route would be provided along H Street connecting the west and east ends of Chula Vista (For other routes outside of the Urban Core, refer to Figure 1.2-3 of the City of Chula Vista General Plan shown in **Appendix D**.)

5.0 YEAR 2030 CONDITIONS

This section provides a description of the year 2030 traffic conditions with the full build-out of the City of Chula Vista's Urban Core Specific Plan project land uses.

Road Network

It was assumed that roads within the Urban Core would be reclassified, but not yet built to their ultimate classification. As a result, no changes would be made to the roadway network compared to Existing Conditions. See previously shown Figures 3-1 to 3-1.5 and 3-2 for the traffic control and lane configurations at the study intersections and the number of lanes and street classifications on each roadway segment in 2030, respectively.

Traffic Volumes

Year 2030 traffic volumes at study intersections were calculated by applying growth factors to existing traffic volumes. These growth factors were determined by comparing the Year 2030 ADT by the existing ADT for each respective roadway segment. This growth in traffic varied between a minimum of 10 percent to a more than doubling of traffic on some intersection approaches. In cases where extreme traffic growth was projected, adjustments were made to account for spreading of the peak hour. This spreading presumes that the peak hour may last for more than one hour in the morning or afternoon peak hour.

The Year 2030 Conditions ADT volumes along the roadway segments were obtained from SANDAG. This forecast model was based on Series 10 and included the Regional Transit Vision (RTV) assumption.

Figures 5-1 to **5-1.5** illustrate the Year 2030 Conditions peak-hour traffic volumes at the study intersections and **Figure 5-2** illustrates the Year 2030 Conditions ADT volumes along the roadway segments.

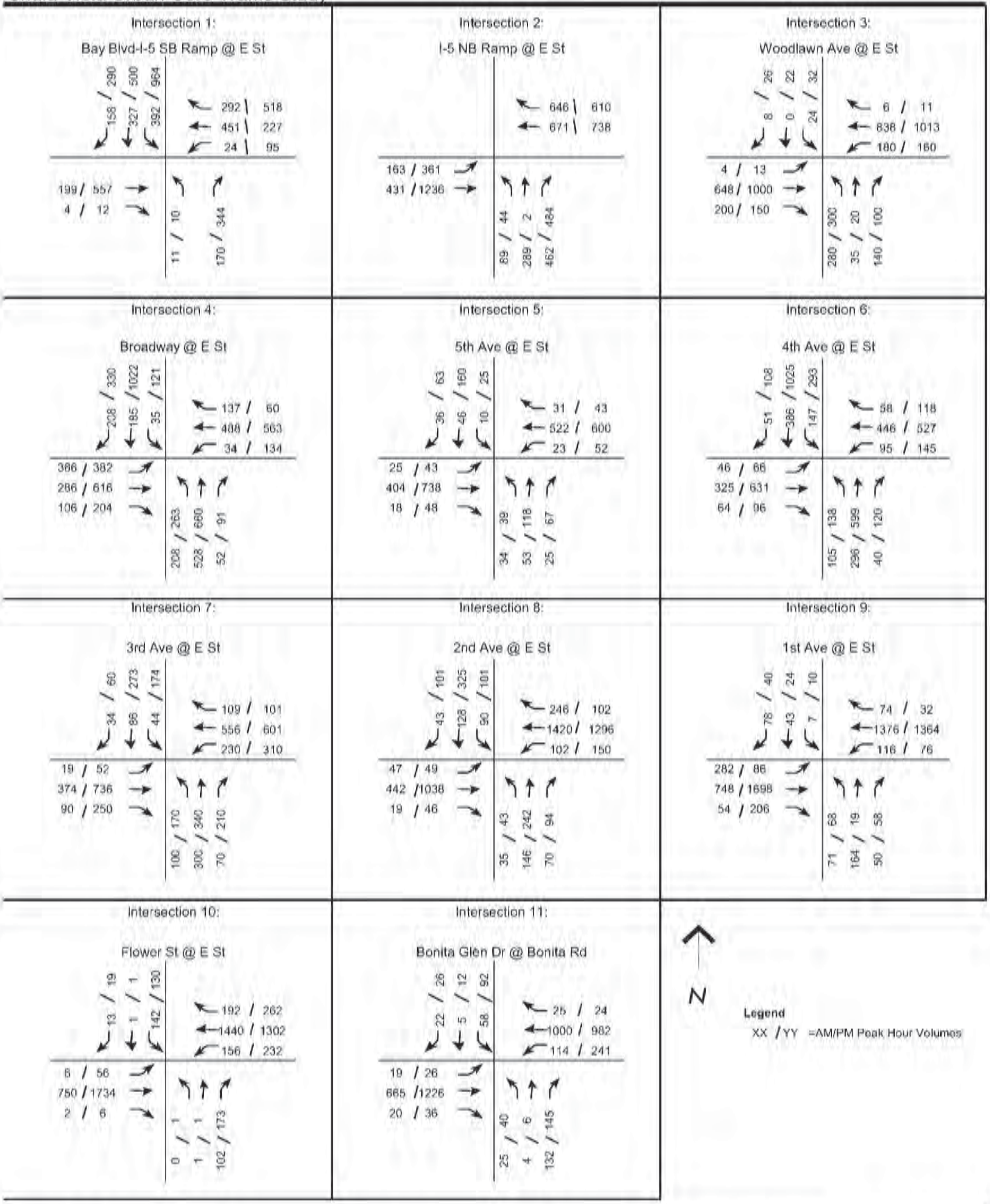


Figure 5-1

Year 2030 Peak-Hour Traffic Volumes

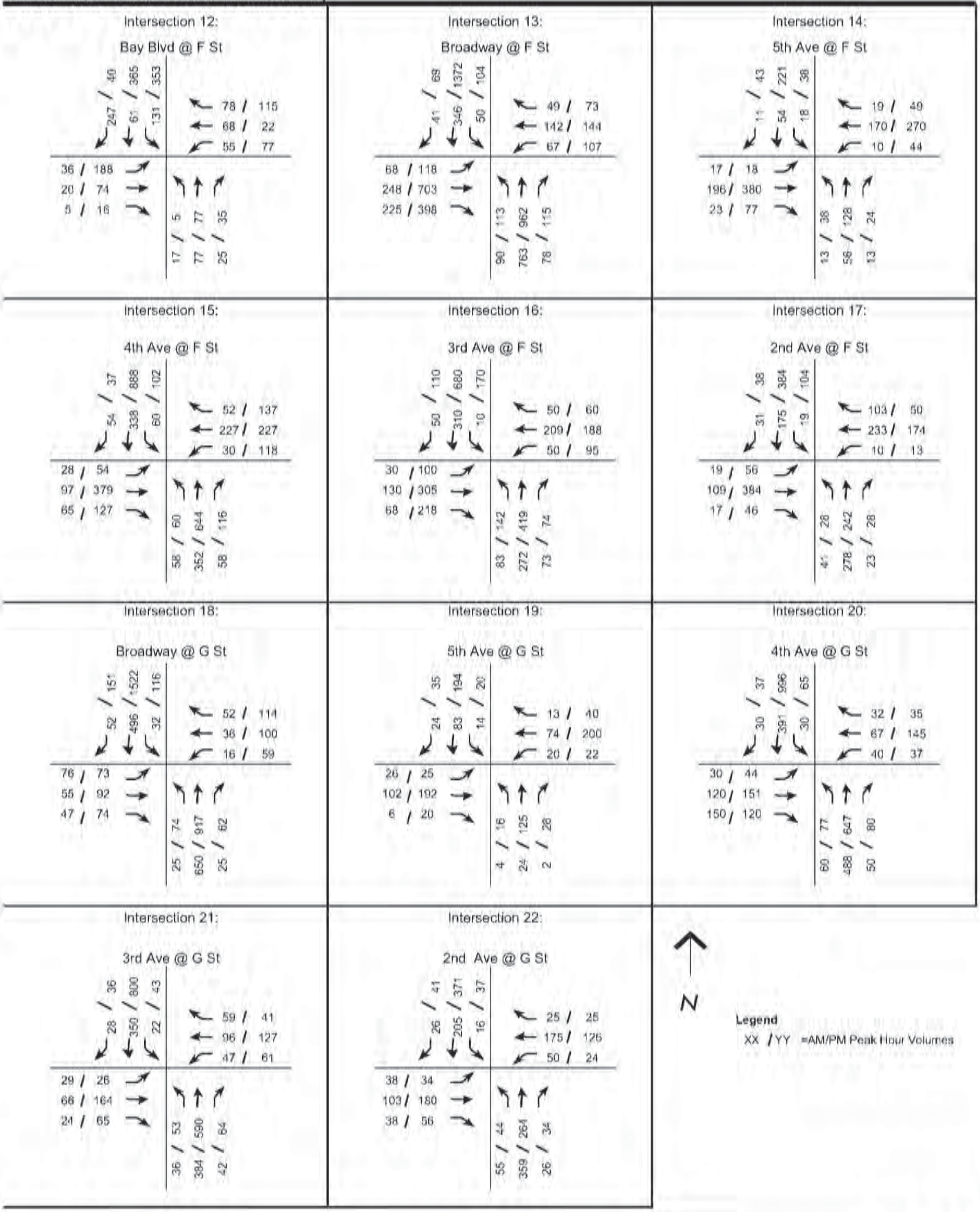


Figure 5-1.1

Year 2030 Peak-Hour Traffic Volumes

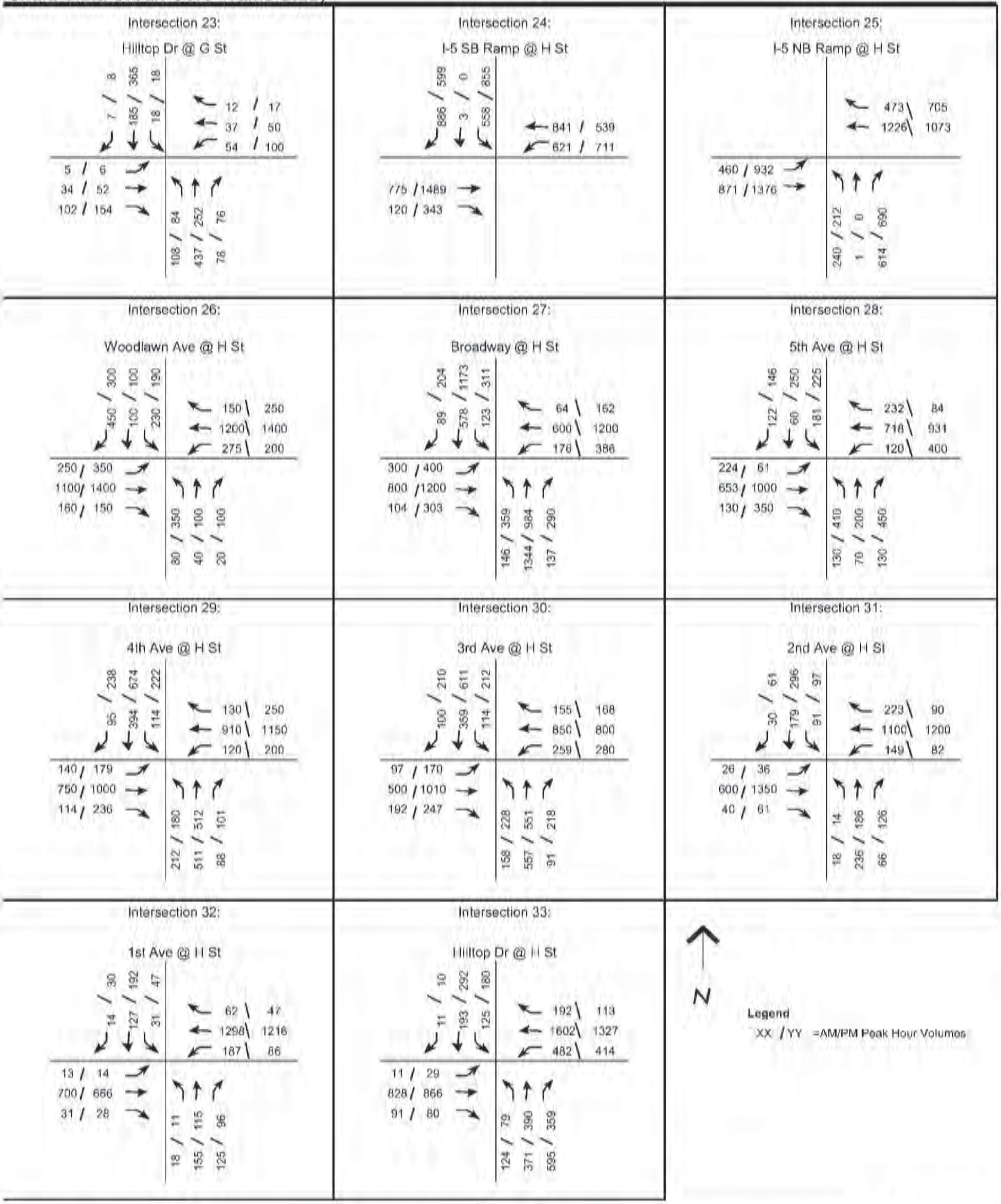


Figure 5-1.2
Year 2030 Peak-Hour Traffic Volumes

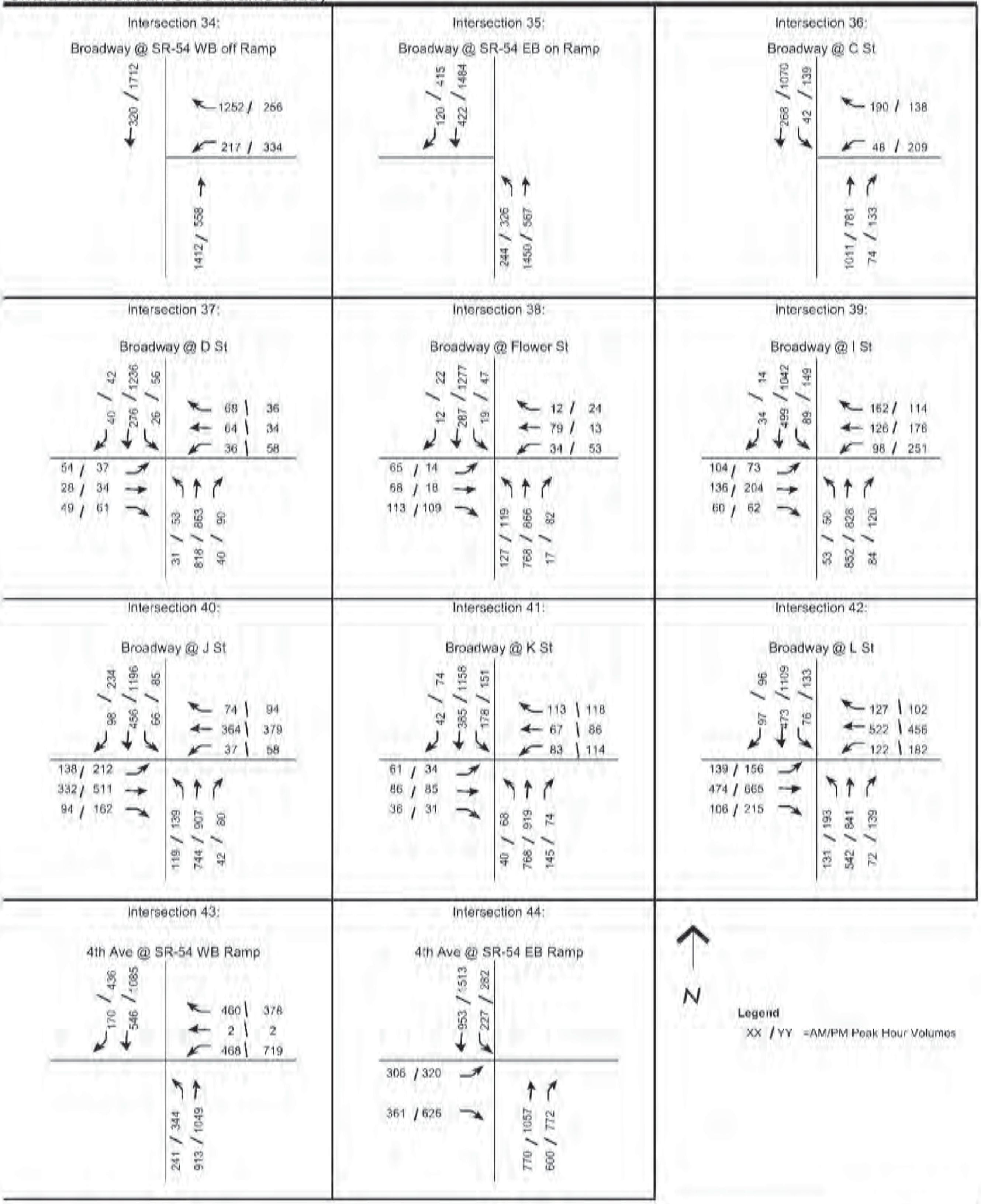


Figure 5-1.3

Year 2030 Peak-Hour Traffic Volumes

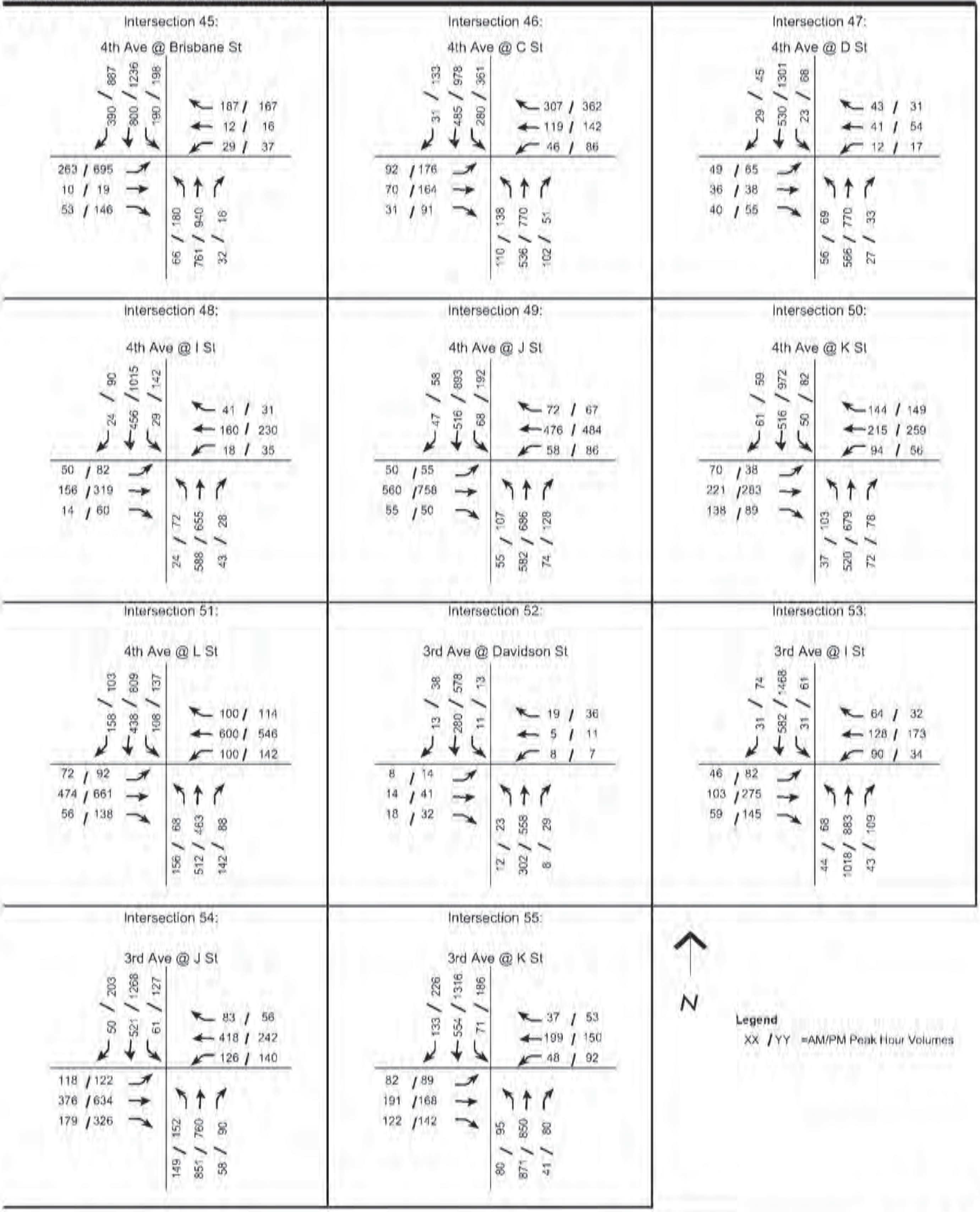


Figure 5-1.4
Year 2030 Peak-Hour Traffic Volumes

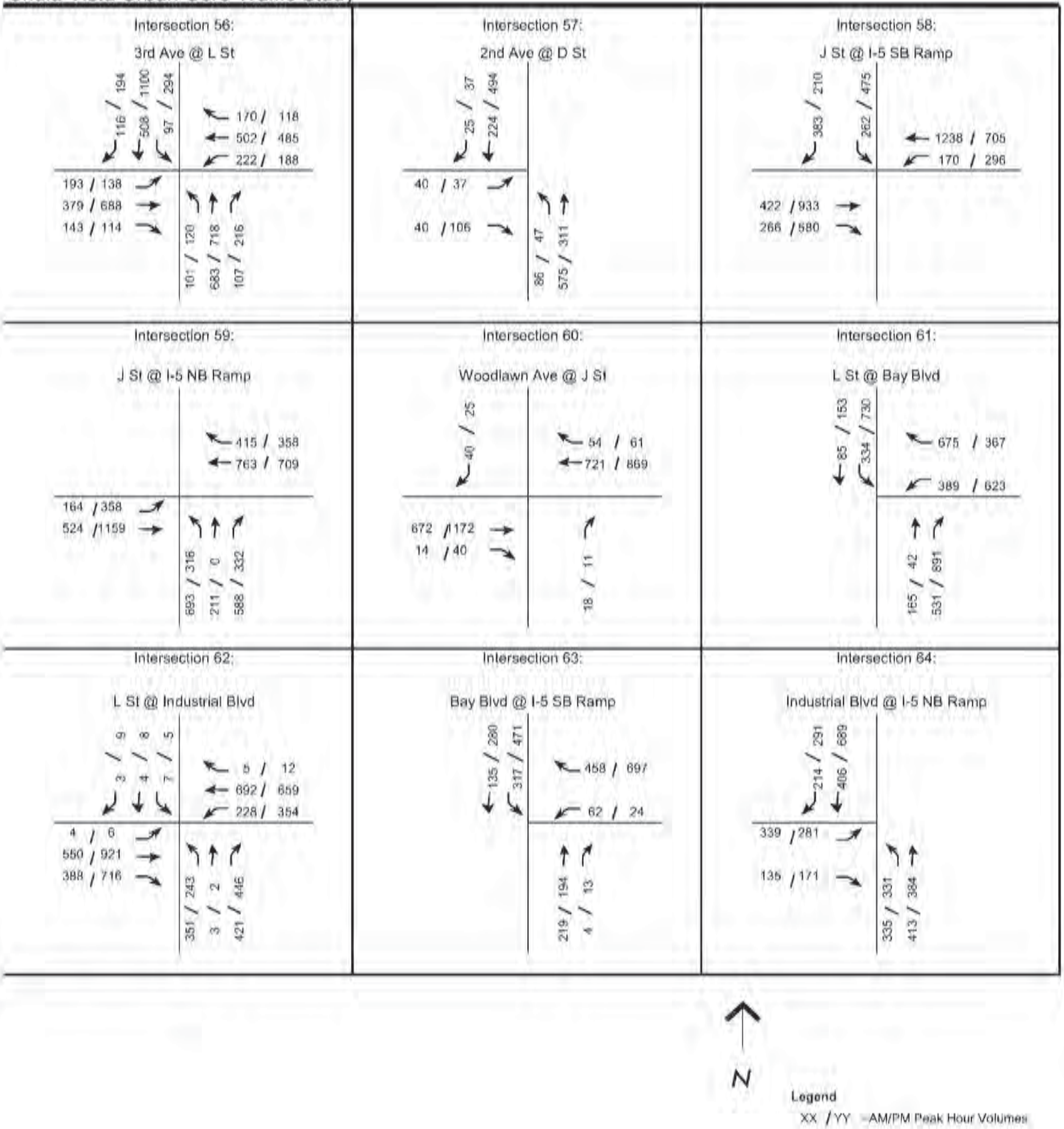


Figure 5-1.5

Year 2030 Peak-Hour Traffic Volumes

Figure 5-2

Year 2030 ADT Volumes

Intersection Analysis

Table 5-1 displays the LOS analysis results for the study intersections under the Year 2030 Conditions scenario. As shown in this table, all study intersections operate at LOS D or better during both peak periods, except for the following 19 intersections:

- #1 Bay Boulevard/I-5 SB Ramp @ E Street (LOS E – AM Peak, LOS F – PM Peak);
- #2 I-5 NB Ramp @ E Street (LOS E – AM Peak);
- #13 Broadway @ F Street (LOS E – PM Peak);
- #24 I-5 SB Ramp @ H Street (LOS F – PM Peak);
- #25 I-5 NB Ramp @ H Street (LOS F – PM Peak);
- #26 Woodlawn Avenue @ H Street (LOS F – PM Peak);
- #27 Broadway @ H Street (LOS F – PM Peak);
- #28 5th Avenue @ H Street (LOS E – PM Peak);
- #29 4th Avenue @ H Street (LOS E – PM Peak);
- #33 Hilltop Drive @ H Street (LOS E – AM and PM Peak);
- #34 Broadway @ SR-54 WB Ramp (LOS F – AM Peak);
- #44 4th Avenue @ SR-54 EB Ramp (LOS F – PM Peak);
- #45 4th Avenue @ Brisbane Street (LOS E – PM Peak);
- #54 3rd Avenue @ J Street (LOS E – PM Peak);
- #57 2nd Avenue @ D Street (LOS E – PM Peak);
- #59 J Street @ I-5 NB Ramp (LOS F – AM Peak, LOS E – PM Peak);
- #61 L Street @ Bay Boulevard (LOS F – PM Peak);
- #63 Bay Boulevard @ I-5 SB Ramp (LOS F – AM and PM Peak); and
- #64 Industrial Boulevard @ I-5 NB Ramp (LOS F – PM Peak).

The majority of the interchange study intersections along I-5 or SR-54 would operate at an unacceptable LOS. In addition, many of the intersections along the H Street corridor would operate at an unacceptable LOS. As previously noted in Section 3, the delay at the E Street and H Street intersections affected by the trolley crossing would be worse than the delay shown in Table 5-1. Additional delays would be between 17 and 40 seconds per vehicle (depending on the direction and time of day) and drop the LOS by at least one grade. By providing a grade-separated trolley crossing at E Street and H Street, delays and LOS would be similar to the results shown in Table 5-1.

Appendix C contains the peak-hour intersections LOS calculation worksheets.

Roadway Segment Analysis

Table 5-2 summarizes the Year 2030 Conditions LOS analysis for the roadway segments located in the Urban Core. The projected volume, estimated using the approved transportation model of SANDAG, is compared to the acceptable volume of the roadways using the adopted functional classifications from the Chula Vista General Plan. As shown in this table, all roadway segments meet the adopted LOS standard of D for the Urban Street System, except for the following roadway segments:

- H Street between I-5 and Broadway (LOS F)
- H Street between Hilltop Drive and I-805 (LOS E)

TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

	INTERSECTION	PEAK HOUR	EXISTING DELAY (a)	EXISTING LOS (b)	YEAR 2030 DELAY (a)	YEAR 2030 LOS (b)	INCREASE IN DELAY	SIGNIFICANT IMPACT?
1	Bay Blvd-I-5 SB Ramp @ E St	AM	10.1	B	**58.4**	**E**	**48.3**	**YES**
		PM	16.6	B	**302.9**	**F**	**286.3**	**YES**
2	I-5 NB Ramp @ E St	AM	33.2	C	**60.5**	**E**	**27.3**	**YES**
		PM	18.2	B	31.9	C	13.7	NO
3	Woodlawn Ave @ E St	AM	21.7	C	25.8	C	4.1	NO
		PM	15.5	B	20.5	C	5.0	NO
4	Broadway @ E St	AM	16.9	B	30.3	C	13.4	NO
		PM	26.3	C	47.2	D	20.9	NO
5	5th Ave @ E St	AM	5.0	A	5.6	A	0.6	NO
		PM	6.4	A	7.7	A	1.3	NO
6	4th Ave @ E St	AM	13.5	B	16.2	B	2.7	NO
		PM	18.8	B	33.3	C	14.5	NO
7	3rd Ave @ E St	AM	11.9	B	12.9	B	1.0	NO
		PM	15.2	B	24.8	C	9.6	NO
8	2nd Ave @ E St	AM	7.3	A	15.5	B	8.2	NO
		PM	11.0	B	28.9	C	17.9	NO
9	1st Ave @ E St	AM	6.8	A	40.6	D	33.8	NO
		PM	5.5	A	10.1	B	4.6	NO
10	Flower St @ E St	AM	10.6	B	20.2	C	9.6	NO
		PM	12.5	B	37.1	D	24.6	NO
11	Bonita Glen Dr @ E St	AM	12.1	B	12.5	B	0.4	NO
		PM	16.5	B	23.0	C	6.5	NO
12	Bay Blvd @ F St	AM	8.8	A	9.8	A	1.0	NO
		PM	14.7	B	21.4	C	6.7	NO
13	Broadway @ F St	AM	16.5	B	17.7	B	1.2	NO
		PM	24.1	C	**66.1**	**E**	**42.0**	**YES**
14	5th Ave @ F St	AM	5.7	A	6.6	A	0.9	NO
		PM	8.2	A	10.0	A	1.8	NO
15	4th Ave @ F St	AM	13.5	B	15.3	B	1.8	NO
		PM	17.7	B	23.7	C	6.0	NO
16	3rd Ave @ F St	AM	13.9	B	15.9	B	2.0	NO
		PM	19.2	B	23.5	C	4.3	NO
17	2nd Ave @ F St	AM	9.7	A	13.4	B	3.7	NO
		PM	12.5	B	12.7	B	0.2	NO
18	Broadway @ G St	AM	12.3	B	14.0	B	1.7	NO
		PM	14.9	B	21.0	C	6.1	NO
19	5th Ave @ G St	AM	6.3	A	7.7	A	1.4	NO
		PM	7.5	A	8.3	A	0.8	NO
20	4th Ave @ G St	AM	8.9	A	12.8	B	3.9	NO
		PM	10.3	B	18.0	B	7.7	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 2000 *Highway Capacity Manual* and performed using Synchro 6.0

TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING		YEAR 2030		INCREASE IN DELAY	SIGNIFICANT IMPACT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
21	3rd Ave @ G St	AM	8.6	A	11.8	B	3.2	NO
		PM	9.2	A	10.5	B	1.3	NO
22	2nd Ave @ G St	AM	14.1	B	22.2	C	8.1	NO
		PM	16.3	C	32.3	D	16.0	NO
23	Hilltop Dr @ G St	AM	16.7	C	33.7	D	17.0	NO
		PM	14.4	B	24.1	C	9.7	NO
24	I-5 SB Ramp @ H St	AM	28.8	C	36.7	D	7.9	NO
		PM	21.1	C	**84.5**	F	**63.4**	**YES**
25	I-5 NB Ramp @ H St	AM	12.7	B	47.6	D	34.9	NO
		PM	14.8	B	**138.4**	F	**123.6**	**YES**
26	Woodlawn Ave @ H St	AM	38.0	D	33.7	C	-4.3	NO
		PM	22.3	F	**260.6**	F	**238.3**	**YES**
27	Broadway @ H St	AM	25.7	C	42.7	D	17.0	NO
		PM	27.1	C	**118.1**	F	**91.0**	**YES**
28	5th Ave @ H St	AM	10.8	B	15.2	B	4.4	NO
		PM	11.3	B	**61.6**	E	**50.3**	**YES**
29	4th Ave @ H St	AM	22.1	C	38.6	D	16.5	NO
		PM	29.2	C	**59.4**	E	**30.2**	**YES**
30	3rd Ave @ H St	AM	19.3	B	23.0	C	3.7	NO
		PM	23.8	C	39.7	D	15.9	NO
31	2nd Ave @ H St	AM	8.4	A	13.7	B	5.3	NO
		PM	11.5	B	31.4	C	19.9	NO
32	1st Ave @ H St	AM	7.6	A	9.8	A	2.2	NO
		PM	8.2	A	12.5	B	4.3	NO
33	Hilltop Dr @ H St	AM	32.2	C	**58.3**	E	**26.1**	**YES**
		PM	41.3	D	**74.2**	E	**32.9**	**YES**
34	Broadway @ SR-54 WB Ramp	AM	**82.9**	F	**190.6**	F	**107.7**	**YES**
		PM	11.8	B	16.2	B	4.4	NO
35	Broadway @ SR 54 EB Ramp	AM	3.3	A	10.1	B	6.8	NO
		PM	6.3	A	17.7	B	11.4	NO
36	Broadway @ C St	AM	18.1	B	20.1	C	2.0	NO
		PM	15.1	B	18.1	B	3.0	NO
37	Broadway @ D Street	AM	9.2	A	12.1	B	2.9	NO
		PM	10.2	B	14.9	B	4.7	NO
38	Broadway @ Flower St	AM	11.5	B	12.3	B	0.8	NO
		PM	14.0	B	17.4	B	3.4	NO
39	Broadway @ I St	AM	16.3	B	16.4	B	0.1	NO
		PM	17.3	B	21.1	C	3.8	NO
40	Broadway @ J St	AM	13.6	B	15.7	B	2.1	NO
		PM	18.6	B	29.6	C	11.0	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 2000 *Highway Capacity Manual* and performed using Synchro 6.0

TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING DELAY (a)	EXISTING LOS (b)	YEAR 2030 DELAY (a)	YEAR 2030 LOS (b)	INCREASE IN DELAY	SIGNIFICANT IMPACT?
41	Broadway @ K St	AM	11.7	B	14.5	B	2.8	NO
		PM	13.2	B	16.4	B	3.2	NO
42	Broadway @ L St	AM	15.5	B	17.5	B	2.0	NO
		PM	20.4	C	34.7	C	14.3	NO
43	4th Ave @ SR-54 WB Ramp	AM	14.7	B	23.1	C	8.4	NO
		PM	25.9	C	42.3	D	16.4	NO
44	4th Ave @ SR-54 EB Ramp	AM	13.4	B	37.2	D	23.8	NO
		PM	27.2	C	**95.2**	**F**	**68.0**	**YES**
45	4th Ave @ Brisbane St	AM	21.5	C	25.8	C	4.3	NO
		PM	27.3	C	**61.5**	**E**	**34.2**	**YES**
46	4th Ave @ C St	AM	23.2	C	24.7	C	1.5	NO
		PM	31.4	C	40.0	D	8.6	NO
47	4th Ave @ D St	AM	9.1	A	13.5	B	4.4	NO
		PM	10.5	B	12.6	B	2.1	NO
48	4th Ave @ I St	AM	8.8	A	11.9	B	3.1	NO
		PM	10.1	B	18.0	B	7.9	NO
49	4th Ave @ J St	AM	9.3	A	12.0	B	2.7	NO
		PM	15.7	B	42.7	D	27.0	NO
50	4th Ave @ K St	AM	8.5	A	12.7	B	4.2	NO
		PM	10.1	B	20.0	B	9.9	NO
51	4th Ave @ L St	AM	24.6	C	27.6	C	3.0	NO
		PM	26.6	C	35.3	D	8.7	NO
52	3rd Ave @ Davidson St	AM	9.9	A	14.7	B	4.8	NO
		PM	13.2	B	19.2	B	6.0	NO
53	3rd Ave @ I St	AM	10.1	B	11.6	B	1.5	NO
		PM	12.2	B	18.3	B	6.1	NO
54	3rd Ave @ J St	AM	18.8	B	22.9	C	4.1	NO
		PM	35.9	D	**74.5**	**E**	**38.6**	**YES**
55	3rd Ave @ K St	AM	9.5	A	12.3	B	2.8	NO
		PM	11.0	B	22.4	C	11.4	NO
56	3rd Ave @ L St	AM	18.1	B	22.9	C	4.8	NO
		PM	27.0	C	44.1	D	17.1	NO
57	2nd Ave @ D St	AM	14.9	B	31.2	D	16.3	NO
		PM	14.9	B	**36.0**	**E**	**21.1**	**YES**
58	J St @ I-5 SB Ramp	AM	8.9	A	17.5	B	8.6	NO
		PM	15.1	B	40.4	D	25.3	NO
59	J St @ I-5 NB Ramp	AM	10.6	B	**135.2**	**F**	**124.6**	**YES**
		PM	8.2	A	**61.7**	**E**	**53.5**	**YES**
60	Woodlawn Ave @ J St	AM	11.0	B	16.3	C	5.3	NO
		PM	11.9	B	18.2	C	6.3	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0

K:\0954\15000\Excel\October 2005 Final Report\[415m08\MODIFIED].xls]Plan to Ground

TABLE 5-1

YEAR 2030 CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	EXISTING DELAY (a)	EXISTING LOS (b)	YEAR 2030 DELAY (a)	YEAR 2030 LOS (b)	INCREASE IN DELAY	SIGNIFICANT IMPACT?
61	L St @ Bay Blvd	AM	16.8	C	22.7	C	5.9	NO
		PM	**120.3**	**F**	**203.0**	**F**	**82.7**	**YES**
62	L St @ Industrial Blvd	AM	18.9	B	30.9	C	12.0	NO
		PM	25.4	C	52.6	D	27.2	NO
63	Bay Blvd @ I-5 SB Ramp	AM	22.2	C	**84.0**	**F**	**61.8**	**YES**
		PM	48.6	E	**221.2**	**F**	**172.6**	**YES**
64	Industrial Blvd @ I-5 NB Ramp	AM	15.4	C	26.0	D	10.6	NO
		PM	17.7	C	**66.5**	**F**	**48.8**	**YES**

Notes:

ECL= Exceeds calculable limit . At intersections at or over capacity, the calculated delay value becomes unreliable.

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 2000 *Highway Capacity Manual* and performed using Synchro 6.0

K:\09541\3000\Excel\October 2005 Final Report\[413m06\MODIFIED.xls]Plan to Ground

TABLE 5-2
YEAR 2030 ROADWAY SEGMENT LEVEL OF SERVICE SUMMARY

STREET	SEGMENT	STREET CLASSIFICATION (b)	DAILY TRAFFIC VOLUME	ACCEPTABLE VOLUME	LOS E CAPACITY	VOLUME TO CAPACITY (V/C)		DAILY SEGMENT LOS
E Street	I-5 - Woodlawn Avenue	4 Lanes Gateway Street	32,000	43,200	48,000	0.67	(b)	B
	Woodlawn Avenue - Broadway	4 Lanes Gateway Street	32,000	43,200	48,000	0.67	(b)	B
	Broadway - 1st Avenue	4 Lanes Urban Arterial	21,000	37,800	42,000	0.50	(b)	A
	1st Avenue - I-805	4 Lanes Gateway Street	24,000	43,200	48,000	0.50	(b)	A
F Street	Bay Boulevard - Woodlawn Avenue	4 Lanes Downtown Promenade	19,000	33,750	37,500	0.51	(b)	A
	Woodlawn Avenue - Broadway	4 Lanes Downtown Promenade	18,000	33,750	37,500	0.48	(b)	A
	Broadway - 4th Avenue	2 Lanes Downtown Promenade	11,000	14,400	16,000	0.69	(b)	B
	4th Avenue - 3rd Avenue	4 Lanes Downtown Promenade	13,000	33,750	37,500	0.35	(b)	A
H Street	I-5 - Broadway	4 Lanes Gateway Street (c)	52,000	43,200	48,000	1.08	(b)	F
	Broadway - 3rd Avenue	4 Lanes Urban Arterial	37,000	37,800	42,000	0.88	(b)	A
	3rd Avenue- Hilltop Drive	4 Lanes Urban Arterial	35,000	37,800	42,000	0.83	(b)	A
	Hilltop Drive - I-805	4 Lanes Gateway Street (d)	47,500	43,200	48,000	0.99	(b)	E
J Street	Bay Boulevard - Broadway	4 Lanes Major Street	25,000	40,000	37,500	0.67	(b)	B
L Street	I-5 - Broadway	4 Lanes Gateway Street	24,000	43,200	48,000	0.50	(b)	A
	Broadway - Hilltop Drive	4 Lanes Class I Collector	20,000	22,000	27,500	0.73	(b)	C
Woodlawn Avenue	E Street - F Street	2 Lanes Downtown Promenade	12,000	14,400	16,000	0.75	(b)	C
	G Street - H Street	2 Lanes Downtown Promenade	9,000	14,400	16,000	0.56	(b)	A
Broadway	SR-54 - C Street	4 Lanes Gateway Street	25,000	43,200	48,000	0.52	(b)	A
	C Street - E Street	4 Lanes Commercial Boulevard	28,000	33,750	37,500	0.75	(b)	C
	E Street - H Street	4 Lanes Commercial Boulevard	28,000	33,750	37,500	0.75	(b)	C
	H Street - K Street	4 Lanes Commercial Boulevard	29,000	33,750	37,500	0.77	(b)	C
	K Street - L Street	4 Lanes Commercial Boulevard	31,000	33,750	37,500	0.83	(b)	D
	South of L Street	4 Lanes Major Street	29,000	40,000	37,500	0.77		C
4th Avenue	SR-54 - C Street	6 Lanes Gateway Street	42,000	61,200	68,000	0.62	(b)	B
	C Street - E Street	4 Lanes Urban Arterial	23,000	37,800	42,000	0.55	(b)	A
	E Street - H Street	4 Lanes Urban Arterial	20,000	37,800	42,000	0.48	(b)	A
	H Street - L Street	4 Lanes Urban Arterial	18,000	37,800	42,000	0.43	(b)	A
3rd Avenue	C Street - E Street	4 Lanes Commercial Boulevard	12,000	33,750	37,500	0.32	(b)	A
	E Street - G Street	4 Lanes Downtown Promenade	21,000	33,750	37,500	0.56	(b)	A
	G Street - H Street	4 Lanes Downtown Promenade	19,000	33,750	37,500	0.51	(b)	A
	H Street - L Street	4 Lanes Commercial Boulevard	24,000	33,750	37,500	0.64	(b)	B
	South of L Street	4 Lanes Class I Collector	22,000	22,000	27,500	0.80		C

NOTE: Values in **bold** indicate roadway segments exceeding the City's minimum performance standard.
(a) Street classification is based on the standards provided in the 2005 Chula Vista General Plan.
(b) This roadway segment is part of the Urban Core Circulation Element.
(c) This roadway segment is classified as a 6-lane roadway, but is assumed to function as a 4-lane roadway for this scenario.
(d) The ADT was taken from the March 25, 2005 Espanada Mixed Use Development Traffic Study prepared by Darnell & Associates, Inc.

Future Transit Service

A number of regional transit improvements are envisioned that will either serve the Urban Core area. Many of these lines provide transit stations within the Urban Core Specific Planning area and are integrated into the land use and transportation components of the specific plan. Other routes are located with transit stations nearby; these routes could serve the urban core area. It should be noted that most routes listed below do not have implementation dates except for the first phase of the regional BRT project and that some of the route numbers may change in the future. **Figure 5-3** depicts those planned regional routes in the South Bay.

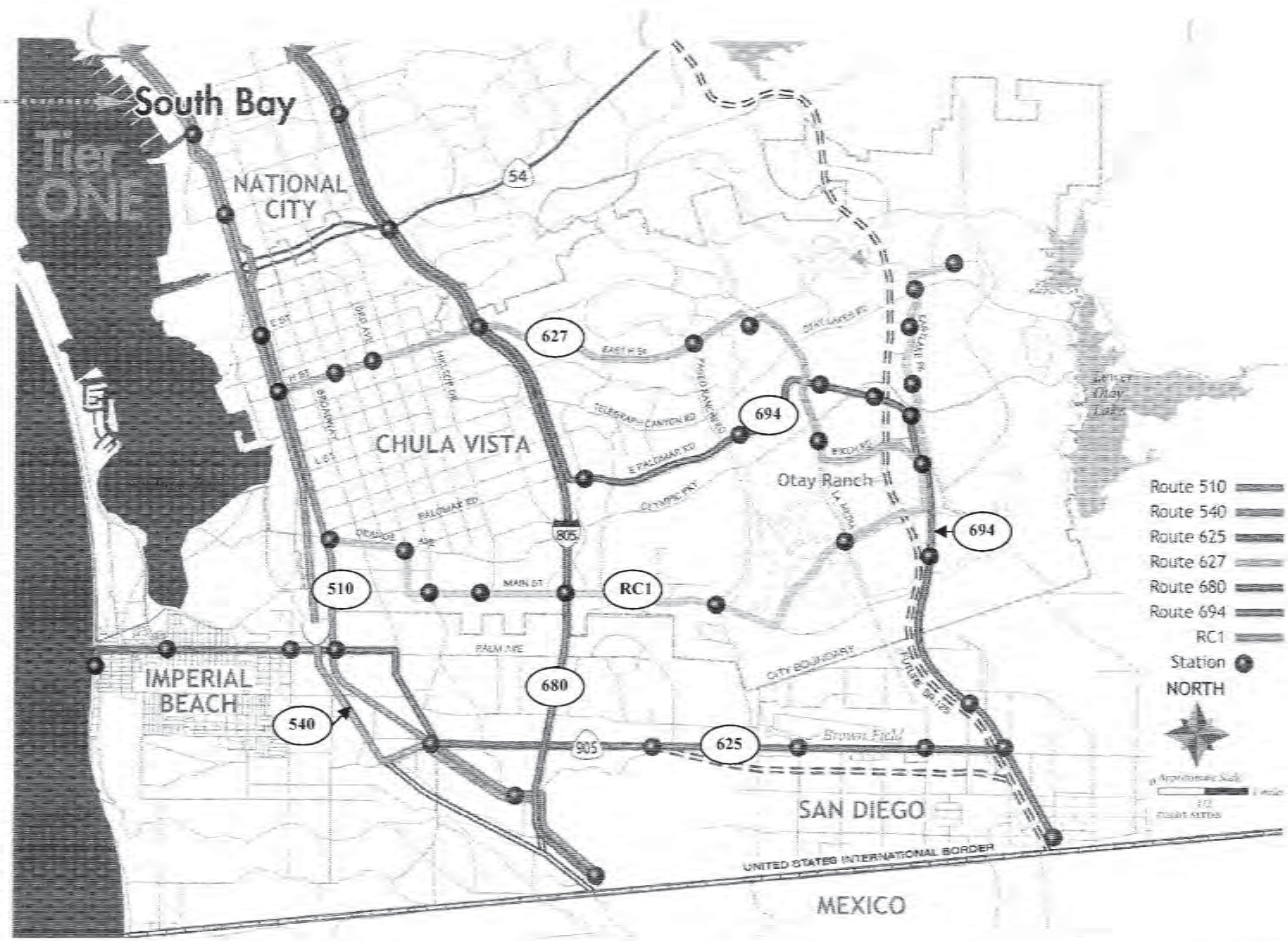
Route 510 (Existing Blue Line Trolley) would have increased frequency of service. LRT headways would be reduced from 10 minutes to 5 minutes. In order to achieve this level of transit service, it would be necessary to grade separate the LRT tracks from key surface streets, such as E Street and H Street within the project area.

South Bay Transit First Project would provide Regional Bus Rapid Transit (BRT) service between Otay Ranch in eastern Chula Vista and downtown San Diego. The first phase of the project would follow I-805 and SR-94, along with East Palomar Street. Phase 1 of the project could be completed by the Year 2010. The second phase of the project would extend the line to the Otay Border crossing and serve businesses in Otay Mesa.

Route 540 (I-5 Express Service) would provide Regional Bus Rapid Transit (BRT) service from San Ysidro to downtown San Diego and Old Town. This route would use median lanes in I-5 and would have a transit stop at H Street (with elevators to the H Street over crossing at I-5. This route would have infrequent stations, which would allow for shorter travel times, as compared to Route 510.

Route 627 (H Street BRT) would provide a transit connection between the Chula Vista Urban Core Specific Plan area and Southwestern College and the Eastern Urban Center. This route will connect the major activity centers in the redeveloping areas of western Chula Vista to the rapidly growing areas of eastern Chula Vista.

Route 680 (Sorrento Valley to San Ysidro International Border) would provide Regional BRT service between the San Ysidro and Sorrento Mesa along the I-805 corridor. This service would connect Chula Vista to major employment centers in Kearny Mesa and Sorrento Mesa. Transit stations for this route would be located on I-805 at H Street.



Kimley-Horn and Associates, Inc.

Figure 5-3
Regional Transit Routes

K:\095413000\Figures\October 2005 Final Report\Transit First.doc

6.0 YEAR 2030 WITH IMPROVEMENTS CONDITIONS

This section provides a description of the Year 2030 traffic conditions at locations where improvements were assumed due to the addition of a project feature or recommended to achieve acceptable LOS. Project features were assumed at locations where either the roadway segment or study intersection operates within acceptable thresholds, but were due to improvements associated with the UCSP. Improvements are recommended at the majority of roadway segments/intersections that exceeded the acceptable thresholds.

Road Network

The following section describes the recommended improvements along the roadway segments in the Urban Core study area. These recommended roadway widths will be used in developing the parkway recommendations and ROW dimensions. It should be noted that right-of-way (ROW) value for the Woodlawn Avenue segment is not shown on the cross section figure due to the uncertainty of the park area at this time.

Table 6-1 summarizes the proposed changes to the existing roadway network. It should be noted that roadway segments that did not have any changes compared to existing conditions were omitted from the table. As shown in the table, all improvements shown for Third Avenue, F Street, Broadway, and Woodlawn Avenue would be considered project features. Improvements along E Street and H Street are recommended to achieve acceptable LOS.

Figures 6-1 to **6-10** illustrate the proposed cross sections for the corridors of E Street, F Street, H Street, Broadway, 3rd Avenue, and Woodlawn Avenue.

TABLE 6-1
PROPOSED ROADWAY SEGMENT DIMENSIONS

Street Segment	Total Existing Travel Lanes	Total Proposed Travel Lanes	Existing Turn Lane/Median	Proposed Turn Lane/Median	Existing Curb-to-Curb Width	Proposed Curb-to-Curb Width	Existing Parking	Proposed Parking	Existing Bike Lanes	Proposed Bike Lanes
Project Feature										
Third Avenue between E Street and F Street	2	2	No Median	No Median	72'	24'/68' *	Y	Y/N *	N	N
Third Avenue between F Street and Madrona Street	4	2	Raised Median	Raised Median	101'	24'/68' *	Y	Y/N *	N	N
Third Avenue between Madrona Street and G Street	4	2	No Median	No Median	72'	24'/68' *	Y	Y/N *	N	N
F Street between Third Avenue and Fourth Avenue	4	2	Raised Median, Bike Lanes (Class III)	Two-way Left Turn Lane/Raised Median, Bike Lanes (Class I)	65'	48'	Y	Y	Y	Y
F Street between Fourth Avenue and I-5	2	2	No Median, Bike Lanes (Class III)	Two-way Left Turn Lane/Raised Median, Bike Lanes (Class I)	40'	48'	Y	Y	Y	Y
Broadway between E Street And F Street	4	4	No Median	Raised Median, Bike Lanes (Class II)	68'	82'	Y	Y	N	Y
Broadway between F Street and H Street	4	4	Two-way Left Turn Lane	Raised Median, Bike Lanes (Class II)	82'	82'	Y	Y	N	Y
Woodlawn Avenue between E Street and H Street	2	2	No Median	Park Area	36'	Varies	Y	Y	N	N
Improvements to Achieve Acceptable LOS										
E Street between I-5 and 300' east of I-5	4	4	Two-Way Left Turn Lane	Two-Way Left Turn Lane, Westbound Right Turn Lane	70'	76'	N	N	N	N
H Street between I-5 and Broadway	4	6	Two-Way Left Turn Lane	Raised Median, Bike Lanes (Class II)	64'	94'	N	N	N	Y

* The 24-foot cross section assumes no parking along Third Avenue and the 68-foot cross section assumes diagonal parking on both sides of Third Avenue.

E Street Corridor

The roadway cross section on E Street is adequate to serve future traffic needs except for the segment between Woodlawn Avenue and I-5. To mitigate the intersection impact at the I-5 NB Ramp with E Street, a westbound right-turn lane is required. It is recommended that E Street be widened between Woodlawn Avenue and I-5, which would add an additional six feet in the curb-to-curb width. This segment will need an additional 22 feet of ROW. This added width will allow for an extended right-turn lane on westbound E Street onto the I-5 northbound on-ramp. This improvement would help to reduce the queues in the westbound direction and improve the operations at the I-5 NB ramp and at Woodlawn Avenue intersection.

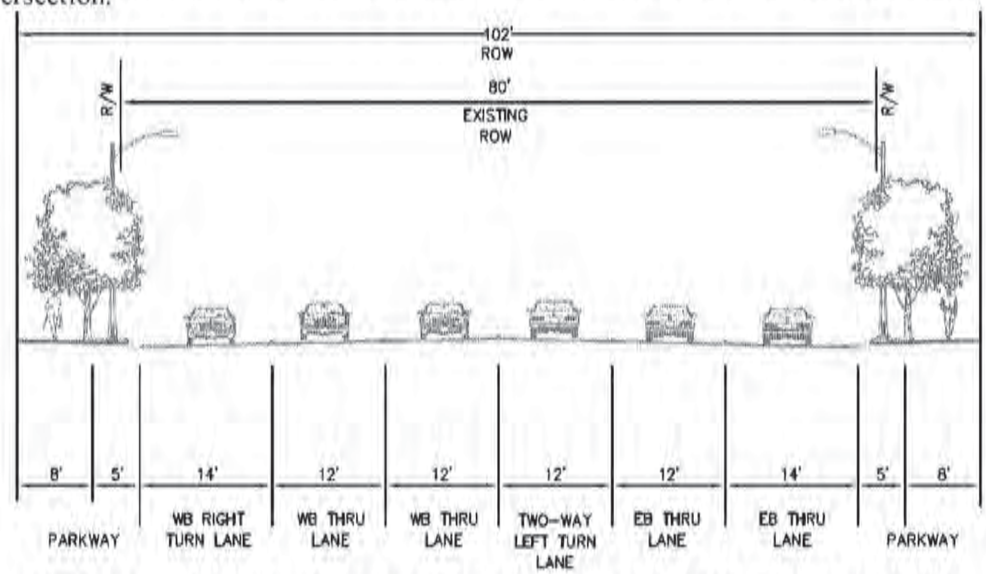


Figure 6-1 Proposed Cross Section, E Street Between I-5 and 300' East of I-5 N Ramp

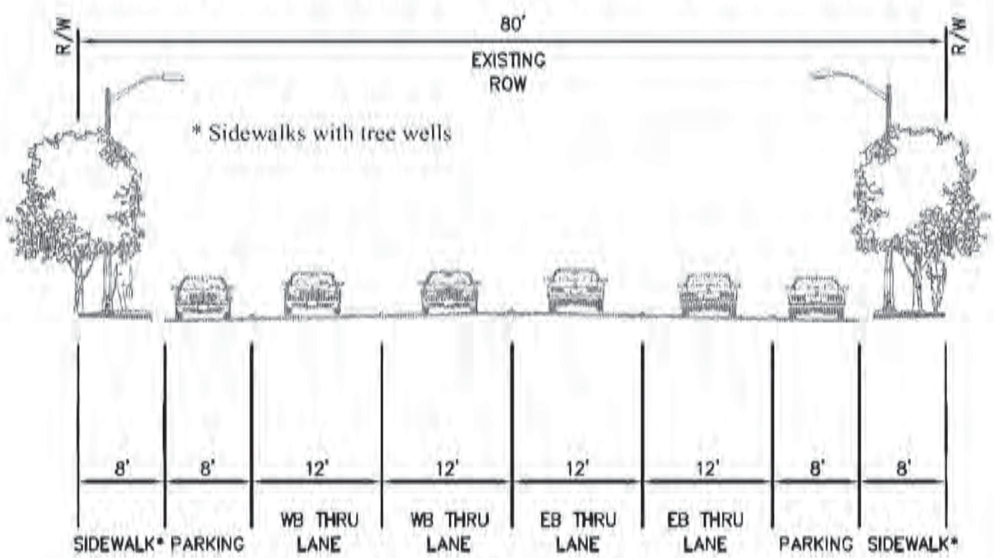


Figure 6-2 Proposed Cross Section, E Street Between 3rd Avenue and Broadway

F Street Bike Lanes

As a project feature of the Urban Core Specific Plan, Class I bike lanes would be added to F Street between Third Avenue and I-5. The new Class I bike lanes ("bikeway") will improve the connectivity of the Urban Core to the Bayfront Area encouraging better synergy between uses/users on the Bayfront and Urban Core, including pedestrians and bicyclists. Wide parkways, off-street bike lanes, and wide sidewalks will provide an opportunity to stroll or bicycle through the Urban Core. A Class II facility would exist on F Street where a Class I bikeway cannot be accommodated due to mature trees or new/existing medians. For F Street, a 16-foot parkway is provided between Fourth Avenue and Broadway and a 12-foot parkway is provided between Third Avenue and Fourth Avenue. Existing trees from Third Avenue to Broadway are proposed to be preserved and incorporated into the streetscape theme. It is suggested that the overhead utility line be placed underground as part of this improvement project.

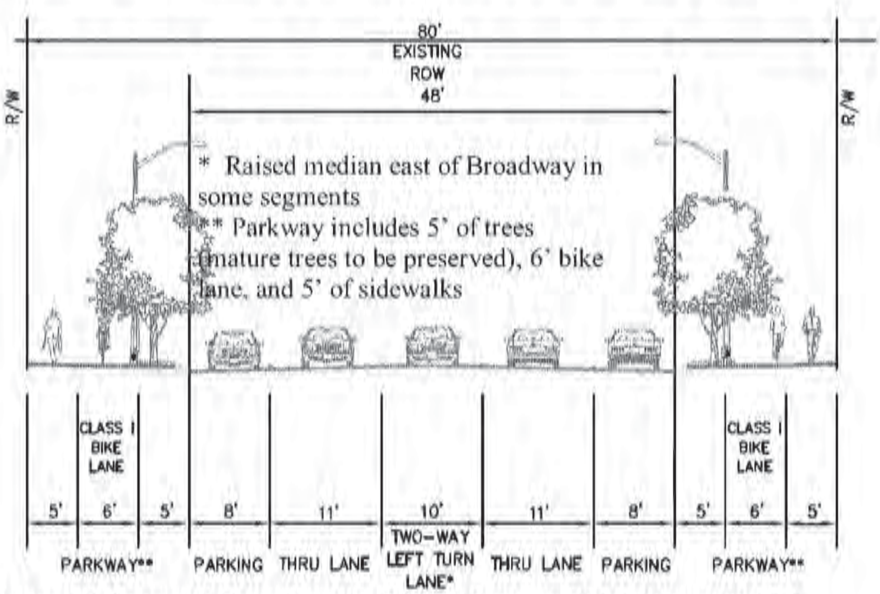


Figure 6-3 Proposed Cross Section, F Street Between Third Avenue and I-5

H Street Corridor

The segment of H Street from Third Avenue to Broadway will be widened by eight feet. The new segment configuration will feature two travel lanes and a bike lane in each direction, as well as a raised center median. One side of the street will also have parallel parking.

An additional 30 feet in the curb-to-curb width will be added to H Street between Broadway and I-5 to include an additional travel and in both directions. This improvement is consistent with the ultimate classification of H Street as defined in the adopted General Plan. The additional travel lane is needed to accommodate buildout daily and peak-hour traffic on H Street and would improve the operations along this segment.

Further, a Class II bikeway is proposed to be added to H Street between Third Avenue and I-5. H Street is intended as the "backbone" of the Urban Core, as it connects the transit focus areas at H Street/Third Avenue and H Street/I-5 and facilitates local and regional transit routes (and Bus Rapid Transit in the future). Twenty-foot wide sidewalks are proposed in order to create a grand boulevard feeling and promote pedestrian use.

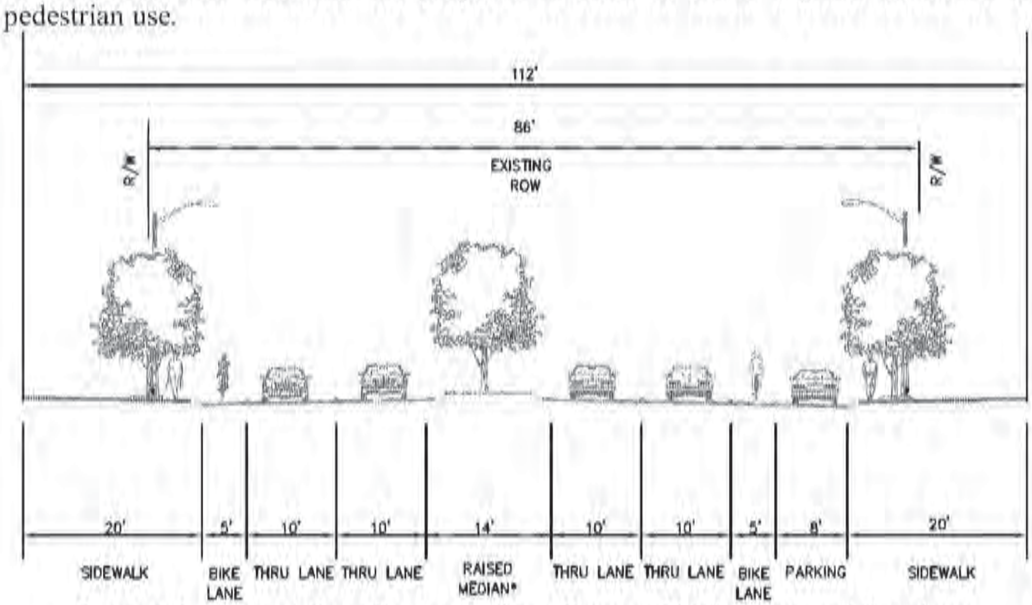


Figure 6-4 Proposed Cross Section, H Street Between Third Avenue and Broadway

Kimley-Horn
and Associates, Inc.

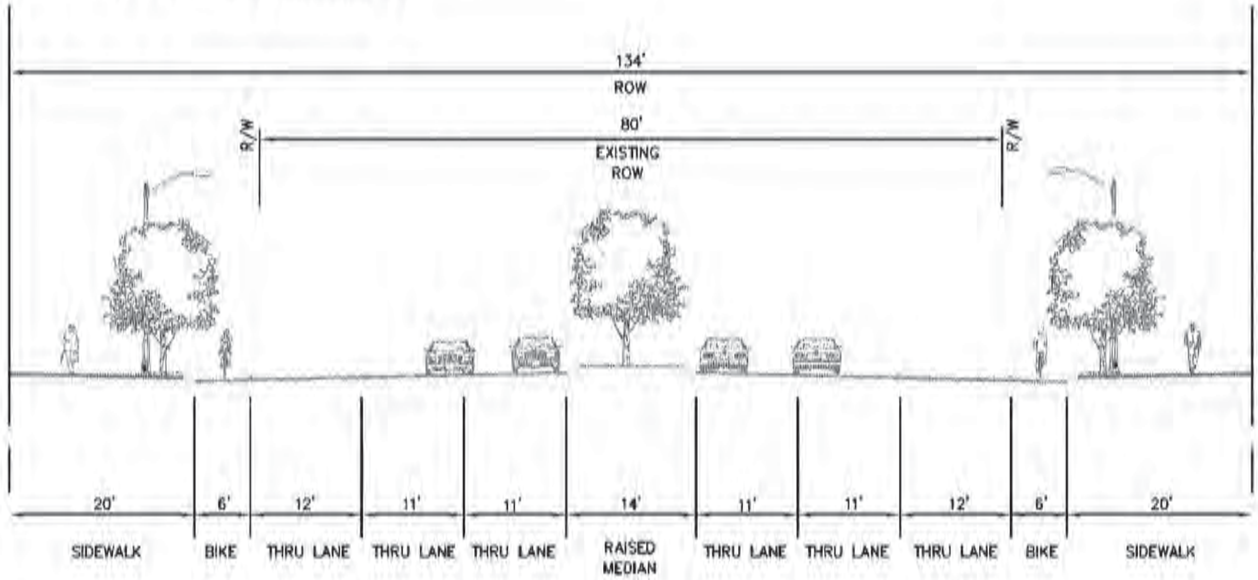


Figure 6-5 Proposed Cross Section, H Street Between Broadway and I-5

Broadway Corridor

Broadway would be improved by adding a 12-foot raised median as a project feature. In addition, a Class II bikeway is proposed to be added along Broadway between C Street and L Street. Broadway will be widened by 14 feet between E Street and F Street to accommodate a final configuration consisting of the raised median, bike lanes in both directions, and narrower traffic lanes. Between F Street and H Street, the roadway would not need to be widened and the existing median would be converted to a raised median. Nine-foot wide sidewalks will support pedestrian circulation. It is proposed to retain the existing palm trees within parkway areas.

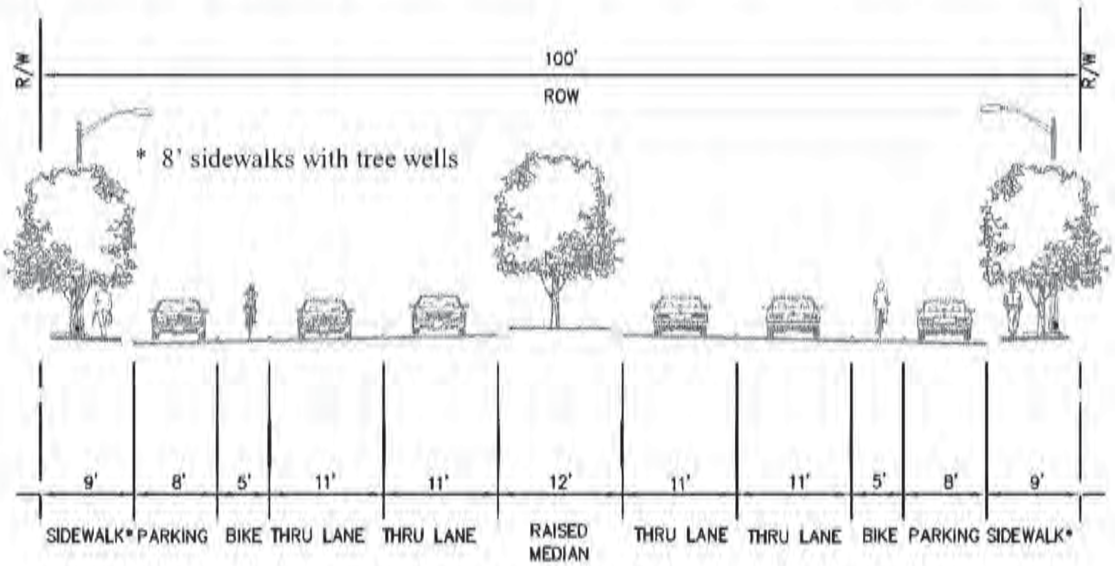


Figure 6-6 Proposed Cross Section, Broadway Between C Street and L Street

3rd Avenue Pedestrian Enhancements

As a project feature of the Urban Core Specific Plan, the sidewalks on 3rd Avenue between E Street and G Street will be widened. The widening of the sidewalks will encourage a higher pedestrian use of 3rd Avenue and provide opportunity for outdoor activity areas within the Village Area. The cross section of 3rd Avenue varies greatly between E Street and G Street. The roadway width varies between 72 feet and 101 feet.

The roadway will be narrowed to provide one through lane in each direction between E Street and G Street. The remainder of Third Avenue to L Street will stay in the current four-lane configuration. It is proposed to retain the existing median. Three distinct cross sections will be provided. On-street parking may be reduced with the implementation of the Third Avenue enhancements. It is recommended that these enhancements be provided in coordination with the provision of off-street parking in the vicinity so that parking impacts do not occur to surrounding areas.

Diagonal parking will be provided for most parts of Third Avenue. Figure 6-7 shows the cross section where angled parking is permitted. Due to relatively high through traffic volumes, it is recommended that the roadway be of sufficient width to allow vehicles to back out without blocking through traffic lanes. It should be noted that the curb-to-curb dimension is not reduced where diagonal parking is provided on the segment of Third Avenue between E Street and F Street.

Figure 6-8 illustrates selected mid-block locations where pedestrian crossing will occur. The roadway would be narrowed to 24 feet by extending the curb into the street. Curbs will be extended toward the roadway centerline about 38 feet on each side of the roadway. This reconfiguration would allow for additional pedestrian crossings with reduced crossing distances at selected locations.

Figure 6-9 shows the treatment at intersections. This cross section allows for a right-turn lane and a left-turn lane to be provided. Although the turning volumes from Third Avenue are not very high, these lanes are needed to remove turning traffic from the through traffic. Turning vehicles will need to yield to anticipated high pedestrian traffic volumes; the turn lanes allow these yielding vehicles to pull out of the through travel lanes. This intersection configuration will adequately accommodate future traffic demands along Third Avenue while providing a significantly enhanced pedestrian friendly streetscape.

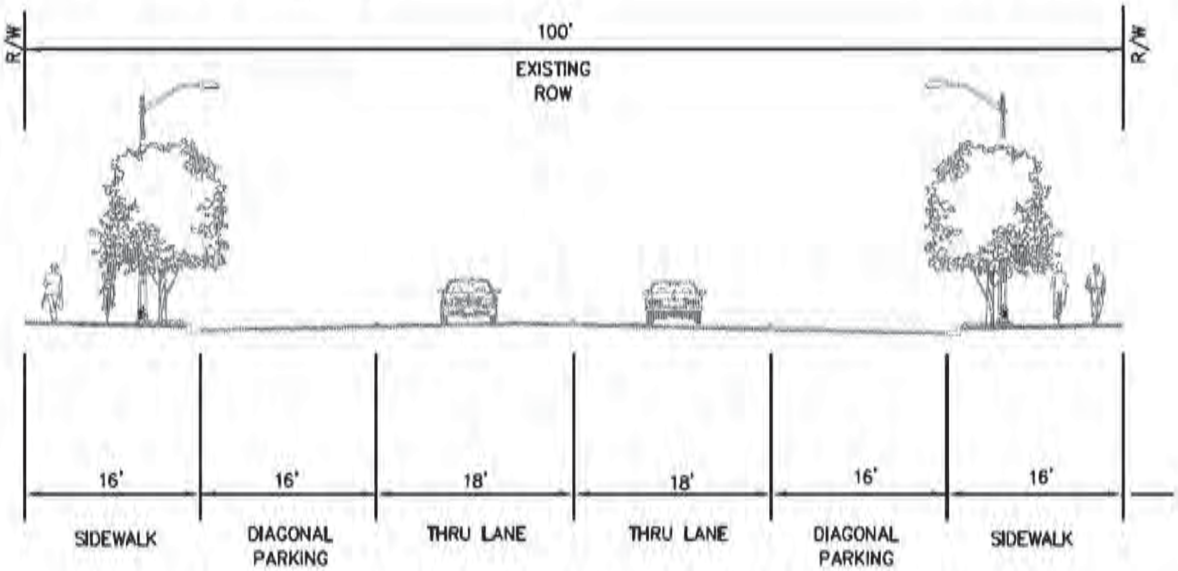


Figure 6-7 Proposed Cross Section, 3rd Avenue With Diagonal Parking

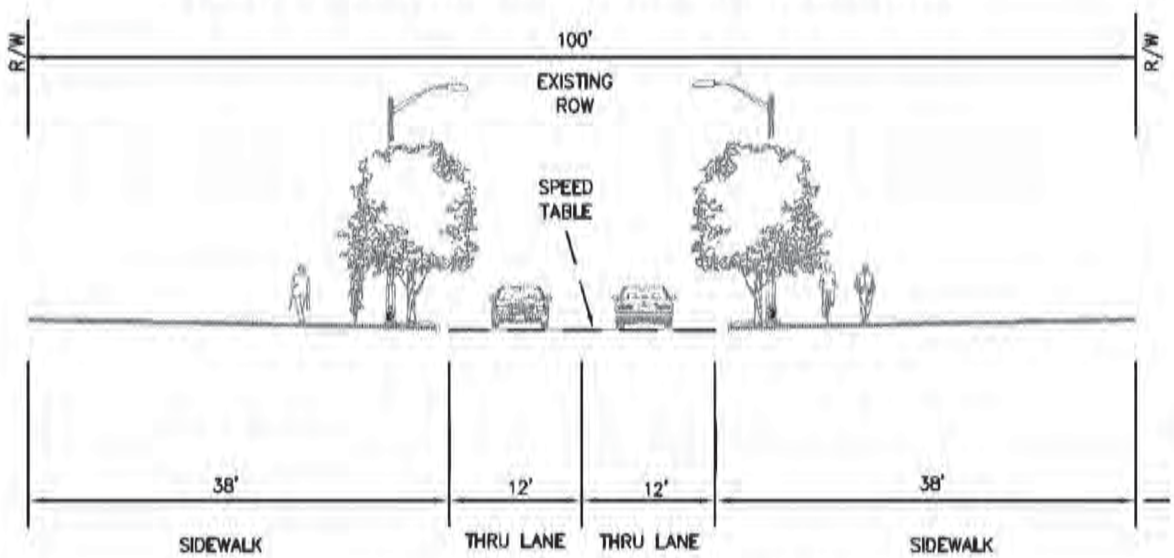


Figure 6-8 Proposed Cross Section, 3rd Avenue Without Diagonal Parking

Kimley-Horn
and Associates, Inc.

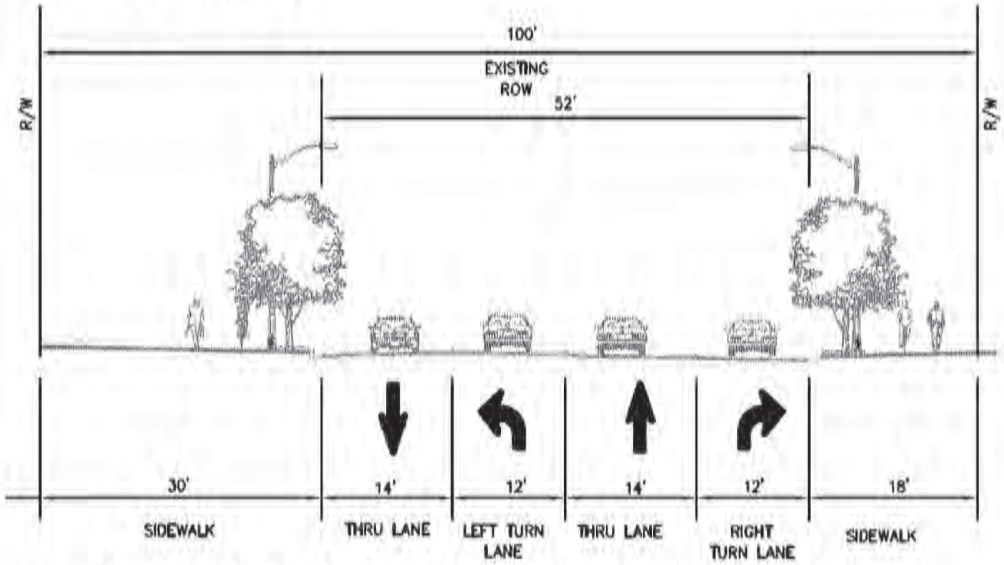


Figure 6-9 Proposed Cross Section, 3rd Avenue At Signalized Intersections

Woodlawn Avenue Couplet

As a project feature, Woodlawn Avenue would be extended and converted to a one-way couplet between south of E Street and north of H Street. Woodlawn Avenue is not built as a continuous roadway between E Street and H Street. The creation of the one-way couplet would include the construction of a neighborhood park between the one-way streets. The neighborhood park may include a variety of recreational uses such as playgrounds, walkways, and basketball courts. The couplet could be implemented over time as property redevelops.

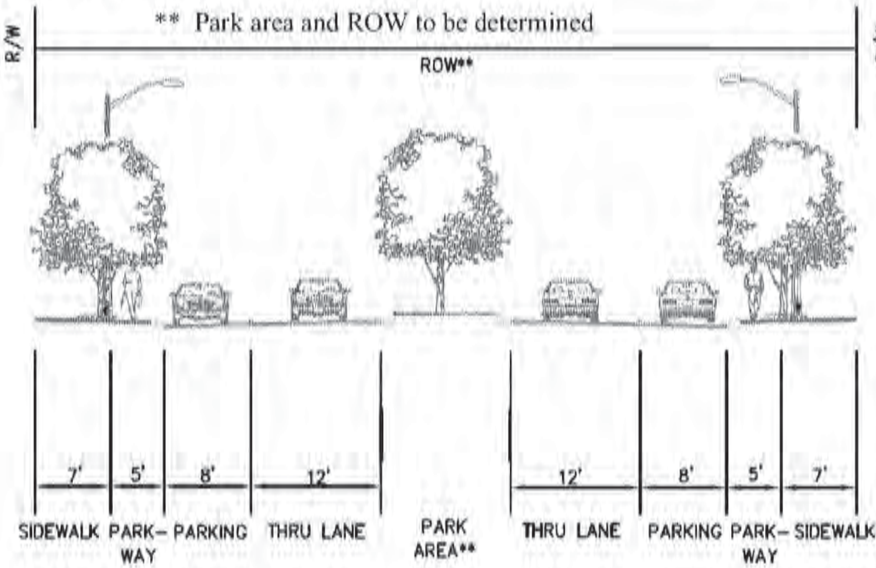


Figure 6-10 Proposed Cross Section, Entire Length of Woodlawn Avenue

Roadway Segment Analysis

Table 6-2 summarizes the Year 2030 With Improvement Conditions LOS analysis for the roadway segments with assumed improvements located in the Urban Core. As shown in this table, H Street between I-5 and Broadway would be widened to a six-lane gateway. As a result, the acceptable ADT would increase and result in an acceptable LOS. For 3rd Avenue between E Street and G Street, this segment would be retained or narrowed as a two-lane downtown promenade. As a result, the acceptable ADT would decrease and result in an unacceptable LOS. However, 3rd Avenue corridor intersections would operate at acceptable levels of service and the narrowing of 3rd Avenue and increasing the width of the sidewalks would create a friendlier pedestrian atmosphere.

TABLE 6-2

YEAR 2030 WITH IMPROVEMENTS CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE SUMMARY

STREET	SEGMENT	DAILY TRAFFIC VOLUME	BEFORE IMPROVEMENTS	ACCEPTABLE VOLUME	DAILY SEGMENT LOS	AFTER IMPROVEMENTS	ACCEPTABLE VOLUME	DAILY SEGMENT LOS
H Street	I-5 - Broadway	52,000	4 Lanes	43,200	F	6 Lanes	61,200	D
3rd Avenue	E Street - G Street	21,000	2/4 Lanes	14,400/ 33,350	A	2 Lanes	14,400	F

K:\095413000\Excel\October 2005 Final Report\[413rs050504.xls]Table 6-2

Intersection Improvements

Due to the unique nature of urban revitalization, the exact timing, sequence and extent of infill development is hard to predict and doing so would be speculative. The anticipated 20-25 year implementation of the Specific Plan therefore necessitates a different approach to implementing the recommended long-term intersection improvements in order to achieve acceptable LOS thresholds. The 20 intersection improvements that follow have been divided into three tiers for phased long term implementation based on need and enhancement to the function of the overall street network. It should be noted that three of the intersections (#7, #16, and #21) are proposed as project features rather than necessitated to improve intersection LOS and the improvements will likely be related to and timed with implementation of streetscape improvements along Third Avenue. The intersection numbers correspond to the intersection numbering system outlined in this report.

Tier 1 Improvements

- Provide a grade-separated intersection at the E Street and H Street trolley crossing locations. This improvement would be considered a regional improvement as the trolley provides service throughout the region. Coordination with MTS/SANDAG will be required for this improvement.
- **#1 Bay Boulevard/I-5 Southbound Ramp/E Street**: Add an eastbound through and right-turn lane, southbound right-turn lane, and northbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- **#2 I-5 Northbound Ramp/E Street**: Add a westbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- **#24 I-5 Southbound Ramp/H Street**: Add a southbound left, eastbound through and right-turn lanes. Coordination with Caltrans will be required for this improvement.
- **#25 I-5 Northbound Ramp/H Street**: Add a westbound through and right-turn lane and restripe south approach to accommodate dual left-turn lanes. Coordination with Caltrans will be required for this improvement.
- **#26 Woodlawn Avenue/H Street**: Change Woodlawn Avenue to a one-way couplet. This improvement is required to serve the intense redevelopment occurring on both sides of H Street. The couplet improvement is not required further north toward E Street.
- **#27 Broadway/H Street**: Add an eastbound transit queue jumper lane and westbound through and right-turn lanes.
- **#28 Fifth Avenue/H Street**: Change the northbound/southbound approaches to include protective plus permissive phasing and add a westbound right-turn lane.
- **#29 Fourth Avenue/H Street**: Add an eastbound/westbound right-turn lane.
- **#44 Fourth Avenue/SR-54 Eastbound Ramp**: Add an eastbound right-turn lane. Coordination with Caltrans will be required for this improvement.

Tier 2 Improvements

- **#34 Broadway/SR-54 Westbound Ramp**: Add a westbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- **#59 J Street/I-5 Northbound Ramp**: Add an eastbound left-turn and westbound right-turn lane. Coordination with Caltrans will be required for this improvement.
- **#61 L Street/Bay Boulevard**: Signalize the intersection, add a southbound left-turn lane, and a northbound right-turn overlap phase to the traffic signal.

- **#63 Bay Boulevard/I-5 Southbound Ramp**: Signalize the intersection. Coordination with Caltrans will be required for this improvement.
- **#64 Industrial Boulevard/I-5 Northbound Ramp**: Signalize the intersection. Coordination with Caltrans will be required for this improvement.
- H Street from four lanes to six lanes from I-5 to Broadway

Tier 3 Improvements

- **#7 Third Avenue/E Street**: Convert the northbound and southbound shared right-through lane into exclusive right-turn lanes.
- **#13 Broadway/F Street**: Add an eastbound right-turn lane.
- **#16 Third Avenue/F Street**: Separate the southbound shared through-right lane into an exclusive through and right-turn lanes, convert the northbound shared through-right lane into an exclusive right-turn lane.
- **#21 Third Avenue/G Street**: Convert the northbound/southbound shared through-right lane into exclusive right-turn lanes.
- **#45 Fourth Avenue/Brisbane Street**: Add a southbound right-turn overlap phase to the traffic signal.
- **#57 Second Avenue/D Street**: Convert to an all-way stop controlled intersection.

In each individual tier, the City's existing monitoring program will determine exactly which projects are implemented first during the biannual CIP program review. In addition to determining timing and need, this systems and operations monitoring approach should also be used to further ascertain final design details of the intersection improvements and may include consideration of the effects on traffic flow as well as the impacts/benefits to other travel modes (e.g. pedestrians and bicycles) that are foundational to the successful implementation of the Specific Plan.

The recommended improvements at the study intersections listed above are shown in **Figure 6-11** and **6-11.1**. It should be noted that the E Street and H Street intersections between the I-5 NB Ramp and Woodlawn Avenue assumes a Light Rail Transit (LRT) grade separation, which would separate vehicular traffic from the trolley. It is recommended that the trolley tracks be grade separated along E and H Streets to improve intersection operations and to accommodate the planned increase in trolley frequency.

Recommendations at intersections 27, 33, and 54 do not improve conditions to an acceptable LOS due to ROW constraints. **Figure 6-12** shows the intersections that have improvements that are considered to be project features or improvements.

Intersection Analysis

Table 6-3 displays the LOS analysis results for the study intersections that have assumed improvements under the Year 2030 With Improvements scenario. As shown in this table, all study intersections could operate at LOS D or better during both peak periods with the proposed improvements, except for the following intersections:

- #27 Broadway/H Street
- #33 Hilltop Drive/H Street
- #54 3rd Avenue/J Street

At the Broadway/H Street intersection (Int. #27), an additional northbound and southbound through lane would be required in order to achieve an acceptable LOS D conditions. However, this improvement would require extensive widening of Broadway and H Street to allow for lane drops. Furthermore, this widening would create longer pedestrian crossings. As such, the recommended improvements of the eastbound queue jumper lane and the additional westbound through and right-turn lanes would improve the intersection from LOS F to LOS E conditions.

At the Hilltop Drive/H Street intersection (Int. #33), no improvements would be recommended due to ROW constraints. The poor LOS at this intersection is primarily caused by the high traffic volumes in the eastbound/westbound movements. Additional through and/or turn lanes would be required in order to improve this intersection to an acceptable LOS. With no improvements, this intersection would remain at LOS E during both peak periods.

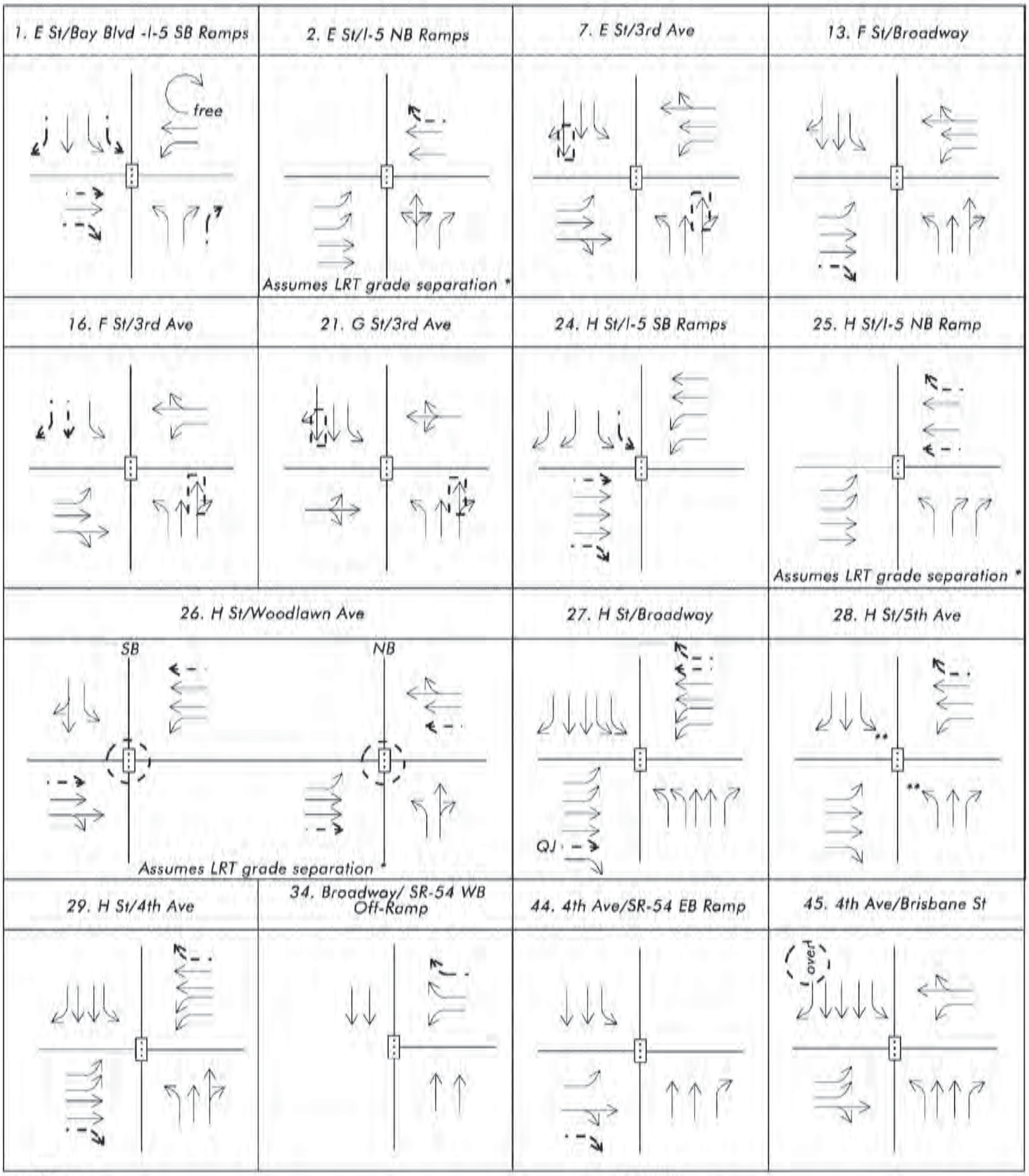
At the 3rd Avenue/J Street intersection (Int. #54), the required improvement of an additional southbound right-turn lane would impact the Henry's Marketplace building, which is built adjacent to the sidewalk. Therefore, this improvement is not recommended. As a result, the LOS would remain at LOS E. However, if the property were to redevelop in the future, additional ROW could be obtained for the southbound right-turn lane.

It should be noted that all of the study intersections along 3rd Avenue would operate at an acceptable LOS without improvements. However, due to the narrowing of 3rd Avenue to create a friendlier pedestrian atmosphere, one of the through lanes along 3rd Avenue in each direction would be converted to an exclusive right-turn lane.

Figure 6-13 shows the locations of these intersections that would still remain at LOS E. **Appendix C** contains the peak-hour intersections LOS calculation worksheets.

West Side Shuttle Service

West Side Shuttle is a concept proposed to serve both the Urban Core Specific Plan and the Bayfront Master Plan areas in western Chula Vista. This service would complement existing and planned future transit improvements. The shuttle would provide localized service between various uses in western Chula Vista and provide connections to the regional transit system. **Figure 6-14** depicts the proposed routing of the West Side Shuttle. The shuttle would provide regional connectivity with stations serving Route 510 at the existing E Street station, Routes 510, 540 (future service), and 627 (future service) at the existing H Street trolley station, and the future station on H Street near Third Avenue serving future Route 627. In addition, five other stations are planned to serve destinations within the Urban Core Specific Plan, along with three additional stations within the Bayfront Master Plan.



N

Legend:

- Traffic Signal
- Stop Sign
- Existing lane
- Proposed Improvement
- Lane to be "altered"
- over New Overlap Phase
- QJ Queue Jumper

* The Light Rail Transit Crossings on E Street and H Street will have to be grade separated from the vehicular traffic along E Street and H Street.

** To improve this intersection the left turn phasing from the indicated movements will be changed to protective + permissive.

Figure 6-11
Year 2030 with Improvements
Intersections Geometrics

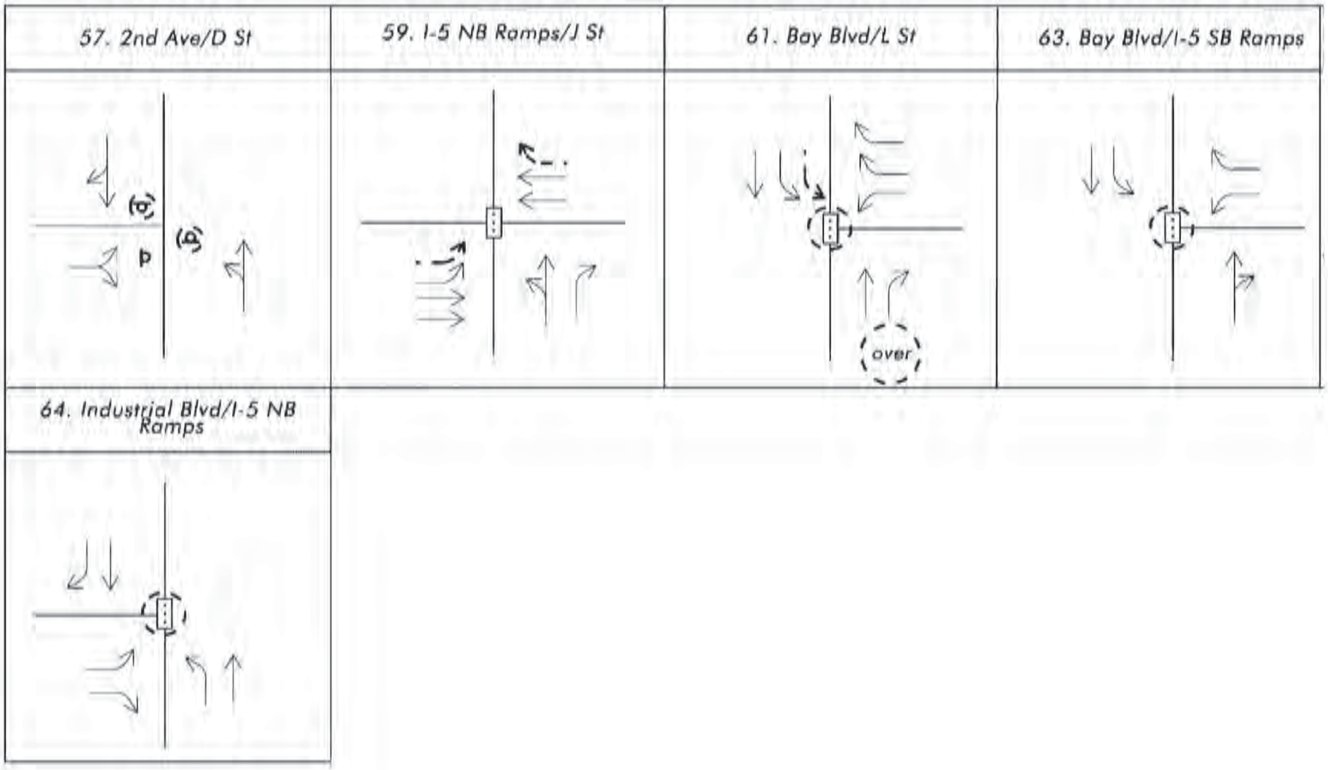


Figure 6-11.1
Year 2030 with Improvements
Intersections Geometrics

Figure 6-12
Project Features/Improvements at Study Intersection

TABLE 6-3

YEAR 2030 WITH IMPROVEMENTS CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

	INTERSECTION	PEAK HOUR	BEFORE IMPROVEMENTS DELAY (a)	BEFORE IMPROVEMENTS LOS (b)	AFTER IMPROVEMENTS DELAY (a)	AFTER IMPROVEMENTS LOS (b)	PROPOSED IMPROVEMENTS (c)
1	Bay Blvd-I-5 SB Ramp @ E St (f)	AM	**58.4**	E	25.5	C	Add EBT, EBR, SBL, SBR and NBR lanes.
		PM	**302.9**	F	37.2	D	
2	I-5 NB Ramp @ E St (f)	AM	**60.5**	E	26.1	C	Add WBR lane.
		PM	31.9	C	20.6	C	
7	3rd Ave @ E St (d)	AM	12.9	B	21.5	C	Convert NBT shared RT lane and SBT shared RT lane into exclusive RT lanes.
		PM	24.8	C	25.7	C	
13	Broadway @ F St	AM	17.7	B	20.0	B	Add EBR lane.
		PM	**66.1**	E	39.7	D	
16	3rd Ave @ F St (d)	AM	15.9	B	20.4	C	Separate SBT shared RT lane into an exclusive SBR lane and a SBT lane; Convert the NBT shared RT lane into an exclusive NBR lane.
		PM	23.5	C	23.2	C	
21	3rd Ave @ G St (d)	AM	11.8	B	10.3	B	Convert NBT shared RT lane and SBT shared RT lane into exclusive RT lanes.
		PM	10.5	B	15.2	B	
24	I-5 SB Ramp @ H St (f)	AM	36.7	D	21.5	C	Add SBL, EBT, and EBR lanes.
		PM	**84.5**	F	27.1	C	
25	I-5 NB Ramp @ H St (f)	AM	47.6	D	23.1	C	Add WBR, WBT, and restripe south approach to accommodate dual left turns.
		PM	**138.4**	F	31.7	C	
26	Woodlawn Ave @ H St (e)	AM	33.7	C	32.2/13.3 (e)	C/B (e)	Change Woodlawn Ave. to a one way couplet.
		PM	**260.6**	F	22.2/28.8 (e)	C/C (e)	
27	Broadway @ H St	AM	42.7	D	36.4	D	Add EBT Queue Jumper Lane, WBT and WBR lanes.
		PM	**118.1**	F	**77.0**	E	
28	5th Ave @ H St	AM	15.2	B	19.1	B	Change NB and SB approaches to protective + permissive phasing and add WBR lane.
		PM	**61.6**	E	52.0	D	
29	4th Ave @ H St	AM	38.6	D	30.3	C	Add EBR and WBR lanes.
		PM	**59.4**	E	40.2	D	
33	Hilltop Dr @ H St	AM	**58.3**	E	**58.3**	E	Do nothing due to ROW Constraints.
		PM	**74.2**	E	**74.2**	E	

Notes:

Bold values indicate intersections operating at LOS E or F.

EBL=Eastbound left turn lane; EBT=Eastbound through lane; EBR=Eastbound right turn lane; NBL=Northbound left turn lane; NBT=Northbound through lane; NBR=Northbound right turn lane; WBL=Westbound left turn lane; WBT=Westbound through lane; WBR=Westbound right turn lane; SBL=Southbound left turn lane; SBT=Southbound through lane; SBR=Southbound right turn lane.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0.

(c) See figures 6-21 to 6-21.1 for the proposed improvements at the study intersections.

(d) Change in travel lanes is due to narrowing of 3rd Avenue.

(e) The Woodlawn Avenue couplet creates 2 new intersections. The first number/letter corresponds to the delay/LOS at the west intersection and the second number/letter corresponds to the delay/LOS at the east intersection.

(f) Coordination with Caltrans will be required for the proposed improvement at this intersection.

K:\095413000\Excel\October 2005 Final Report [412tc08]MODIFIED\[...]\Mitigation Summary

TABLE 6-3

YEAR 2030 WITH IMPROVEMENTS CONDITIONS

PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY (Continued)

	INTERSECTION	PEAK HOUR	BEFORE IMPROVEMENTS		AFTER IMPROVEMENTS		PROPOSED IMPROVEMENTS (c)
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	
34	Broadway @ SR-54 WB Ramp (f)	AM	**190.6**	**F**	45.2	D	Add WBR lane.
		PM	16.2	B	14.8	B	
44	4th Ave @ SR-54 EB Ramp (f)	AM	37.2	D	22.6	C	Add EBR lane.
		PM	**95.2**	**F**	25.2	C	
45	4th Ave @ Brisbane St	AM	25.8	C	24.2	C	Add SBR overlap phase.
		PM	**61.5**	**E**	50.1	D	
54	3rd Ave @ J St	AM	22.9	C	22.9	C	Do Nothing due to impacts on Henry's Building.
		PM	**74.5**	**E**	**74.5**	**E**	
57	2nd Ave @ D St	AM	31.2	D	27.0	D	Convert to an all-way stop control intersection.
		PM	36.0	**E**	18.6	C	
59	J St @ I-5 NB Ramp (f)	AM	**135.2**	**F**	28.3	C	Add EBL and WBR lanes.
		PM	**61.7**	**E**	24.1	C	
61	L St @ Bay Blvd	AM	22.7	C	18.1	B	Add SBL lane, signalize intersection, and add NBR overlap phasing.
		PM	**203.0**	**F**	17.1	B	
63	Bay Blvd @ I-5 SB Ramp (f)	AM	**84.0**	**F**	17.7	B	Signalize intersection.
		PM	**221.2**	**F**	46.9	D	
64	Industrial Blvd @ I-5 NB Ramp (f)	AM	26.0	D	12.6	B	Signalize intersection.
		PM	**66.5**	**F**	20.8	C	

Notes:

Bold values indicate intersections operating at LOS E or F.

ECL= Exceeds calculable limit. At intersections at or over capacity, the calculated delay value becomes unreliable.

EBL=Eastbound left turn lane; EBT=Eastbound through lane; EBR=Eastbound right turn lane; NBL=Northbound left turn lane; NBT=Northbound through lane; NBR=Northbound right turn lane; WBL=Westbound left turn lane; WBT=Westbound through lane; WBR=Westbound right turn lane; SBL=Southbound left turn lane; SBT=Southbound through lane; SBR=Southbound right turn lane.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 6.0.

(c) See figures 6-21 to 6-21.1 for the proposed improvements at the study intersections.

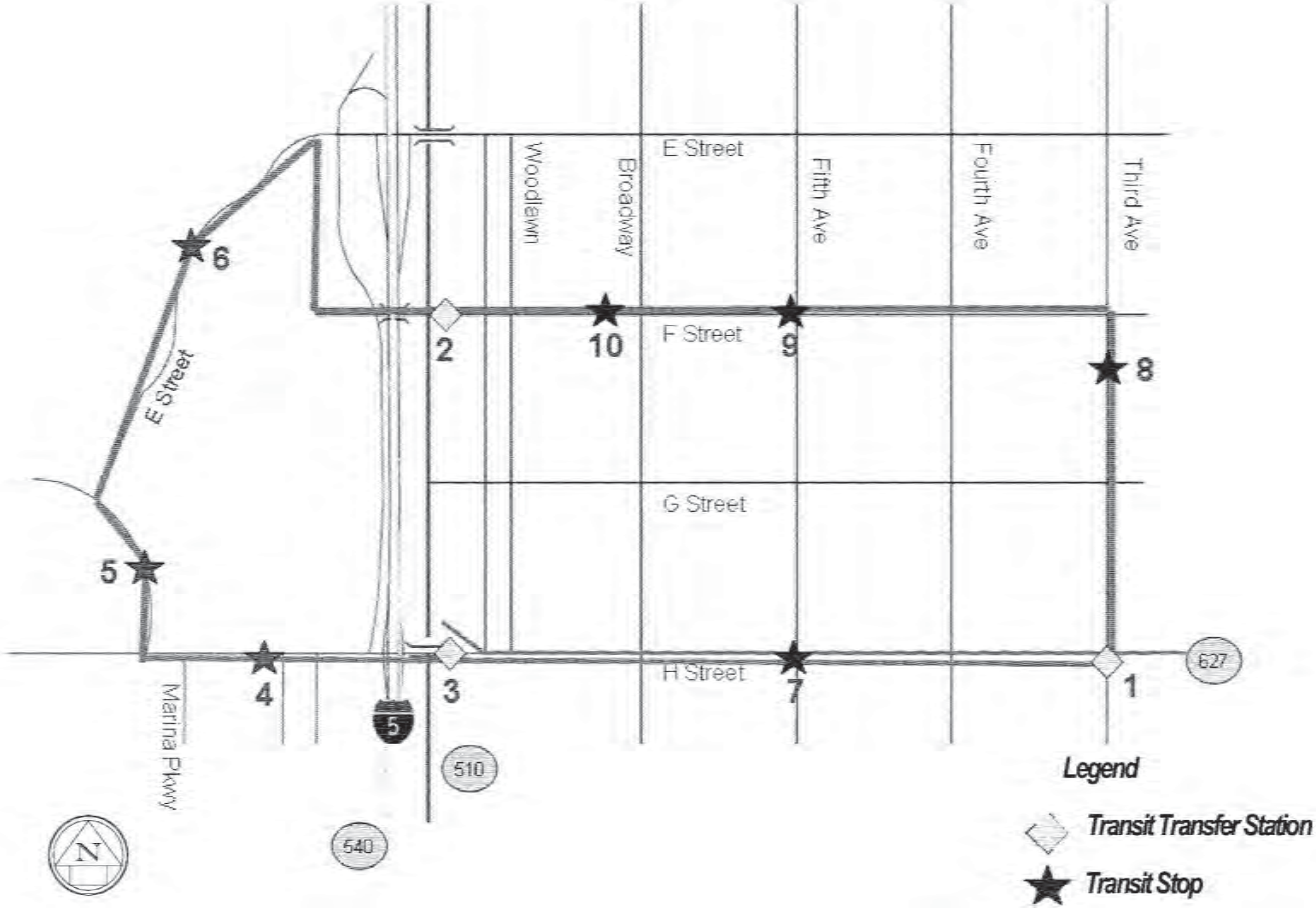
(d) Change in travel lanes is due to narrowing of 3rd Avenue.

(e) The Woodlawn Avenue couplet creates 2 new intersections. The first number/letter corresponds to the delay LOS at the west intersection and the second number/letter corresponds to the delay LOS at the east intersection.

(f) Coordination with Caltrans will be required for the proposed improvement at this intersection.

K:\SD\543000 Excel\October 2005 Final Report [41302006 MODIFIED.xls]Mitigation Summary

Figure 6-13
Study Intersections
Remaining LOS E



Kimley-Horn and Associates, Inc.

Figure 6-14
West Side Shuttle Proposed Route

7.0 FINDINGS AND CONCLUSIONS

The following section provides a summary of the key findings and study recommendations.

- The Urban Core Specific Plan (UCSP) focus area is located east of I-5, west of Del Mar Avenue, north of L Street, and south of C Street.
- Approximately 331,000 ADT is expected with the full build-out of the Urban Core, which is an increase of 141,000 ADT over existing conditions.
- A total of 64 intersections and 32 roadway segments were identified for analysis.
- Under existing conditions, three intersections operate at LOS E or worse during the peak periods and all roadway segments function at an acceptable LOS.
- Under Year 2030 conditions, 20 intersections operate at LOS E or worse during the peak periods and all but two roadway segment functions at an acceptable LOS.
- Recommended improvements were made along nine roadway segments within the study area, which include E Street, F Street, H Street, Woodlawn Avenue, and several segments along Broadway and 3rd Avenue.
- With the recommended improvements, the segment of H Street between I-5 and Broadway would function at an acceptable LOS, but the segment of 3rd Avenue between E Street and G Street would function at LOS F.
- The 3rd Avenue corridor intersections would operate at acceptable levels of service and the narrowing of 3rd Avenue and increasing the width of the sidewalks would create a friendlier pedestrian atmosphere.
- Recommended improvements were made at the 20 intersections that would operate at LOS E or worse during the peak periods and at locations where improvements to the road network would also affect the intersections at either end of the segment.
- Three of the 20 intersections (#7, #16, and #21) are proposed as project features rather than necessitated to improve intersection LOS and the improvements will likely be related to and timed with implementation of streetscape improvements along Third Avenue.

K:\095413000\Word\October 2005 Final Report\Chula Vista UC Final Traffic Study.doc

APPENDIX D

Noise Report

Noise Technical Report for the City of Chula Vista Urban Core Specific Plan

Prepared for

City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Prepared by

RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334

RECON Number 4066N
May 24, 2006

Charles S. Bull, President

TABLE OF CONTENTS

FIGURES

TABLES

ATTACHMENTS

1.0 Introduction

1.1 Purpose

The purpose of this study is to assess the potential for significant adverse impacts to result from the approval of the Urban Core Specific Plan as proposed by the City of Chula Vista (Figure 1). The analysis considers the noise levels that future residents could be exposed to and evaluates options for limiting that exposure to acceptable levels. In addition, a discussion of notable noise-producing activities and the regulatory requirements associated with the maintenance of acceptable noise levels are included.

As a result of this analysis, it was determined that significant noise impacts could occur as a result of the adoption of the Urban Core Specific Plan, unless specific mitigation measures are adopted that assure the protection of future receivers. This report details those mitigation measures, the adoption of which will lessen potential effects to below a level of significance.

1.2 Fundamentals of Noise

Simply stated, noise is unwanted sound. Sound is caused by minute pressure variations in the air—above and below static atmospheric pressure that are sensed by the human ear. The number of these minute pressure variations over time is referred to as the frequency of the sound.

Sound in the ambient environment is composed of a wide range of frequencies. Because the human ear is not equally sensitive at all frequencies, two different noises that have the same sound pressure level (SPL) may be perceived as having different levels of loudness. Therefore, the SPL is not a measure of the loudness of a sound. In order to obtain levels that more closely approximate the perceived loudness of noise by humans, *frequency-weighting* of the sound level is used.

Sound Pressure Level

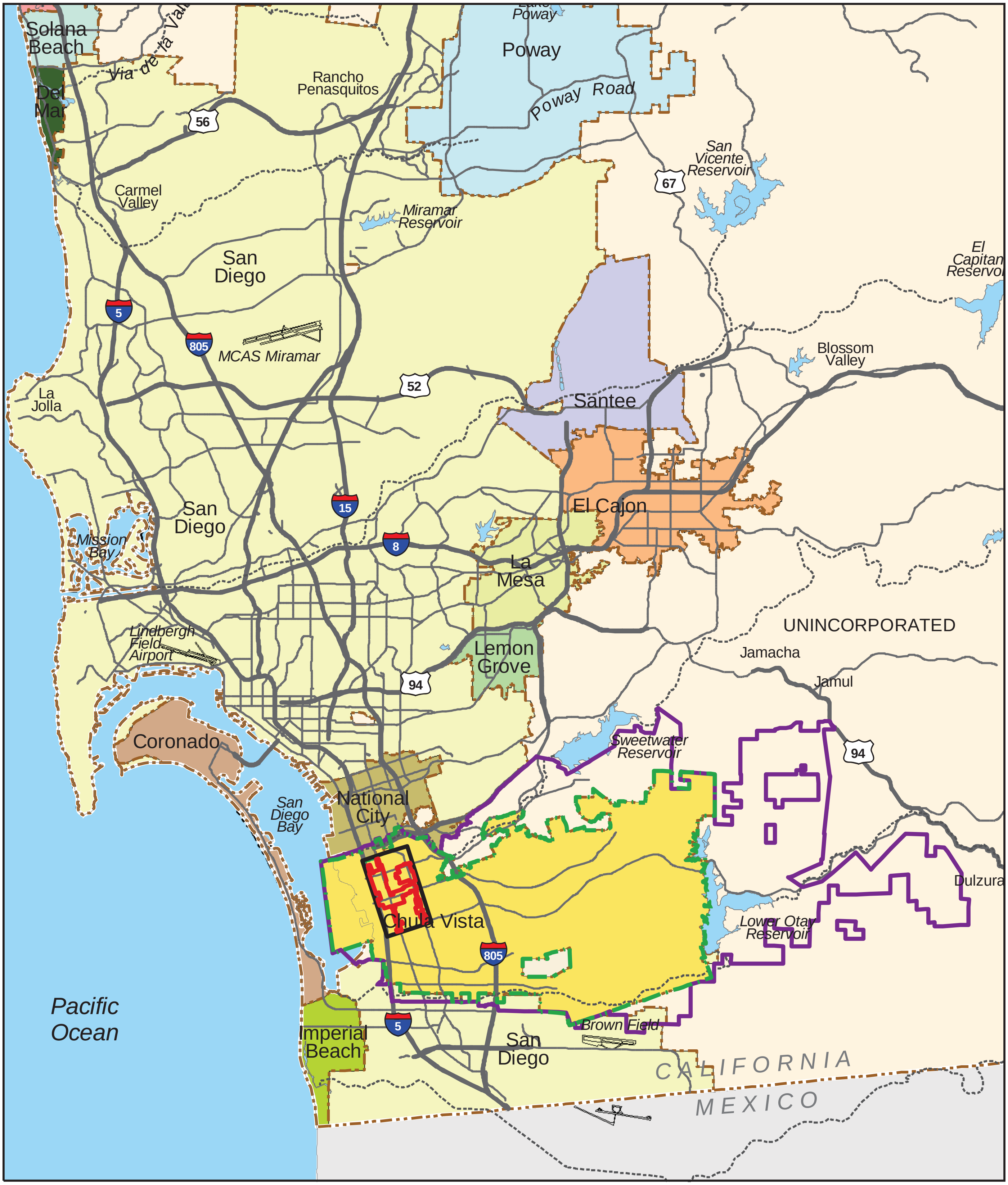
$$SPL = 10 \log_{10} \left(p / p_o \right)^2$$

Where:

p = the sound pressure of the signal above atmospheric pressure, and

p_o = the reference pressure (standardized at 20 micropascals[1])

[1]A micropascal is a unit of pressure equal to a millionth of a newton per square meter.



UCSP Study Area

UCSP Subdistricts Area

City of Chula Vista boundary

General Plan Update boundary

0 Miles 4 N

FIGURE 1
Regional Location

M:\jobs2\4066\common_gis\fig1(air).mxd 05/22/06

The most common frequency-weighting used for assessment of noise in the ambient environment is *A-weighting*. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. The noise at any given location is a function of the noise produced by the source, the propagation path between the source and the receiver, and the sensitivity of the receiver. To reduce noise levels at a sensitive receiver, the only available techniques are to reduce the noise of the source, to interrupt the propagation path between the source and the receiver, or to increase the distance between the source and the receiver. The propagation path is simply the path that the sound travels between its source and the receiver.

The evaluation of the effects of noise in the city of Chula Vista must consider the sound pressure levels to which people will be exposed, the duration of those levels, and the time of day—or night—at which they occur. While different people will respond differently to any specific situation, overall response is primarily a factor of these three main elements. The City of Chula Vista uses the Community Noise Equivalent Level (CNEL) as the measure for assessing noise impacts.

The CNEL is a 24-hour A-weighted decibel average sound level [dB(A) L_{eq}] from midnight to midnight obtained after the addition of 5 dB to sound levels occurring between 7:00 P.M. and 10:00 P.M. and 10 dB to the sound levels occurring between 10:00 P.M. and 7:00 A.M. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. Adding 5 dB and 10 dB to the evening and nighttime hours accounts for the added sensitivity of humans to noise during these time periods.

1.3 Standards

1.3.1 Noise Exposure to Receivers

Future residents and visitors to the Urban Core Specific Plan area of Chula Vista will be exposed to noise from traffic and other local noise sources. In the City of Chula Vista, noise standards are expressed in terms of the CNEL. The City's exterior noise level standard for noise-sensitive areas, which include residences, school play areas, and outdoor recreational areas, is 65 CNEL. The City's exterior noise standard for office buildings and commercial property is 70 CNEL. Figure 2 provides the allowable noise levels by land use as identified in the City of Chula Vista General Plan.

The City also specifies that residential structures shall be designed to prevent the intrusion of exterior noises such that interior noise levels attributable to exterior sources do not exceed 45 CNEL in noise-sensitive interior rooms. This conforms to Title 24 of the California Administrative Code that requires that multi-family residences' interior noise levels, due to exterior sources, not exceed 45 dB CNEL.

Map Source: City of Chula Vista, GPU, December 2005

	Acceptable CNEL in Decibels					
Land Use	50	55	60	65	70	75
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and Other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Office and Professional						
Places of Worship (excluding outdoor use areas)						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

FIGURE 2
Exterior Land Use-Noise
Compatibility Guidelines

The Code further specifies that if the exterior noise level exceeds 60 dB CNEL, an acoustical analysis shall demonstrate that the design would achieve the prescribed interior noise standard. Structural attenuation of noise from the exterior to interior is found in standard construction practices to be 15 dB or higher if windows are closed. With little additional noise reduction design, a noise reduction of 20 dB can be achieved. Exterior levels of up to 65 dB can therefore be accommodated before double-paned windows and other acoustical upgrades may be needed to meet the 45 dB CNEL interior standard.

1.3.2 Noise Generated On-Site

In addition to allowing development that would result in future receivers being located in adverse noise areas, there is the potential that the Urban Core Specific Plan would allow uses that generate noise. Impacts to receivers generated by activities at a given location will be regulated by the City's Municipal Zoning Code, Chapter 19.68. This ordinance specifies maximum one-hour average sound level limits at the boundary of a property. These maximum one-hour sound level limits are the maximum noise levels allowed at any point on or beyond the property boundaries due to activities occurring on the property. Where two or more zones adjoin, the more restrictive noise limits shall apply. Table 1 shows the exterior noise limits of the Noise Control Ordinance. These levels are applied to both environmental and nuisance noise sources as defined by the ordinance.

TABLE 1
EXTERIOR NOISE LIMITS

	Noise Level [dB(A)]	
Receiving Land Use Category	10 P.M. to 7 A.M. (Weekdays) 10 P.M. to 8 A.M. (Weekends)	7 A.M. to 10 P.M. (Weekdays) 8 A.M. to 10 P.M. (Weekends)
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zone	70	70
Heavy industry – I zone	80	80

NOTES:
Environmental Noise – L_{eq} in any hour.
Nuisance Noise – not to be exceeded any time.

The noise level limits are specified for two different time intervals: daytime and nighttime hours. The daytime hours are specified as 7 A.M. to 10 P.M. on weekdays and 8 A.M. to 10 P.M. on weekends. The nighttime hours are specified as 10 P.M. to 7 A.M. on weekdays and 10 P.M. to 8 A.M. on weekends.

The City of Chula Vista Noise Ordinance restricts times of construction activities from 7:00 A.M. to 7:00 P.M., Monday through Saturday, and prohibits construction on Sundays and holidays. Furthermore, the noise levels from construction activities to residential receptors are not to exceed 75 dB, averaged over a 12-hour period.

1.4 Existing Noise

The following noise sources exist within the Urban Core Specific Plan area:

- Traffic on circulation element roads;
- Traffic on Interstate 5;
- The San Diego Trolley operated by the Metropolitan Transit Development Board;
- Freight service provided by the San Diego & Imperial Valley Railroad; and
- Various commercial operations in the planning area.

As part of this analysis, ambient noise conditions were measured in and around the planning area. In order to provide a qualitative assessment of the variability of noise throughout the study area, a series of 10 daytime noise measurements ranging from 15 to 18 minutes in duration were made throughout the study area. The measurement locations are shown in Figure 3 and were chosen to obtain existing noise levels in order to characterize the existing ambient noise condition.

The noise measurement data and descriptions are contained in Attachment 1.

Table 2 presents the results of the noise measurements. As seen from Table 2, the measured short-term noise levels ranged from approximately 53 to 73 dB(A) L_{eq} with the loudest levels occurring in the more urbanized portions of the study area.

As indicated, existing noise levels in the specific plan subarea are primarily due to traffic on area roadways but are also comprised of other sources. A brief discussion of each of these sources follows.

1.4.1 Traffic

Traffic noise occurs adjacent to every roadway and is directly related to the traffic volume, speed, and mix. The FHWA Noise Prediction Model (1979), with the California Vehicle Noise Emission Levels (Calveno) (California Department of Transportation 1983), was used to estimate roadway traffic noise in the project area. The FHWA model takes into account traffic mix, speed, and volume; roadway gradient; relative distances

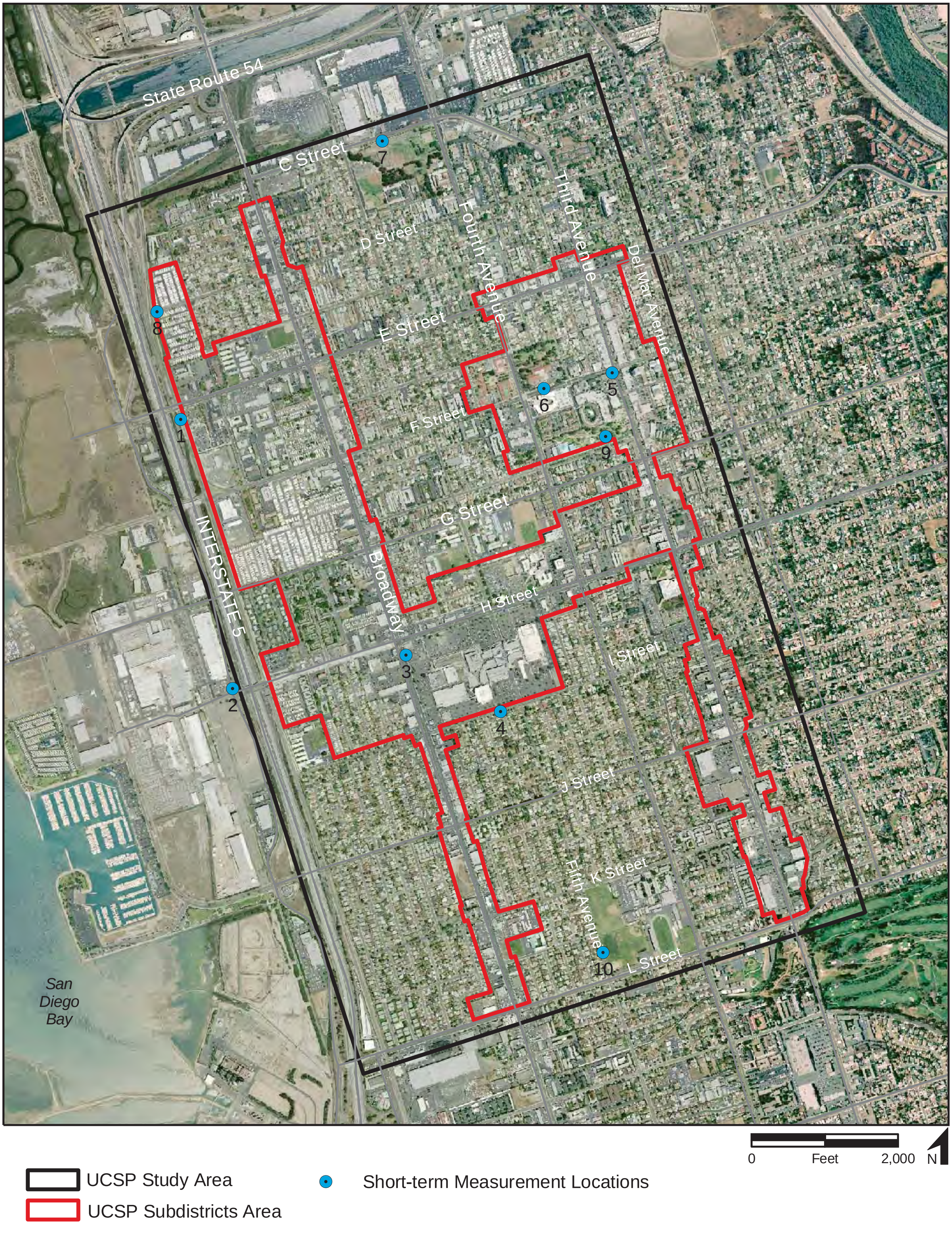


FIGURE 3

Noise Measurement Locations

M:\jobs2\4066\common_gis\fig3(noise).mxd 05/24/06

TABLE 2
MEASUREMENT RESULTS

Location	Date	Duration (Minutes)	Average Noise Level [dB(A)]	Traffic Noise Sources	Distance from Source	Noise Level at 50 feet from Source [dB(A)]
1	02/25/2005	15	66.4	Trolley	19 feet from center of near trolley tracks	58.0
2	02/25/2005	15	67.2	Bay Boulevard	50 feet from centerline	67.2
3	02/25/2005	15	71.2	Broadway Avenue	50 feet from centerline	71.2
4	02/25/2005	15	66.0	I Street	50 feet from centerline	66.0
5	02/25/2005	18	69.1	Corner of Third Avenue and F Street	50 feet from centerlines of both roadways	69.1
6	02/25/2005	17	63.5	F Street	50 feet from centerline	63.5
7	02/25/2005	18	66.7	C Street	50 feet from centerline	66.7
8	02/25/2005	15	72.6	I-5	N/A	N/A
9	02/25/2005	16	53.2	Third Avenue	N/A	N/A
10	02/25/2005	15	63.4	Fifth Avenue	40 feet from centerline	61.5

between sources, barriers, and receivers; and shielding provided by intervening terrain or structures.

The analysis of the noise environment considered that the topography was flat with no intervening terrain between sensitive land uses and roadways. Because there are no obstructions assumed, predicted noise levels are higher than would actually occur. In actuality buildings and other obstructions along the roadways will shield distant receivers from the traffic noise.

Traffic mix data chosen for this analysis were based on typical mix data for area roadways. Auto, medium truck, and heavy truck percentages were based on current area roadway performance. For Interstate 5, Interstate 805, and State Route 54, the average percentages of cars, medium trucks, and heavy trucks were 95.3 percent, 3.2 percent, and 1.5 percent, respectively. For this EIR, 95 percent, 3 percent, and 2 percent were used for all freeways. The traffic mix used for city streets was 97 percent cars, 2 percent medium trucks, and 1 percent heavy trucks. This mix was determined in consultation with the traffic engineer at the City of Chula Vista.

The greater the amount of nighttime traffic, generally the greater the resulting CNEL. A typical, conservative traffic distribution of 77 percent daytime, 10 percent evening, and 13 percent nighttime traffic was assumed for projecting the existing noise contours. With this distribution, CNEL is approximately two decibels greater than a noise level for an average daytime hour.

Table 3 lists roadway segments and their corresponding traffic volumes and noise levels at a reference distance of 50 feet from the centerline. It also provides the distance to the 65 decibel CNEL contour assuming a flat site with no intervening barriers or obstructions.

It should be noted that at any specific location the actual existing noise will depend upon not only the source noise, but the nature of the path from the source to the receiver. Buildings, walls, and other barriers will reduce the direct line of sight noise levels. For the existing noise contours, the first row of buildings (where they exist) will effectively reduce road noise to receivers placed behind those structures.

1.4.2 Railway and Trolley Operations

The primary railway operations in the study area consist of trolley traffic. The current trolley schedule for the Blue Line indicates that there are 123 trolleys during the daytime hours, 20 trolley during the evening hours, and 44 trolleys during the nighttime hours. For estimating the noise due to trolley operations, the following formula provides the equivalent number of trolley operations for the 24-hour period (Swing and Pies 1973):

$$N_{total} = N_{day} + 3*N_{evening} + 10*N_{night}$$

TABLE 3
EXISTING TRAFFIC VOLUMES AND NOISE LEVELS

Roadway	Segment	Traffic Volume	CNEL at 50 feet [dB(A)]	Speed Limit (mph)	Distance to 65 CNEL Contour (feet)
E Street	I-5 to Woodlawn Ave.	26,924	69	30	130
	Woodlawn Ave. to Broadway	21,997	68	30	106
	Fourth Ave. to Third Ave.	17,493	67	30	87
	East of First Ave.	17,966	67	30	87
F Street	I-5 to Woodlawn Ave.	5,336	62	30	26
	Woodlawn Ave. to Broadway	9,293	65	30	45
	Broadway to Fifth Ave.	7,880	64	30	38
	Fourth Ave. to Third Ave.	10,332	65	30	50
H Street	Woodlawn Ave. to Broadway	33,116	71	35	204
	Fifth Ave. to Fourth Ave.	24,637	70	35	152
	Second Ave. to First Ave.	27,474	70	35	170
J Street	Woodlawn Ave. to Broadway	19,024	69	35	117
L Street	Woodlawn Ave. to Broadway	15,450	68	35	95
	Second Ave. to First Ave.	16,430	68	35	101
Woodlawn Ave.	E St. to F St.	4,900	63	35	30
	G St. to H St.	2,600	60	35	16
Broadway	C St. to D St.	20,015	69	35	123
	F St. to G St.	23,208	70	35	143
	I St. to J St.	25,713	70	35	159
	K St. to L St.	26,599	70	35	164
Fourth Ave.	C St. to D St.	17,812	68	35	110
	F St. to G St.	17,001	68	35	105
	I St. to J St.	16,101	68	35	99
Third Ave.	D St. to E St.	7,200	64	35	44
	F St. to G St.	15,632	68	35	96
	I St. to J St.	23,459	70	35	145

This results in a total of 623 equivalent trolley operations. The CNEL due to trolley operations may be estimated from the SEL for a single trolley passby using the following formula (Swing and Pies 1973):

$$CNEL = SEL + 10*Log10(N_{total}) – 49.4$$

Using the SEL of approximately 82 dB(A) that was calculated from the 15-minute measurement data at the Bayfront/E Street Trolley Station, the CNEL due to trolley operations is estimated to be approximately 70 CNEL at a distance of 50 feet. Again, the maximum observed noise levels during the trolley passbys ranged from 77 to 83 dB(A). These maximum noise levels generally last for a few seconds during each passby. Table 4 provides the unobstructed distance from the centerline between the trolley tracks to noise contours resulting from trolley operations.

TABLE 4
DISTANCE FROM CENTERLINE BETWEEN
TROLLEY TRACKS TO UNOBSTRUCTED NOISE CONTOURS

	CNEL			
	75	70	65	60
Distance	28 feet	51 feet	90 feet	160 feet

Maximum noise levels of up to 112 dB(A) were observed for the assumed freight operation (RECON 2004). These freight operations occur on some days during the early morning hours (between 2:00 A.M. and 4:30 A.M.). As with the trolley passbys, maximum noise levels due to the freight operations are of relatively short duration.

1.4.3 Other Sources of Noise

Other sources of noise within the specific plan subarea are due to the normal activities associated with a given land use. For example, within residential areas noise sources may include dogs, landscaping activities, parties, etc. Commercial uses may include car washes, fast food restaurants, auto repair facilities, etc. Sources of noise in industrial and manufacturing areas may include heavy machinery, truck loading/unloading, etc. Noises from these types of activities are considered normal environmental noises that are expected to occur within these types of land uses. The Chula Vista Municipal Code generally regulates excessive noises resulting from these activities.

1.5 Year 2030 Noise Projections

Year 2030 traffic generated noise contours were estimated for the City's circulation element roadways using the same traffic distributions, speeds, and mixes used for estimating the existing noise contours. Year 2030 traffic volumes were obtained from the SANDAG traffic forecast model (SANDAG 2003b). Table 5 lists roadway segments and their corresponding traffic volumes and noise levels at a reference distance of 50 feet from the centerline.

Figure 4 presents the future noise contours relative to the circulation element roadways throughout the study area, which are based upon the conservative assumption of hard, flat site conditions.

As with the existing traffic noise contours, it should be noted that at any specific location the actual existing noise will depend upon not only the source noise, but the nature of the path from the source to the receiver. Buildings, walls, and other barriers will reduce the direct line of sight noise levels. For the future noise contours, the first row of buildings (where they exist) will effectively reduce road noise to receivers placed behind those structures.

Prior to mitigation, the UCSP would have a significant impact from noise because it would result in exposure of receivers in the UCSP area to exterior noise levels that exceed the levels established by the General Plan. These include limits of 65 CNEL in residential areas and outdoor recreation areas, 70 CNEL in office and professional areas, or 75 decibels for retail and wholesale commercial area, restaurants, and movie theatres.

The siting of future UCSP parks has the potential to result in significant noise impacts. While park sites have not been designated, it is possible that parks could be sited next to circulation element roadways which generate noise in excess of 65 [to 70] decibels. This would be a significant impact and would require mitigation. Mitigating this impact would require the construction of noise barriers. Required barrier heights may be achieved through the construction of walls, berms, or wall/berm combinations. While noise levels at a park site would be reduced by the construction of noise barriers, these barriers are incompatible with park uses.

The adoption of the UCSP would also have a significant noise impact prior to mitigation because it would result in interior noise levels that exceed 45 dB CNEL due to exterior sources for habitable rooms in residences. Until specific uses are identified, however, conformance to the code cannot be assured and impacts are significant.

In addition to noise resulting from traffic on area roads, noise will also result from rail traffic, both that produced by trolley activity and that resulting from trains. This represents a significant impact if residential uses are placed closer than 90 feet from the

TABLE 5
2030 TRAFFIC VOLUMES AND NOISE LEVELS

Roadway	Segment	Traffic Volume	CNEL at 50 feet [dB(A)]	Speed Limit (mph)	Distance to 65 CNEL Contour (feet)
E Street	I-5 to Woodlawn Ave.	32,000	70	30	155
	Woodlawn Ave. to Broadway	32,000	70	30	155
	Fourth Ave. to Third Ave.	21,000	68	30	102
	East of First Ave.	24,000	69	30	116
F Street	I-5 to Woodlawn Ave.	19,000	68	30	92
	Woodlawn Ave. to Broadway	18,000	67	30	87
	Broadway to Fifth Ave.	11,000	65	30	53
	Fourth Ave. to Third Ave.	11,000	65	30	53
	Second Ave. to First Ave.	6,000	63	30	29
H Street	Woodlawn Ave. to Broadway	52,000	73	35	321
	Fifth Ave. to Fourth Ave.	37,000	72	35	228
	Second Ave. to First Ave.	35,000	71	35	216
J Street	Woodlawn Ave. to Broadway	25,000	70	35	154
L Street	Woodlawn Ave. to Broadway	24,000	70	35	148
	Second Ave. to First Ave.	20,000	69	35	123
Woodlawn Ave.	E St. to F St.	12,000	67	35	74
	G St. to H St.	9,000	65	35	56
Broadway	C St. to D St.	28,000	70	35	173
	F St. to G St.	28,000	70	35	173
	I St. to J St.	29,000	71	35	179
	K St. to L St.	23,000	70	35	142
Fourth Ave.	C St. to D St.	23,000	70	35	142
	F St. to G St.	20,000	69	35	123
	I St. to J St.	18,000	68	35	111
Third Ave.	D St. to E St.	12,000	67	35	74
	F St. to G St.	20,000	69	35	123
	I St. to J St.	24,000	70	35	148

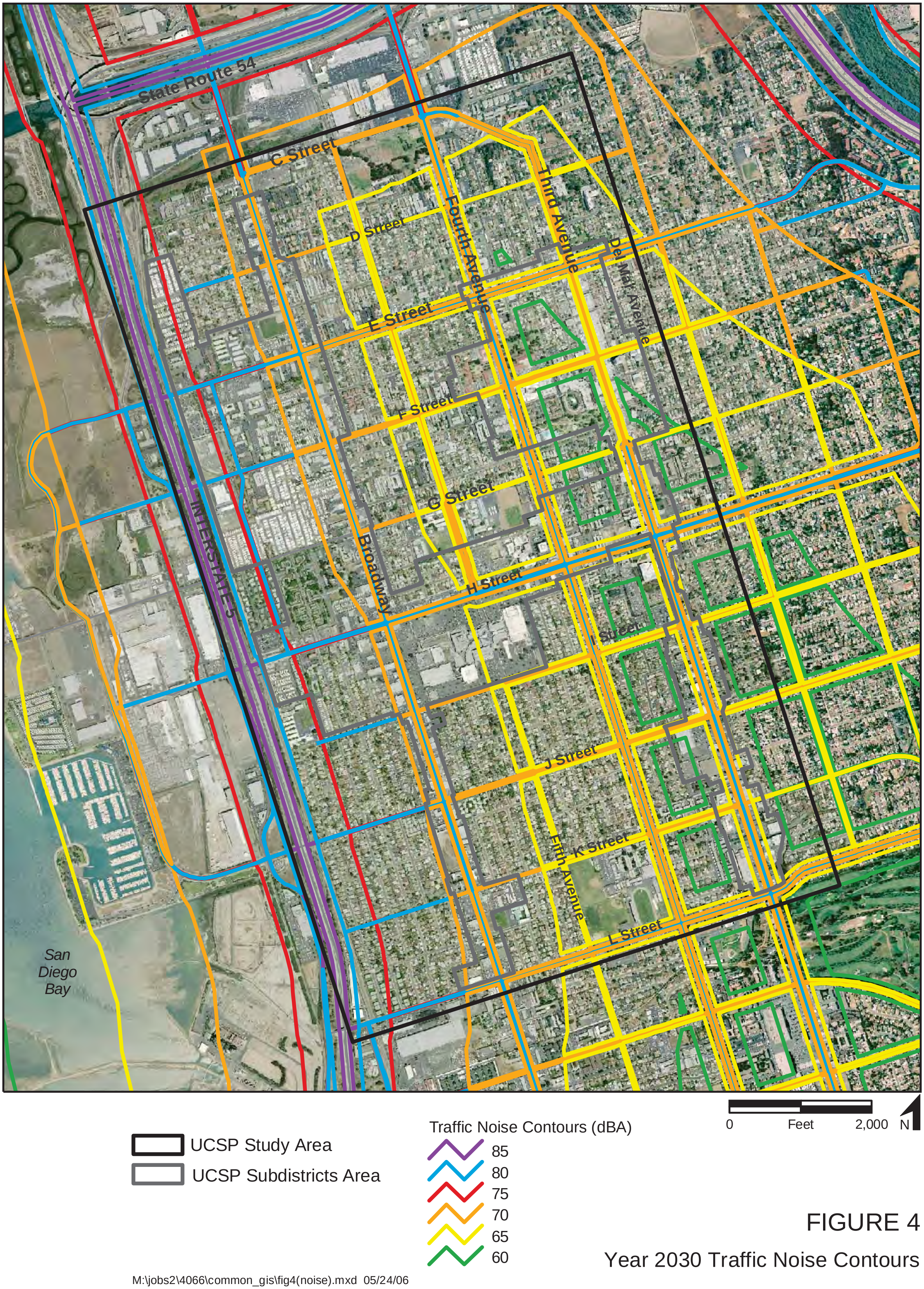


FIGURE 4

Year 2030 Traffic Noise Contours

M:\jobs2\4066\common_gis\fig4(noise).mxd 05/24/06 trolley line, or professional office or community parks are placed within 51 feet of the tracks. It should also be noted that there is an occasional freight train that uses this alignment. Maximum noise levels of up to 112 dB(A) were observed for the assumed freight operations (RECON 2004). As with the trolley passbys, maximum noise levels due to the freight operations are of relatively short duration (typically less than 30 seconds).

2.0 Mitigation

The following measures will mitigate noise impacts resulting from the adoption of the UCSP to below a level of significance.

- Exterior Noise Mitigation Measure. Prior to the approval of individual development projects, projects within the UCSP area shall demonstrate that required outdoor usable open space areas are adequately shielded from transportation related noise sources so that noise levels fall below the standards set by the General Plan Update (see Figure 5.9-1 and Table 5.9-1). Noise reduction measures may include building noise-attenuating berms, walls or other attenuation measures. Future development of park facilities shall also, to the extent feasible, incorporate mitigation measures such as siting, berms, walls or other attenuation measures to reduce impacts to acceptable levels of 65-70 CNEL or less. Indication that noise levels fall below this limit shall be made to the satisfaction of the Planning and Building Director, Building Official or Community Development Director.

- Interior Noise Mitigation Measure. Prior to the approval of subsequent individual development projects, for any residential use immediately adjacent to a circulation element roadway, trolley or rail line, or Interstate 5, an acoustical analysis shall be completed demonstrating to the satisfaction of the Planning and Building Director, Community Development Director or Building Official, that interior noise levels due to exterior sources are 45 CNEL or less in any habitable room. For residential projects where interior noise levels due to exterior noise sources exceed 45 CNEL, architectural and structural considerations such as improved window and door acoustical performance, shall be identified.

- Interior Noise Mitigation Measure. Prior to the approval of individual development projects, projects where it is necessary for the windows to remain closed to ensure that interior noise levels meet the City's and the Building Code interior standard of 45 CNEL shall demonstrate that the design for these units includes a ventilation or air conditioning system which provides a habitable interior environment with the windows closed.

- Noise Mitigation Measure. Prior to the approval of individual development projects, commercial uses that may involve noise producing activities shall demonstrate compliance with the existing performance standards provided in the City's Noise Ordinance (Chapter 19.68.010 of the Municipal Zoning Code). Prior to project approval, subsequent projects shall also demonstrate compliance with the mixed-use provisions of Chapter VI of the UCSP that include minimization of the effects of any exterior noise impacts and provision of "internal compatibility between the different uses within the project" (UCSP, VI-44).

3.0 References Cited

California Department of Transportation (Caltrans)

1983 California Vehicle Noise Emission Levels. Report No. FHWA/CA/Tl-84/13. August.

Swing, Jack W., and Donald B. Pies

1973 *Assessment of Noise Environments Around Railroad Operations.* Wyle Laboratories, report WCR 73-5. July.

Noise Technical Report for the City of Chula Vista Urban Core Specific Plan

Prepared for

City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Prepared by

RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
RECON Number 4066N
May 24, 2006

Charles S. Bull, President

TABLE OF CONTENTS

FIGURES

TABLES

ATTACHMENTS

1.0 Introduction

1.1 Purpose

The purpose of this study is to assess the potential for significant adverse impacts to result from the approval of the Urban Core Specific Plan as proposed by the City of Chula Vista (Figure 1). The analysis considers the noise levels that future residents could be exposed to and evaluates options for limiting that exposure to acceptable levels. In addition, a discussion of notable noise-producing activities and the regulatory requirements associated with the maintenance of acceptable noise levels are included.

As a result of this analysis, it was determined that significant noise impacts could occur as a result of the adoption of the Urban Core Specific Plan, unless specific mitigation measures are adopted that assure the protection of future receivers. This report details those mitigation measures, the adoption of which will lessen potential effects to below a level of significance.

1.2 Fundamentals of Noise

Simply stated, noise is unwanted sound. Sound is caused by minute pressure variations in the air—above and below static atmospheric pressure that are sensed by the human ear. The number of these minute pressure variations over time is referred to as the frequency of the sound.

Sound in the ambient environment is composed of a wide range of frequencies. Because the human ear is not equally sensitive at all frequencies, two different noises that have the same sound pressure level (SPL) may be perceived as having different levels of loudness. Therefore, the SPL is not a measure of the loudness of a sound. In order to obtain levels that more closely approximate the perceived loudness of noise by humans, *frequency-weighting* of the sound level is used.

Sound Pressure Level

$$SPL = 10 \log_{10} \left(p / p_0 \right)^2$$

Where:

p = the sound pressure of the signal above atmospheric pressure, and

p_0 = the reference pressure (standardized at 20 micropascals[1])

[1]A micropascal is a unit of pressure equal to a millionth of a newton per square meter.

The most common frequency-weighting used for assessment of noise in the ambient environment is *A-weighting*. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. The noise at any given location is a function of the noise produced by the source, the propagation path between the source and the receiver, and the sensitivity of the receiver. To reduce noise levels at a sensitive receiver, the only available techniques are to reduce the noise of the source, to interrupt the propagation path between the source and the receiver, or to increase the distance between the source and the receiver. The propagation path is simply the path that the sound travels between its source and the receiver.

The evaluation of the effects of noise in the city of Chula Vista must consider the sound pressure levels to which people will be exposed, the duration of those levels, and the time of day—or night—at which they occur. While different people will respond differently to any specific situation, overall response is primarily a factor of these three main elements. The City of Chula Vista uses the Community Noise Equivalent Level (CNEL) as the measure for assessing noise impacts.

The CNEL is a 24-hour A-weighted decibel average sound level [dB(A) L_{eq}] from midnight to midnight obtained after the addition of 5 dB to sound levels occurring between 7:00 P.M. and 10:00 P.M. and 10 dB to the sound levels occurring between 10:00 P.M. and 7:00 A.M. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. Adding 5 dB and 10 dB to the evening and nighttime hours accounts for the added sensitivity of humans to noise during these time periods.

1.3 Standards

1.3.1 Noise Exposure to Receivers

Future residents and visitors to the Urban Core Specific Plan area of Chula Vista will be exposed to noise from traffic and other local noise sources. In the City of Chula Vista, noise standards are expressed in terms of the CNEL. The City's exterior noise level standard for noise-sensitive areas, which include residences, school play areas, and outdoor recreational areas, is 65 CNEL. The City's exterior noise standard for office buildings and commercial property is 70 CNEL. Figure 2 provides the allowable noise levels by land use as identified in the City of Chula Vista General Plan.

The City also specifies that residential structures shall be designed to prevent the intrusion of exterior noises such that interior noise levels attributable to exterior sources do not exceed 45 CNEL in noise-sensitive interior rooms. This conforms to Title 24 of the California Administrative Code that requires that multi-family residences' interior noise levels, due to exterior sources, not exceed 45 dB CNEL.

	Acceptable CNEL in Decibels					
Land Use	50	55	60	65	70	75
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and Other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Office and Professional						
Places of Worship (excluding outdoor use areas)						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

FIGURE 2
Exterior Land Use-Noise Compatibility Guidelines

The Code further specifies that if the exterior noise level exceeds 60 dB CNEL, an acoustical analysis shall demonstrate that the design would achieve the prescribed interior noise standard. Structural attenuation of noise from the exterior to interior is found in standard construction practices to be 15 dB or higher if windows are closed. With little additional noise reduction design, a noise reduction of 20 dB can be achieved. Exterior levels of up to 65 dB can therefore be accommodated before double-paned windows and other acoustical upgrades may be needed to meet the 45 dB CNEL interior standard.

1.3.2 Noise Generated On-Site

In addition to allowing development that would result in future receivers being located in adverse noise areas, there is the potential that the Urban Core Specific Plan would allow uses that generate noise. Impacts to receivers generated by activities at a given location will be regulated by the City's Municipal Zoning Code, Chapter 19.68. This ordinance specifies maximum one-hour average sound level limits at the boundary of a property. These maximum one-hour sound level limits are the maximum noise levels allowed at any point on or beyond the property boundaries due to activities occurring on the property. Where two or more zones adjoin, the more restrictive noise limits shall apply. Table 1 shows the exterior noise limits of the Noise Control Ordinance. These levels are applied to both environmental and nuisance noise sources as defined by the ordinance.

TABLE 1
EXTERIOR NOISE LIMITS

	Noise Level [dB(A)]	
Receiving Land Use Category	10 P.M. to 7 A.M. (Weekdays) 10 P.M. to 8 A.M. (Weekends)	7 A.M. to 10 P.M. (Weekdays) 8 A.M. to 10 P.M. (Weekends)
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zone	70	70
Heavy industry – I zone	80	80

NOTES:
Environmental Noise – L_{eq} in any hour.
Nuisance Noise – not to be exceeded any time.

The noise level limits are specified for two different time intervals: daytime and nighttime hours. The daytime hours are specified as 7 A.M. to 10 P.M. on weekdays and 8 A.M. to 10 P.M. on weekends. The nighttime hours are specified as 10 P.M. to 7 A.M. on weekdays and 10 P.M. to 8 A.M. on weekends.

The City of Chula Vista Noise Ordinance restricts times of construction activities from 7:00 A.M. to 7:00 P.M., Monday through Saturday, and prohibits construction on Sundays and holidays. Furthermore, the noise levels from construction activities to residential receptors are not to exceed 75 dB, averaged over a 12-hour period.

1.4 Existing Noise

The following noise sources exist within the Urban Core Specific Plan area:

- Traffic on circulation element roads;
- Traffic on Interstate 5;
- The San Diego Trolley operated by the Metropolitan Transit Development Board;
- Freight service provided by the San Diego & Imperial Valley Railroad; and
- Various commercial operations in the planning area.

As part of this analysis, ambient noise conditions were measured in and around the planning area. In order to provide a qualitative assessment of the variability of noise throughout the study area, a series of 10 daytime noise measurements ranging from 15 to 18 minutes in duration were made throughout the study area. The measurement locations are shown in Figure 3 and were chosen to obtain existing noise levels in order to characterize the existing ambient noise condition.

The noise measurement data and descriptions are contained in Attachment 1.

Table 2 presents the results of the noise measurements. As seen from Table 2, the measured short-term noise levels ranged from approximately 53 to 73 dB(A) L_{eq} with the loudest levels occurring in the more urbanized portions of the study area.

As indicated, existing noise levels in the specific plan subarea are primarily due to traffic on area roadways but are also comprised of other sources. A brief discussion of each of these sources follows.

1.4.1 Traffic

Traffic noise occurs adjacent to every roadway and is directly related to the traffic volume, speed, and mix. The FHWA Noise Prediction Model (1979), with the California Vehicle Noise Emission Levels (Calveno) (California Department of Transportation 1983), was used to estimate roadway traffic noise in the project area. The FHWA model takes into account traffic mix, speed, and volume; roadway gradient; relative distances

TABLE 2
MEASUREMENT RESULTS

Location	Date	Duration (Minutes)	Average Noise Level [dB(A)]	Traffic Noise Sources	Distance from Source	Noise Level at 50 feet from Source [dB(A)]
1	02/25/2005	15	66.4	Trolley	19 feet from center of near trolley tracks	58.0
2	02/25/2005	15	67.2	Bay Boulevard	50 feet from centerline	67.2
3	02/25/2005	15	71.2	Broadway Avenue	50 feet from centerline	71.2
4	02/25/2005	15	66.0	I Street	50 feet from centerline	66.0
5	02/25/2005	18	69.1	Corner of Third Avenue and F Street	50 feet from centerlines of both roadways	69.1
6	02/25/2005	17	63.5	F Street	50 feet from centerline	63.5
7	02/25/2005	18	66.7	C Street	50 feet from centerline	66.7
8	02/25/2005	15	72.6	I-5	N/A	N/A
9	02/25/2005	16	53.2	Third Avenue	N/A	N/A
10	02/25/2005	15	63.4	Fifth Avenue	40 feet from centerline	61.5

between sources, barriers, and receivers; and shielding provided by intervening terrain or structures.

The analysis of the noise environment considered that the topography was flat with no intervening terrain between sensitive land uses and roadways. Because there are no obstructions assumed, predicted noise levels are higher than would actually occur. In actuality buildings and other obstructions along the roadways will shield distant receivers from the traffic noise.

Traffic mix data chosen for this analysis were based on typical mix data for area roadways. Auto, medium truck, and heavy truck percentages were based on current area roadway performance. For Interstate 5, Interstate 805, and State Route 54, the average percentages of cars, medium trucks, and heavy trucks were 95.3 percent, 3.2 percent, and 1.5 percent, respectively. For this EIR, 95 percent, 3 percent, and 2 percent were used for all freeways. The traffic mix used for city streets was 97 percent cars, 2 percent medium trucks, and 1 percent heavy trucks. This mix was determined in consultation with the traffic engineer at the City of Chula Vista.

The greater the amount of nighttime traffic, generally the greater the resulting CNEL. A typical, conservative traffic distribution of 77 percent daytime, 10 percent evening, and 13 percent nighttime traffic was assumed for projecting the existing noise contours. With this distribution, CNEL is approximately two decibels greater than a noise level for an average daytime hour.

Table 3 lists roadway segments and their corresponding traffic volumes and noise levels at a reference distance of 50 feet from the centerline. It also provides the distance to the 65 decibel CNEL contour assuming a flat site with no intervening barriers or obstructions.

It should be noted that at any specific location the actual existing noise will depend upon not only the source noise, but the nature of the path from the source to the receiver. Buildings, walls, and other barriers will reduce the direct line of sight noise levels. For the existing noise contours, the first row of buildings (where they exist) will effectively reduce road noise to receivers placed behind those structures.

1.4.2 Railway and Trolley Operations

The primary railway operations in the study area consist of trolley traffic. The current trolley schedule for the Blue Line indicates that there are 123 trolleys during the daytime hours, 20 trolley during the evening hours, and 44 trolleys during the nighttime hours. For estimating the noise due to trolley operations, the following formula provides the equivalent number of trolley operations for the 24-hour period (Swing and Pies 1973):

$$N_{total} = N_{day} + 3^{*}N_{evening} + 10^{*}N_{night}$$

TABLE 3
EXISTING TRAFFIC VOLUMES AND NOISE LEVELS

Roadway	Segment	Traffic Volume	CNEL at 50 feet [dB(A)]	Speed Limit (mph)	Distance to 65 CNEL Contour (feet)
E Street	I-5 to Woodlawn Ave.	26,924	69	30	130
	Woodlawn Ave. to Broadway	21,997	68	30	106
	Fourth Ave. to Third Ave.	17,493	67	30	87
	East of First Ave.	17,966	67	30	87
F Street	I-5 to Woodlawn Ave.	5,336	62	30	26
	Woodlawn Ave. to Broadway	9,293	65	30	45
	Broadway to Fifth Ave.	7,880	64	30	38
	Fourth Ave. to Third Ave.	10,332	65	30	50
H Street	Woodlawn Ave. to Broadway	33,116	71	35	204
	Fifth Ave. to Fourth Ave.	24,637	70	35	152
	Second Ave. to First Ave.	27,474	70	35	170
J Street	Woodlawn Ave. to Broadway	19,024	69	35	117
L Street	Woodlawn Ave. to Broadway	15,450	68	35	95
	Second Ave. to First Ave.	16,430	68	35	101
Woodlawn Ave.	E St. to F St.	4,900	63	35	30
	G St. to H St.	2,600	60	35	16
Broadway	C St. to D St.	20,015	69	35	123
	F St. to G St.	23,208	70	35	143
	I St. to J St.	25,713	70	35	159
	K St. to L St.	26,599	70	35	164
Fourth Ave.	C St. to D St.	17,812	68	35	110
	F St. to G St.	17,001	68	35	105
	I St. to J St.	16,101	68	35	99
Third Ave.	D St. to E St.	7,200	64	35	44
	F St. to G St.	15,632	68	35	96
	I St. to J St.	23,459	70	35	145

This results in a total of 623 equivalent trolley operations. The CNEL due to trolley operations may be estimated from the SEL for a single trolley passby using the following formula (Swing and Pies 1973):

$$CNEL = SEL + 10*Log10(N_{total}) - 49.4$$

Using the SEL of approximately 82 dB(A) that was calculated from the 15-minute measurement data at the Bayfront/E Street Trolley Station, the CNEL due to trolley operations is estimated to be approximately 70 CNEL at a distance of 50 feet. Again, the maximum observed noise levels during the trolley passbys ranged from 77 to 83 dB(A). These maximum noise levels generally last for a few seconds during each passby. Table 4 provides the unobstructed distance from the centerline between the trolley tracks to noise contours resulting from trolley operations.

TABLE 4
DISTANCE FROM CENTERLINE BETWEEN
TROLLEY TRACKS TO UNOBSTRUCTED NOISE CONTOURS

	CNEL			
	75	70	65	60
Distance	28 feet	51 feet	90 feet	160 feet

Maximum noise levels of up to 112 dB(A) were observed for the assumed freight operation (RECON 2004). These freight operations occur on some days during the early morning hours (between 2:00 A.M. and 4:30 A.M.). As with the trolley passbys, maximum noise levels due to the freight operations are of relatively short duration.

1.4.3 Other Sources of Noise

Other sources of noise within the specific plan subarea are due to the normal activities associated with a given land use. For example, within residential areas noise sources may include dogs, landscaping activities, parties, etc. Commercial uses may include car washes, fast food restaurants, auto repair facilities, etc. Sources of noise in industrial and manufacturing areas may include heavy machinery, truck loading/unloading, etc. Noises from these types of activities are considered normal environmental noises that are expected to occur within these types of land uses. The Chula Vista Municipal Code generally regulates excessive noises resulting from these activities.

1.5 Year 2030 Noise Projections

Year 2030 traffic generated noise contours were estimated for the City's circulation element roadways using the same traffic distributions, speeds, and mixes used for estimating the existing noise contours. Year 2030 traffic volumes were obtained from the SANDAG traffic forecast model (SANDAG 2003b). Table 5 lists roadway segments and their corresponding traffic volumes and noise levels at a reference distance of 50 feet from the centerline.

Figure 4 presents the future noise contours relative to the circulation element roadways throughout the study area, which are based upon the conservative assumption of hard, flat site conditions.

As with the existing traffic noise contours, it should be noted that at any specific location the actual existing noise will depend upon not only the source noise, but the nature of the path from the source to the receiver. Buildings, walls, and other barriers will reduce the direct line of sight noise levels. For the future noise contours, the first row of buildings (where they exist) will effectively reduce road noise to receivers placed behind those structures.

Prior to mitigation, the UCSP would have a significant impact from noise because it would result in exposure of receivers in the UCSP area to exterior noise levels that exceed the levels established by the General Plan. These include limits of 65 CNEL in residential areas and outdoor recreation areas, 70 CNEL in office and professional areas, or 75 decibels for retail and wholesale commercial area, restaurants, and movie theatres.

The siting of future UCSP parks has the potential to result in significant noise impacts. While park sites have not been designated, it is possible that parks could be sited next to circulation element roadways which generate noise in excess of 65 [to 70] decibels. This would be a significant impact and would require mitigation. Mitigating this impact would require the construction of noise barriers. Required barrier heights may be achieved through the construction of walls, berms, or wall/berm combinations. While noise levels at a park site would be reduced by the construction of noise barriers, these barriers are incompatible with park uses.

The adoption of the UCSP would also have a significant noise impact prior to mitigation because it would result in interior noise levels that exceed 45 dB CNEL due to exterior sources for habitable rooms in residences. Until specific uses are identified, however, conformance to the code cannot be assured and impacts are significant.

In addition to noise resulting from traffic on area roads, noise will also result from rail traffic, both that produced by trolley activity and that resulting from trains. This represents a significant impact if residential uses are placed closer than 90 feet from the

TABLE 5
2030 TRAFFIC VOLUMES AND NOISE LEVELS

Roadway	Segment	Traffic Volume	CNEL at 50 feet [dB(A)]	Speed Limit (mph)	Distance to 65 CNEL Contour (feet)
E Street	I-5 to Woodlawn Ave.	32,000	70	30	155
	Woodlawn Ave. to Broadway	32,000	70	30	155
	Fourth Ave. to Third Ave.	21,000	68	30	102
	East of First Ave.	24,000	69	30	116
F Street	I-5 to Woodlawn Ave.	19,000	68	30	92
	Woodlawn Ave. to Broadway	18,000	67	30	87
	Broadway to Fifth Ave.	11,000	65	30	53
	Fourth Ave. to Third Ave.	11,000	65	30	53
	Second Ave. to First Ave.	6,000	63	30	29
H Street	Woodlawn Ave. to Broadway	52,000	73	35	321
	Fifth Ave. to Fourth Ave.	37,000	72	35	228
	Second Ave. to First Ave.	35,000	71	35	216
J Street	Woodlawn Ave. to Broadway	25,000	70	35	154
L Street	Woodlawn Ave. to Broadway	24,000	70	35	148
	Second Ave. to First Ave.	20,000	69	35	123
Woodlawn Ave.	E St. to F St.	12,000	67	35	74
	G St. to H St.	9,000	65	35	56
Broadway	C St. to D St.	28,000	70	35	173
	F St. to G St.	28,000	70	35	173
	I St. to J St.	29,000	71	35	179
	K St. to L St.	23,000	70	35	142
Fourth Ave.	C St. to D St.	23,000	70	35	142
	F St. to G St.	20,000	69	35	123
	I St. to J St.	18,000	68	35	111
Third Ave.	D St. to E St.	12,000	67	35	74
	F St. to G St.	20,000	69	35	123
	I St. to J St.	24,000	70	35	148

trolley line, or professional office or community parks are placed within 51 feet of the tracks. It should also be noted that there is an occasional freight train that uses this alignment. Maximum noise levels of up to 112 dB(A) were observed for the assumed freight operations (RECON 2004). As with the trolley passbys, maximum noise levels due to the freight operations are of relatively short duration (typically less than 30 seconds).

2.0 Mitigation

The following measures will mitigate noise impacts resulting from the adoption of the UCSP to below a level of significance.

- Exterior Noise Mitigation Measure. Prior to the approval of individual development projects, projects within the UCSP area shall demonstrate that required outdoor usable open space areas are adequately shielded from transportation related noise sources so that noise levels fall below the standards set by the General Plan Update (see Figure 5.9-1 and Table 5.9-1). Noise reduction measures may include building noise-attenuating berms, walls or other attenuation measures. Future development of park facilities shall also, to the extent feasible, incorporate mitigation measures such as siting, berms, walls or other attenuation measures to reduce impacts to acceptable levels of 65-70 CNEL or less. Indication that noise levels fall below this limit shall be made to the satisfaction of the Planning and Building Director, Building Official or Community Development Director.

- Interior Noise Mitigation Measure. Prior to the approval of subsequent individual development projects, for any residential use immediately adjacent to a circulation element roadway, trolley or rail line, or Interstate 5, an acoustical analysis shall be completed demonstrating to the satisfaction of the Planning and Building Director, Community Development Director or Building Official, that interior noise levels due to exterior sources are 45 CNEL or less in any habitable room. For residential projects where interior noise levels due to exterior noise sources exceed 45 CNEL, architectural and structural considerations such as improved window and door acoustical performance, shall be identified.

- Interior Noise Mitigation Measure. Prior to the approval of individual development projects, projects where it is necessary for the windows to remain closed to ensure that interior noise levels meet the City's and the Building Code interior standard of 45 CNEL shall demonstrate that the design for these units includes a ventilation or air conditioning system which provides a habitable interior environment with the windows closed.

- Noise Mitigation Measure. Prior to the approval of individual development projects, commercial uses that may involve noise producing activities shall demonstrate compliance with the existing performance standards provided in the City's Noise Ordinance (Chapter 19.68.010 of the Municipal Zoning Code). Prior to project approval, subsequent projects shall also demonstrate compliance with the mixed-use provisions of Chapter VI of the UCSP that include minimization of the effects of any exterior noise impacts and provision of "internal compatibility between the different uses within the project" (UCSP, VI-44).

3.0 References Cited

California Department of Transportation (Caltrans)

1983 California Vehicle Noise Emission Levels. Report No. FHWA/CA/TI-84/13. August.

Swing, Jack W., and Donald B. Pies

1973 *Assessment of Noise Environments Around Railroad Operations.* Wyle Laboratories, report WCR 73-5. July.

ATTACHMENT 1

Trolley Passby

	Time	Level		Time Int.		SEL
Southbound	9:23:55	64.4	2754229			
	9:24:00	63.7	2344229			
	9:24:05	63.8	2398833			
	9:24:10	64.9	3090295			
	9:24:15	74.4	27542287			
	9:24:20	71.3	13489629			
	9:24:25	65.2	3311311			
	9:24:30	66.6	4570882			
	9:24:35	65.2	3311311			
		68.43807		***40***		***84.45867***
	SEL at 50 ft from centreline of source track					***79.72723***
	SEL at 50 ft from centreline of tracks					***78.14361***

	Time	Level		Time Int.		SEL
Northbound	9:21:15	68.4	6918310			
	9:21:20	69	7943282			
	9:21:25	70.4	10964782			
	9:21:30	69	7943282			
	9:21:35	70.7	11748976			
	9:21:40	69.5	8912509			
	9:21:45	69	7943282			
	9:21:50	70.4	10964782			
	9:21:55	69.4	8709636			
	9:22:00	72.6	18197009			
	9:22:05	69.4	8709636			
	9:22:10	70.1	10232930			
	9:22:15	71.1	12882496			
	9:22:20	79	79432823			
	9:22:25	71.2	13182567			
	9:22:30	64.5	2818383			
	9:22:35	64.7	2951209			
	9:22:40	64.4	2754229			
	9:22:45	67	5011872			
		70.98228		***90***		***90.52471***
	SEL at 50 ft from centreline of source track					***82.12038***
	SEL at 50 ft from centreline of tracks					***84.05868***
	Average SEL at 50 ft from centreline of tracks					***82.03871***
	15-minute Leq due to trolleys					***61.94233***

			Trains							
	SEL	Hourly Leq	Day time	Evening	Night time	N_total	Day Leq	Even Leq	Night Leq	CNEL
Southbound	0	42.58058	68	9	24	335				63.49405
Northbound	0	48.49555	55	11	20	288				68.7525
Combined (weekday)		46.47569	123	20	44	623				70.08359
Southbound	0	42.58058	48	11	19	271				62.5733
Northbound	0	48.49555	48	12	17	254				68.20692
Average (Saturday)		46.47569	96	23	36	525				69.3403
Southbound	0	42.58058	45	9	11	182				60.84432
Northbound	0	43.49555	43	11	12	196				67.08114
Average (Sunday)		46.47569	88	20	23	378				67.91363

CNEL Contours		
dB[A]	feet	
75	28.38897	
70	50.48352	
65	89.7738	
60	159.6429	
55	283.8897	
70.1	**50**	*reference contour*

C:\NOISE\LARDAV\SLMUTIL\25FEB_09.bin   Setup Data

Site: 0   Date: 25Feb 05 09:18:34   Model: 720

#	Description	Value
2	Name	(L-D Model 720)
3	Name	(RECON Environmental Inc.)
4	Name	(Meter 027300)
5	Title	(Standard Road Setup)
9	Com1 Baud Rate	[9600]
10	Com1 Address	(0)
14	Output 1 Logic	[Off]
15	Output 1 Hold Time	(10)
20	Power save options	[Auto Off]
35	Cal level	(114.00)
36	Calibrator S/N	(0489)
39	Detector	[Fast]
40	Frequency Weighting	[A]
43	Mic polarization	[0]
44	Reference Level	(114.00)
45	Current Exchange rate	[3dB]
46	Current Threshold	(80)
47	Current Criterion	(90)
48	Overall Exchange rate	[3dB]

49 Overall Threshold	(0)
50 Overall Criterion	(0)
51 Dose period	(8)
55 Lnn 1 Percent	(5)
56 Lnn 2 Percent	(10)
57 Lnn 3 Percent	(33)
58 Lnn 4 Percent	(50)
61 RMS Excd Level 1	(115.00)
62 RMS Excd Level 2	(120)
63 Peak Excd Level	(140)
64 Uwpk Excd Level	(140)
65 Excd Hysteresis	(2)
72 Enable Intv History	[Yes]
73 Intv Exchange rate	[3dB]
74 Intv Threshold	(0)
75 Intv period	(00:01)
76 Intv Time Sync	[Yes]
77 Intv Save Ln'S	[Yes]
79 Intv Auto Stop	[No]
80 Enable Time History	[Yes]
81 Time History Resolution	[0.1dB]
82 Hist Save Peak	[Lmax]
83 Hist Period	(5)
87 Histogram Resolution	[5.0]

C:\NOISE\LARDAV\SLMUTIL\25FEB_09.bin Time History Data

Sample Period (sec): 5

Site	Location	Meas Number	Date	Time	Level	Lmax
	Run	Key				
	0	0	25-Feb	5	9:18:35	62.5	65.5
	0	0	25-Feb	5	9:18:40	63.5	65.2
	0	0	25-Feb	5	9:18:45	63.3	64.7
	0	0	25-Feb	5	9:18:50	63	67.2
	0	0	25-Feb	5	9:18:55	61.8	63.6
	0	0	25-Feb	5	9:19:00	62.5	64.4
	0	0	25-Feb	5	9:19:05	63.7	65.8
	0	0	25-Feb	5	9:19:10	63.6	64.8
	0	0	25-Feb	5	9:19:15	63.9	65.7
	0	0	25-Feb	5	9:19:20	63.4	65.2
	0	0	25-Feb	5	9:19:25	63.9	65.2
	0	0	25-Feb	5	9:19:30	63.9	65.7
	0	0	25-Feb	5	9:19:35	63.4	65.2
	0	0	25-Feb	5	9:19:40	62.2	63.7
	0	0	25-Feb	5	9:19:45	62.9	65.1
	0	0	25-Feb	5	9:19:50	63.5	65.8

0	0	25-Feb	5	9:19:55	63.6	66.5
0	0	25-Feb	5	9:20:00	63.6	66.1
0	0	25-Feb	5	9:20:05	63.4	64.8
0	0	25-Feb	5	9:20:10	64.5	66.2
0	0	25-Feb	5	9:20:15	64.5	66.2
0	0	25-Feb	5	9:20:20	64.4	67.2
0	0	25-Feb	5	9:20:25	66.2	70.1
0	0	25-Feb	5	9:20:30	63.8	67.2
0	0	25-Feb	5	9:20:35	64.7	65.8
0	0	25-Feb	5	9:20:40	64.6	68.5
0	0	25-Feb	5	9:20:45	66	75.8
0	0	25-Feb	5	9:20:50	64.8	66
0	0	25-Feb	5	9:20:55	65.1	67.2
0	0	25-Feb	5	9:21:00	66.3	69.5
0	0	25-Feb	5	9:21:05	68.1	71.8
0	0	25-Feb	5	9:21:10	67.7	69.5
0	0	25-Feb	5	9:21:15	68.4	70.7
0	0	25-Feb	5	9:21:20	69	76.3
0	0	25-Feb	5	9:21:25	70.4	73
0	0	25-Feb	5	9:21:30	69	70.1
0	0	25-Feb	5	9:21:35	70.7	78.4
0	0	25-Feb	5	9:21:40	69.5	73.7
0	0	25-Feb	5	9:21:45	69	70
0	0	25-Feb	5	9:21:50	70.4	75.5

0	0	25-Feb	5	9:21:55	69.4	71.5
0	0	25-Feb	5	9:22:00	72.6	83.4
0	0	25-Feb	5	9:22:05	69.4	72.4
0	0	25-Feb	5	9:22:10	70.1	76.1
0	0	25-Feb	5	9:22:15	71.1	77.3
0	0	25-Feb	5	9:22:20	79	81.2
0	0	25-Feb	5	9:22:25	71.2	76.6
0	0	25-Feb	5	9:22:30	64.5	66.5
0	0	25-Feb	5	9:22:35	64.7	66.5
0	0	25-Feb	5	9:22:40	64.4	65.9
0	0	25-Feb	5	9:22:45	67	69.6
0	0	25-Feb	5	9:22:50	66.7	71.4
0	0	25-Feb	5	9:22:55	65.9	67.8
0	0	25-Feb	5	9:23:00	68.2	71.1
0	0	25-Feb	5	9:23:05	64.2	67.9
0	0	25-Feb	5	9:23:10	64.5	65.8
0	0	25-Feb	5	9:23:15	64.1	66.8
0	0	25-Feb	5	9:23:20	64.3	66.3
0	0	25-Feb	5	9:23:25	65.3	66.9
0	0	25-Feb	5	9:23:30	63.7	64.8
0	0	25-Feb	5	9:23:35	63	64.9
0	0	25-Feb	5	9:23:40	62.8	65
0	0	25-Feb	5	9:23:45	62.8	64.4
0	0	25-Feb	5	9:23:50	64.5	66.9

0	0	25-Feb	5	9:23:55	64.4	65.3
0	0	25-Feb	5	9:24:00	63.7	64.8
0	0	25-Feb	5	9:24:05	63.8	65
0	0	25-Feb	5	9:24:10	64.9	68.3
0	0	25-Feb	5	9:24:15	74.4	77
0	0	25-Feb	5	9:24:20	71.3	75.6
0	0	25-Feb	5	9:24:25	65.2	66.6
0	0	25-Feb	5	9:24:30	66.6	70.5
0	0	25-Feb	5	9:24:35	65.2	66.5
0	0	25-Feb	5	9:24:40	65	66
0	0	25-Feb	5	9:24:45	62.8	63.9
0	0	25-Feb	5	9:24:50	65.2	68
0	0	25-Feb	5	9:24:55	65.8	69.5
0	0	25-Feb	5	9:25:00	65	71.9
0	0	25-Feb	5	9:25:05	65	66.2
0	0	25-Feb	5	9:25:10	64.9	65.9
0	0	25-Feb	5	9:25:15	63.8	64.7
0	0	25-Feb	5	9:25:20	63.6	64.5
0	0	25-Feb	5	9:25:25	63.8	64.9
0	0	25-Feb	5	9:25:30	61.8	62.8
0	0	25-Feb	5	9:25:35	62.3	63.8
0	0	25-Feb	5	9:25:40	64.5	66.9
0	0	25-Feb	5	9:25:45	66.4	67.8
0	0	25-Feb	5	9:25:50	65.3	66

0	0	25-Feb	5	9:25:55	64.9	66.4
0	0	25-Feb	5	9:26:00	66.7	68.8
0	0	25-Feb	5	9:26:05	64.6	65.2
0	0	25-Feb	5	9:26:10	65.8	67.9
0	0	25-Feb	5	9:26:15	71.5	74.8
0	0	25-Feb	5	9:26:20	69.3	72
0	0	25-Feb	5	9:26:25	66.7	68.7
0	0	25-Feb	5	9:26:30	65.6	66.5
0	0	25-Feb	5	9:26:35	64.8	66.8
0	0	25-Feb	5	9:26:40	64.4	65.5
0	0	25-Feb	5	9:26:45	65.1	65.9
0	0	25-Feb	5	9:26:50	65.6	66.7
0	0	25-Feb	5	9:26:55	63.8	65.2
0	0	25-Feb	5	9:27:00	64.6	65.9
0	0	25-Feb	5	9:27:05	64.2	65.7
0	0	25-Feb	5	9:27:10	66.3	68.8
0	0	25-Feb	5	9:27:15	65	66
0	0	25-Feb	5	9:27:20	65.3	66.8
0	0	25-Feb	5	9:27:25	65	68.5
0	0	25-Feb	5	9:27:30	63.3	64.2
0	0	25-Feb	5	9:27:35	63.4	64.6
0	0	25-Feb	5	9:27:40	63.8	65.2
0	0	25-Feb	5	9:27:45	63.7	64.8
0	0	25-Feb	5	9:27:50	66.5	72.4

0	0	25-Feb	5	9:27:55	66.2	69.3
0	0	25-Feb	5	9:28:00	62.4	63.9
0	0	25-Feb	5	9:28:05	64.1	65.2
0	0	25-Feb	5	9:28:10	63.8	65.4
0	0	25-Feb	5	9:28:15	65.2	66.3
0	0	25-Feb	5	9:28:20	63.3	64.5
0	0	25-Feb	5	9:28:25	63.9	65.8
0	0	25-Feb	5	9:28:30	64.1	65.3
0	0	25-Feb	5	9:28:35	63.8	64.9
0	0	25-Feb	5	9:28:40	63.4	63.9
0	0	25-Feb	5	9:28:45	64.4	65.3
0	0	25-Feb	5	9:28:50	65.3	67
0	0	25-Feb	5	9:28:55	64.2	66.2
0	0	25-Feb	5	9:29:00	63.8	65.3
0	0	25-Feb	5	9:29:05	63.1	64.4
0	0	25-Feb	5	9:29:10	62.3	64.2
0	0	25-Feb	5	9:29:15	62.8	64
0	0	25-Feb	5	9:29:20	64.1	66.5
0	0	25-Feb	5	9:29:25	67.1	71.7
0	0	25-Feb	5	9:29:30	74.5	79.4
0	0	25-Feb	5	9:29:35	68.1	72.4
0	0	25-Feb	5	9:29:40	64.5	65.9
0	0	25-Feb	5	9:29:45	63.5	64.4
0	0	25-Feb	5	9:29:50	64.5	66.9

0	0	25-Feb	5	9:29:55	65.4	66.8
0	0	25-Feb	5	9:30:00	64.4	65.7
0	0	25-Feb	5	9:30:05	64.4	65.3
0	0	25-Feb	5	9:30:10	64.6	65.9
0	0	25-Feb	5	9:30:15	64.6	65.9
0	0	25-Feb	5	9:30:20	63.9	65.7
0	0	25-Feb	5	9:30:25	64.1	66.2
0	0	25-Feb	5	9:30:30	65.2	66.5
0	0	25-Feb	5	9:30:35	66.4	67.4
0	0	25-Feb	5	9:30:40	66.2	68.3
0	0	25-Feb	5	9:30:45	66.4	67.4
0	0	25-Feb	5	9:30:50	67.5	69.7
0	0	25-Feb	5	9:30:55	67.5	69.5
0	0	25-Feb	5	9:31:00	64.8	66.2
0	0	25-Feb	5	9:31:05	64.1	65.5
0	0	25-Feb	5	9:31:10	63.5	64.8
0	0	25-Feb	5	9:31:15	62.8	63.5
0	0	25-Feb	5	9:31:20	64.6	68
0	0	25-Feb	5	9:31:25	64.2	65.1
0	0	25-Feb	5	9:31:30	65	65.8
0	0	25-Feb	5	9:31:35	64.6	65.5
0	0	25-Feb	5	9:31:40	65.6	67.6
0	0	25-Feb	5	9:31:45	64	65.3
0	0	25-Feb	5	9:31:50	63.9	65

0	0	25-Feb	5	9:31:55	64	65.5
0	0	25-Feb	5	9:32:00	64.8	66
0	0	25-Feb	5	9:32:05	64.6	66.1
0	0	25-Feb	5	9:32:10	64.1	64.9
0	0	25-Feb	5	9:32:15	63.4	65.1
0	0	25-Feb	5	9:32:20	63.9	65
0	0	25-Feb	5	9:32:25	63.4	65.3
0	0	25-Feb	5	9:32:30	63	64.5
0	0	25-Feb	5	9:32:35	66.2	67.4
0	0	25-Feb	5	9:32:40	66.9	68.8
0	0	25-Feb	5	9:32:45	65.4	66.5
0	0	25-Feb	5	9:32:50	65.5	67.6
0	0	25-Feb	5	9:32:55	64.1	64.9
0	0	25-Feb	5	9:33:00	65.8	68
0	0	25-Feb	5	9:33:05	65.3	66.1
0	0	25-Feb	5	9:33:10	65.6	66.7
0	0	25-Feb	5	9:33:15	64.4	65.8
0	0	25-Feb	5	9:33:20	63.5	65.8
0	0	25-Feb	5	9:33:25	64.5	66.3
0	0	25-Feb	5	9:33:30	63.5	65.1
0	0	25-Feb	5	9:33:35	64.3	66
0	0	25-Feb	5	9:33:40	62.8	65.3
0	0	25-Feb	5	9:33:45	62.2	64
0	0	25-Feb	5	9:33:50	61.2	62

0	0	25-Feb	5	9:33:55	62.3	63.4
0	0	25-Feb	5	9:34:00	63.8	65.3
0	0	25-Feb	5	9:34:05	64.6	65.4
Stop	Key					
Run	Key					
0	0	25-Feb	5	9:48:05	64.6	65.8
0	0	25-Feb	5	9:48:10	65.1	66.2
0	0	25-Feb	5	9:48:15	65	67.1
0	0	25-Feb	5	9:48:20	65.1	66.1
0	0	25-Feb	5	9:48:25	64.6	65.3
0	0	25-Feb	5	9:48:30	63.8	64.6
0	0	25-Feb	5	9:48:35	64.7	65.4
0	0	25-Feb	5	9:48:40	65.2	66.6
0	0	25-Feb	5	9:48:45	66.1	67.2
0	0	25-Feb	5	9:48:50	66.1	67.5
0	0	25-Feb	5	9:48:55	66.1	67.6
0	0	25-Feb	5	9:49:00	66.4	67.7
0	0	25-Feb	5	9:49:05	64.9	65.8
0	0	25-Feb	5	9:49:10	63.9	64.4
0	0	25-Feb	5	9:49:15	64.2	64.8
0	0	25-Feb	5	9:49:20	64.8	66.4
0	0	25-Feb	5	9:49:25	65.8	68.1
0	0	25-Feb	5	9:49:30	67.2	69.4
0	0	25-Feb	5	9:49:35	67.9	69.9

0	0	25-Feb	5	9:49:40	69.2	72.9
0	0	25-Feb	5	9:49:45	67.2	69.3
0	0	25-Feb	5	9:49:50	66.5	67.4
0	0	25-Feb	5	9:49:55	65.5	66.2
0	0	25-Feb	5	9:50:00	65.5	66.2
0	0	25-Feb	5	9:50:05	64.8	65.7
0	0	25-Feb	5	9:50:10	67.6	69.7
0	0	25-Feb	5	9:50:15	67.4	69.4
0	0	25-Feb	5	9:50:20	69.8	71.9
0	0	25-Feb	5	9:50:25	67.4	69.9
0	0	25-Feb	5	9:50:30	65.7	67.9
0	0	25-Feb	5	9:50:35	64.4	67.5
0	0	25-Feb	5	9:50:40	64.7	65.4
0	0	25-Feb	5	9:50:45	65.2	67.9
0	0	25-Feb	5	9:50:50	69.5	70.9
0	0	25-Feb	5	9:50:55	70.9	71.5
0	0	25-Feb	5	9:51:00	71.5	73.1
0	0	25-Feb	5	9:51:05	72	72.8
0	0	25-Feb	5	9:51:10	82.8	87.4
0	0	25-Feb	5	9:51:15	71.4	76.9
0	0	25-Feb	5	9:51:20	65.7	66.8
0	0	25-Feb	5	9:51:25	64.8	65.8
0	0	25-Feb	5	9:51:30	64.3	65.5
0	0	25-Feb	5	9:51:35	64.7	65.3

0	0	25-Feb	5	9:51:40	64.5	65.5
0	0	25-Feb	5	9:51:45	64.6	65.7
0	0	25-Feb	5	9:51:50	64.1	64.9
0	0	25-Feb	5	9:51:55	63.6	64.3
0	0	25-Feb	5	9:52:00	64.4	65.8
0	0	25-Feb	5	9:52:05	66.8	68.7
0	0	25-Feb	5	9:52:10	67.9	69.8
0	0	25-Feb	5	9:52:15	66.7	68.5
0	0	25-Feb	5	9:52:20	66.4	67
0	0	25-Feb	5	9:52:25	66.5	67
0	0	25-Feb	5	9:52:30	66.8	67.4
0	0	25-Feb	5	9:52:35	66.5	68.5
0	0	25-Feb	5	9:52:40	67.5	73.4
0	0	25-Feb	5	9:52:45	76.2	80.7
0	0	25-Feb	5	9:52:50	65.9	68.2
0	0	25-Feb	5	9:52:55	64.5	65.7
0	0	25-Feb	5	9:53:00	64.3	65.9
0	0	25-Feb	5	9:53:05	64.6	66.3
0	0	25-Feb	5	9:53:10	63.5	64.4
0	0	25-Feb	5	9:53:15	64	64.9
0	0	25-Feb	5	9:53:20	63.8	64.3
0	0	25-Feb	5	9:53:25	64.2	65.2
0	0	25-Feb	5	9:53:30	65.1	66.5
0	0	25-Feb	5	9:53:35	66.3	68.8

0	0	25-Feb	5	9:53:40	65.4	66.4
0	0	25-Feb	5	9:53:45	65	65.9
0	0	25-Feb	5	9:53:50	64.3	65
0	0	25-Feb	5	9:53:55	64.4	66.5
0	0	25-Feb	5	9:54:00	63.2	63.9
0	0	25-Feb	5	9:54:05	69.3	72.3
0	0	25-Feb	5	9:54:10	65.5	66.8
0	0	25-Feb	5	9:54:15	64.2	65.3
0	0	25-Feb	5	9:54:20	64.3	65.5
0	0	25-Feb	5	9:54:25	64.5	66
0	0	25-Feb	5	9:54:30	63.2	63.8
0	0	25-Feb	5	9:54:35	63.7	64.2
0	0	25-Feb	5	9:54:40	63.8	64.5
0	0	25-Feb	5	9:54:45	64.5	65.3
0	0	25-Feb	5	9:54:50	64.8	65.3
0	0	25-Feb	5	9:54:55	64.4	65.3
0	0	25-Feb	5	9:55:00	64.3	65.2
0	0	25-Feb	5	9:55:05	63.5	65
0	0	25-Feb	5	9:55:10	63.8	64.7
0	0	25-Feb	5	9:55:15	64.5	65.5
0	0	25-Feb	5	9:55:20	65.4	67
0	0	25-Feb	5	9:55:25	67.9	71.7
0	0	25-Feb	5	9:55:30	65.1	66.8
0	0	25-Feb	5	9:55:35	64.8	66.7

0	0	25-Feb	5	9:55:40	65.1	66.2
0	0	25-Feb	5	9:55:45	65.6	66
0	0	25-Feb	5	9:55:50	64.3	65.2
0	0	25-Feb	5	9:55:55	63.6	64.4
0	0	25-Feb	5	9:56:00	63.9	65.8
0	0	25-Feb	5	9:56:05	64.9	66.5
0	0	25-Feb	5	9:56:10	64	65.2
0	0	25-Feb	5	9:56:15	63.6	64.5
0	0	25-Feb	5	9:56:20	64.3	65.5
0	0	25-Feb	5	9:56:25	65.6	66.7
0	0	25-Feb	5	9:56:30	65	66.7
0	0	25-Feb	5	9:56:35	64.6	65.3
0	0	25-Feb	5	9:56:40	65.6	66.8
0	0	25-Feb	5	9:56:45	66.1	67.3
0	0	25-Feb	5	9:56:50	66.7	67.6
0	0	25-Feb	5	9:56:55	66	67.3
0	0	25-Feb	5	9:57:00	64.3	65.4
0	0	25-Feb	5	9:57:05	64.7	65.9
0	0	25-Feb	5	9:57:10	65.5	66.8
0	0	25-Feb	5	9:57:15	64.3	65.1
0	0	25-Feb	5	9:57:20	65.9	70.2
0	0	25-Feb	5	9:57:25	70.5	72
0	0	25-Feb	5	9:57:30	66	68.2
0	0	25-Feb	5	9:57:35	66.3	67.3

0	0	25-Feb	5	9:57:40	67.5	69.6
0	0	25-Feb	5	9:57:45	68.7	71.9
0	0	25-Feb	5	9:57:50	71.2	72.8
0	0	25-Feb	5	9:57:55	71.5	74.1
0	0	25-Feb	5	9:58:00	67.6	69.2
0	0	25-Feb	5	9:58:05	65.5	68.4
0	0	25-Feb	5	9:58:10	64	64.6
0	0	25-Feb	5	9:58:15	64.2	65.2
0	0	25-Feb	5	9:58:20	64.8	65.9
0	0	25-Feb	5	9:58:25	65.4	66.4
0	0	25-Feb	5	9:58:30	68.4	70.1
0	0	25-Feb	5	9:58:35	64.8	66.4
0	0	25-Feb	5	9:58:40	63.9	64.7
0	0	25-Feb	5	9:58:45	64.6	65.9
0	0	25-Feb	5	9:58:50	65.8	66.7
0	0	25-Feb	5	9:58:55	63.8	65.6
0	0	25-Feb	5	9:59:00	63.3	63.9
0	0	25-Feb	5	9:59:05	62.9	63.9
0	0	25-Feb	5	9:59:10	63.3	64.5
0	0	25-Feb	5	9:59:15	65.8	70
0	0	25-Feb	5	9:59:20	66.2	68.2
0	0	25-Feb	5	9:59:25	64.5	65.5
0	0	25-Feb	5	9:59:30	64.8	65.7
0	0	25-Feb	5	9:59:35	64.4	65.2

0	0	25-Feb	5	9:59:40	63.5	64.7
0	0	25-Feb	5	9:59:45	66.2	69.7
0	0	25-Feb	5	9:59:50	64.7	66
0	0	25-Feb	5	9:59:55	67.2	70
0	0	25-Feb	5	10:00:00	64.1	67.7
0	0	25-Feb	5	10:00:05	61.3	62.5
0	0	25-Feb	5	10:00:10	61.9	63
0	0	25-Feb	5	10:00:15	64	65.4
0	0	25-Feb	5	10:00:20	64.4	65.3
0	0	25-Feb	5	10:00:25	63.7	65.2
0	0	25-Feb	5	10:00:30	62.6	63.7
0	0	25-Feb	5	10:00:35	62.3	62.9
0	0	25-Feb	5	10:00:40	62.5	63.2
0	0	25-Feb	5	10:00:45	64.2	69.1
0	0	25-Feb	5	10:00:50	63.8	66.3
0	0	25-Feb	5	10:00:55	65.1	70.3
0	0	25-Feb	5	10:01:00	64.9	67.8
0	0	25-Feb	5	10:01:05	66.6	70.2
0	0	25-Feb	5	10:01:10	67.5	69.4
0	0	25-Feb	5	10:01:15	66.4	69.2
0	0	25-Feb	5	10:01:20	64.5	65.2
0	0	25-Feb	5	10:01:25	63.8	64.8
0	0	25-Feb	5	10:01:30	66.5	67.6
0	0	25-Feb	5	10:01:35	65.9	67.5

0	0	25-Feb	5	10:01:40	64.4	65
0	0	25-Feb	5	10:01:45	64.3	65.6
0	0	25-Feb	5	10:01:50	65.3	66.4
0	0	25-Feb	5	10:01:55	65.1	66.8
0	0	25-Feb	5	10:02:00	63.9	66.2
0	0	25-Feb	5	10:02:05	65.7	67.4
0	0	25-Feb	5	10:02:10	65.2	66.9
0	0	25-Feb	5	10:02:15	67	68.3
0	0	25-Feb	5	10:02:20	66	66.9
0	0	25-Feb	5	10:02:25	73.5	79.7
0	0	25-Feb	5	10:02:30	74.1	79.1
0	0	25-Feb	5	10:02:35	65.6	72.6
0	0	25-Feb	5	10:02:40	63.9	64.6
0	0	25-Feb	5	10:02:45	64.1	66.9
0	0	25-Feb	5	10:02:50	63.7	64.9
0	0	25-Feb	5	10:02:55	63.6	66.7
0	0	25-Feb	5	10:03:00	62.5	63.8
0	0	25-Feb	5	10:03:05	62.7	63.7
0	0	25-Feb	5	10:03:10	64.4	67.8
0	0	25-Feb	5	10:03:15	68.7	70.7
0	0	25-Feb	5	10:03:20	65.4	67.1
0	0	25-Feb	5	10:03:25	64.7	66.6
0	0	25-Feb	5	10:03:30	63.9	66.6
0	0	25-Feb	5	10:03:35	64.1	64.1

Stop	Key					
Run	Key					
0	0	25-Feb	5	10:18:10	73	78.2
0	0	25-Feb	5	10:18:15	66.4	69.1
0	0	25-Feb	5	10:18:20	68.3	73.5
0	0	25-Feb	5	10:18:25	67.6	73.4
0	0	25-Feb	5	10:18:30	69.1	74.3
0	0	25-Feb	5	10:18:35	67.7	71.6
0	0	25-Feb	5	10:18:40	70.6	75.5
0	0	25-Feb	5	10:18:45	72.5	76.8
0	0	25-Feb	5	10:18:50	70.4	72.5
0	0	25-Feb	5	10:18:55	69.5	71.7
0	0	25-Feb	5	10:19:00	67.1	68.8
0	0	25-Feb	5	10:19:05	71	73
0	0	25-Feb	5	10:19:10	70.8	72.8
0	0	25-Feb	5	10:19:15	72.3	76.8
0	0	25-Feb	5	10:19:20	72	76
0	0	25-Feb	5	10:19:25	67.3	69.5
0	0	25-Feb	5	10:19:30	68	69.6
0	0	25-Feb	5	10:19:35	66.5	67.4
0	0	25-Feb	5	10:19:40	66.6	69.1
0	0	25-Feb	5	10:19:45	63.2	64.9
0	0	25-Feb	5	10:19:50	67	71.6
0	0	25-Feb	5	10:19:55	62.5	63.6

0	0	25-Feb	5	10:20:00	61.8	63.1
0	0	25-Feb	5	10:20:05	58.8	61.8
0	0	25-Feb	5	10:20:10	58.3	59.9
0	0	25-Feb	5	10:20:15	59.9	61.8
0	0	25-Feb	5	10:20:20	59.6	61.9
0	0	25-Feb	5	10:20:25	68.2	75.3
0	0	25-Feb	5	10:20:30	72.7	78.7
0	0	25-Feb	5	10:20:35	66.5	68.2
0	0	25-Feb	5	10:20:40	67.8	71.4
0	0	25-Feb	5	10:20:45	66.9	68.7
0	0	25-Feb	5	10:20:50	68.2	69.2
0	0	25-Feb	5	10:20:55	68	69.2
0	0	25-Feb	5	10:21:00	70.8	73.9
0	0	25-Feb	5	10:21:05	68.4	70.9
0	0	25-Feb	5	10:21:10	68.5	73.4
0	0	25-Feb	5	10:21:15	69	71
0	0	25-Feb	5	10:21:20	76.8	81.2
0	0	25-Feb	5	10:21:25	67	71.4
0	0	25-Feb	5	10:21:30	63.6	65.7
0	0	25-Feb	5	10:21:35	63	64.2
0	0	25-Feb	5	10:21:40	60.7	62.9
0	0	25-Feb	5	10:21:45	63.8	67.9
0	0	25-Feb	5	10:21:50	62.4	66.7
0	0	25-Feb	5	10:21:55	64.2	68.2

0	0	25-Feb	5	10:22:00	69	73.8
0	0	25-Feb	5	10:22:05	67	67.9
0	0	25-Feb	5	10:22:10	77	86.7
0	0	25-Feb	5	10:22:15	71.8	74.8
0	0	25-Feb	5	10:22:20	73.6	75.2
0	0	25-Feb	5	10:22:25	85.8	88.5
0	0	25-Feb	5	10:22:30	83.3	86.2
0	0	25-Feb	5	10:22:35	74.7	78.3
0	0	25-Feb	5	10:22:40	70.5	74.6
0	0	25-Feb	5	10:22:45	71.1	75.9
0	0	25-Feb	5	10:22:50	70.9	73.2
0	0	25-Feb	5	10:22:55	70.8	73.8
0	0	25-Feb	5	10:23:00	68.3	72.5
0	0	25-Feb	5	10:23:05	66.3	67.9
0	0	25-Feb	5	10:23:10	69.5	72.5
0	0	25-Feb	5	10:23:15	66.4	68.9
0	0	25-Feb	5	10:23:20	67	69.2
0	0	25-Feb	5	10:23:25	66.9	68.9
0	0	25-Feb	5	10:23:30	63.9	68.4
0	0	25-Feb	5	10:23:35	68.9	74.5
0	0	25-Feb	5	10:23:40	61.3	63.3
0	0	25-Feb	5	10:23:45	72.7	76.7
0	0	25-Feb	5	10:23:50	65.5	68.9
0	0	25-Feb	5	10:23:55	68.9	72.2

0	0	25-Feb	5	10:24:00	69.1	74.7
0	0	25-Feb	5	10:24:05	64.9	66.7
0	0	25-Feb	5	10:24:10	67.6	71.2
0	0	25-Feb	5	10:24:15	67.1	70.9
0	0	25-Feb	5	10:24:20	70.5	71.4
0	0	25-Feb	5	10:24:25	72.4	74.7
0	0	25-Feb	5	10:24:30	77.1	81.5
0	0	25-Feb	5	10:24:35	69.5	74.2
0	0	25-Feb	5	10:24:40	74.1	77.8
0	0	25-Feb	5	10:24:45	71.3	76.8
0	0	25-Feb	5	10:24:50	71.9	76.4
0	0	25-Feb	5	10:24:55	67.7	70.5
0	0	25-Feb	5	10:25:00	70.4	71.4
0	0	25-Feb	5	10:25:05	73.4	75.9
0	0	25-Feb	5	10:25:10	73.1	76.5
0	0	25-Feb	5	10:25:15	65.6	69.7
0	0	25-Feb	5	10:25:20	64.5	66.4
0	0	25-Feb	5	10:25:25	62.4	65.9
0	0	25-Feb	5	10:25:30	66.1	67.5
0	0	25-Feb	5	10:25:35	67.7	69.3
0	0	25-Feb	5	10:25:40	68.6	72.2
0	0	25-Feb	5	10:25:45	71.3	74.2
0	0	25-Feb	5	10:25:50	68.2	70.9
0	0	25-Feb	5	10:25:55	64.1	71.2

0	0	25-Feb	5	10:26:00	67.1	73.4
0	0	25-Feb	5	10:26:05	68.5	71.9
0	0	25-Feb	5	10:26:10	70.8	74
0	0	25-Feb	5	10:26:15	68	68.9
0	0	25-Feb	5	10:26:20	66.3	67.9
0	0	25-Feb	5	10:26:25	65.6	66.5
0	0	25-Feb	5	10:26:30	66.1	70
0	0	25-Feb	5	10:26:35	69.3	71.8
0	0	25-Feb	5	10:26:40	76.4	82.9
0	0	25-Feb	5	10:26:45	63.3	64.4
0	0	25-Feb	5	10:26:50	68.4	71
0	0	25-Feb	5	10:26:55	67.3	68.9
0	0	25-Feb	5	10:27:00	66.4	68.5
0	0	25-Feb	5	10:27:05	78.5	85.9
0	0	25-Feb	5	10:27:10	77.7	80.6
0	0	25-Feb	5	10:27:15	75.2	76.6
0	0	25-Feb	5	10:27:20	72.6	75.3
0	0	25-Feb	5	10:27:25	68.1	74.5
0	0	25-Feb	5	10:27:30	64.7	69.9
0	0	25-Feb	5	10:27:35	67	69.5
0	0	25-Feb	5	10:27:40	64.7	66.9
0	0	25-Feb	5	10:27:45	66	68.5
0	0	25-Feb	5	10:27:50	66.8	70.9
0	0	25-Feb	5	10:27:55	68.8	71

0	0	25-Feb	5	10:28:00	71.9	73.6
0	0	25-Feb	5	10:28:05	75.7	79.2
0	0	25-Feb	5	10:28:10	69	73.9
0	0	25-Feb	5	10:28:15	73.5	77.7
0	0	25-Feb	5	10:28:20	71.8	73.6
0	0	25-Feb	5	10:28:25	73.3	77.7
0	0	25-Feb	5	10:28:30	67.2	72.4
0	0	25-Feb	5	10:28:35	66.4	69.2
0	0	25-Feb	5	10:28:40	66.7	67.6
0	0	25-Feb	5	10:28:45	65.5	66.7
0	0	25-Feb	5	10:28:50	66.9	69.2
0	0	25-Feb	5	10:28:55	64.2	66
0	0	25-Feb	5	10:29:00	65.8	69.5
0	0	25-Feb	5	10:29:05	68.5	72.2
0	0	25-Feb	5	10:29:10	59.1	60.2
0	0	25-Feb	5	10:29:15	58.8	60.7
0	0	25-Feb	5	10:29:20	58.7	60.2
0	0	25-Feb	5	10:29:25	61.4	63.1
0	0	25-Feb	5	10:29:30	67.6	71.9
0	0	25-Feb	5	10:29:35	63.3	69.1
0	0	25-Feb	5	10:29:40	71	75.8
0	0	25-Feb	5	10:29:45	73.5	75.8
0	0	25-Feb	5	10:29:50	76	79.2
0	0	25-Feb	5	10:29:55	76.5	78.7

0	0	25-Feb	5	10:30:00	75.3	77.7
0	0	25-Feb	5	10:30:05	72.3	75.4
0	0	25-Feb	5	10:30:10	72.1	75.1
0	0	25-Feb	5	10:30:15	72.5	75.4
0	0	25-Feb	5	10:30:20	66.9	68.1
0	0	25-Feb	5	10:30:25	68.4	69.7
0	0	25-Feb	5	10:30:30	69.2	71.2
0	0	25-Feb	5	10:30:35	72.4	77.8
0	0	25-Feb	5	10:30:40	69	70.2
0	0	25-Feb	5	10:30:45	67.1	69.4
0	0	25-Feb	5	10:30:50	67.1	69.2
0	0	25-Feb	5	10:30:55	68	71.7
0	0	25-Feb	5	10:31:00	65.2	67.7
0	0	25-Feb	5	10:31:05	63.2	66.7
0	0	25-Feb	5	10:31:10	62.4	64.9
0	0	25-Feb	5	10:31:15	66.4	68.3
0	0	25-Feb	5	10:31:20	64.9	68.3
0	0	25-Feb	5	10:31:25	62	64.9
0	0	25-Feb	5	10:31:30	67.3	70
0	0	25-Feb	5	10:31:35	69.3	71.3
0	0	25-Feb	5	10:31:40	70.5	71.9
0	0	25-Feb	5	10:31:45	72.7	74.4
0	0	25-Feb	5	10:31:50	73.6	77
0	0	25-Feb	5	10:31:55	69.5	74.5

0	0	25-Feb	5	10:32:00	66.8	69
0	0	25-Feb	5	10:32:05	67.5	70
0	0	25-Feb	5	10:32:10	69	70.3
0	0	25-Feb	5	10:32:15	69.7	71.2
0	0	25-Feb	5	10:32:20	67.1	69.7
0	0	25-Feb	5	10:32:25	71.1	74.3
0	0	25-Feb	5	10:32:30	68.4	70
0	0	25-Feb	5	10:32:35	73.2	77.7
0	0	25-Feb	5	10:32:40	70.3	72.3
0	0	25-Feb	5	10:32:45	62.5	65.8
0	0	25-Feb	5	10:32:50	63.1	65.5
0	0	25-Feb	5	10:32:55	60	62.4
0	0	25-Feb	5	10:33:00	56.2	58.1
0	0	25-Feb	5	10:33:05	62.7	65.3
0	0	25-Feb	5	10:33:10	60.5	62.5
0	0	25-Feb	5	10:33:15	63.6	65.3
0	0	25-Feb	5	10:33:20	70.4	73.8
0	0	25-Feb	5	10:33:25	72.5	73.3
Stop	Key					
Run	Key					
0	0	25-Feb	5	10:52:25	68.5	73.4
0	0	25-Feb	5	10:52:30	69	70.8
0	0	25-Feb	5	10:52:35	63.7	68.4
0	0	25-Feb	5	10:52:40	57.7	59.5

0	0	25-Feb	5	10:52:45	65	71.4
0	0	25-Feb	5	10:52:50	68.1	72.6
0	0	25-Feb	5	10:52:55	66.3	70.1
0	0	25-Feb	5	10:53:00	68.3	69.9
0	0	25-Feb	5	10:53:05	64.5	69.3
0	0	25-Feb	5	10:53:10	63.6	69.2
0	0	25-Feb	5	10:53:15	66	69.2
0	0	25-Feb	5	10:53:20	62.3	64.9
0	0	25-Feb	5	10:53:25	59.4	63.3
0	0	25-Feb	5	10:53:30	65.2	66.4
0	0	25-Feb	5	10:53:35	62.2	65.8
0	0	25-Feb	5	10:53:40	53.7	58.1
0	0	25-Feb	5	10:53:45	50.7	52.4
0	0	25-Feb	5	10:53:50	57	64.6
0	0	25-Feb	5	10:53:55	66.8	70.2
0	0	25-Feb	5	10:54:00	67.6	72
0	0	25-Feb	5	10:54:05	56	60
0	0	25-Feb	5	10:54:10	50.7	51.8
0	0	25-Feb	5	10:54:15	51	55.7
0	0	25-Feb	5	10:54:20	51.2	58
0	0	25-Feb	5	10:54:25	52.6	55.8
0	0	25-Feb	5	10:54:30	63.8	68.5
0	0	25-Feb	5	10:54:35	66.6	69.3
0	0	25-Feb	5	10:54:40	60.8	67

0	0	25-Feb	5	10:54:45	52.3	55.1
0	0	25-Feb	5	10:54:50	58.6	61.9
0	0	25-Feb	5	10:54:55	67.9	70.5
0	0	25-Feb	5	10:55:00	66.8	70.1
0	0	25-Feb	5	10:55:05	67.3	69.7
0	0	25-Feb	5	10:55:10	69.2	70.5
0	0	25-Feb	5	10:55:15	64.5	70.4
0	0	25-Feb	5	10:55:20	58.4	64.7
0	0	25-Feb	5	10:55:25	62.9	66.9
0	0	25-Feb	5	10:55:30	53.4	56
0	0	25-Feb	5	10:55:35	61.1	64.4
0	0	25-Feb	5	10:55:40	58.4	63.8
0	0	25-Feb	5	10:55:45	62.7	70.2
0	0	25-Feb	5	10:55:50	68.2	72.2
0	0	25-Feb	5	10:55:55	57.2	61.7
0	0	25-Feb	5	10:56:00	72.2	80.9
0	0	25-Feb	5	10:56:05	75.8	83
0	0	25-Feb	5	10:56:10	65.5	67.1
0	0	25-Feb	5	10:56:15	65.8	69.1
0	0	25-Feb	5	10:56:20	68.7	70.9
0	0	25-Feb	5	10:56:25	69.2	73.2
0	0	25-Feb	5	10:56:30	66.8	72.6
0	0	25-Feb	5	10:56:35	54.1	59.6
0	0	25-Feb	5	10:56:40	51.2	53.2

0	0	25-Feb	5	10:56:45	51.1	54.6
0	0	25-Feb	5	10:56:50	50.2	52.8
0	0	25-Feb	5	10:56:55	52.2	56.8
0	0	25-Feb	5	10:57:00	52.3	53.6
0	0	25-Feb	5	10:57:05	55.1	60.2
0	0	25-Feb	5	10:57:10	69.1	71.9
0	0	25-Feb	5	10:57:15	70.5	73.6
0	0	25-Feb	5	10:57:20	66.7	68.4
0	0	25-Feb	5	10:57:25	63.5	68.4
0	0	25-Feb	5	10:57:30	56	58.1
0	0	25-Feb	5	10:57:35	54.5	56.9
0	0	25-Feb	5	10:57:40	63.3	67.1
0	0	25-Feb	5	10:57:45	58.7	62.8
0	0	25-Feb	5	10:57:50	52	53.5
0	0	25-Feb	5	10:57:55	51.2	52.8
0	0	25-Feb	5	10:58:00	58.4	63.6
0	0	25-Feb	5	10:58:05	63.7	66.8
0	0	25-Feb	5	10:58:10	62.6	66
0	0	25-Feb	5	10:58:15	62.9	67
0	0	25-Feb	5	10:58:20	67.4	70.4
0	0	25-Feb	5	10:58:25	64.8	69
0	0	25-Feb	5	10:58:30	58.3	62
0	0	25-Feb	5	10:58:35	65.6	69.5
0	0	25-Feb	5	10:58:40	66.6	68.9

0	0	25-Feb	5	10:58:45	64.9	68.5
0	0	25-Feb	5	10:58:50	58.7	69.3
0	0	25-Feb	5	10:58:55	61.4	64.5
0	0	25-Feb	5	10:59:00	62.3	63.9
0	0	25-Feb	5	10:59:05	68.2	69.9
0	0	25-Feb	5	10:59:10	63.3	68.8
0	0	25-Feb	5	10:59:15	66.1	70.3
0	0	25-Feb	5	10:59:20	63.9	66.4
0	0	25-Feb	5	10:59:25	57.1	60.5
0	0	25-Feb	5	10:59:30	64.7	67.1
0	0	25-Feb	5	10:59:35	60.3	64.8
0	0	25-Feb	5	10:59:40	55.7	59.4
0	0	25-Feb	5	10:59:45	65.4	68.6
0	0	25-Feb	5	10:59:50	58.8	63.6
0	0	25-Feb	5	10:59:55	51	53.3
0	0	25-Feb	5	11:00:00	49.3	50.6
0	0	25-Feb	5	11:00:05	49.8	52
0	0	25-Feb	5	11:00:10	50.7	53.9
0	0	25-Feb	5	11:00:15	59	64.4
0	0	25-Feb	5	11:00:20	63.2	65.3
0	0	25-Feb	5	11:00:25	68.5	70.2
0	0	25-Feb	5	11:00:30	67.3	69.8
0	0	25-Feb	5	11:00:35	69.3	72
0	0	25-Feb	5	11:00:40	66.6	69.3

0	0	25-Feb	5	11:00:45	57.9	61.7
0	0	25-Feb	5	11:00:50	54.1	55.7
0	0	25-Feb	5	11:00:55	56.6	62.2
0	0	25-Feb	5	11:01:00	65.2	70.4
0	0	25-Feb	5	11:01:05	53.8	57.7
0	0	25-Feb	5	11:01:10	62	65.5
0	0	25-Feb	5	11:01:15	64.6	66.5
0	0	25-Feb	5	11:01:20	62.7	66.7
0	0	25-Feb	5	11:01:25	65.9	69.4
0	0	25-Feb	5	11:01:30	68.6	70.9
0	0	25-Feb	5	11:01:35	67.5	70.8
0	0	25-Feb	5	11:01:40	68.6	71.2
0	0	25-Feb	5	11:01:45	56.8	62.9
0	0	25-Feb	5	11:01:50	53	56
0	0	25-Feb	5	11:01:55	54.6	57.9
0	0	25-Feb	5	11:02:00	58.6	59.3
0	0	25-Feb	5	11:02:05	62.4	64.5
0	0	25-Feb	5	11:02:10	58.7	61.4
0	0	25-Feb	5	11:02:15	65.2	68
0	0	25-Feb	5	11:02:20	64.5	67.5
0	0	25-Feb	5	11:02:25	58.2	63.7
0	0	25-Feb	5	11:02:30	66.8	69.8
0	0	25-Feb	5	11:02:35	67.2	69
0	0	25-Feb	5	11:02:40	64.1	67.5

0	0	25-Feb	5	11:02:45	54.9	57.9
0	0	25-Feb	5	11:02:50	51.6	55.3
0	0	25-Feb	5	11:02:55	52.4	55.5
0	0	25-Feb	5	11:03:00	55.8	60.3
0	0	25-Feb	5	11:03:05	68.5	72.5
0	0	25-Feb	5	11:03:10	63.3	69.9
0	0	25-Feb	5	11:03:15	55	58.2
0	0	25-Feb	5	11:03:20	57.6	60.6
0	0	25-Feb	5	11:03:25	59.3	61.7
0	0	25-Feb	5	11:03:30	65.4	68.8
0	0	25-Feb	5	11:03:35	69.1	72.9
0	0	25-Feb	5	11:03:40	70.6	72.7
0	0	25-Feb	5	11:03:45	65.8	69.4
0	0	25-Feb	5	11:03:50	57.1	62.8
0	0	25-Feb	5	11:03:55	60.5	62.7
0	0	25-Feb	5	11:04:00	63.1	64.7
0	0	25-Feb	5	11:04:05	67.7	69.9
0	0	25-Feb	5	11:04:10	66.5	70.3
0	0	25-Feb	5	11:04:15	59.1	64.8
0	0	25-Feb	5	11:04:20	66.1	68.8
0	0	25-Feb	5	11:04:25	61.5	65.8
0	0	25-Feb	5	11:04:30	67.9	71.9
0	0	25-Feb	5	11:04:35	80	85.5
0	0	25-Feb	5	11:04:40	79.7	85.5

0	0	25-Feb	5	11:04:45	68.9	70.5
0	0	25-Feb	5	11:04:50	66	68.8
0	0	25-Feb	5	11:04:55	56.3	59.6
0	0	25-Feb	5	11:05:00	53.4	54.8
0	0	25-Feb	5	11:05:05	57.8	63.3
0	0	25-Feb	5	11:05:10	66.6	70.3
0	0	25-Feb	5	11:05:15	63.5	67.4
0	0	25-Feb	5	11:05:20	56.8	60.7
0	0	25-Feb	5	11:05:25	64.4	67.7
0	0	25-Feb	5	11:05:30	55.8	60.2
0	0	25-Feb	5	11:05:35	51.8	53.7
0	0	25-Feb	5	11:05:40	55.4	58.5
0	0	25-Feb	5	11:05:45	63.3	68.5
0	0	25-Feb	5	11:05:50	65.9	68.5
0	0	25-Feb	5	11:05:55	64.6	66.6
0	0	25-Feb	5	11:06:00	62.1	63.2
0	0	25-Feb	5	11:06:05	58.9	61.6
0	0	25-Feb	5	11:06:10	62.3	69.9
0	0	25-Feb	5	11:06:15	67.5	73.1
0	0	25-Feb	5	11:06:20	59.6	65.2
0	0	25-Feb	5	11:06:25	57.5	58.9
0	0	25-Feb	5	11:06:30	55.1	57.2
0	0	25-Feb	5	11:06:35	55.1	57.8
0	0	25-Feb	5	11:06:40	56.3	57.6

0	0	25-Feb	5	11:06:45	61.3	65.6
0	0	25-Feb	5	11:06:50	66.8	69
0	0	25-Feb	5	11:06:55	70.6	75.2
0	0	25-Feb	5	11:07:00	67.8	73
0	0	25-Feb	5	11:07:05	61.3	63.5
0	0	25-Feb	5	11:07:10	63.7	66
0	0	25-Feb	5	11:07:15	64.8	68.8
0	0	25-Feb	5	11:07:20	60.1	65
0	0	25-Feb	5	11:07:25	62.4	70.1
0	0	25-Feb	5	11:07:30	71.7	72.6
Stop	Key					
Run	Key					
0	0	25-Feb	5	11:39:36	68	73.2
0	0	25-Feb	5	11:39:41	61.8	64.6
0	0	25-Feb	5	11:39:46	63.7	66.9
0	0	25-Feb	5	11:39:51	68.8	71.7
0	0	25-Feb	5	11:39:56	77.3	81.6
0	0	25-Feb	5	11:40:01	69.3	76.4
0	0	25-Feb	5	11:40:06	65.3	70.7
0	0	25-Feb	5	11:40:11	68.3	77
0	0	25-Feb	5	11:40:16	80.3	85.6
0	0	25-Feb	5	11:40:21	70.5	80.4
0	0	25-Feb	5	11:40:26	69.3	71.4
0	0	25-Feb	5	11:40:31	66.6	69.5

0	0	25-Feb	5	11:40:36	61.9	64.1
0	0	25-Feb	5	11:40:41	65	70
0	0	25-Feb	5	11:40:46	60.9	63.2
0	0	25-Feb	5	11:40:51	60.1	61.5
0	0	25-Feb	5	11:40:56	61.9	63.4
0	0	25-Feb	5	11:41:01	68.1	71
0	0	25-Feb	5	11:41:06	69.4	73.7
0	0	25-Feb	5	11:41:11	71.4	75
0	0	25-Feb	5	11:41:16	68.9	73.5
0	0	25-Feb	5	11:41:21	68	74
0	0	25-Feb	5	11:41:26	70.5	72.6
0	0	25-Feb	5	11:41:31	68	70.5
0	0	25-Feb	5	11:41:36	64	66.9
0	0	25-Feb	5	11:41:41	68.5	73.9
0	0	25-Feb	5	11:41:46	61.3	63.4
0	0	25-Feb	5	11:41:51	67.8	70.2
0	0	25-Feb	5	11:41:56	70.3	75
0	0	25-Feb	5	11:42:01	81	86.5
0	0	25-Feb	5	11:42:06	73.5	78.4
0	0	25-Feb	5	11:42:11	69.2	72.4
0	0	25-Feb	5	11:42:16	70.1	72.1
0	0	25-Feb	5	11:42:21	66.2	68
0	0	25-Feb	5	11:42:26	66.3	68.7
0	0	25-Feb	5	11:42:31	64.1	68.1

0	0	25-Feb	5	11:42:36	68.4	73.1
0	0	25-Feb	5	11:42:41	69.5	73
0	0	25-Feb	5	11:42:46	71.3	73.9
0	0	25-Feb	5	11:42:51	68.3	70.5
0	0	25-Feb	5	11:42:56	64.7	68
0	0	25-Feb	5	11:43:01	63.1	65.1
0	0	25-Feb	5	11:43:06	64.2	72.7
0	0	25-Feb	5	11:43:11	61.5	64.6
0	0	25-Feb	5	11:43:16	64.8	67.2
0	0	25-Feb	5	11:43:21	70	76.4
0	0	25-Feb	5	11:43:26	69.3	76.7
0	0	25-Feb	5	11:43:31	71.7	74.5
0	0	25-Feb	5	11:43:36	78.3	82.6
0	0	25-Feb	5	11:43:41	75.4	82.9
0	0	25-Feb	5	11:43:46	69.5	72.1
0	0	25-Feb	5	11:43:51	63.5	69
0	0	25-Feb	5	11:43:56	58.5	60.4
0	0	25-Feb	5	11:44:01	64	69.6
0	0	25-Feb	5	11:44:06	66.9	71.1
0	0	25-Feb	5	11:44:11	71.1	72.8
0	0	25-Feb	5	11:44:16	70.9	73.5
0	0	25-Feb	5	11:44:21	67.1	70.5
0	0	25-Feb	5	11:44:26	64.8	66.5
0	0	25-Feb	5	11:44:31	65.5	67.9

0	0	25-Feb	5	11:44:36	60.4	61.9
0	0	25-Feb	5	11:44:41	66.4	71.4
0	0	25-Feb	5	11:44:46	69.2	71.5
0	0	25-Feb	5	11:44:51	62.9	65.1
0	0	25-Feb	5	11:44:56	66.9	69.9
0	0	25-Feb	5	11:45:01	68.2	70.1
0	0	25-Feb	5	11:45:06	63.7	64.7
0	0	25-Feb	5	11:45:11	63.5	70.3
0	0	25-Feb	5	11:45:16	66.7	70.1
0	0	25-Feb	5	11:45:21	65.4	68.4
0	0	25-Feb	5	11:45:26	64.5	70
0	0	25-Feb	5	11:45:31	61.4	63.1
0	0	25-Feb	5	11:45:36	64.1	67.5
0	0	25-Feb	5	11:45:41	69.2	71.6
0	0	25-Feb	5	11:45:46	75.9	80.2
0	0	25-Feb	5	11:45:51	68.7	75.6
0	0	25-Feb	5	11:45:56	68.1	69.6
0	0	25-Feb	5	11:46:01	68.9	71.1
0	0	25-Feb	5	11:46:06	66.5	67.8
0	0	25-Feb	5	11:46:11	67.1	70.3
0	0	25-Feb	5	11:46:16	65.7	72.1
0	0	25-Feb	5	11:46:21	65.9	69.4
0	0	25-Feb	5	11:46:26	71.4	76.2
0	0	25-Feb	5	11:46:31	70.8	74.8

0	0	25-Feb	5	11:46:36	63.1	64.4
0	0	25-Feb	5	11:46:41	64.9	68.3
0	0	25-Feb	5	11:46:46	65.9	69.2
0	0	25-Feb	5	11:46:51	66	69.5
0	0	25-Feb	5	11:46:56	68.8	73
0	0	25-Feb	5	11:47:01	63.4	67.6
0	0	25-Feb	5	11:47:06	69.1	74.1
0	0	25-Feb	5	11:47:11	62.4	64.3
0	0	25-Feb	5	11:47:16	67	69.5
0	0	25-Feb	5	11:47:21	70.8	73.3
0	0	25-Feb	5	11:47:26	69.8	73.3
0	0	25-Feb	5	11:47:31	64.5	67.5
0	0	25-Feb	5	11:47:36	64	65.9
0	0	25-Feb	5	11:47:41	66.8	70.7
0	0	25-Feb	5	11:47:46	63.3	65.9
0	0	25-Feb	5	11:47:51	63.7	67.2
0	0	25-Feb	5	11:47:56	63.3	64.8
0	0	25-Feb	5	11:48:01	64.6	67.8
0	0	25-Feb	5	11:48:06	63.5	66.4
0	0	25-Feb	5	11:48:11	67.4	69.9
0	0	25-Feb	5	11:48:16	67.2	70.2
0	0	25-Feb	5	11:48:21	67.2	71.9
0	0	25-Feb	5	11:48:26	68.8	73
0	0	25-Feb	5	11:48:31	68.2	70.4

0	0	25-Feb	5	11:48:36	66.3	69.7
0	0	25-Feb	5	11:48:41	64.6	67.4
0	0	25-Feb	5	11:48:46	66.2	72.5
0	0	25-Feb	5	11:48:51	63.7	66.3
0	0	25-Feb	5	11:48:56	61.3	63.8
0	0	25-Feb	5	11:49:01	58.9	61
0	0	25-Feb	5	11:49:06	60	62.2
0	0	25-Feb	5	11:49:11	64.7	68.8
0	0	25-Feb	5	11:49:16	68.4	71.7
0	0	25-Feb	5	11:49:21	66.9	71.2
0	0	25-Feb	5	11:49:26	67.2	70.7
0	0	25-Feb	5	11:49:31	66.6	72.4
0	0	25-Feb	5	11:49:36	66	69.9
0	0	25-Feb	5	11:49:41	62.1	65.8
0	0	25-Feb	5	11:49:46	59.6	60.5
0	0	25-Feb	5	11:49:51	63	64.8
0	0	25-Feb	5	11:49:56	66.5	68.3
0	0	25-Feb	5	11:50:01	70.5	72.8
0	0	25-Feb	5	11:50:06	69.8	71.5
0	0	25-Feb	5	11:50:11	67.2	69.3
0	0	25-Feb	5	11:50:16	65	67.2
0	0	25-Feb	5	11:50:21	68.1	70.7
0	0	25-Feb	5	11:50:26	79.8	84.5
0	0	25-Feb	5	11:50:31	74.8	82.3

0	0	25-Feb	5	11:50:36	60.8	64.2
0	0	25-Feb	5	11:50:41	65.1	69.8
0	0	25-Feb	5	11:50:46	66.6	72
0	0	25-Feb	5	11:50:51	67.2	70.9
0	0	25-Feb	5	11:50:56	65.2	67.8
0	0	25-Feb	5	11:51:01	65.7	68.2
0	0	25-Feb	5	11:51:06	66.7	68.7
0	0	25-Feb	5	11:51:11	66.6	69.3
0	0	25-Feb	5	11:51:16	63.9	66.5
0	0	25-Feb	5	11:51:21	69.2	72.3
0	0	25-Feb	5	11:51:26	70.3	73.5
0	0	25-Feb	5	11:51:31	68.4	72
0	0	25-Feb	5	11:51:36	66.5	70.7
0	0	25-Feb	5	11:51:41	67	71.3
0	0	25-Feb	5	11:51:46	63.2	70.2
0	0	25-Feb	5	11:51:51	67.9	71.9
0	0	25-Feb	5	11:51:56	67.8	72.4
0	0	25-Feb	5	11:52:01	65.6	70.3
0	0	25-Feb	5	11:52:06	65.5	68.3
0	0	25-Feb	5	11:52:11	61.5	69.3
0	0	25-Feb	5	11:52:16	65.5	67.9
0	0	25-Feb	5	11:52:21	64.7	66.9
0	0	25-Feb	5	11:52:26	65.9	70.9
0	0	25-Feb	5	11:52:31	66.3	70.5

0	0	25-Feb	5	11:52:36	63.9	66
0	0	25-Feb	5	11:52:41	65.4	66.5
0	0	25-Feb	5	11:52:46	67.4	72
0	0	25-Feb	5	11:52:51	64.8	67.8
0	0	25-Feb	5	11:52:56	62.8	65.8
0	0	25-Feb	5	11:53:01	61.5	62.7
0	0	25-Feb	5	11:53:06	63.3	68.7
0	0	25-Feb	5	11:53:11	67.1	70.6
0	0	25-Feb	5	11:53:16	67.7	70.7
0	0	25-Feb	5	11:53:21	73.5	78
0	0	25-Feb	5	11:53:26	65	67.8
0	0	25-Feb	5	11:53:31	63.9	67.9
0	0	25-Feb	5	11:53:36	64.7	67.2
0	0	25-Feb	5	11:53:41	66.2	70.9
0	0	25-Feb	5	11:53:46	62.8	63.9
0	0	25-Feb	5	11:53:51	66	70.5
0	0	25-Feb	5	11:53:56	70	76.7
0	0	25-Feb	5	11:54:01	70.9	76.8
0	0	25-Feb	5	11:54:06	69.9	71
0	0	25-Feb	5	11:54:11	69.2	71.3
0	0	25-Feb	5	11:54:16	70.1	75.8
0	0	25-Feb	5	11:54:21	63.9	65.8
0	0	25-Feb	5	11:54:26	68	74.4
0	0	25-Feb	5	11:54:31	63.5	67

0	0	25-Feb	5	11:54:36	69.5	71
0	0	25-Feb	5	11:54:41	68.2	71.2
0	0	25-Feb	5	11:54:46	72.7	74.8
0	0	25-Feb	5	11:54:51	75.6	78.8
0	0	25-Feb	5	11:54:56	72.4	76.1
0	0	25-Feb	5	11:55:01	66.1	69.6
0	0	25-Feb	5	11:55:06	65.1	68.5
0	0	25-Feb	5	11:55:11	69.2	71.6
0	0	25-Feb	5	11:55:16	66.3	70.1
0	0	25-Feb	5	11:55:21	63.5	67.1
0	0	25-Feb	5	11:55:26	70.8	73.3
0	0	25-Feb	5	11:55:31	70.2	74.6
0	0	25-Feb	5	11:55:36	65.4	67.5
0	0	25-Feb	5	11:55:41	69.1	75.4
0	0	25-Feb	5	11:55:46	68.9	73
0	0	25-Feb	5	11:55:51	72.9	77.5
0	0	25-Feb	5	11:55:56	68.3	73.9
0	0	25-Feb	5	11:56:01	69.2	71.6
0	0	25-Feb	5	11:56:06	67.4	71.3
0	0	25-Feb	5	11:56:11	69.2	73.5
0	0	25-Feb	5	11:56:16	66.1	69
0	0	25-Feb	5	11:56:21	66.7	70.3
0	0	25-Feb	5	11:56:26	67.7	71.5
0	0	25-Feb	5	11:56:31	65.7	67.8

0	0	25-Feb	5	11:56:36	62.6	65.2
0	0	25-Feb	5	11:56:41	71.7	77.1
0	0	25-Feb	5	11:56:46	70.6	76.9
0	0	25-Feb	5	11:56:51	69.5	71.9
0	0	25-Feb	5	11:56:56	66.7	69.6
0	0	25-Feb	5	11:57:01	65.8	69
0	0	25-Feb	5	11:57:06	69.9	76.4
0	0	25-Feb	5	11:57:11	68.2	71.9
0	0	25-Feb	5	11:57:16	65.4	67.3
0	0	25-Feb	5	11:57:21	65.1	67.1
0	0	25-Feb	5	11:57:26	65.1	70.4
0	0	25-Feb	5	11:57:31	66.5	69.8
0	0	25-Feb	5	11:57:36	67.4	71.3
0	0	25-Feb	5	11:57:41	66.4	71.4
Stop	Key					
Run	Key					
0	0	25-Feb	5	12:58:50	58.2	63.5
0	0	25-Feb	5	12:58:55	59.9	64.4
0	0	25-Feb	5	12:59:00	60.5	67.4
0	0	25-Feb	5	12:59:05	63.8	67.8
0	0	25-Feb	5	12:59:10	66	70.9
0	0	25-Feb	5	12:59:15	69.4	73.4
0	0	25-Feb	5	12:59:20	60.3	63.1
0	0	25-Feb	5	12:59:25	56.1	58.4

0	0	25-Feb	5	12:59:30	60.4	61.9
0	0	25-Feb	5	12:59:35	61.2	63.7
0	0	25-Feb	5	12:59:40	55.7	59.9
0	0	25-Feb	5	12:59:45	57.7	60.5
0	0	25-Feb	5	12:59:50	61.6	65.8
0	0	25-Feb	5	12:59:55	60.5	62.9
0	0	25-Feb	5	13:00:00	61.6	63.5
0	0	25-Feb	5	13:00:05	59.7	63.2
0	0	25-Feb	5	13:00:10	59.9	64.1
0	0	25-Feb	5	13:00:15	60.8	63.7
0	0	25-Feb	5	13:00:20	57.8	61.8
0	0	25-Feb	5	13:00:25	63.8	65.1
0	0	25-Feb	5	13:00:30	62.5	65.5
0	0	25-Feb	5	13:00:35	57.5	60.2
0	0	25-Feb	5	13:00:40	63	65.1
0	0	25-Feb	5	13:00:45	62.5	64.6
0	0	25-Feb	5	13:00:50	61.9	64.9
0	0	25-Feb	5	13:00:55	63.2	66.2
0	0	25-Feb	5	13:01:00	59.7	61.6
0	0	25-Feb	5	13:01:05	60.6	62.9
0	0	25-Feb	5	13:01:10	66.9	69.2
0	0	25-Feb	5	13:01:15	67.6	70.9
0	0	25-Feb	5	13:01:20	67.2	71.9
0	0	25-Feb	5	13:01:25	69	74.4

0	0	25-Feb	5	13:01:30	67.9	70.6
0	0	25-Feb	5	13:01:35	63.3	66.1
0	0	25-Feb	5	13:01:40	61.5	66.4
0	0	25-Feb	5	13:01:45	61.3	63.4
0	0	25-Feb	5	13:01:50	60.7	62.1
0	0	25-Feb	5	13:01:55	63.5	66.7
0	0	25-Feb	5	13:02:00	59.4	62.8
0	0	25-Feb	5	13:02:05	59.6	62.4
0	0	25-Feb	5	13:02:10	55.5	57.7
0	0	25-Feb	5	13:02:15	56.9	58.9
0	0	25-Feb	5	13:02:20	65.3	69.9
0	0	25-Feb	5	13:02:25	64.2	67.4
0	0	25-Feb	5	13:02:30	61.6	64.9
0	0	25-Feb	5	13:02:35	59.4	61
0	0	25-Feb	5	13:02:40	59.5	62.9
0	0	25-Feb	5	13:02:45	57.5	60.7
0	0	25-Feb	5	13:02:50	64.4	67.3
0	0	25-Feb	5	13:02:55	64.4	67.4
0	0	25-Feb	5	13:03:00	61.7	64.4
0	0	25-Feb	5	13:03:05	55	57.8
0	0	25-Feb	5	13:03:10	53.3	54.4
0	0	25-Feb	5	13:03:15	55.6	57.3
0	0	25-Feb	5	13:03:20	62.2	65.2
0	0	25-Feb	5	13:03:25	59.9	62.9

0	0	25-Feb	5	13:03:30	62.1	64.8
0	0	25-Feb	5	13:03:35	59.7	61.4
0	0	25-Feb	5	13:03:40	60	62.4
0	0	25-Feb	5	13:03:45	65.2	71.2
0	0	25-Feb	5	13:03:50	61.2	66.2
0	0	25-Feb	5	13:03:55	61.3	64
0	0	25-Feb	5	13:04:00	59.4	62.2
0	0	25-Feb	5	13:04:05	60.5	63
0	0	25-Feb	5	13:04:10	60.3	63.3
0	0	25-Feb	5	13:04:15	66.3	69.6
0	0	25-Feb	5	13:04:20	62.8	68.6
0	0	25-Feb	5	13:04:25	63.2	65.3
0	0	25-Feb	5	13:04:30	65.8	68.1
0	0	25-Feb	5	13:04:35	66.5	67.8
0	0	25-Feb	5	13:04:40	69.6	72.1
0	0	25-Feb	5	13:04:45	64.5	66.1
0	0	25-Feb	5	13:04:50	61.5	65
0	0	25-Feb	5	13:04:55	63.1	66
0	0	25-Feb	5	13:05:00	63.6	67
0	0	25-Feb	5	13:05:05	63.6	66.8
0	0	25-Feb	5	13:05:10	61	62.4
0	0	25-Feb	5	13:05:15	66.8	71.4
0	0	25-Feb	5	13:05:20	61	62.4
0	0	25-Feb	5	13:05:25	59.6	61.8

0	0	25-Feb	5	13:05:30	63	65.4
0	0	25-Feb	5	13:05:35	64.5	67.5
0	0	25-Feb	5	13:05:40	62	63.6
0	0	25-Feb	5	13:05:45	64.9	66.6
0	0	25-Feb	5	13:05:50	62.2	66.1
0	0	25-Feb	5	13:05:55	60	61.6
0	0	25-Feb	5	13:06:00	58.5	61.6
0	0	25-Feb	5	13:06:05	60.9	64.6
0	0	25-Feb	5	13:06:10	62.8	64
0	0	25-Feb	5	13:06:15	63.3	65.2
0	0	25-Feb	5	13:06:20	62.9	65.6
0	0	25-Feb	5	13:06:25	62.9	64.5
0	0	25-Feb	5	13:06:30	60.4	62.7
0	0	25-Feb	5	13:06:35	58.7	61.6
0	0	25-Feb	5	13:06:40	62.6	64.4
0	0	25-Feb	5	13:06:45	61.6	63.2
0	0	25-Feb	5	13:06:50	57.8	59.6
0	0	25-Feb	5	13:06:55	55.5	56.6
0	0	25-Feb	5	13:07:00	62.3	67.6
0	0	25-Feb	5	13:07:05	72	75.2
0	0	25-Feb	5	13:07:10	61.8	62.8
0	0	25-Feb	5	13:07:15	60.1	63.8
0	0	25-Feb	5	13:07:20	61.7	63.6
0	0	25-Feb	5	13:07:25	62.1	66.2

0	0	25-Feb	5	13:07:30	58.7	62
0	0	25-Feb	5	13:07:35	60.6	62.2
0	0	25-Feb	5	13:07:40	59	62.6
0	0	25-Feb	5	13:07:45	56	58.8
0	0	25-Feb	5	13:07:50	55.1	57.5
0	0	25-Feb	5	13:07:55	59.8	62.1
0	0	25-Feb	5	13:08:00	59.3	61.7
0	0	25-Feb	5	13:08:05	61.3	62.5
0	0	25-Feb	5	13:08:10	63	64.7
0	0	25-Feb	5	13:08:15	64.8	69.6
0	0	25-Feb	5	13:08:20	72.8	75
0	0	25-Feb	5	13:08:25	72.3	76.1
0	0	25-Feb	5	13:08:30	61.7	63
0	0	25-Feb	5	13:08:35	62.3	64.5
0	0	25-Feb	5	13:08:40	59.8	61.5
0	0	25-Feb	5	13:08:45	63.5	67.7
0	0	25-Feb	5	13:08:50	63.9	68.3
0	0	25-Feb	5	13:08:55	58.2	61.5
0	0	25-Feb	5	13:09:00	54.2	56.3
0	0	25-Feb	5	13:09:05	56.7	59.8
0	0	25-Feb	5	13:09:10	55	57.3
0	0	25-Feb	5	13:09:15	59.7	63.2
0	0	25-Feb	5	13:09:20	57.1	62.3
0	0	25-Feb	5	13:09:25	57.2	61.1

0	0	25-Feb	5	13:09:30	60.9	63.5
0	0	25-Feb	5	13:09:35	56.3	60.8
0	0	25-Feb	5	13:09:40	63.6	65.6
0	0	25-Feb	5	13:09:45	60.6	65
0	0	25-Feb	5	13:09:50	52.1	53.4
0	0	25-Feb	5	13:09:55	52	52.8
0	0	25-Feb	5	13:10:00	53	55.8
0	0	25-Feb	5	13:10:05	58.3	61
0	0	25-Feb	5	13:10:10	58	60
0	0	25-Feb	5	13:10:15	56.9	58
0	0	25-Feb	5	13:10:20	57.4	60.8
0	0	25-Feb	5	13:10:25	64.8	66.3
0	0	25-Feb	5	13:10:30	57.5	62.5
0	0	25-Feb	5	13:10:35	54.9	58.1
0	0	25-Feb	5	13:10:40	63.4	65.8
0	0	25-Feb	5	13:10:45	62.4	65.3
0	0	25-Feb	5	13:10:50	58.1	64.6
0	0	25-Feb	5	13:10:55	59.5	61.5
0	0	25-Feb	5	13:11:00	57.3	59.3
0	0	25-Feb	5	13:11:05	58.7	60
0	0	25-Feb	5	13:11:10	60.6	63.1
0	0	25-Feb	5	13:11:15	69.4	74.1
0	0	25-Feb	5	13:11:20	75.2	78.5
0	0	25-Feb	5	13:11:25	66	67.5

0	0	25-Feb	5	13:11:30	64.5	67.5
0	0	25-Feb	5	13:11:35	62.3	64.1
0	0	25-Feb	5	13:11:40	60.3	62.1
0	0	25-Feb	5	13:11:45	62.1	64.1
0	0	25-Feb	5	13:11:50	61.5	63.3
0	0	25-Feb	5	13:11:55	58.7	60.9
0	0	25-Feb	5	13:12:00	61.8	63.4
0	0	25-Feb	5	13:12:05	61.4	65.2
0	0	25-Feb	5	13:12:10	60	61.9
0	0	25-Feb	5	13:12:15	59.4	61.1
0	0	25-Feb	5	13:12:20	61.4	63.1
0	0	25-Feb	5	13:12:25	63.5	66.5
0	0	25-Feb	5	13:12:30	62.4	66.9
0	0	25-Feb	5	13:12:35	58.1	59.7
0	0	25-Feb	5	13:12:40	61	64.3
0	0	25-Feb	5	13:12:45	55.4	58.4
0	0	25-Feb	5	13:12:50	63.2	65.8
0	0	25-Feb	5	13:12:55	61.3	65.3
0	0	25-Feb	5	13:13:00	63	65.6
0	0	25-Feb	5	13:13:05	59.1	62.3
0	0	25-Feb	5	13:13:10	63	66.2
0	0	25-Feb	5	13:13:15	60.6	63.7
0	0	25-Feb	5	13:13:20	61.5	63.6
0	0	25-Feb	5	13:13:25	59.3	60.9

0	0	25-Feb	5	13:13:30	67.6	73.8
0	0	25-Feb	5	13:13:35	75.2	77.7
0	0	25-Feb	5	13:13:40	72	76.8
0	0	25-Feb	5	13:13:45	63.8	66.8
0	0	25-Feb	5	13:13:50	62.2	66.4
0	0	25-Feb	5	13:13:55	64.2	66.8
0	0	25-Feb	5	13:14:00	62.4	64.6
0	0	25-Feb	5	13:14:05	62.8	64.4
0	0	25-Feb	5	13:14:10	62.4	64.9
0	0	25-Feb	5	13:14:15	60.3	63.9
0	0	25-Feb	5	13:14:20	59.6	61.6
0	0	25-Feb	5	13:14:25	58.9	61.3
0	0	25-Feb	5	13:14:30	59.3	62.2
0	0	25-Feb	5	13:14:35	60.3	64.7
0	0	25-Feb	5	13:14:40	57	63.4
0	0	25-Feb	5	13:14:45	54.2	56.7
0	0	25-Feb	5	13:14:50	55.6	57.7
0	0	25-Feb	5	13:14:55	59.1	61.3
0	0	25-Feb	5	13:15:00	57.7	61.8
0	0	25-Feb	5	13:15:05	61.5	63.7
0	0	25-Feb	5	13:15:10	56.1	58.2
0	0	25-Feb	5	13:15:15	59	60.9
0	0	25-Feb	5	13:15:20	56.3	59.5
0	0	25-Feb	5	13:15:25	69.3	72.7

0	0	25-Feb	5	13:15:30	63.4	69.7
0	0	25-Feb	5	13:15:35	57.8	58.7
0	0	25-Feb	5	13:15:40	57.3	59
0	0	25-Feb	5	13:15:45	55.6	56.9
0	0	25-Feb	5	13:15:50	57.5	58.7
0	0	25-Feb	5	13:15:55	59.1	61.5
0	0	25-Feb	5	13:16:00	63.4	64.7
0	0	25-Feb	5	13:16:05	63.8	65
0	0	25-Feb	5	13:16:10	65.2	67.8
0	0	25-Feb	5	13:16:15	60.5	64.8
0	0	25-Feb	5	13:16:20	64	66.2
0	0	25-Feb	5	13:16:25	65.1	65.9
0	0	25-Feb	5	13:16:30	63.1	66.3
0	0	25-Feb	5	13:16:35	62.2	64.3
Stop	Key					
Run	Key					
0	0	25-Feb	5	13:30:00	66.3	68
0	0	25-Feb	5	13:30:05	66.5	68.5
0	0	25-Feb	5	13:30:10	63	69
0	0	25-Feb	5	13:30:15	59.1	61.5
0	0	25-Feb	5	13:30:20	66	69.1
0	0	25-Feb	5	13:30:25	63.8	65.4
0	0	25-Feb	5	13:30:30	59.6	63.4
0	0	25-Feb	5	13:30:35	63	66

0	0	25-Feb	5	13:30:40	58.2	60.9
0	0	25-Feb	5	13:30:45	59.5	62
0	0	25-Feb	5	13:30:50	62.9	67.3
0	0	25-Feb	5	13:30:55	65.3	67.3
0	0	25-Feb	5	13:31:00	61.7	66.4
0	0	25-Feb	5	13:31:05	63.8	65.5
0	0	25-Feb	5	13:31:10	68.5	72.4
0	0	25-Feb	5	13:31:15	67.3	72.7
0	0	25-Feb	5	13:31:20	65.6	70
0	0	25-Feb	5	13:31:25	73.4	75.1
0	0	25-Feb	5	13:31:30	69	71.7
0	0	25-Feb	5	13:31:35	58.4	59.9
0	0	25-Feb	5	13:31:40	57	58.8
0	0	25-Feb	5	13:31:45	57.7	61
0	0	25-Feb	5	13:31:50	67.5	70.9
0	0	25-Feb	5	13:31:55	68.6	73.1
0	0	25-Feb	5	13:32:00	70	72.7
0	0	25-Feb	5	13:32:05	61.8	63.9
0	0	25-Feb	5	13:32:10	59.1	63.7
0	0	25-Feb	5	13:32:15	68.6	71.1
0	0	25-Feb	5	13:32:20	70.8	72.6
0	0	25-Feb	5	13:32:25	67.2	72.8
0	0	25-Feb	5	13:32:30	67.5	72.5
0	0	25-Feb	5	13:32:35	64.3	68.3

0	0	25-Feb	5	13:32:40	64.8	68.6
0	0	25-Feb	5	13:32:45	66.5	70.3
0	0	25-Feb	5	13:32:50	58	60.5
0	0	25-Feb	5	13:32:55	58.3	62.8
0	0	25-Feb	5	13:33:00	60.9	63.6
0	0	25-Feb	5	13:33:05	56.3	57.3
0	0	25-Feb	5	13:33:10	55.9	56.8
0	0	25-Feb	5	13:33:15	57.3	59.8
0	0	25-Feb	5	13:33:20	66	68.7
0	0	25-Feb	5	13:33:25	66.4	68.2
0	0	25-Feb	5	13:33:30	64.3	65.4
0	0	25-Feb	5	13:33:35	62.2	63.9
0	0	25-Feb	5	13:33:40	64	65.9
0	0	25-Feb	5	13:33:45	59.1	62.6
0	0	25-Feb	5	13:33:50	62.8	66.7
0	0	25-Feb	5	13:33:55	56.8	58.1
0	0	25-Feb	5	13:34:00	56.4	57.2
0	0	25-Feb	5	13:34:05	57.2	58.2
0	0	25-Feb	5	13:34:10	63.9	69.9
0	0	25-Feb	5	13:34:15	66.6	70.2
0	0	25-Feb	5	13:34:20	66.9	68.3
0	0	25-Feb	5	13:34:25	63.8	65.3
0	0	25-Feb	5	13:34:30	63.6	66.3
0	0	25-Feb	5	13:34:35	68	69

0	0	25-Feb	5	13:34:40	74.2	77.8
0	0	25-Feb	5	13:34:45	66.7	75
0	0	25-Feb	5	13:34:50	56.4	57.5
0	0	25-Feb	5	13:34:55	56.2	57.8
0	0	25-Feb	5	13:35:00	56.8	58.4
0	0	25-Feb	5	13:35:05	57.2	62
0	0	25-Feb	5	13:35:10	61.5	63.7
0	0	25-Feb	5	13:35:15	63.1	64.2
0	0	25-Feb	5	13:35:20	61.5	62.9
0	0	25-Feb	5	13:35:25	64	69.9
0	0	25-Feb	5	13:35:30	62.5	69.3
0	0	25-Feb	5	13:35:35	57.7	61.5
0	0	25-Feb	5	13:35:40	63.7	65.8
0	0	25-Feb	5	13:35:45	62.8	65.5
0	0	25-Feb	5	13:35:50	61.8	65
0	0	25-Feb	5	13:35:55	64.9	67.9
0	0	25-Feb	5	13:36:00	60.4	62
0	0	25-Feb	5	13:36:05	61.5	66.7
0	0	25-Feb	5	13:36:10	68.8	71.3
0	0	25-Feb	5	13:36:15	71.1	75.3
0	0	25-Feb	5	13:36:20	75.4	78.3
0	0	25-Feb	5	13:36:25	73.9	77.4
0	0	25-Feb	5	13:36:30	70.2	71.3
0	0	25-Feb	5	13:36:35	67	70.5

0	0	25-Feb	5	13:36:40	60.2	61.8
0	0	25-Feb	5	13:36:45	68.6	72.6
0	0	25-Feb	5	13:36:50	63	71.4
0	0	25-Feb	5	13:36:55	69	74
0	0	25-Feb	5	13:37:00	78.8	81.6
0	0	25-Feb	5	13:37:05	78.1	81.1
0	0	25-Feb	5	13:37:10	70.1	71.9
0	0	25-Feb	5	13:37:15	66.6	69.5
0	0	25-Feb	5	13:37:20	68.7	70.1
0	0	25-Feb	5	13:37:25	66.2	68.8
0	0	25-Feb	5	13:37:30	59.4	63
0	0	25-Feb	5	13:37:35	57.8	59.1
0	0	25-Feb	5	13:37:40	62.6	67.3
0	0	25-Feb	5	13:37:45	68.6	70.5
0	0	25-Feb	5	13:37:50	64.3	67.9
0	0	25-Feb	5	13:37:55	68.3	70.5
0	0	25-Feb	5	13:38:00	66.5	70.1
0	0	25-Feb	5	13:38:05	64.9	67.3
0	0	25-Feb	5	13:38:10	63.5	67.6
0	0	25-Feb	5	13:38:15	60.5	61.9
0	0	25-Feb	5	13:38:20	65	68.4
0	0	25-Feb	5	13:38:25	63.4	68.2
0	0	25-Feb	5	13:38:30	68.9	71.1
0	0	25-Feb	5	13:38:35	63.3	67.6

0	0	25-Feb	5	13:38:40	67.3	69.2
0	0	25-Feb	5	13:38:45	63.9	65.5
0	0	25-Feb	5	13:38:50	62.9	65.7
0	0	25-Feb	5	13:38:55	59.3	63
0	0	25-Feb	5	13:39:00	60.9	65.6
0	0	25-Feb	5	13:39:05	66.9	69.2
0	0	25-Feb	5	13:39:10	64.3	66.7
0	0	25-Feb	5	13:39:15	65.2	68.2
0	0	25-Feb	5	13:39:20	63.2	65.1
0	0	25-Feb	5	13:39:25	61.1	65
0	0	25-Feb	5	13:39:30	63.5	66.1
0	0	25-Feb	5	13:39:35	65	67.4
0	0	25-Feb	5	13:39:40	66	69
0	0	25-Feb	5	13:39:45	69.4	72.7
0	0	25-Feb	5	13:39:50	64.6	66
0	0	25-Feb	5	13:39:55	71.6	75.1
0	0	25-Feb	5	13:40:00	73.1	76.4
0	0	25-Feb	5	13:40:05	62.7	66.7
0	0	25-Feb	5	13:40:10	58.4	61.6
0	0	25-Feb	5	13:40:15	63.7	65.7
0	0	25-Feb	5	13:40:20	64.9	69.6
0	0	25-Feb	5	13:40:25	59.4	63.3
0	0	25-Feb	5	13:40:30	68.1	71.3
0	0	25-Feb	5	13:40:35	66	68.1

0	0	25-Feb	5	13:40:40	65.2	67.5
0	0	25-Feb	5	13:40:45	62.3	63.3
0	0	25-Feb	5	13:40:50	62.8	66
0	0	25-Feb	5	13:40:55	64.6	66.6
0	0	25-Feb	5	13:41:00	65.6	68.1
0	0	25-Feb	5	13:41:05	57.5	60.1
0	0	25-Feb	5	13:41:10	55.7	56.8
0	0	25-Feb	5	13:41:15	56.1	57.3
0	0	25-Feb	5	13:41:20	63	67
0	0	25-Feb	5	13:41:25	64.7	66.2
0	0	25-Feb	5	13:41:30	63.2	64.6
0	0	25-Feb	5	13:41:35	66.7	69.3
0	0	25-Feb	5	13:41:40	67.9	69.8
0	0	25-Feb	5	13:41:45	67.3	70
0	0	25-Feb	5	13:41:50	66.8	69.8
0	0	25-Feb	5	13:41:55	64.5	67.2
0	0	25-Feb	5	13:42:00	69.9	72
0	0	25-Feb	5	13:42:05	67.4	71.6
0	0	25-Feb	5	13:42:10	66.9	68.5
0	0	25-Feb	5	13:42:15	63.8	65.5
0	0	25-Feb	5	13:42:20	61.8	64.5
0	0	25-Feb	5	13:42:25	58.6	59.7
0	0	25-Feb	5	13:42:30	64.5	68.8
0	0	25-Feb	5	13:42:35	64.3	70

0	0	25-Feb	5	13:42:40	63.6	67.3
0	0	25-Feb	5	13:42:45	58	65.1
0	0	25-Feb	5	13:42:50	56.5	58
0	0	25-Feb	5	13:42:55	57.7	60.2
0	0	25-Feb	5	13:43:00	59.5	62.2
0	0	25-Feb	5	13:43:05	57.1	58.3
0	0	25-Feb	5	13:43:10	62.4	68.1
0	0	25-Feb	5	13:43:15	68	71.5
0	0	25-Feb	5	13:43:20	66.5	71.6
0	0	25-Feb	5	13:43:25	65.6	68.8
0	0	25-Feb	5	13:43:30	65.1	69.5
0	0	25-Feb	5	13:43:35	59.4	62.6
0	0	25-Feb	5	13:43:40	61.1	64.9
0	0	25-Feb	5	13:43:45	68.4	71.8
0	0	25-Feb	5	13:43:50	66.7	68.4
0	0	25-Feb	5	13:43:55	66	69.1
0	0	25-Feb	5	13:44:00	62.9	65.1
0	0	25-Feb	5	13:44:05	63.8	70.4
0	0	25-Feb	5	13:44:10	70.1	71.8
0	0	25-Feb	5	13:44:15	60.3	66.1
0	0	25-Feb	5	13:44:20	59.8	63.1
0	0	25-Feb	5	13:44:25	70.8	74.7
0	0	25-Feb	5	13:44:30	73.2	75.1
0	0	25-Feb	5	13:44:35	71	73.1

0	0	25-Feb	5	13:44:40	68.4	71.6
0	0	25-Feb	5	13:44:45	64.3	69.7
0	0	25-Feb	5	13:44:50	67.4	73.2
0	0	25-Feb	5	13:44:55	62.2	70.2
0	0	25-Feb	5	13:45:00	62.8	67.7
0	0	25-Feb	5	13:45:05	68.8	72.2
0	0	25-Feb	5	13:45:10	65.7	67.2
0	0	25-Feb	5	13:45:15	62.3	67.6
0	0	25-Feb	5	13:45:20	73.1	76.7
0	0	25-Feb	5	13:45:25	64.1	70.6
0	0	25-Feb	5	13:45:30	63	64.3
0	0	25-Feb	5	13:45:35	64.2	67.9
0	0	25-Feb	5	13:45:40	67.7	70.3
0	0	25-Feb	5	13:45:45	60	64.6
0	0	25-Feb	5	13:45:50	57.7	60.3
0	0	25-Feb	5	13:45:55	66.3	68.8
0	0	25-Feb	5	13:46:00	67.4	69.4
0	0	25-Feb	5	13:46:05	67.5	74.6
0	0	25-Feb	5	13:46:10	70.9	75.1
0	0	25-Feb	5	13:46:15	65.9	70.3
0	0	25-Feb	5	13:46:20	69.9	72.2
0	0	25-Feb	5	13:46:25	66.5	68.9
0	0	25-Feb	5	13:46:30	63.8	66.2
0	0	25-Feb	5	13:46:35	64.7	67.4

0	0	25-Feb	5	13:46:40	62.1	65.8
0	0	25-Feb	5	13:46:45	61	64.6
0	0	25-Feb	5	13:46:50	63	66.2
0	0	25-Feb	5	13:46:55	60.2	64.8
0	0	25-Feb	5	13:47:00	62.7	65.9
0	0	25-Feb	5	13:47:05	65.2	67.9
0	0	25-Feb	5	13:47:10	60.9	65.4
0	0	25-Feb	5	13:47:15	55.2	57.7
0	0	25-Feb	5	13:47:20	54.3	55.2
0	0	25-Feb	5	13:47:25	55.1	57.4
0	0	25-Feb	5	13:47:30	66.6	71
0	0	25-Feb	5	13:47:35	66.8	69.3
0	0	25-Feb	5	13:47:40	63.7	68.2
0	0	25-Feb	5	13:47:45	61.8	63.9
0	0	25-Feb	5	13:47:50	59.7	60
Stop	Key					
Run	Key					
0	0	25-Feb	5	13:58:00	73.1	74.8
0	0	25-Feb	5	13:58:05	71.1	72.1
0	0	25-Feb	5	13:58:10	72.1	72.9
0	0	25-Feb	5	13:58:15	70.8	72
0	0	25-Feb	5	13:58:20	72.4	73.9
0	0	25-Feb	5	13:58:25	72.9	74.4
0	0	25-Feb	5	13:58:30	73.4	74.4

0	0	25-Feb	5	13:58:35	73.7	75
0	0	25-Feb	5	13:58:40	73.3	74.5
0	0	25-Feb	5	13:58:45	72.4	73.4
0	0	25-Feb	5	13:58:50	72.2	73.3
0	0	25-Feb	5	13:58:55	73	73.9
0	0	25-Feb	5	13:59:00	73.5	74.2
0	0	25-Feb	5	13:59:05	72.9	74.4
0	0	25-Feb	5	13:59:10	72.9	73.8
0	0	25-Feb	5	13:59:15	72.9	74
0	0	25-Feb	5	13:59:20	72	72.6
0	0	25-Feb	5	13:59:25	70.8	72
0	0	25-Feb	5	13:59:30	70.8	71.9
0	0	25-Feb	5	13:59:35	70.4	71.5
0	0	25-Feb	5	13:59:40	70.4	71.8
0	0	25-Feb	5	13:59:45	72.8	73.6
0	0	25-Feb	5	13:59:50	72.2	73.3
0	0	25-Feb	5	13:59:55	72.5	73.9
0	0	25-Feb	5	14:00:00	72.1	73.8
0	0	25-Feb	5	14:00:05	71.3	72.4
0	0	25-Feb	5	14:00:10	73.4	75.3
0	0	25-Feb	5	14:00:15	72.2	73.6
0	0	25-Feb	5	14:00:20	72.1	73
0	0	25-Feb	5	14:00:25	72.8	74.3
0	0	25-Feb	5	14:00:30	73.2	75.1

0	0	25-Feb	5	14:00:35	74	76.1
0	0	25-Feb	5	14:00:40	72.7	73.6
0	0	25-Feb	5	14:00:45	72.3	73.2
0	0	25-Feb	5	14:00:50	72.1	73
0	0	25-Feb	5	14:00:55	72.9	73.9
0	0	25-Feb	5	14:01:00	72.4	74.1
0	0	25-Feb	5	14:01:05	72.3	75.4
0	0	25-Feb	5	14:01:10	73.8	75.5
0	0	25-Feb	5	14:01:15	73.7	75.6
0	0	25-Feb	5	14:01:20	74.2	75.1
0	0	25-Feb	5	14:01:25	74.2	74.9
0	0	25-Feb	5	14:01:30	74.1	76.4
0	0	25-Feb	5	14:01:35	72.3	72.9
0	0	25-Feb	5	14:01:40	71.9	73.7
0	0	25-Feb	5	14:01:45	71.5	72.8
0	0	25-Feb	5	14:01:50	71.4	72.4
0	0	25-Feb	5	14:01:55	71.5	72.6
0	0	25-Feb	5	14:02:00	72.4	73.1
0	0	25-Feb	5	14:02:05	71.9	72.7
0	0	25-Feb	5	14:02:10	71.1	73.1
0	0	25-Feb	5	14:02:15	70.3	71.1
0	0	25-Feb	5	14:02:20	71.1	72.2
0	0	25-Feb	5	14:02:25	71.7	72.9
0	0	25-Feb	5	14:02:30	71.3	72.6

0	0	25-Feb	5	14:02:35	70.4	71.5
0	0	25-Feb	5	14:02:40	72.4	73.9
0	0	25-Feb	5	14:02:45	72.7	73.9
0	0	25-Feb	5	14:02:50	73.3	74.4
0	0	25-Feb	5	14:02:55	73	74.4
0	0	25-Feb	5	14:03:00	73.1	73.8
0	0	25-Feb	5	14:03:05	73.3	74.2
0	0	25-Feb	5	14:03:10	72.4	73.7
0	0	25-Feb	5	14:03:15	73	73.7
0	0	25-Feb	5	14:03:20	73.7	75.1
0	0	25-Feb	5	14:03:25	73	74.2
0	0	25-Feb	5	14:03:30	72.1	73.2
0	0	25-Feb	5	14:03:35	71.5	73.2
0	0	25-Feb	5	14:03:40	72.4	73.7
0	0	25-Feb	5	14:03:45	71.7	72.7
0	0	25-Feb	5	14:03:50	70.7	72
0	0	25-Feb	5	14:03:55	70.7	71.7
0	0	25-Feb	5	14:04:00	71.8	73.2
0	0	25-Feb	5	14:04:05	72	72.7
0	0	25-Feb	5	14:04:10	72	72.5
0	0	25-Feb	5	14:04:15	72.6	73.7
0	0	25-Feb	5	14:04:20	72.3	73.3
0	0	25-Feb	5	14:04:25	73	74.5
0	0	25-Feb	5	14:04:30	73	73.9

0	0	25-Feb	5	14:04:35	73.3	75.5
0	0	25-Feb	5	14:04:40	73.4	74.9
0	0	25-Feb	5	14:04:45	73.3	74
0	0	25-Feb	5	14:04:50	73.5	74.7
0	0	25-Feb	5	14:04:55	75.1	76.6
0	0	25-Feb	5	14:05:00	74.2	77.6
0	0	25-Feb	5	14:05:05	73.2	74.3
0	0	25-Feb	5	14:05:10	72.4	73.2
0	0	25-Feb	5	14:05:15	72.2	73.4
0	0	25-Feb	5	14:05:20	72.1	73
0	0	25-Feb	5	14:05:25	73.6	74.8
0	0	25-Feb	5	14:05:30	72.6	73.8
0	0	25-Feb	5	14:05:35	71.3	72.2
0	0	25-Feb	5	14:05:40	72.5	73.8
0	0	25-Feb	5	14:05:45	71	72.3
0	0	25-Feb	5	14:05:50	71.6	73.2
0	0	25-Feb	5	14:05:55	72	73.3
0	0	25-Feb	5	14:06:00	72.1	73.2
0	0	25-Feb	5	14:06:05	71.8	72.7
0	0	25-Feb	5	14:06:10	71.1	72.6
0	0	25-Feb	5	14:06:15	69	70.7
0	0	25-Feb	5	14:06:20	70.3	71.8
0	0	25-Feb	5	14:06:25	71.2	72.8
0	0	25-Feb	5	14:06:30	72.1	73.1

0	0	25-Feb	5	14:06:35	70.7	71.8
0	0	25-Feb	5	14:06:40	70	72
0	0	25-Feb	5	14:06:45	72.8	74.3
0	0	25-Feb	5	14:06:50	74	75.1
0	0	25-Feb	5	14:06:55	72.9	73.7
0	0	25-Feb	5	14:07:00	71.7	73
0	0	25-Feb	5	14:07:05	71.1	72.5
0	0	25-Feb	5	14:07:10	71.7	72.8
0	0	25-Feb	5	14:07:15	71.7	73
0	0	25-Feb	5	14:07:20	72.1	73
0	0	25-Feb	5	14:07:25	70.8	72
0	0	25-Feb	5	14:07:30	72	73.2
0	0	25-Feb	5	14:07:35	72.2	73.2
0	0	25-Feb	5	14:07:40	73.6	75
0	0	25-Feb	5	14:07:45	72.3	74.1
0	0	25-Feb	5	14:07:50	70	71.7
0	0	25-Feb	5	14:07:55	70.8	71.8
0	0	25-Feb	5	14:08:00	72.1	73.1
0	0	25-Feb	5	14:08:05	71.6	72.7
0	0	25-Feb	5	14:08:10	73.2	74.1
0	0	25-Feb	5	14:08:15	73.8	74.8
0	0	25-Feb	5	14:08:20	73.6	74.7
0	0	25-Feb	5	14:08:25	71.3	73.1
0	0	25-Feb	5	14:08:30	71.4	73.6

0	0	25-Feb	5	14:08:35	72.8	73.6
0	0	25-Feb	5	14:08:40	73.4	75.2
0	0	25-Feb	5	14:08:45	78.2	82.1
0	0	25-Feb	5	14:08:50	79.5	83.4
0	0	25-Feb	5	14:08:55	72.1	73.2
0	0	25-Feb	5	14:09:00	73.3	74
0	0	25-Feb	5	14:09:05	73.3	73.9
0	0	25-Feb	5	14:09:10	72.6	74.1
0	0	25-Feb	5	14:09:15	71	71.9
0	0	25-Feb	5	14:09:20	71.8	73.2
0	0	25-Feb	5	14:09:25	73.2	74.3
0	0	25-Feb	5	14:09:30	72.3	73.2
0	0	25-Feb	5	14:09:35	72.1	72.9
0	0	25-Feb	5	14:09:40	72.1	73.3
0	0	25-Feb	5	14:09:45	72.9	73.8
0	0	25-Feb	5	14:09:50	72	73.1
0	0	25-Feb	5	14:09:55	72.5	74.2
0	0	25-Feb	5	14:10:00	71.3	73.4
0	0	25-Feb	5	14:10:05	70.8	72.1
0	0	25-Feb	5	14:10:10	71.3	72.4
0	0	25-Feb	5	14:10:15	71.3	72.4
0	0	25-Feb	5	14:10:20	71.3	72.9
0	0	25-Feb	5	14:10:25	72.3	73.5
0	0	25-Feb	5	14:10:30	72.3	73.3

0	0	25-Feb	5	14:10:35	72.4	74.9
0	0	25-Feb	5	14:10:40	71.6	72.8
0	0	25-Feb	5	14:10:45	72.1	73.3
0	0	25-Feb	5	14:10:50	72	72.7
0	0	25-Feb	5	14:10:55	78	80.9
0	0	25-Feb	5	14:11:00	75.1	80.4
0	0	25-Feb	5	14:11:05	71.1	73
0	0	25-Feb	5	14:11:10	70.2	71.1
0	0	25-Feb	5	14:11:15	71	72.6
0	0	25-Feb	5	14:11:20	73.3	74.1
0	0	25-Feb	5	14:11:25	72.2	73.3
0	0	25-Feb	5	14:11:30	71.8	72.9
0	0	25-Feb	5	14:11:35	71.7	72.6
0	0	25-Feb	5	14:11:40	72	72.9
0	0	25-Feb	5	14:11:45	73.1	74.1
0	0	25-Feb	5	14:11:50	74.1	75.2
0	0	25-Feb	5	14:11:55	73.9	74.7
0	0	25-Feb	5	14:12:00	72.3	73.7
0	0	25-Feb	5	14:12:05	74.5	76.9
0	0	25-Feb	5	14:12:10	71.8	72.8
0	0	25-Feb	5	14:12:15	72.4	73.2
0	0	25-Feb	5	14:12:20	72.1	72.9
0	0	25-Feb	5	14:12:25	72.3	73.1
0	0	25-Feb	5	14:12:30	72.2	73.1

0	0	25-Feb	5	14:12:35	72.6	74.2
0	0	25-Feb	5	14:12:40	73.9	74.8
0	0	25-Feb	5	14:12:45	73.3	74.3
0	0	25-Feb	5	14:12:50	72.9	74.7
0	0	25-Feb	5	14:12:55	72.5	73.3
0	0	25-Feb	5	14:13:00	72.5	73.4
0	0	25-Feb	5	14:13:05	72.3	73.3
0	0	25-Feb	5	14:13:10	71.6	71.8
Stop	Key					
Run	Key					
0	0	25-Feb	5	14:26:00	50	54.7
0	0	25-Feb	5	14:26:05	50.7	54.3
0	0	25-Feb	5	14:26:10	52	56
0	0	25-Feb	5	14:26:15	51.6	54.1
0	0	25-Feb	5	14:26:20	56.4	60.5
0	0	25-Feb	5	14:26:25	55	59.5
0	0	25-Feb	5	14:26:30	54.1	56.8
0	0	25-Feb	5	14:26:35	53.9	57.8
0	0	25-Feb	5	14:26:40	51.2	52.6
0	0	25-Feb	5	14:26:45	50.3	52.1
0	0	25-Feb	5	14:26:50	50.5	54.4
0	0	25-Feb	5	14:26:55	51.1	54.5
0	0	25-Feb	5	14:27:00	50.2	54.8
0	0	25-Feb	5	14:27:05	49.5	51

0	0	25-Feb	5	14:27:10	49.6	50.9
0	0	25-Feb	5	14:27:15	50	52.8
0	0	25-Feb	5	14:27:20	49.3	50.4
0	0	25-Feb	5	14:27:25	48.9	50.1
0	0	25-Feb	5	14:27:30	48.7	50.1
0	0	25-Feb	5	14:27:35	47.8	48.9
0	0	25-Feb	5	14:27:40	47.6	48.5
0	0	25-Feb	5	14:27:45	48.3	49.8
0	0	25-Feb	5	14:27:50	48.3	49.5
0	0	25-Feb	5	14:27:55	51.3	53.1
0	0	25-Feb	5	14:28:00	52.7	53.6
0	0	25-Feb	5	14:28:05	54	58.6
0	0	25-Feb	5	14:28:10	52.7	54
0	0	25-Feb	5	14:28:15	51.8	52.6
0	0	25-Feb	5	14:28:20	52	53.3
0	0	25-Feb	5	14:28:25	50.7	52.5
0	0	25-Feb	5	14:28:30	51.2	53.2
0	0	25-Feb	5	14:28:35	53.7	55
0	0	25-Feb	5	14:28:40	55	56.4
0	0	25-Feb	5	14:28:45	55	57.3
0	0	25-Feb	5	14:28:50	53.2	55.4
0	0	25-Feb	5	14:28:55	53	55
0	0	25-Feb	5	14:29:00	54.6	57.6
0	0	25-Feb	5	14:29:05	55.9	58.1

0	0	25-Feb	5	14:29:10	53.1	56.6
0	0	25-Feb	5	14:29:15	50.5	51.4
0	0	25-Feb	5	14:29:20	51.3	53.3
0	0	25-Feb	5	14:29:25	50.3	52.4
0	0	25-Feb	5	14:29:30	50.2	52.1
0	0	25-Feb	5	14:29:35	50.9	51.8
0	0	25-Feb	5	14:29:40	49.9	51.9
0	0	25-Feb	5	14:29:45	49.8	51.8
0	0	25-Feb	5	14:29:50	49.2	50.5
0	0	25-Feb	5	14:29:55	50.4	52.1
0	0	25-Feb	5	14:30:00	49.4	51.5
0	0	25-Feb	5	14:30:05	50.2	52.1
0	0	25-Feb	5	14:30:10	51.1	53.5
0	0	25-Feb	5	14:30:15	51.8	53.7
0	0	25-Feb	5	14:30:20	53.6	56.6
0	0	25-Feb	5	14:30:25	52.9	54.7
0	0	25-Feb	5	14:30:30	55.7	60.1
0	0	25-Feb	5	14:30:35	56.6	60.4
0	0	25-Feb	5	14:30:40	56.4	59
0	0	25-Feb	5	14:30:45	56	58.6
0	0	25-Feb	5	14:30:50	54.9	57.5
0	0	25-Feb	5	14:30:55	52.5	55
0	0	25-Feb	5	14:31:00	52.5	56.2
0	0	25-Feb	5	14:31:05	50.5	52.5

0	0	25-Feb	5	14:31:10	50.6	52.9
0	0	25-Feb	5	14:31:15	50.3	52.5
0	0	25-Feb	5	14:31:20	51	53
0	0	25-Feb	5	14:31:25	49.4	52.6
0	0	25-Feb	5	14:31:30	47.5	51
0	0	25-Feb	5	14:31:35	49.7	52.1
0	0	25-Feb	5	14:31:40	51.2	54.9
0	0	25-Feb	5	14:31:45	54.2	57.2
0	0	25-Feb	5	14:31:50	52.6	55.1
0	0	25-Feb	5	14:31:55	50.2	51.8
0	0	25-Feb	5	14:32:00	49.2	50.4
0	0	25-Feb	5	14:32:05	52.1	59
0	0	25-Feb	5	14:32:10	50.6	57.3
0	0	25-Feb	5	14:32:15	48.9	50.2
0	0	25-Feb	5	14:32:20	49.5	50.7
0	0	25-Feb	5	14:32:25	51.3	53
0	0	25-Feb	5	14:32:30	50.1	52.1
0	0	25-Feb	5	14:32:35	50.5	53.7
0	0	25-Feb	5	14:32:40	54.8	58.9
0	0	25-Feb	5	14:32:45	52.5	59
0	0	25-Feb	5	14:32:50	51.1	54.6
0	0	25-Feb	5	14:32:55	50.4	55.8
0	0	25-Feb	5	14:33:00	48.8	52.6
0	0	25-Feb	5	14:33:05	53.7	58.1

0	0	25-Feb	5	14:33:10	48	52.5
0	0	25-Feb	5	14:33:15	48.3	51.5
0	0	25-Feb	5	14:33:20	49.1	54.5
0	0	25-Feb	5	14:33:25	50.3	52.6
0	0	25-Feb	5	14:33:30	49.8	52
0	0	25-Feb	5	14:33:35	49.9	52.2
0	0	25-Feb	5	14:33:40	48	49
0	0	25-Feb	5	14:33:45	48.5	49.8
0	0	25-Feb	5	14:33:50	49.1	50.5
0	0	25-Feb	5	14:33:55	51.2	57.2
0	0	25-Feb	5	14:34:00	53.7	57.5
0	0	25-Feb	5	14:34:05	55.1	59.1
0	0	25-Feb	5	14:34:10	53.9	56.1
0	0	25-Feb	5	14:34:15	56	57.8
0	0	25-Feb	5	14:34:20	53.9	55.7
0	0	25-Feb	5	14:34:25	52.1	56.5
0	0	25-Feb	5	14:34:30	53.7	57.1
0	0	25-Feb	5	14:34:35	53.1	54
0	0	25-Feb	5	14:34:40	51.8	53.1
0	0	25-Feb	5	14:34:45	50.5	51.6
0	0	25-Feb	5	14:34:50	50.5	51.5
0	0	25-Feb	5	14:34:55	50.8	53.5
0	0	25-Feb	5	14:35:00	52.8	54.3
0	0	25-Feb	5	14:35:05	53.6	56.7

0	0	25-Feb	5	14:35:10	57.1	58.8
0	0	25-Feb	5	14:35:15	56.6	59.4
0	0	25-Feb	5	14:35:20	56.3	60
0	0	25-Feb	5	14:35:25	53.5	56.6
0	0	25-Feb	5	14:35:30	50	53.7
0	0	25-Feb	5	14:35:35	48.9	50.3
0	0	25-Feb	5	14:35:40	48.6	50
0	0	25-Feb	5	14:35:45	50	51.1
0	0	25-Feb	5	14:35:50	48.3	49.4
0	0	25-Feb	5	14:35:55	47.5	48.2
0	0	25-Feb	5	14:36:00	47.6	48.3
0	0	25-Feb	5	14:36:05	47.8	50.2
0	0	25-Feb	5	14:36:10	47.9	50.1
0	0	25-Feb	5	14:36:15	48	48.9
0	0	25-Feb	5	14:36:20	49	50.6
0	0	25-Feb	5	14:36:25	49.2	52.2
0	0	25-Feb	5	14:36:30	50.5	51.7
0	0	25-Feb	5	14:36:35	50.9	51.9
0	0	25-Feb	5	14:36:40	50.8	51.7
0	0	25-Feb	5	14:36:45	51.5	52.9
0	0	25-Feb	5	14:36:50	50.7	52.1
0	0	25-Feb	5	14:36:55	49.6	50.8
0	0	25-Feb	5	14:37:00	50.6	51.4
0	0	25-Feb	5	14:37:05	51.6	53.8

0	0	25-Feb	5	14:37:10	53	54.6
0	0	25-Feb	5	14:37:15	51.5	52.7
0	0	25-Feb	5	14:37:20	50.6	51.8
0	0	25-Feb	5	14:37:25	51	52.2
0	0	25-Feb	5	14:37:30	51.8	53
0	0	25-Feb	5	14:37:35	51.6	52.4
0	0	25-Feb	5	14:37:40	52	55.7
0	0	25-Feb	5	14:37:45	52.1	53
0	0	25-Feb	5	14:37:50	50.6	52.5
0	0	25-Feb	5	14:37:55	52.2	54.9
0	0	25-Feb	5	14:38:00	54.9	56.9
0	0	25-Feb	5	14:38:05	59.2	64.3
0	0	25-Feb	5	14:38:10	62	63.8
0	0	25-Feb	5	14:38:15	61.2	63.4
0	0	25-Feb	5	14:38:20	61.5	63.4
0	0	25-Feb	5	14:38:25	62.4	64.7
0	0	25-Feb	5	14:38:30	61.6	64
0	0	25-Feb	5	14:38:35	59.2	60.8
0	0	25-Feb	5	14:38:40	57.7	59.5
0	0	25-Feb	5	14:38:45	56.5	58.3
0	0	25-Feb	5	14:38:50	56.3	57.8
0	0	25-Feb	5	14:38:55	56.1	58.3
0	0	25-Feb	5	14:39:00	54.9	55.9
0	0	25-Feb	5	14:39:05	52.8	54.3

0	0	25-Feb	5	14:39:10	51.5	52.5
0	0	25-Feb	5	14:39:15	50.8	53.3
0	0	25-Feb	5	14:39:20	50.5	51.8
0	0	25-Feb	5	14:39:25	49.7	50.8
0	0	25-Feb	5	14:39:30	50.7	52.7
0	0	25-Feb	5	14:39:35	52.6	56.5
0	0	25-Feb	5	14:39:40	52.5	53.9
0	0	25-Feb	5	14:39:45	51.9	53.9
0	0	25-Feb	5	14:39:50	51.9	54.5
0	0	25-Feb	5	14:39:55	51.2	52.6
0	0	25-Feb	5	14:40:00	50.7	52.6
0	0	25-Feb	5	14:40:05	51.1	53.3
0	0	25-Feb	5	14:40:10	51.3	52.5
0	0	25-Feb	5	14:40:15	51.1	52.1
0	0	25-Feb	5	14:40:20	49.5	50.9
0	0	25-Feb	5	14:40:25	50.5	54.4
0	0	25-Feb	5	14:40:30	52.6	54.6
0	0	25-Feb	5	14:40:35	51.6	53.7
0	0	25-Feb	5	14:40:40	49.8	51.8
0	0	25-Feb	5	14:40:45	51.2	52.6
0	0	25-Feb	5	14:40:50	52.4	53.4
0	0	25-Feb	5	14:40:55	54	55.1
0	0	25-Feb	5	14:41:00	52.4	54.9
0	0	25-Feb	5	14:41:05	53.4	55.3

0	0	25-Feb	5	14:41:10	54.2	55.3
0	0	25-Feb	5	14:41:15	53.9	56
0	0	25-Feb	5	14:41:20	54	54.7
0	0	25-Feb	5	14:41:25	54.3	55.4
0	0	25-Feb	5	14:41:30	54.3	55.6
0	0	25-Feb	5	14:41:35	52.2	53.5
0	0	25-Feb	5	14:41:40	51.1	53.5
0	0	25-Feb	5	14:41:45	51.1	54.4
0	0	25-Feb	5	14:41:50	50.8	53.2
0	0	25-Feb	5	14:41:55	53.3	53.2
Stop	Key					
Run	Key					
0	0	25-Feb	5	14:56:10	61.2	65.1
0	0	25-Feb	5	14:56:15	66.4	69.2
0	0	25-Feb	5	14:56:20	62	63.5
0	0	25-Feb	5	14:56:25	58.2	63.2
0	0	25-Feb	5	14:56:30	56.8	62.6
0	0	25-Feb	5	14:56:35	63.3	70.1
0	0	25-Feb	5	14:56:40	63.8	69.6
0	0	25-Feb	5	14:56:45	58.8	64.8
0	0	25-Feb	5	14:56:50	63	69.8
0	0	25-Feb	5	14:56:55	65	69.8
0	0	25-Feb	5	14:57:00	65.8	71.6
0	0	25-Feb	5	14:57:05	64.6	71.9

0	0	25-Feb	5	14:57:10	58.2	64.3
0	0	25-Feb	5	14:57:15	60.2	64.3
0	0	25-Feb	5	14:57:20	65.9	67.1
0	0	25-Feb	5	14:57:25	65.8	69.2
0	0	25-Feb	5	14:57:30	63.4	65.6
0	0	25-Feb	5	14:57:35	59.5	66.8
0	0	25-Feb	5	14:57:40	60	66
0	0	25-Feb	5	14:57:45	61.1	66.9
0	0	25-Feb	5	14:57:50	65	71.2
0	0	25-Feb	5	14:57:55	58.9	63.2
0	0	25-Feb	5	14:58:00	61.5	68.2
0	0	25-Feb	5	14:58:05	66.1	68.2
0	0	25-Feb	5	14:58:10	67.3	68.9
0	0	25-Feb	5	14:58:15	65.8	68.1
0	0	25-Feb	5	14:58:20	67	72.5
0	0	25-Feb	5	14:58:25	64.7	67.6
0	0	25-Feb	5	14:58:30	58.7	63.6
0	0	25-Feb	5	14:58:35	58.1	61.7
0	0	25-Feb	5	14:58:40	59.1	67.3
0	0	25-Feb	5	14:58:45	61.5	66.1
0	0	25-Feb	5	14:58:50	74.2	82.1
0	0	25-Feb	5	14:58:55	65.5	72.3
0	0	25-Feb	5	14:59:00	65.5	69.3
0	0	25-Feb	5	14:59:05	66.8	72.3

0	0	25-Feb	5	14:59:10	63.7	66.3
0	0	25-Feb	5	14:59:15	56.9	61.8
0	0	25-Feb	5	14:59:20	57.1	60.6
0	0	25-Feb	5	14:59:25	65.7	69.3
0	0	25-Feb	5	14:59:30	67	69.1
0	0	25-Feb	5	14:59:35	58.7	62.6
0	0	25-Feb	5	14:59:40	57	59.9
0	0	25-Feb	5	14:59:45	60.1	64
0	0	25-Feb	5	14:59:50	60.8	63.4
0	0	25-Feb	5	14:59:55	63.2	65.8
0	0	25-Feb	5	15:00:00	65.1	68.2
0	0	25-Feb	5	15:00:05	67.3	69.6
0	0	25-Feb	5	15:00:10	69	71.4
0	0	25-Feb	5	15:00:15	61.7	65.4
0	0	25-Feb	5	15:00:20	55.2	58.5
0	0	25-Feb	5	15:00:25	58.2	64.2
0	0	25-Feb	5	15:00:30	64.8	67.5
0	0	25-Feb	5	15:00:35	58.3	68.8
0	0	25-Feb	5	15:00:40	53.8	56.9
0	0	25-Feb	5	15:00:45	54.3	59.8
0	0	25-Feb	5	15:00:50	56.4	61
0	0	25-Feb	5	15:00:55	59.9	63.4
0	0	25-Feb	5	15:01:00	66.1	67.7
0	0	25-Feb	5	15:01:05	65.3	66.8

0	0	25-Feb	5	15:01:10	65.6	67.3
0	0	25-Feb	5	15:01:15	65.2	69.3
0	0	25-Feb	5	15:01:20	63.9	69.5
0	0	25-Feb	5	15:01:25	56.7	60.9
0	0	25-Feb	5	15:01:30	55.4	57.9
0	0	25-Feb	5	15:01:35	60.3	64.8
0	0	25-Feb	5	15:01:40	63.4	67.4
0	0	25-Feb	5	15:01:45	67.9	69.4
0	0	25-Feb	5	15:01:50	66.5	69.2
0	0	25-Feb	5	15:01:55	70.5	75.5
0	0	25-Feb	5	15:02:00	59.8	62.8
0	0	25-Feb	5	15:02:05	58.1	62.3
0	0	25-Feb	5	15:02:10	57.5	59.4
0	0	25-Feb	5	15:02:15	63.8	67.5
0	0	25-Feb	5	15:02:20	66.7	69
0	0	25-Feb	5	15:02:25	65.9	68.5
0	0	25-Feb	5	15:02:30	57	59.8
0	0	25-Feb	5	15:02:35	59	64.5
0	0	25-Feb	5	15:02:40	56.3	58.7
0	0	25-Feb	5	15:02:45	63.8	68.5
0	0	25-Feb	5	15:02:50	66.8	68.6
0	0	25-Feb	5	15:02:55	67.7	70.2
0	0	25-Feb	5	15:03:00	66.5	70.2
0	0	25-Feb	5	15:03:05	64.3	67.2

0	0	25-Feb	5	15:03:10	58.7	63.3
0	0	25-Feb	5	15:03:15	61.4	68.2
0	0	25-Feb	5	15:03:20	61	65
0	0	25-Feb	5	15:03:25	62.9	65.8
0	0	25-Feb	5	15:03:30	55.4	56.6
0	0	25-Feb	5	15:03:35	56.2	60.6
0	0	25-Feb	5	15:03:40	57.7	62.4
0	0	25-Feb	5	15:03:45	64.6	68.1
0	0	25-Feb	5	15:03:50	61	64.3
0	0	25-Feb	5	15:03:55	57.1	58.9
0	0	25-Feb	5	15:04:00	58.3	60.8
0	0	25-Feb	5	15:04:05	56	59.6
0	0	25-Feb	5	15:04:10	60.2	66.5
0	0	25-Feb	5	15:04:15	60.2	64.8
0	0	25-Feb	5	15:04:20	65.7	69.3
0	0	25-Feb	5	15:04:25	58.2	62
0	0	25-Feb	5	15:04:30	63.2	65.9
0	0	25-Feb	5	15:04:35	65.5	72.8
0	0	25-Feb	5	15:04:40	56.9	62.6
0	0	25-Feb	5	15:04:45	64.8	68
0	0	25-Feb	5	15:04:50	63.3	66.5
0	0	25-Feb	5	15:04:55	60.2	64.3
0	0	25-Feb	5	15:05:00	65.2	68.5
0	0	25-Feb	5	15:05:05	60.7	66.4

0	0	25-Feb	5	15:05:10	66	69.3
0	0	25-Feb	5	15:05:15	65.3	70.4
0	0	25-Feb	5	15:05:20	63.1	70.3
0	0	25-Feb	5	15:05:25	54.7	58.3
0	0	25-Feb	5	15:05:30	53.8	56.8
0	0	25-Feb	5	15:05:35	53.3	58.9
0	0	25-Feb	5	15:05:40	53.8	55
0	0	25-Feb	5	15:05:45	58.5	63.1
0	0	25-Feb	5	15:05:50	64.2	65.1
0	0	25-Feb	5	15:05:55	60.5	64.4
0	0	25-Feb	5	15:06:00	63.8	66.7
0	0	25-Feb	5	15:06:05	63.2	66
0	0	25-Feb	5	15:06:10	59	64.2
0	0	25-Feb	5	15:06:15	59.3	61.5
0	0	25-Feb	5	15:06:20	59.4	61.1
0	0	25-Feb	5	15:06:25	63.7	67.7
0	0	25-Feb	5	15:06:30	62	66.6
0	0	25-Feb	5	15:06:35	61.5	64.7
0	0	25-Feb	5	15:06:40	63.2	64.5
0	0	25-Feb	5	15:06:45	61.9	64.6
0	0	25-Feb	5	15:06:50	67.6	70.9
0	0	25-Feb	5	15:06:55	67.4	69.3
0	0	25-Feb	5	15:07:00	66	67.9
0	0	25-Feb	5	15:07:05	62.2	65.9

0	0	25-Feb	5	15:07:10	63.4	68.6
0	0	25-Feb	5	15:07:15	64.1	69.1
0	0	25-Feb	5	15:07:20	55.7	57.5
0	0	25-Feb	5	15:07:25	56.6	59.6
0	0	25-Feb	5	15:07:30	66.1	69.2
0	0	25-Feb	5	15:07:35	64.1	67.5
0	0	25-Feb	5	15:07:40	55.6	57.4
0	0	25-Feb	5	15:07:45	59.7	63.2
0	0	25-Feb	5	15:07:50	63	69.6
0	0	25-Feb	5	15:07:55	58.9	62.6
0	0	25-Feb	5	15:08:00	65.3	69.9
0	0	25-Feb	5	15:08:05	54.8	58
0	0	25-Feb	5	15:08:10	57.9	61
0	0	25-Feb	5	15:08:15	64.8	67.2
0	0	25-Feb	5	15:08:20	59.2	61.7
0	0	25-Feb	5	15:08:25	57.2	60.4
0	0	25-Feb	5	15:08:30	55.1	56.4
0	0	25-Feb	5	15:08:35	58.3	62.4
0	0	25-Feb	5	15:08:40	62.5	64.5
0	0	25-Feb	5	15:08:45	68.1	70.7
0	0	25-Feb	5	15:08:50	65.5	69
0	0	25-Feb	5	15:08:55	61.9	67
0	0	25-Feb	5	15:09:00	65	68.6
0	0	25-Feb	5	15:09:05	60.5	66.1

0	0	25-Feb	5	15:09:10	54.8	56.7
0	0	25-Feb	5	15:09:15	61	67.4
0	0	25-Feb	5	15:09:20	67.3	69.2
0	0	25-Feb	5	15:09:25	66.7	69.6
0	0	25-Feb	5	15:09:30	55.2	57.6
0	0	25-Feb	5	15:09:35	53	54.8
0	0	25-Feb	5	15:09:40	56.9	62.6
0	0	25-Feb	5	15:09:45	64.7	66.1
0	0	25-Feb	5	15:09:50	64.6	67.6
0	0	25-Feb	5	15:09:55	63.4	65.4
0	0	25-Feb	5	15:10:00	61.8	64.3
0	0	25-Feb	5	15:10:05	59.7	63.7
0	0	25-Feb	5	15:10:10	62.1	65.1
0	0	25-Feb	5	15:10:15	65.2	68.4
0	0	25-Feb	5	15:10:20	63.4	67.6
0	0	25-Feb	5	15:10:25	60.6	66.3
0	0	25-Feb	5	15:10:30	57.5	61.7
0	0	25-Feb	5	15:10:35	66	67.6
0	0	25-Feb	5	15:10:40	64.1	66.2
0	0	25-Feb	5	15:10:45	64	66
0	0	25-Feb	5	15:10:50	59	64.8
0	0	25-Feb	5	15:10:55	65.5	69.8
0	0	25-Feb	5	15:11:00	56.6	58.3
0	0	25-Feb	5	15:11:05	59.6	65

0	0	25-Feb	5	15:11:10	65.9	69.5
0	0	25-Feb	5	15:11:15	67.3	70
0	0	25-Feb	5	15:11:20	64.8	70.6
0	0	25-Feb	5	15:11:25	59.6	61.7
0	0	25-Feb	5	15:11:30	56.1	58.1
0	0	25-Feb	5	15:11:35	55	58.3
0	0	25-Feb	5	15:11:40	55.5	60.8
0	0	25-Feb	5	15:11:45	54.8	57
0	0	25-Feb	5	15:11:50	61.8	67.5
0	0	25-Feb	5	15:11:55	63.1	68.2
0	0	25-Feb	5	15:12:00	55.8	61
0	0	25-Feb	5	15:12:05	58.7	64.8
0	0	25-Feb	5	15:12:10	57.5	57.5
Stop	Key					
Run	Key					

C:\NOISE\LARDAV\SLMUTIL\25FEB_09.bin   Summary Data

Site: 0   Model: 720   Firmware rev: 1.634

Location:

Date: 25Feb 05 09:18:35

	Overall	Current
Run Time	02:42:19.5	02:42:19.5
Start Time	25Feb 05 09:18:35	25Feb 05 09:18:35
Leq	67.9	Leq 59.4
SEL	107.8	99.3
Lmax	88.5	88.5
Lmax Time	25Feb 05 10:22:29	25Feb 05 10:22:29
Lmin	36.5	36.5
Lmin Time	28Feb 05 08:13:45	28Feb 05 08:13:45
Peak	101.4	101.4
Peak Time	25Feb 05 10:22:29	25Feb 05 10:22:29
Unweighted Peak	111.3	111.3
Uwpk Time	25Feb 05 10:22:12	25Feb 05 10:22:12
Dose	0.0	0.0
Projected Dose	0.0	0.1
Threshold	0	80
Criterion	0	90

Ln values

L 5 =	73.1	L10 =	71.9	L33 =	66.3
L50 =	64.1	L99 =	36.6	L99 =	36.6

Ldn	0.0	Event Leq	0.0
Cnel	0.0	Event Time	00:00:00.0
Sound Exposure	0.0	Background Leq	67.9
Overloads	0	Background Time	02:42:19.5
Pause Time	00:00:00.0		

Records:

Run/Stop	22	Daily	0
Event	0	Calibration	1
Interval	171	Time History	1978

APPENDIX E

Air Quality Report for the Urban Core Specific Plan

Air Quality Report for the Urban Core Specific Plan Chula Vista, California

Prepared for

City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Prepared by

RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334

RECON Number 4066Q

September 15, 2006

Charles S. Bull, President

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT.)

FIGURES

TABLES

ATTACHMENTS

1.0 Summary

Long-term exposure to air pollutants can result in serious health risks, especially in the elderly, the young, and people with heart and respiratory problems. Poor air quality hurts local economies by damaging agricultural crops, natural vegetation, buildings, and other exposed materials. Air pollutants also affect animals, reduce visibility, and obscure views. Even the economic health of an area can suffer in a region with poor air quality. If insufficient air quality improvement leads to more stringent federally mandated air pollution controls on businesses in the region, local businesses may choose to relocate to regions without air pollution controls.

This baseline study examines air quality in the city of Chula Vista's Urban Core specific planning area including the physical conditions that affect the city's air quality, sources of air pollutants, and policies and planning issues that have been developed for the purpose of improving air quality. The study will identify federal and state agencies that are in charge of regulating the quality of the air in Chula Vista and will detail several local initiatives that have been developed by the City to reduce local air pollutant emissions.

This report includes a summary of recent air pollutant measurements of state and federally regulated pollutants taken within or near the study area as well as a description of major sources of air pollutants both within and outside the study area. The report includes a map of receptors in the Urban Core that are sensitive to poor air quality, such as hospitals and schools, and their proximity to the City's largest sources of air pollutant emissions. Conformance with the rules and regulations of the City of Chula Vista, San Diego Air Pollution Control District (APCD), and the California Air Resources Board (CARB) will be addressed. This report also describes what measures are currently being taken in Chula Vista to improve air quality and will provide suggestions for actions that can be taken in the future to help improve the City's air quality, despite an expected increase in the population.

2.0 Regulatory Framework

Currently about half of the smog-forming emissions are produced by cars, trucks, and other motor vehicles (County of San Diego 2004). In addition to these sources, other mobile sources include construction equipment, trains, and airplanes. Emission standards for mobile sources are established by state and federal agencies such as the CARB and the U.S. Environmental Protection Agency (EPA). Reducing mobile source emissions requires the technological improvement of existing mobile sources and the examination of future mobile sources such as those associated with new or modification projects. Due to the state's low emission vehicle requirements it is anticipated that by 2010 the percentage of air pollution contributed by motor vehicles will be down to 42 percent. The regulatory framework described below details the federal and state agencies that are in charge of monitoring and controlling mobile source air pollutants and what measures are currently being taken to achieve and maintain healthful air quality in the SDAB.

The state of California is divided geographically into 15 air basins for the purpose of managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses, and therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as moderate, serious, severe, or extreme (there is also a marginal classification for federal non-attainment areas).

2.1 Federal Regulations

The federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 U.S.C. 7506(c)] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity.

In 1971, in order to achieve the purposes of Section 109 of the CAA, the EPA developed primary and secondary national ambient air quality standards (NAAQS). Six pollutants of primary concern were designated: ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and suspended particulates (PM_{10}). The primary NAAQS must "protect the public health with an adequate margin of safety" and the secondary standards must "protect the public welfare from known or anticipated adverse effects (aesthetics, crops, architecture, etc.)" (Federal Clean Air Act 1990:Section 109). The primary standards were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties). The current state and federal ambient air quality standards are shown in Table 1. Table 2 presents a brief summary of the principal sources of each criteria pollutant and the health effects associated with exposure to them. Also shown in Table 2 are the potential health effects associated with exposure to elevated concentrations of the original six criteria pollutants. It is in consideration of these potential health effects that the pollutant concentration thresholds identified in the AAQS were established.

If an air basin is not in federal attainment for a particular pollutant, the basin is classified as marginal, moderate, serious, severe, or extreme. The SDAB was formally designated a federal attainment area for the one-hour ozone standard on July 28, 2003. With the attainment of the federal ozone standard, the SDAB was in attainment of all federal criteria pollutants and is currently operating under a maintenance plan for ozone.

In 1997, the EPA promulgated a new eight-hour ozone standard of 8 parts per hundred million (pphm) to replace the existing one-hour standard of 12 pphm. For areas in

TABLE 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (138 µg/m^3)		0.08 ppm (157 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		--	--	--
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	--	Gas Phase Chemilumine-scence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m^3)		--		
Lead	30 days average	1.5 µg/m^3	AIHL Method 54 (12/74) Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m^3	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	Fluorescence	0.030 ppm (80 µg/m^3)	--	Pararosoaniline
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	--	
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (665 µg/m^3)		--	--	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer –visibility of 10 miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chroma-tography*	No Federal Standards		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence	No Federal Standards		
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chroma-tography	No Federal Standards		
See also footnotes on next page.						

TABLE 1
AMBIENT AIR QUALITY STANDARDS
(continued)

ppm = parts per million;   g/m^3 = micrograms per cubic meter.

[1]California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standrads in Section 70200 of Title 17 of the California Code of Regulations.

[2]National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

[3]Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25º C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25º C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4]Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

[5]National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[6]National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7]Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

[8]New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. Contact U.S. EPA for further clarification and current federal policies.

[9]The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

TABLE 2
CRITERIA POLLUTANTS - SOURCES AND HEALTH EFFECTS

Pollutant	Characteristics	Major Sources	Health Effects
Ozone (O_3)	A highly reactive photochemical pollutant that is formed at ground level from emissions of volatile organic compounds (VOC) and nitrogen oxides (NOx) in the presence of sunlight. Ozone is a major component of photochemical smog.	Combustion sources such as engines in automobiles and factories, and evaporation of solvents and fuels.	• Eye irritation • Respiratory function impairment
Carbon Monoxide (CO)	An odorless, colorless and poisonous gas. It is formed during the incomplete combustion of fuels.	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.	• Increase of carboxyhemoglobin - Impairment of oxygen transport in the bloodstream • Aggravation of cardiovascular disease • Impairment of central nervous system function • Fatigue, headache, confusion, dizziness • Can be fatal in the case of very high concentrations in enclosed places
Sulfur Dioxide (SO_2)	A colorless gas with a pungent, irritating odor.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.	• Aggravation of chronic obstruction lung disease • Increased risk of acute and chronic respiratory disease
Nitrogen Dioxide (NO_2)	Reddish-brown gas that discolors the air. It is formed during combustion.	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants	• Increased risk of acute and chronic respiratory disease
Particulate Matter (PM_{10} & $PM_{2.5}$)	Solid and liquid particles of dust, soot, aerosols, and other matter that are small enough to remain suspended in the air for a long period of time.	Combustion, automobiles, field burning, factories, and unpaved roads. Diesel engines for $PM_{2.5}$.Also a result of photochemical processes.	• Aggravation of respiratory effects like asthma and emphysema • May cause heart and lung problems • May carry toxic materials deep into the respiratory system
Lead (Pb)	A toxic heavy metal found in dust and soils.	Lead gasoline additives, metal refineries, manufacture of lead storage batteries, paint	• Brain and other nervous system damage • Carcinogenic • Digestive and other health problems

attainment of the one-hour standard, the eight-hour standard replaced the one-hour standard. However, the existing one-hour standard continued to apply in each non-attainment area until attainment of the one-hour standard was achieved. After attainment of the one-hour standard, the standard is revoked, leaving only the eight-hour standard (County of San Diego 1999).

Until recently, the EPA had been unable to implement and enforce the eight-hour ozone standard established in 1997 as a result of several legal challenges culminating with the U.S. Supreme Court. With the suspension of the enforcement ability of the eight-hour standard, the EPA felt that those areas where the one-hour standard had been revoked were no longer protected by any federal ozone standard. Consequently, on July 5, 2000, the EPA reinstated the one-hour ozone standard for all areas where the one-hour standard had been revoked, thereby ensuring that the entire nation was covered by the original one-hour ozone standard.

The Supreme Court issued its opinion on February 27, 2001 upholding the new ozone standard. However, the Court said EPA must reconsider its implementation plan for moving from the 1-hour standard to the revised standard. The Court instructed EPA to develop an implementation plan (including a timetable) consistent with the Court's opinion. While the case was pending before the Supreme Court, the ozone and fine particle standards remained in effect as a legal matter, because the D.C. Circuit Court had not vacated the standards.

Consequently, although enforcement of the standard had been delayed by the litigation, the EPA directed air districts to begin collecting eight-hour ozone data to be used in determining the attainment status of the districts relative to the new standard. The resolution of litigation regarding the new eight-hour ozone standard has allowed the EPA to move forward with implementation of the standard.

The EPA requested states to provide designation recommendations to the Regional Administrator by July 15, 2003. The California Air Resources Board supplied monitoring data for the years 2000 through 2002 to the EPA on July 15, 2003. The EPA reviewed the designation recommendations and on April 30, 2004 listed the final designations in the Federal Register (EPA 2004a). These designations are to become effective June 15, 2004.

That portion of the SDAB containing the project site has been designated a "basic" non-attainment area for the eight-hour ozone standard under Subpart 1 of Part D of the Clean Air Act (EPA 2004a). Using the discretion provided by Section 172(a)(1) of the CAA, the EPA has chosen not to classify the basin (e.g., moderate, serious, etc.). For areas subject to Subpart 1, consistent with Section 172(a)(2)(A) of the CAA, the period of attainment will be no more than five years from the effective date of designation (EPA 2004b). Consequently, the SDAB must demonstrate attainment by June 15, 2009. If warranted, the EPA may grant an extension of the attainment date to no more than 10 years after designation (June 15, 2014).

A new federal fine particles standard was also established in 1997, targeting $PM_{2.5}$ or inhalable particles that are 2.5 microns or less in diameter. Despite the new $PM_{2.5}$ standard, the existing federal standard for particles that are 10 microns or less in diameter (PM_{10}) has been retained. Federal regulations required $PM_{2.5}$ monitoring to begin on January 1, 1999 (County of San Diego 1999). Monitoring data is currently being collected at five monitoring sites in the SDAB.

A list of recommended designations was due to the EPA by February 15, 2004. The CARB supplied monitoring data for the years 2000 through 2002 to the EPA on February 11, 2004. The EPA reviewed the designation recommendations, made some modifications, and on January 5, 2005 listed the final designations in the Federal Register (EPA 2004c). These designations became effective April 5, 2005.

That portion of the SDAB containing the project site has been designated a non-attainment area for the $PM_{2.5}$ standard (U.S. EPA 2004c). Attainment of the $PM_{2.5}$ standards must be achieved five years after the designation date. Consequently, the SDAB must demonstrate attainment by April 5, 2010. If warranted, the EPA may grant an extension of the attainment date to no more than 10 years after designation (April 5, 2015).

2.2 State Regulations

The EPA allows states the option to develop different (stricter) standards. The state of California generally has set more stringent limits on the six criteria pollutants (see Table 1). The California Clean Air Act (CCAA), also known as the Sher Bill or AB 2595, was signed into law on September 30, 1988 and became effective on January 1, 1989. The CCAA requires that districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. As a state serious ozone non-attainment area, San Diego is subject to various requirements including (County of San Diego 1998):

- Five percent annual reduction in hydrocarbons and oxides of nitrogen emissions from 1987 until standards are attained. If this reduction cannot be obtained, all feasible measures must be implemented.

- Air quality permitting program requiring: (1) Best Available Control Technology (BACT) on new and modified equipment that emits 10 or more pounds per day of non-attainment pollutants or precursors, and (2) emission offsets for all increases in emissions of non-attainment pollutants or precursors at sources with emissions of non-attainment pollutants or precursors of 15 or more tons per year.

2.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (AB 1807: Health and Safety Code Sections 39650-39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

Diesel-exhaust particulate matter emissions have since been established as TACs. Diesel emissions occurring during construction and those associated with the operations associated with the proposed project pose a potential hazard to residents and visitors in the immediate area. Following the identification of diesel particulate matter as an air toxic in 1998, the CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (State of California 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter 75 percent by 2010 and 85 percent by 2020. A number of programs and strategies to reduce diesel particulate matter that have been or are in the process of being developed include (State of California 2005a):

The Carl Moyer Program: This program, administered by the CARB, was initially approved in February 1999 and was revised in November 2000. It provides grants to private companies, public agencies, or individuals operating heavy-duty diesel engines to cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines.

California Diesel Fuel Regulations: The California Diesel Fuel Regulations (13 CCR 2281-2285 and 17 CCR 93114) set limits on the aromatic hydrocarbon and sulfur content for diesel fuel marketed in California. Under these rules, starting in June 2006 in accordance with the phase-in schedule, vehicular diesel fuel must not have a sulfur content that exceeds 15 parts per million by weight. The regulations also specify that on or after October 1, 1993, the aromatic hydrocarbon content of vehicular diesel fuel must not exceed 10 percent by volume.

On-Road Heavy-Duty Diesel New Engine Program: This program develops strategies and regulations to reduce diesel emissions from new on-road diesel powered equipment. Emission control regulations have been coordinated with the U.S. EPA and require that new engines manufactured in and subsequent to 2004 meet new emissions requirements for particulates and other pollutants.

Heavy-Duty Diesel In-Use Strategies Program: The goal of this program is to develop and implement strategies for reducing diesel emissions from existing on- and off-road diesel engines. The Retrofit Assessment section is responsible for the development and implementation of procedures for assessing, recommending, and approving emission control devices. The Retrofit Implementation section is responsible for developing plans for retrofitting on- and off-road engines with emission reducing technologies. To date plans being developed or implemented have targeted solid waste collection vehicles, on-road heavy-duty public fleet vehicles, and fuel delivery trucks. Generally these plans require that a percentage of the fleet, based on age of the vehicles, be retrofitted on a predetermined schedule.

Other programs include:

Off-Road Mobile Sources Emission Reduction Program: The goal of this program is to develop regulations to control emissions from diesel, gasoline, and alternative-fueled off-road mobile engines. These sources include a range of equipment from lawn mowers to construction equipment to locomotives.

Heavy-Duty Vehicle Inspection and Periodic Smoke Inspection Program: This program provides periodic inspections to ensure that truck and bus fleets do not emit excessive amounts of smoke.

Lower-Emission School Bus Program: Under this program, and in coordination with the California Energy Commission, the CARB is developing guidelines to provide criteria for the purchase of new school buses and the retro-fit of existing school buses to reduce particulate matter emissions.

As an ongoing process, the CARB will continue to establish new programs and regulations for the control of diesel particulate emissions as appropriate. The continued development and implementation of these programs and policies will ensure that public exposure to diesel particulate matter will continue to decline.

2.4 State Implementation Plan

The State Implementation Plan is the document that sets forth the state's strategies for achieving the air quality standards. The San Diego Air Pollution Control District is responsible for preparing and implementing the portion of the SIP applicable to the SDAB. The San Diego APCD adopts rules, regulations, and programs to attain state and federal air quality standards, and appropriates money (including permit fees) to achieve these objectives.

2.5 The California Environmental Quality Act

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines requires discussion of any inconsistencies between the proposed project and applicable general plans and regional plans, including the applicable air quality attainment or maintenance plan (or State Implementation Plan).

2.6 San Diego Air Pollution Control District

In order to meet federal air quality standards in California, CARB required each air basin to develop its own strategy for achieving the NAAQS. The San Diego Air Pollution Control District (SDAPCD) is the agency that regulates air quality in the SDAB. The SDAPCD prepared the 1991/1992 Regional Air Quality Strategy (RAQS) in response to the requirements set forth in Assembly Bill (AB) 2595. The draft was adopted, with amendments, on June 30, 1992 (County of San Diego 1992). Attached, as part of the RAQS, are the transportation control measures (TCM) for the air quality plan prepared by the San Diego Association of Governments (SANDAG) in accordance with AB 2595 and adopted by SANDAG on March 27, 1992, as Resolution Number 92-49 and Addendum. The required triennial updates of the RAQS and corresponding TCM were adopted in 1995, 1998, 2001, and 2004. The RAQS and TCM plan set forth the steps needed to accomplish attainment of state and federal ambient air quality standards.

The San Diego APCD has also established a set of rules and regulations initially adopted on January 1, 1969, and periodically reviewed and updated. The rules and regulations define requirements regarding stationary sources of air pollutants and fugitive dust. These rules and regulations are available for review on the agency's website (www.sdapcd.co.san-diego.ca.us).

The San Diego APCD is the primary agency that handles industrial odor and dust complaints. As a part of their nuisance complaint program, the San Diego APCD responds to citizen complaints concerning air pollution problems, such as smoke, odors, and dust from permitted and unpermitted operations. State and local regulations prohibit air pollution discharges which may cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or the public, or which cause or have the tendency to cause injury or damage to business or property. These regulations, which are referred to as the public nuisance laws, do not apply to odors from agricultural operations in the growing of crops, or raising of fowl or animals, or to composting facilities (County of San Diego 2002a).

2.7 City of Chula Vista

The City has included a Growth Management Element (GME) in its General Plan. One of the stated objectives of the GME is to have active planning to meet federal and state air quality standards. This objective is incorporated into the GME's action program. In addition, the City's Growth Management Ordinance requires an Air Quality Improvement Plan be prepared for all major development projects (50 dwelling units or greater) as part of the SPA plan process.

In addition, the City of Chula Vista has developed a number of strategies and plans aimed at improving air quality. The City is a part of the Cities for Climate Protection Program headed by the International Council of Local Environmental Initiatives (ICLEI). In November 2002, the City of Chula Vista adopted a Carbon Dioxide (CO_2) Reduction Plan to lower the community's major greenhouse gas emissions, strengthen the local economy, and improve the global environment. The CO_2 Reduction Plan focuses on reducing fossil fuel consumption and decreasing reliance on power generated by fossil fuels (City of Chula Vista 2002a). A reduction in the usage of power generated by fossil fuels will result in a decrease in the total amount of air pollutants that are emitted into the atmosphere during production power.

The CO_2 Reduction Plan aims to reduce CO_2 emissions to 80 percent of 1990 levels by the year 2010. The following 20 action measures have been proposed in order to achieve this goal (City of Chula Vista 2002a):

1. Municipal clean fuel vehicle purchases
2. Green power
3. Municipal clean fuel demonstration project
4. Telecommuting and telecenters
5. Municipal building upgrades and trip reduction
6. Enhanced pedestrian connections to transit
7. Increased housing density near transit
8. Site design with transit orientation
9. Increased land use mix
10. Green power public education program
11. Site design with pedestrian/bicycle orientation
12. Bicycle integration with transit and employment
13. Bicycle lanes, paths, and routes
14. Energy-efficient landscaping
15. Solar pool heating
16. Traffic signal and system upgrades
17. Student transit subsidy
18. Energy-efficient building program
19. Municipal life-cycle purchasing standards
20. Increased employment density near transit

2.7.1 Transit System

The Metropolitan Transit Development Board (MTDB) serves as the policy-setting and coordinating agency for public transportation in the San Diego metropolitan area. Chula Vista Transit is one of several fixed-route operating entities that have banded together to form the Metropolitan Transit System (MTS).

Chula Vista Transit is operated by the City of Chula Vista under contract with ATC Vancom. Service includes 12 routes covering a service area of approximately 30 square miles, mainly within Chula Vista City limits, with the rest in unincorporated areas of the county. Transit service can lead to reduced automobile trips and reduced mobile source air pollutant emissions.

In addition, the existing San Diego Trolley Blue Line traverses Chula Vista, and includes three stations in the city at E Street, H Street, and Palomar Street. In October 2000, the MTDB adopted a strategy for improving future transit in San Diego. The Transit First strategy strives to make transit an attractive first choice for everyday trips, and includes a network of new services with the purpose of providing transit users with increased convenience, comfort, security, and speed. MTDB is preparing a South Bay Transit First Study in cooperation with Chula Vista and other participants to apply the regional transit vision in the South Bay area, and define implementing projects. Results of the South Bay Transit First Study will be a critical input for Chula Vista’s General Plan update.

2.7.2 Transportation Demand Management

Chula Vista is working on a Transportation Demand Management (TDM) program to aid in the reduction of mobile source emissions. The TDM program strives to change travel behavior so that traffic congestion during the peak demand period is reduced. The change in travel behavior is divided into two categories. The first behavior change is for those who must travel at the peak periods to travel by means other than in a single occupancy vehicle. This is achieved by walking, biking, joining a car or vanpool, or using some form of mass transit. The second behavioral change is for those that do not have to travel during the peak periods and has two components. The first component is to alter the time of travel so that it occurs during non-peak periods. The most common approach for changing travel time is through flexible start and end times at a person’s work and to alter school schedules that may coincide with peak travel demand. The second subpart is telecommuting (working at home) either during the peak travel period or during one or more full days per week.

Immediate TDM options currently being considered by the City include express bus and trolley shuttle service to downtown San Diego from Chula Vista, TDM incentives such as payouts for new participants, and the use of a SANDAG vanpool. The target group for the TDM program is eastern Chula Vista residents.

3.0 Environmental Setting

3.1 Geographic Setting

This baseline study addresses air quality issues for the region within the city of Chula Vista's Urban Core Specific Planning Area. The Urban Core Specific Plan (UCSP) is bounded by C Street to the north, Second Street to the east, L Street to the south, and I-5 to the west. Figure 1 shows the regional location for the study area and Figure 2 shows an aerial photograph of the project vicinity.

3.2 Climate

Air quality is a function of both the rate and location of pollutant emissions and how meteorological conditions and topographic features influence these pollutants. Atmospheric conditions such as wind speed and direction and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

The climate of coastal southern California, including the city of Chula Vista, is determined largely by high pressure that is almost always present off the west coast of North America. High-pressure systems are characterized by an upper layer of dry air that warms as it descends. This warm, dry air acts as a lid, restricting the mobility of the cool, ocean-modified air located near the surface creating an inversion or a reversal of the typical decreasing temperature with height structure of the atmosphere.

Moisture trapped in the cool, lowest layer of the atmosphere forms clouds that make up what is referred to as the "marine layer." The marine layer is the prominent weather feature in the SDAB, an area that is defined roughly by the boundary of San Diego County. The temperature inversion associated with the marine layer also plays an important role in determining the quality of the air in the SDAB. During the summer and fall, emissions generated in the region combine with abundant sunshine under the restraining influences of topography and an inversion to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as sulfates and nitrates. As a result, the quality of the air in the SDAB is often the poorest during the warmer, summer and fall months.

According to the Western Regional Climate Center, over 90 percent of the yearly total precipitation in San Diego occurs during the period of November through April (U.S. Department of Commerce 2000). During these months, the area of high pressure in the eastern Pacific is occasionally displaced allowing storm systems to spread unsettled weather including precipitation into southern California. This wet period of the year is

UCSP Study Area

UCSP Subdistricts Area

City of Chula Vista boundary

General Plan Update boundary

FIGURE 1
Regional Location

M:\jobs2\4066\common_gis\fig1(air).mxd 05/22/06

FIGURE 2

Aerial Photograph of Project

M:\jobs2\4066\common_gis\fig2(air).mxd 05/22/06

characterized by increased mixing in the atmosphere and occasional rainfall that helps cleanse the air of pollutants. As a result, air quality in San Diego is often the best during this time of the year.

The prevailing wind in San Diego is from the west. As a result, the temperature and moisture content of the air near the ground is often strongly influenced by the cool waters of the Pacific Ocean located to the west. Occasionally, when high pressure is centered near the Great Basin, hot, dry winds called “Santa Ana winds” develop over southern California. These winds blow from the east or offshore and can bring some of the warmest temperatures of the year to San Diego. Santa Ana wind events occur most often during the winter months and can occasionally allow pollutant-laden air from the Los Angeles area to be drawn southward into the SDAB. This often occurs during the onset or final stages of a Santa Ana wind event. These conditions have the potential to produce some of the poorest air quality days of the year in San Diego.

Average summer high temperatures in the project are approximately 80 degrees Fahrenheit (°F). Average winter low temperatures are approximately 45° F. The average rainfall in Chula Vista is approximately 9.2 inches annually (Southern California Climate Summaries found at http://www.wrcc.dri.edu/summary/climsmsca.html).

3.3 Existing Air Quality

In response to the federal Clean Air Act (CAA) of 1970, the EPA developed primary and secondary national ambient air quality standards (national standards) for six pollutants of primary concern (criteria pollutants): ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and suspended particulates of 10 microns or less in diameter (PM_{10}). The primary national standards were established to “protect the public health with an adequate margin of safety.” The secondary national standards were established to “protect the public welfare from known or anticipated adverse effects (aesthetics, crops, architecture, etc.)” (federal Clean Air Act 1990:Section 109). The primary standards were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties). The federal CAA and many other air quality plans, policies, and laws are discussed later in this report in the Planning and Regulatory Context section.

If an air basin is not in federal attainment for a particular pollutant, the basin is classified as marginal, moderate, serious, severe, or extreme based on the level of exceedance of the standard. This classification also determines the minimum federal control requirements and the federal attainment deadline. California has adopted a more stringent set of ambient air quality standards for most of the criteria air pollutants (state standards). Because of the unique meteorological conditions in California, there are considerable differences between the state and federal air quality standards currently in effect.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the EPA. Table 2 summarizes the number of days per year during which state and federal standards were exceeded in the SDAB overall during the years 1999 to 2003. The San Diego APCD currently maintains 10 air quality monitoring stations located throughout the greater San Diego metropolitan region. Figure 3 shows the locations the SDAPCD monitoring stations. Air pollutant concentrations and meteorological information are continuously recorded at these 10 stations. Measurements are then used by scientists to help forecast daily air pollution levels.

Table 1 presents a brief discussion of the principal sources of each criteria pollutant and the health effects associated with exposure to them. Table 2 presents both the state and federal air quality standards and provides the attainment status of the SDAB with respect to both the state and primary national standards for each of the criteria pollutants. Table 3 provide a summary of measurements of ozone (O_3), carbon monoxide (CO), and 10-micron particulate matter (PM_{10}) taken at the Chula Vista air quality monitoring stations.

While emission-control programs have created a substantial improvement in regional air quality within the last several decades, clean air standards are still often exceeded in parts of the SDAB.

3.3.1 Ozone

Ozone historically has been the primary air pollution problem in the SDAB. Because sunlight plays such an important role in its formation, ozone pollution or smog is mainly a concern during the daytime in summer months. Nitrogen oxides and hydrocarbons (reactive organic gases [ROG]) are known as the chief “precursors” of ozone. These compounds react in the presence of sunlight to produce ozone. The SDAB is currently designated a federal maintenance area for the one-hour ozone standard, a federal “basic” non-attainment area for the eight-hour ozone standard, and a state non-attainment area for ozone. Ozone concentration measurements recorded in the SDAB dating back to the late 1970s show a distinctive downward trend with occasional peaks due primarily to meteorological influences (County of San Diego 2002b).

About half of smog-forming emissions come from cars, trucks, and other motor vehicles (County of San Diego 2004). Population growth in San Diego has resulted in a large increase in the number of automobiles expelling ozone-forming pollutants while operating on area roadways. In addition, the occasional transport of smog-filled air from Los Angeles only adds to the SDAB’s ozone problem. More strict automobile emission

Image source: Copyright 2004 AirPhotoUSA, LLC, All Rights Reserved (flown April 2004)

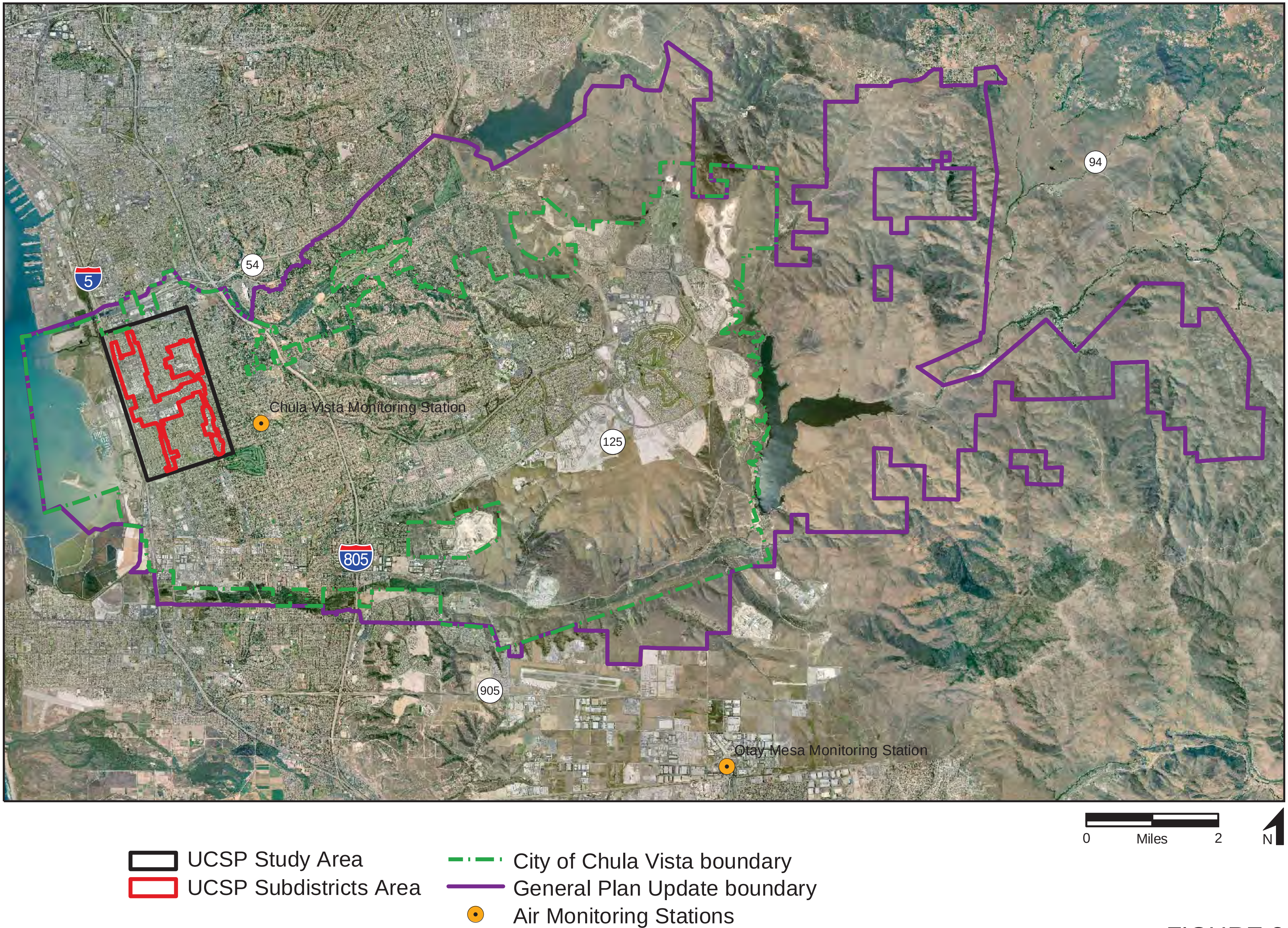


FIGURE 3

Air Monitoring Stations

M:\jobs2\4066\common_gis\fig3(air).mxd 05/22/06

TABLE 3
AMBIENT AIR QUALITY SUMMARY – SAN DIEGO AIR BASIN

Pollutant	Average Time	California Ambient Air Quality Standards[a]	Attainment Status	National Ambient Air Quality Standards[b]	Attainment Status	Maximum Concentration					Number of Days Exceeding State Standard					Number of Days Exceeding National Standard				
						1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
O_3	1 hour	0.09 ppm	N	0.12 ppm	A	0.12	0.12	0.14	0.12	0.13	27	24	29	15	23	0	0	2	0	1
O_3	8 hours	N/A	N/A	0.08 ppm	U	0.10	0.11	0.12	0.10	0.10	N/A	N/A	N/A	N/A	N/A	17	16	17	13	6
CO	1 hour	20 ppm	A	35 ppm	A	9.9	9.3	8.5	8.5	12.7	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
CO	8 hours	9.0 ppm	A	9 ppm	A	6.0	5.9	5.1	4.7	10.6	0	0	0	0	1	0	0	0	0	1
NO_2	1 hour	0.25 ppm	A	N/A	N/A	.172	.117	.148	.126	.148	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
NO_2	Annual	N/A	N/A	0.053 ppm	A	.026	.024	.022	.022	.021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SO_2	1 hour	25 pphm	A	N/A	N/A	8.4	5.8	6.0	4.4	3.6	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
SO_2	24 hours	4 pphm	A	14 pphm	A	1.7	1.4	1.6	1.2	1.1	0	0	0	0	0	0	0	0	0	0
SO_2	Annual	N/A	N/A	3 pphm	A	0.3	0.4	0.4	0.4	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PM_{10}	24 hours	50 $\mu g/m^3$	N	150 $\mu g/m^3$	U	121	139	107	130	280	19	18	21	29	24	0	0	0	0	2
PM_{10}[c]	Annual	20 $\mu g/m^3$	N	50 $\mu g/m^3$	A	52	45	49	55	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
$PM_{2.5}$	24 hours	N/A	N/A	65 $\mu g/m^3$	U	64.3	66.3	60.0	53.6	239	N/A	N/A	N/A	N/A	N/A	0	1	0	0	2
$PM_{2.5}$[c]	Annual	12 $\mu g/m^3$	N/A	15 $\mu g/m^3$	U	18.0	15.8	17.7	16.0	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SOURCES: SDAPCD and CARB 2002: http://www.sdapcd.co.san-diego.ca.us and http://www.arb.ca.gov.

[a]California standards for ozone, carbon monoxide (except at Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM_{10} are values that are not to be exceeded. Some measurements gathered for pollutants with air quality standards that are based upon 1-hour, 8-hour, or 24-hour averages, may be excluded if the CARB determines they would occur less than once per year on average.

[b]National standards other than for ozone and particulates, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.

[c]On June 20, 2002, the Air Resources Board approved staff's recommendation to revise the PM_{10} annual average standard to 20 $\mu g/m^3$ and to establish an annual average standard for PM2.5 of 12 μg/m3. These standards will take effect upon final approval by the Office of Administrative Law, which is expected in May 2003. Information regarding these revisions can be found at http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm.

[d]A-attainment, N-non-attainment, U-unclassifiable, N/A-not applicable or not available.

ppm-parts per million, pphm-parts per hundred million, $\mu g/m^3$-micrograms per cubic meter.

controls, including more efficient automobile engines, have played a large role in why ozone levels have steadily decreased.

The national ozone standard was not exceeded at either the Chula Vista monitoring station during the five-year period of 1999 to 2003. The stricter state standard for ozone was exceeded at the Chula Vista monitoring station on 4 days in 1999, and 2 days in 2001, and 1 day in 2002. The standard was not exceeded at the Chula Vista monitoring station in 2000 and 2003 (State of California 2005b).

Not all of the ozone within the SDAB is derived from local sources. Under certain meteorological conditions, such as during Santa Ana wind events, ozone, and other pollutants are transported from the Los Angeles Basin and combine with ozone formed from local emission sources to produce elevated ozone levels in the SDAB. According to SANDAG, on average, approximately 42 percent of the days that have ozone concentrations over state standard between 1987 and 1994 were attributable to pollution transported from Los Angeles (SANDAG 1994:249-250).

More recent data suggests that this percentage is even higher. According to the San Diego APCD, ozone transported into the SDAB from the South Coast Air Basin (Los Angeles area) was the primary cause for the SDAB exceeding national ozone thresholds on 27 of a total of 33 days from 1994 to 1998 (County of San Diego 2000a). The San Diego APCD further explains that the two days in which the national one-hour standard was exceeded in the SDAB in 2001 (see Table 3) were both caused by ozone-rich air transported from the Los Angeles Basin (County of San Diego 2003). There also was an exceedance of the national one-hour standard in 2003 (occurring on September 21, 2003) as well as on exceedance in 2004 (occurring on October 3, 2004). This also may have been due to transport from outside of the basin, however, the SDAPCD has yet to determine the cause.

Local agencies can control neither the source nor the transportation of pollutants from outside the SDAB. The San Diego APCD's policy, therefore, has been to control local sources effectively enough to reduce locally produced contamination to clean air standards. Through the use of air pollution control measures outlined in the RAQS, the San Diego APCD has effectively reduced ozone levels in the SDAB.

Actions that have been taken in the SDAB to reduce ozone concentrations include:

- **TCMs if vehicle travel and emissions exceed attainment demonstration levels.** TCMs are strategies that will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.

- **Enhanced motor vehicle inspection and maintenance program.** The smog check program monitors the amount of pollutants automobiles produce. One focus of the program is identifying "gross polluters" or vehicles that exceed two times the allowable emissions for a particular model. Regular maintenance and tune-ups, changing the oil, and checking tire inflation can improve gas mileage and lower air pollutant emissions. It can also reduce traffic congestion due to preventable breakdowns, further lowering emissions.

- **Old car buy-back and retrofit programs.** The old car buy-back program is an incentive program offered by the San Diego APCD to purchase older, more polluting vehicles (1985 and older) and scrap them, thereby getting them off the road. Old car sellers are paid $600 for vehicles built prior to 1975 and $500 for 1975-1985 cars and trucks. There is also a retrofit program designed to retrofit 1975-1980 vehicles with a new technology upgrade kit that reduces smog-forming emissions.

- **Clean-fuel vehicle program.** Cleaner vehicles and fuels will result in continued reductions in vehicle pollutant emissions despite increases in travel.

3.3.2 Carbon Monoxide

The SDAB is classified as a state and federal attainment area for carbon monoxide (County of San Diego 1998). Until 2003 no violations of the state standard for CO had been recorded in the SDAB since 1991 and no violations of the national standard had been recorded in the SDAB since 1989. As seen in Table 3, both the federal and state eight-hour CO standards were exceeded in the SDAB on one day in 2003. These exceedances occurred on October 28, 2003, at a time when major wildfires were raging throughout the county. Consequently, this exceedance was likely caused by the wildfires (a natural event) and would be considered beyond the control of the San Diego APCD. However, as seen in Table 4, neither the state nor federal standards were exceeded during the period from 2000 through 2004 at the Chula Vista monitoring station.

Small-scale, localized concentrations of carbon monoxide above the state and national standards have the potential to occur at intersections with stagnation points such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as “CO hot spots” and are a concern at congested intersections when automobile engines burn fuel less efficiently and their exhaust contains more CO.

3.3.3 PM_{10}

Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Sources of PM_{10} emissions in the SDAB consist mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere. For comparison, 10 microns is about one-seventh the diameter of a human hair.

TABLE 4
SUMMARY OF AIR QUALITY MEASUREMENTS RECORDED
AT THE CHULA VISTA MONITORING STATION

Pollutant/Standard	1999	2000	2001	2002	2003
Ozone					
Days State Standard Exceeded (0.09 ppm)	4	0	2	1	0
Days National Standard Exceeded (0.12 ppm)†	0	0	0	0	0
Max. 1-hr (ppm)	0.105	0.091	0.102	0.115	0.075
Carbon Monoxide					
Days State 1-hour Standard Exceeded (20 ppm)	0	0	0	0	0
Days Federal 1-hour Standard Exceeded (35 ppm)	0	0	0	0	0
Max. 1-hr (ppm)	5.4	5.8	5.6	4.3	6.9*
Max. 8-hr (ppm)	3.04	3.35	4.64	2.61	5.4*
Max. Summer 1-hr (ppm)	2.2	2.7	1.9	1.9	2.3
Max. Summer 8-hr (ppm)	1.6	1.943	1.314	1.45	1.5
PM_{10}					
Calculated Days State Standard Exceeded ($\mu g/m^3$)**	N/A	N/A	12	6	12
Sampled Days State Standard Exceeded ($\mu g/m^3$)	1	4	2	1	2
Days National Standard Exceeded ($\mu g/m^3$)†	0	0	0	0	0
Max. Daily ($\mu g/m^3$)	59.0	52.0	64.0	50.0	75.0
$PM_{2.5}$					
Sampled Days National Standard Exceeded ($\mu g/m^3$)	0	0	0	0	1
Max. Daily ($\mu g/m^3$)	47.1	40.5	41.0	41.0	239.2

SOURCE: CARB 2002: http://www.arb.ca.gov.

NOTE: Lead concentrations in the SDAB have not exceeded the state or federal standard during at least the past 10 years.

*The measurement was taken on October 27, 2003 during the San Diego County forest fire and, therefore, is not an accurate representation of ambient conditions.

**Calculated days - Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

†"National Standard" refers to the primary federal standard. In the case of ozone and PM_{10}, the secondary federal standards are the same as the primary federal standards. There are no secondary federal standards for carbon monoxide.

Until 2003 the national standards for PM_{10} had never been exceeded in the SDAB since the standards were established. The EPA has designated the SDAB unclassifiable for PM_{10}. In 2003 the measured federal PM_{10} standard was exceed twice in the SDAB. These two exceedances result in a calculated number of days that the federal standard was exceeded of approximately nine days for the year (see Table 3). The first exceedance occurred on October 29, 2003, at a time when major wildfires were raging throughout the county. The second exceedance occurred on November 23, 2003, during high winds which caused large amounts of ash from the previous fires to be resuspended. However, the federal PM_{10} standards were not exceeded at the Chula Vista monitoring station in 2003.

Consequently, these exceedances were likely caused by or were a subsequent result of the wildfires (a natural event) and would be considered beyond the control of the San Diego APCD. As such, these events likely would be covered under the U.S. EPA's Natural Events Policy that permits, under certain circumstances, the exclusion of air quality data attributable to uncontrollable natural events (e.g., volcanic activity, wildland fires, and high wind events).

In addition to the two federal exceedances in 2003, the more strict state standards for PM_{10} historically have not been met. As a result, the SDAB is designated a state non-attainment area for PM_{10}. Table 2 shows that the 24-hour state PM_{10} standard was exceeded in the SDAB each year from 1999 through 2003. Except for 2003 as discussed above, the much higher 24-hour federal PM_{10} standard has not been exceeded in the SDAB during the same time period.

The calculated number of days that the state PM_{10} standard was exceeded at the Chula Vista monitoring station for 1999 and 2000 is not available. However, as seen in Table 3 the measured number of days the state standard was exceeded was four days in 1999 and one day in 2000. For the years 2001 through 2003, the calculated number of days that the state PM_{10} standard was exceeded at the Chula Vista monitoring station were 12 days in 2001, 6 days in 2002, and 12 days in 2003 (see Table 4). Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day.

Under typical conditions (i.e., no wildfires) particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust, salts, brake dust, and tire wear (County of San Diego 1998). For several reasons hinging on the area's dry climate and coastal location, the SDAB has special difficulty in developing adequate tactics to meet present state particulate standards.

3.3.4 $PM_{2.5}$

$PM_{2.5}$ are particles that measure 2.5 microns or less in diameter. As a result of their small size, $PM_{2.5}$ particles can be inhaled deeply into the lungs. $PM_{2.5}$ is predominantly produced from combustion sources such as gasoline and diesel engines and industrial facilities. Emissions of organic gases, nitrogen oxides (NOx), sulfur oxides (SOx), and ammonia produced at these sources react in the atmosphere and form such tiny particles. $PM_{2.5}$ can remain suspended in the air for long periods and can travel great distances (County of San Diego 2001).

As indicated previously, $PM_{2.5}$ has recently been recognized as an air quality concern requiring regular monitoring. Federal regulations required that $PM_{2.5}$ monitoring begin January 1, 1999 (County of San Diego 1999). The Chula Vista monitoring station is one of five stations in the SDAB that monitors $PM_{2.5}$. Monitoring data has been collected in order to make a determination as to whether the $PM_{2.5}$ standard is currently being met in the SDAB.

At the Chula Vista monitoring station, for the period from 1999 through 2003 the federal $PM_{2.5}$ standard was exceeded on only one day in 2003 (see Table 3). As also seen in Table 2 the state annual arithmetic average standard was exceeded in 2002 and 2003.

A list of recommended designations was due to the EPA by February 15, 2004. The CARB supplied monitoring data for the years 2000 through 2002 to the EPA on February 11, 2004. The EPA reviewed the designation recommendations, made some modifications, and on January 5, 2005 listed the final designations in the Federal Register (EPA 2004c). These designations became effective April 5, 2005. The SDAB was initially classified as a non-attainment area; however, it has since been redesignated as an attainment area for the $PM_{2.5}$ standard (U.S. EPA 2005). The SDAB is a non-attainment area for the state $PM_{2.5}$ standard (State of California 2005c)

3.3.5 Other Criteria Pollutants

The national and state standards for NO_2, SO_2, and lead are being met in the SDAB and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future.

4.0 Thresholds of Significance

4.1 California Air Resources Board

For purposes of assessing the significance of air quality impacts, the CARB has established guidelines, as described below.

For long-term emissions, the direct impacts of a project can be measured by the degree to which the project is consistent with regional plans to improve and maintain air quality. The regional plan for San Diego is the 1991/1992 RAQS and attached TCM plan, as revised by the triennial updates adopted in 1995, 1998, 2001, and 2004. The CARB provides criteria for determining whether a project conforms with the RAQS (State of California 1989), which include the following:

1. Is a regional air quality plan being implemented in the project area?
2. Is the project consistent with the growth assumptions in the regional air quality plan?
3. Does the project incorporate all feasible and available air quality control measures?

4.2 City of Chula Vista

The City of Chula Vista assesses air impacts in conformance consistent with those identified in Appendix G of the CEQA Guidelines. In combination, these policies and guidelines provide guidance as to what would be considered significant under CEQA.

Based on the thresholds identified in Appendix G of the CEQA guidelines, the proposed project would result in a significant impact to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). The City of Chula Vista uses the South Coast Air Quality Management District (SCAQMD) thresholds shown in Table 5 to assess the significance of air quality impacts (SCAQMD 1993).

TABLE 5
SCAQMD THRESHOLDS

Pollutant	Project Construction	Project Operation
Carbon Monoxide	24.75 tons/quarter	550 pounds/day
Reactive Organic Compounds	2.5 tons/quarter	55 pounds/day
Oxides of Nitrogen	2.5 tons/quarter	55 pounds/day
Oxides of Sulfur	6.75 tons/quarter	150 pounds/day
PM_{10}	6.75 tons/quarter	150 pounds/day

- Expose sensitive receptors to substantial pollutant concentrations such as ozone or respirable particulates (PM_{10});
- Create objectionable odors affecting a substantial number of people.

4.3 Emissions Criteria

Emissions resulting from implementation of the proposed project would be due primarily to an increase in traffic associated with the daily operations of the proposed project. The San Diego APCD does not provide specific numerics for determining the significance of mobile source-related impacts. However, the district does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (APCD Rules 20.2 and 20.3). If these incremental levels are exceeded, then the district requires that an AQIA be performed for the proposed project. Although these trigger levels do not generally apply to mobile sources, for comparative purposes, these levels are used to evaluate the increased emissions that would be discharged to the SDAB if the proposed project were approved. The AQIA trigger levels are shown in Table 6 (note: there is no level specified for reactive organic compounds).

TABLE 6
AIR QUALITY IMPACT ANALYSIS
TRIGGER LEVELS

Pollutant	Threshold
NOx	250 lbs/day
SOx	250 lbs/day
CO	550 lbs/day
PM_{10}	100 lbs/day
Lead	3.2 lbs/day

SOURCE: San Diego APCD, Rule 20.2 (12/17/1998).

In addition to a comparison with the thresholds, the project should be evaluated to determine if it has the potential to produce carbon monoxide hot spots at intersections near the project site. A hot spot is a localized area, most often near a congested intersection, where the state's one-hour or eight-hour carbon monoxide standards are exceeded. Localized carbon monoxide impacts can occur where projects contribute traffic to intersections in areas where the ambient carbon monoxide concentrations are projected to be above the state's standards.

4.4 Public Nuisance Law (Odors)

The State of California Health and Safety Code (H&S) Sections 41700 and 41705, and San Diego Air Pollution Control District Rule 51, commonly referred to as public nuisance law, prohibits emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Although the provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals, they do apply to odors from solid waste facilities. It is generally accepted that the considerable number of person's requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

Every use and operation shall be conducted so that no unreasonable heat, odor, vapor, glare, vibration (displacement), dust, smoke, or other forms of air pollution subject to air pollution control district standards of particulate matter shall be discernible at the property line of the parcel upon which the use or operation is located.

Therefore, any unreasonable odor discernible at the property line of the project site will be considered a significant odor impact.

5.0 Air Quality Assessment

Air quality impacts can result from the operation of the project. In the case of this project, operational impacts result mainly from mobile sources associated with the vehicular travel along the roadways within the project area.

Operational impacts can occur on two levels. Regional impacts resulting from growth-inducing development or local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways.

5.1 Construction-Related Emissions

Construction-related activities are temporary, short-term sources of air emissions. Sources of construction-related air emissions include:

- Fugitive dust from grading activities
- Construction equipment exhaust
- Construction-related trips by workers, delivery trucks, and material-hauling trucks
- Construction-related power consumption

5.1.1 Construction

Air pollutants generated by the construction of projects that conform to the proposed UCSP would vary depending upon the number of projects occurring simultaneously, and the size of each individual project. Pollutants result from dust raised during demolition and grading, emissions from construction vehicles, chemicals used during construction, and ultimately emissions generated during operation of approved uses.

Heavy-duty construction equipment is usually diesel-powered. In general, emissions from diesel-powered equipment contain more nitrogen oxides, sulfur oxides, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less carbon monoxide and less reactive organic gases than do gasoline-powered engines.

Standard construction equipment includes dozers, rollers, scrapers, dewatering pumps, backhoes, loaders, paving equipment, delivery/haul trucks, jacking equipment, welding machines, pile drivers, and so on. Heavy-duty equipment emissions are difficult to quantify because of day-to-day variability in construction activities and equipment used.

The exact number and timing of all development projects that could occur under the proposed UCSP are unknown. However, given the predominantly developed nature of the Urban Core area, it can be assumed that the Urban Core would experience relatively small projects in terms of land area, most of which would involve the demolition of existing structures and improvements.

To illustrate the potential air quality effects from projects that could occur in the UCSP area, a speculative project was evaluated. This hypothetical project includes a one-acre multi-family residential project that may be typical in the UCSP Subdistricts Area. The one-acre multi-family development is assumed to consist of the demolition of an existing structure with a volume of approximately 50,000 cubic feet and the construction of a 40-unit multi-family structure. Construction emissions were calculated using the URBEMIS2002 computer program (Yolo-Solano Air Quality Management District 2003).

Table 7 shows the anticipated emissions from each of these projects assuming that the duration of construction is 12 months.

TABLE 7
YEARLY CONSTRUCTION EMISSIONS
(tons/year)

Pollutant	Small Multi-Family Project
ROG	1.66
NO_x	6.03
CO	5.73
SO_2	0
PM_{10} – total	0.3
PM_{10} – exhaust	0.24
PM_{10} – fugitive dust	0.06

To estimate the effects of such projects over the 25-year horizon of the UCSP it was assumed that an average of approximately five projects equivalent to the 40-unit multi-family project could occur yearly.

The City of Chula Vista uses the SCAQMD quarterly construction thresholds shown in Table 8 to assess the significance of air quality impacts. Table 8 shows the average quarterly emissions using the above assumptions.

TABLE 8
AVERAGE QUARTERLY EMISSIONS
(tons/quarter)

Pollutant	Small Multi-Family Project	Five Small Multi-Family Projects	Threshold†
ROG	0.23	1.16	2.5
NOx	1.05	5.25	2.5
CO	1.02	5.11	24.75
SO_2	0	0	6.75
PM_{10} – total	0.05	0.25	6.75
PM_{10} – exhaust	0.04	0.18	--
PM_{10} – fugitive dust	0.02	0.08	--

†Threshold for individual projects.

As seen from Table 8, small individual projects are not expected to exceed the thresholds of significance. If the smaller projects were considered as a single project they might exceed the quarterly thresholds.

5.1.2 Fugitive Dust

Fugitive dust is any solid particulate matter that becomes airborne directly or indirectly as a result of the activities of man or natural events (such as windborne dust), other than that emitted from an exhaust stack. Construction dust is comprised primarily of chemically inert particles that are too large to enter the human respiratory tract when inhaled. Approximately 35 percent of the total fugitive dust emissions is 10 microns or smaller.

Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces are all sources of fugitive dust. Construction operations are subject to the requirements established in Regulation 4, Rules 52 and 54, of the San Diego APCD’s rules and regulations.

Fugitive dust emissions to the air basin are not expected to be significant with the UCSP project; however, they could be perceived as a nuisance to the immediate area. Dust control during demolition and grading operations would be implemented to reduce potential nuisance impacts.

This project is illustrative only. Approval of the proposed UCSP would not permit the construction of any individual project, and no specific development details are available. The thresholds presented above are applied on a project-by-project basis and are not used for assessment of regional planning impacts. The information is presented to illustrate the potential scope of air impacts for projects that could be reviewed under the proposed plan.

The County is not in attainment for Ozone and is unclassifiable for PM_{10}. Clearly, there is the potential for future projects that would conform to the UCSP to contribute to cumulatively considerable emissions should multiple projects be implemented simultaneously. Should three small projects or one large project be initiated in any given year, it is anticipated that the construction of those projects would result in a potentially cumulatively considerable increase in criteria air pollutant emissions.

5.2 Operation-Related Emissions

5.2.1 Direct Project Impacts

5.2.1.1 Localized Carbon Monoxide Impacts

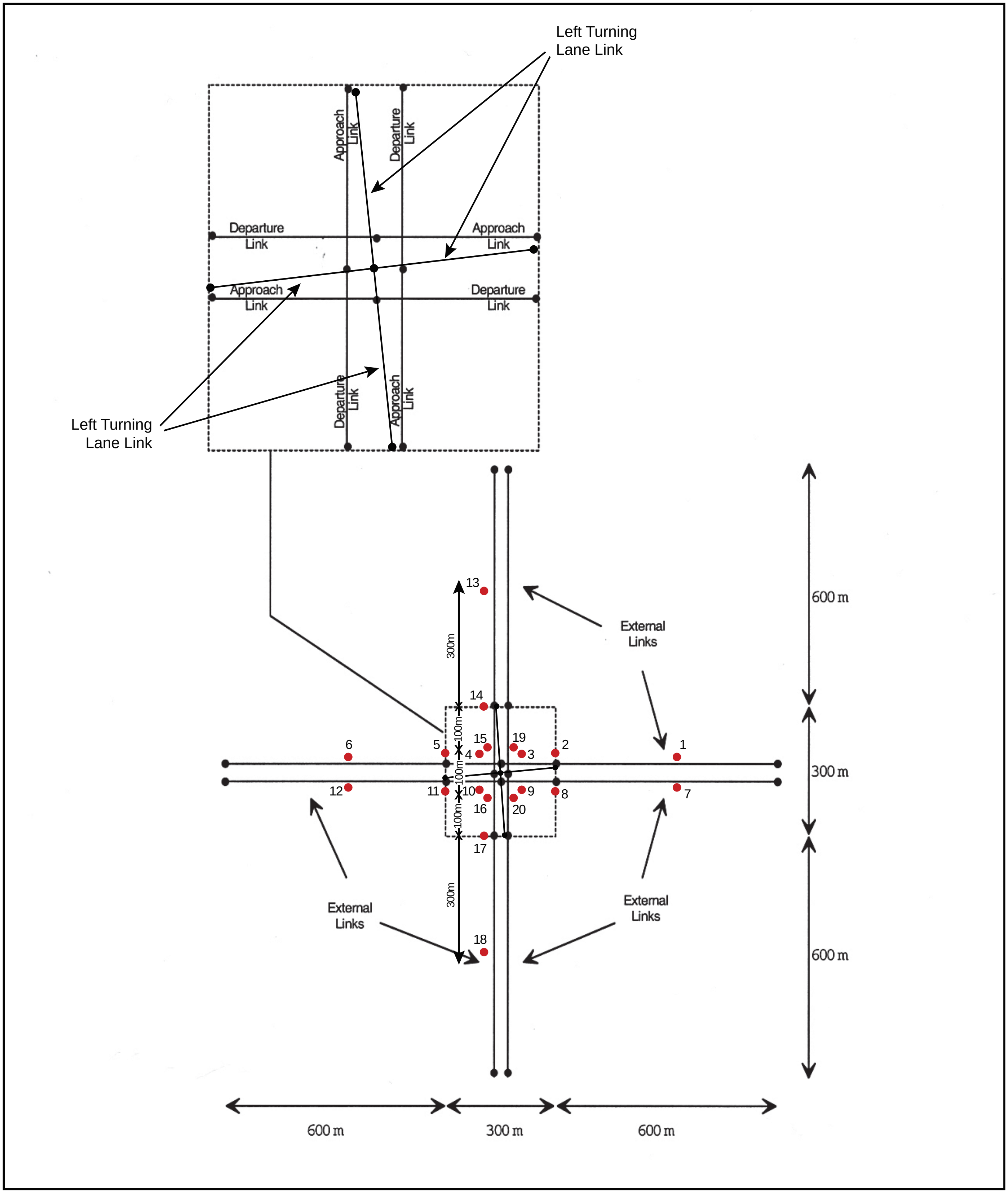
Small-scale, localized concentrations of CO above the state and national standards have the potential to occur near stagnation points of heavily traveled intersections. Localized, high concentrations of CO are referred to as “CO hot spots.” CO hot spots can occur when projects contribute traffic to area intersections.

A micro-scale CO hot spot screening analysis was performed at four key intersections within the UCSP area in order to assess potential exposure of sensitive receptors to CO concentrations above the state and national standards. The Transportation Project-Level Carbon Monoxide Protocol developed at the University of California at Davis (Garza et al. 1997) was used to conduct the CO hot spot screening analysis for the following four intersections: Broadway at H Street, H Street at Third Avenue, Third Avenue at E Street and Fourth Avenue at F Street. The intersections were chosen to represent areas within the UCSP that experience high daily traffic volumes. The traffic volumes, intersection configuration, and cruise speeds were provided by Kimley-Horn. Concentrations were calculated for 20 receptors for each intersection. The basic configuration of the intersections and the receptor locations for a typical intersection is illustrated in Figure 4. The details of the CO hot spot screening analysis are provided as Attachments 1 and 2.

Following the EPA's established policy described in the Protocol, a receptor distance of three meters was used. The three-meter distance reflects the concentration in the "mixing zone" above and surrounding the traveled way and is the closest distance for which modeled concentrations are considered valid (Garza et al. 1997). The three-meter distance provides worst-case CO concentration estimates. As seen from Table 3, the highest one-hour measured non-fire concentration was 5.8 parts per million (ppm) (on November 28, 2000, CARB), while the highest eight-hour CO non-fire concentration was 4.64 ppm (on December 20, 2001, CARB). The maximum one-hour and eight-hour CO concentrations measured at the Chula Vista station for the last five years for the summer months (June, July, and August) are also shown in Table 3. The highest one-hour measured non-fire concentration was 2.7 ppm (on August 16, 2000, CARB), while the highest eight-hour CO non-fire concentration was 1.94 ppm (on August 11, 2000, CARB). Background CO concentrations are expected to fall over time. Therefore, these maximum CO concentrations were used in the winter and summer CO hot spot analysis, respectively, as the worst-case background CO concentrations. It is noted that the worst-case background concentrations occur in the winter. Tables 9 and 10 below present estimates of worst-case CO concentrations at these intersections for winter and summer conditions, respectively.

TABLE 9
TRAFFIC-RELATED WINTER CO CONCENTRATIONS

Intersection	Distance to Receptor Location from Roadway Centerline (meters)	Existing CO Concentration 1-Hour/8-Hour (ppm)
Broadway/H St.	3	6.6/5.3
H St./Third Ave.	3	6.4/5.1
Third Ave./E St.	3	6.2/5.0
Fourth Ave./F St.	3	6.3/5.0



● Receptors at 3m from edge of roadway and 1.8m high

● Link end point

FIGURE 4

Link and Receptor Network For a Single Intersection with Dedicated Left Turn Lanes

RECON

M:\JOBS2\4066\air\graphics\fig4.ai 07/05/05

TABLE 10
TRAFFIC-RELATED SUMMER CO CONCENTRATIONS

Intersection	Distance to Receptor Location from Roadway Centerline (meters)	Existing CO Concentration 1-Hour/8-Hour (ppm)
Broadway/H St.	3	3.7/3.0
H St./Third Ave.	3	3.5/2.8
Third Ave./E St.	3	3.2/2.6
Fourth Ave./F St.	3	3.3/2.6

Tables 9 and 10 show that estimates of 1-hour winter CO concentrations at the intersections range from 6.6 to 6.2 ppm and the summer CO concentrations range from 3.7 to 3.2, well below the 20 ppm state standard and the 35 ppm national standard. The 8-hour winter CO concentrations range from 5.3 to 5.0 ppm and the summer 8-hour CO concentrations range from 3.0 to 2.6 and are below the state's 9 ppm standard. The most recent traffic volumes (Kimley-Horn and Associates 2005) for the four Chula Vista intersections were used during this CO hot spot analysis. State and federal mandates will cause exhaust emissions per vehicle to continue to improve in the future. As a result, CO concentrations at these intersections will likely decline in the future despite the anticipated increase in traffic.

5.2.1.2 Cumulative Project Impacts

a. Mobile and Area Source Emissions

For comparative purposes, an assessment of the anticipated air emissions resulting from buildout of the preferred alternative in the year 2030 was prepared using the URBEMIS2002 computer program (Yolo-Solano Air Quality Management District 2003). The details of the URBEMIS2002 evaluation are included in Attachment 3. The URBEMIS2002 program is a tool used to estimate air emissions resulting from land development projects in the state of California. The model generates emissions from three basic sources: construction sources, area sources (e.g., fireplaces, natural gas heating, etc.), and operational sources (e.g., traffic).

Inputs to URBEMIS2002 include such parameters as the air basin containing the project, land uses, trip generation rates, trip lengths, vehicle fleet mix (i.e., percentage autos, medium truck, etc.), trip distribution (i.e., percent home to work, etc.), season, and ambient temperature, as well as other parameters. A detailed description of the URBEMIS2002 model and its use may be found in the URBEMIS2002 User's Guide that may be obtained from the CARB web site at http://www.arb.ca.gov/planning/urbemis/urbemis2002/urbemis2002.htm.

Using the land use designations for the UCSP, along with trip generation rates provided by Kimley-Horn, as well as URBEMIS2002 defaults for other parameters, average daily emissions were estimated using URBEMIS2002 assuming buildout of the UCSP in the year 2030. The results of the modeling, which include both mobile and area source emissions, are shown in Table 11. As seen in Table 11, emissions are anticipated to be below those that would occur under existing conditions due to improvements in mobile source emissions. As such, operation of the UCSP is not anticipated to have a significant air quality impact when compared to the existing condition.

b. Conformance with Regional Plans and City Criteria

California Air Resources Board

1. Is a regional air quality plan being implemented in the project area?

   The proposed project is in the city of Chula Vista, which is within the San Diego Air Basin. The 1991/1992 RAQS (and triennial updates) are implemented by APCD throughout the air basin. Therefore, the proposed project fulfills the first criteria from the CARB guidelines described in the Standards of Significance section.

2. Is the project consistent with the growth assumptions in the regional air quality plan?

The proposed project is inconsistent with the growth assumptions in the RAQS. By changing land use designations, the Adopted General Plan would no longer be in conformance with the growth projections used by SANDAG and the SDAPCD as the basis for the adopted air quality management plan. As such, until revisions are made to the SANDAG plan that reflect the Adopted General Plan, this is a significant adverse air quality impact. Consequently, the proposed project is not considered consistent with the growth assumptions in the RAQS. The only measure that can lessen this impact is the revision of the RAQS based on the Adopted General Plan. This effort is the responsibility of SANDAG and San Diego APCD and is outside the jurisdiction of the City. As such, no mitigation is available to the City.

3. Does the project incorporate all feasible and available air quality control measures?

   Measures have been incorporated into the project design to lessen air quality impacts. The UCSP has been prepared using the smart growth principles foundational to the General Plan Update (GPU) such as providing a mix of compatible land uses; locating highest density near transit; utilizing compact building design and creating walkable communities; providing a range of infill housing opportunities; and increasing transportation choices. In particular, the UCSP focuses new development at key transit nodes and enhances alternative modes of travel by promoting walkability with enhanced pedestrian paths, augmenting existing bicycle paths, and making public transit more accessible and desirable with new and expanded public transit stops.

TABLE 11
PROJECT EMISSIONS TO THE SAN DIEGO AIR BASIN
(pounds per day)

Season	Pollutant	Mobile Emissions (vehicle)	Area Emissions[1]	Total Emissions[2]	SCAQMD Significance Threshold	APCD Significance Threshold	Does Change Exceed Threshold?
Summer	CO	6,220	64.08	6,283.9	550	550	Yes
	NOx	539.1	151.6	690.7	55	250	Yes
	ROG	543.9	537.1	1,081.0	55	---	Yes
	SOx[3]	18.07	0.00	18.1	150	250	No
	PM_{10}	3,157	0.28	3,157.7	150	100	Yes
Winter	CO	6,399	62.70	6,461.2	550	550	Yes
	NOx	807.9	151.6	959.5	55	250	Yes
	ROG	570.0	537.0	1,107.0	55	---	Yes
	SOx[3]	17.73	0.00	17.7	250	250	No
	PM_{10}	3,157	0.28	3,157.7	150	100	Yes

SOURCE: San Diego APCD, Rule 20.2 (12/17/1998); SCAQMD 1993.
[1]Area emissions include emissions from on-site stationary sources such as natural gas combustion (e.g., heating systems), landscaping maintenance, etc.
[2]Totals may differ due to rounding.
[3]Emissions calculated by URBEMIS2002 are for SO_2.

However, since the GPU is inconsistent with the former General Plan upon which the goals and objectives of the RAQS were based, and the proposed UCSP conforms to the GPU, implementation of the proposed UCSP could result in significant air emissions to the air basin that are not currently planned for.

City of Chula Vista

1. Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

   The proposed project is inconsistent with the RAQs. By changing land use designations, the Adopted General Plan would no longer be in conformance with the growth projections used by SANDAG and the SDAPCD as the basis for the adopted air quality management plan. The growth projections used by SANDAG and the SDAPCD as based on the former General Plan. As such, until revisions are made to the SANDAG plan that reflect the Adopted General Plan, this is a significant adverse air quality impact. Consequently, the proposed project is not considered consistent with the growth assumptions in the RAQS. The only measure that can lessen this impact is the revision of the RAQS based on the Adopted General Plan. This effort is the responsibility of SANDAG and San Diego APCD and is outside the jurisdiction of the City. As such, no mitigation is available to the City.

   Measures have been incorporated into the project design to lessen air quality impacts. The UCSP has been prepared using the smart growth principles foundational to the GPU such as providing a mix of compatible land uses; locating highest density near transit; utilizing compact building design and creating walkable communities; providing a range of infill housing opportunities; and increasing transportation choices. In particular, the UCSP focuses new development at key transit nodes and enhances alternative modes of travel by promoting walkability with enhanced pedestrian paths, augmenting existing bicycle paths, and making public transit more accessible and desirable with new and expanded public transit stops. However, since the GPU is inconsistent with the former General Plan upon which the goals and objectives of the RAQS were based, and the proposed UCSP conforms to the GPU, adoption of the proposed UCSP would result in significant conflict with an applicable air quality plan.

2. Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

   There are no currently existing or projected air quality violations within the UCSP or in the vicinity of the UCSP. As such, the proposed project will not contribute to an existing or projected air quality violation.

3. Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

   The region is currently classified as attainment for all federal criterion pollutants except ozone. As of April 15, the region was classified as non-attainment for ozone as a result of the application of the eight-hour ozone standard. Ozone is not emitted directly, but is a result of atmospheric activity on precursors. Nitrogen oxides and hydrocarbons (reactive organic gases) are known as the chief “precursors” of ozone. These compounds react in the presence of sunlight to produce ozone.

   Long-term emissions of air pollutants occur from both stationary and mobile sources. Stationary source pollutant emissions include those generated by the consumption of natural gas and electricity for space and water heating and the burning of wood in residential fireplaces. Vehicle travel would generate mobile source emissions including carbon monoxide, nitrogen oxides, and hydrocarbons.

   In order to assess the potential for the project to contribute to an increase in a criteria pollutant the URBEMIS2002 computer program was completed. This program calculates estimates for air emissions from construction, area emissions, and operation of the project.

   As noted above, the results of the modeling, which include both mobile and area source emissions, indicate that emissions are anticipated to be below those that would occur under existing conditions (see Table 11). This is due to improvements in mobile source emissions. As such, operation of the UCSP is not anticipated to have a significant air quality impact when compared to the existing condition.

4. Would the proposed project expose sensitive receptors to substantial pollutant concentrations such as ozone or respirable particulates (PM_{10})?

   In addition to the evaluation of the potential for the project to exceed the air quality standards described in the preceding section, the possibility for sensitive receivers to be exposed to respirable particulates was also evaluated. Ozone precursors were evaluated as part of the consideration of the criterion 3 above.

   There are two potential sources of pollution that were addressed in review of this criterion. These are reflected in two policies in the City of Chula Vista General Plan. Policy EE 6.4 states:

   > Prohibit major new or re-powered energy generation facilities of all sizes, and other major toxic air emitters within 1,000 feet of a sensitive receiver unless a health risk assessment has been performed demonstrating an

> incremental cancer risk of less than 10 in 1,000,000 and a chronic and acute total health hazard index (THI) of less than 1.

And Policy EE 6.10 is as follows:

> The siting of new sensitive receivers within 500 feet of highways resulting from development or redevelopment projects shall require the preparation of a health risk assessment as part of the CEQA review of the project. Attendant health risks identified in the HRA shall be feasibly mitigated to the maximum extent practicable in accordance with CEQA, in order to help ensure that applicable federal and state standards are not exceeded.

Although there are no major toxic air emitters within the planning area, there is one energy generation facility in the vicinity of the planning area, and one other potentially significant source of air pollution. The South Bay Power Plant is located in the Bayfront Planning District, west of the freeway, approximately 4,800 feet southwest of the intersection of Interstate 5 and H Street. The Goodrich industrial facility is located about 1,000 feet due west of this intersection.

While both facilities are further than 1,000 feet from the proposed project, each has had health risk assessments prepared previously. Both of these assessments have demonstrated that the incremental cancer risk in the specific plan area from these facilities is below 10 in 1,000,000.

In addition to consideration of the California Air Toxics “Hot Spots” Information and Assessment Act (.AB 2588), a CO hot spot model was conducted for a select number of intersections in the city. This model was prepared in accordance with the Transportation Project-Level Carbon Monoxide Protocol established by Caltrans (Garza et al. 1997). The procedure followed is detailed in Appendix B of that protocol. The analysis and the results of the modeling are presented in Section 5.2.1.1 of this report. As indicated, no significant CO hot spot impacts were found, thus, no mitigation is required.

Consideration of Policy EE 6.10 was addressed with the preparation of a Health Risk Assessment (HRA) conducted for diesel particulate emissions from vehicles on Interstate 5. The modeling process and the results of the analysis are presented in Chapter 6 “Health Risk Assessment” below.

5. Would the proposed project create objectionable odors affecting a substantial number of people?

   The construction of residential housing in the Urban Core area will not create objectionable odors and therefore will not adversely affect a substantial number of people.

6.0 Health Risk Assessment

A health risk assessment was performed to consider the potential effects of placement of residential uses within 500 feet of Interstate 5. This analysis included the calculation of potential cancer risk and a chronic health hazard index resulting from exposure to diesel particulates. The calculation involved an iterative generation of a composite emissions factor for diesel particulates using the Emfac2002 program. The calculation of individual emission factors for every type of vehicle assumed the default parameters for the San Diego Air Basin provided by the model. Using the individual emissions factors, a composite emissions rate was then generated, which assumed 5 percent of traffic as diesel-emitting. An assumption of 5 percent traffic on the freeway being diesel-emitting was based on recent counts of diesel-emitting vehicles conducted by Caltrans for the segment of Interstate 5 adjacent to the project. Emission factors were calculated for both summer and winter conditions (Attachment 4).

These emission factors were then applied to the vehicles using the freeway, and dispersed using the Caline4 dispersion model. A future Interstate 5 traffic volume of 8,566 vehicles per hour was obtained from SANDAG 2030 projections. This model results in concentrations at locations along the roadway. It is a line source model that does not specifically address topographic variability or intervening structures. Based on these concentrations, a cancer risk measured in terms of number of cancers per million was determined (Attachment 5).

It should be noted that the Interstate 5 freeway is up to 30 feet lower in elevation than those adjacent areas currently developed with uses and proposed for new mixed-use residential and high-density residential uses. The proposed scale of the new development may also include structures that are mid to high rise (at trolley stations) unlike the low scale one-two story structures that exist today.

Calculations were made for receivers along the freeway at distances of 150, 300, and 500 feet from the center of the freeway. Wind direction was taken into account based on a wind rose obtained from the San Diego Air Pollution Control District for Chula Vista. This information included direction and strength. A copy of the wind rose is included in Figure 5. For each 22.5 degree wind angle, a particulate concentration was calculated, weighted for the duration of the wind and combined into a cancer exposure. This was done for each of the three sets of receivers and for summer and winter conditions. Table 12 provides the angles and duration of the wind used in the analysis.

Map Source: San Diego Air Pollution Control District

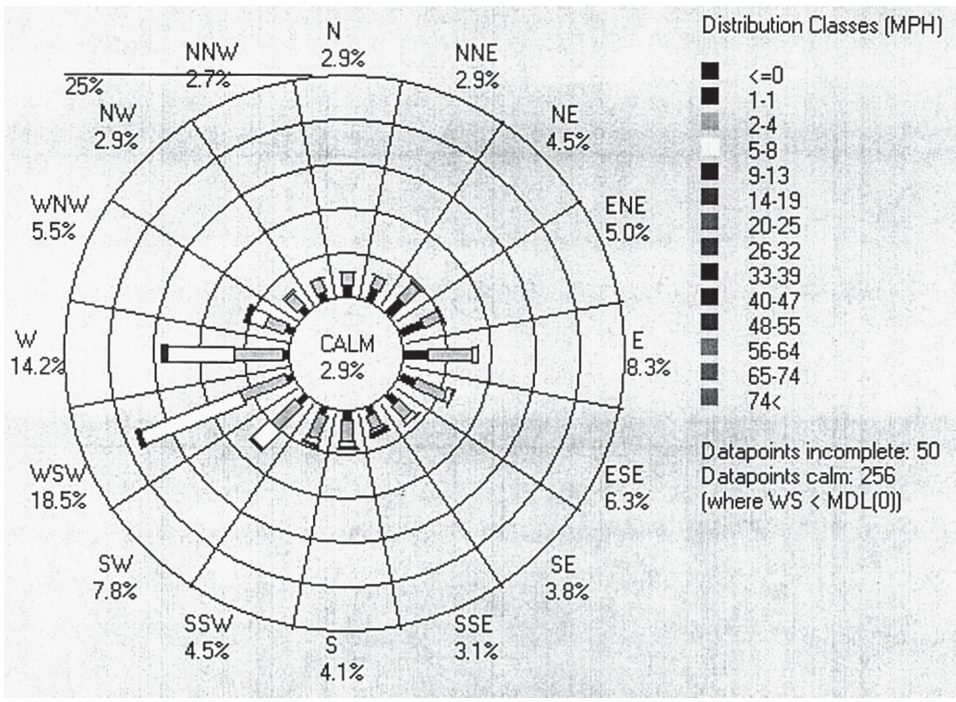


FIGURE 5
Windrose for Chula Vista

M:\JOBS2\4066\env\graphics\fig5(tech).ai 05/23/06

TABLE 12
WIND DIRECTION AND RELATIVE DURATION

Wind Direction	Angle	Average Wind Speed (meters/second)	Relative Duration
N	0.0	0.89	0.029
NNE	22.5	0.89	0.029
NE	45.0	1.16	0.045
ENE	67.5	0.85	0.050
E	90.0	1.16	0.083
ESE	112.5	1.21	0.063
SE	135.0	1.30	0.038
SSE	157.5	2.00	0.031
S	180.0	1.34	0.041
SSW	202.5	1.74	0.045
SW	225.0	1.88	0.078
WSW	247.5	2.41	0.185
W	270.0	2.30	0.142
WNW	292.5	2.10	0.055
NW	315.0	1.21	0.029
NNW	337.5	0.94	0.027

The results of the cancer risk are provided in Table 13. The calculated risk ranges from a high of 230 in 1,000,000 at some receptors 150 feet from the source to a low of 71 in 1,000,000 at 500 feet from the road. It should be noted that incremental cancer risk is calculated assuming a 24-hour-per-day-70-year-lifetime exposure. The assessment also does not account for significant mobile source emission reductions mandated to occur by state and federal regulations over the next 5-15 years.

In April 2005, the California Air Resources Board (CARB) published the “Air Quality and Land Use Handbook: A Community Health Perspective” (State of California 2005d). The handbook makes recommendations directed at protecting sensitive land uses while balancing a myriad of other land use issues (e.g., housing, transportation, economics). It notes that the handbook is not regulatory or binding on local agencies and recognizes that application takes a qualitative approach. As reflected in the CARB handbook, there is currently no adopted standard for the significance of health effects from mobile sources. Although there is no adopted standard for mobile sources, such as the freeway, the effects detailed in Table 5.10-13 are considered to be significant. The only means of reducing these effects is the implementation of source controls. The CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the “Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles” (State of California 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter 75 percent by

TABLE 13
INCREMENTAL CANCER RISK

150 Receptors									Wind Direction								
Receiver	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	2.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-05	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.27E-04
2	4.74E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-05	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.29E-04
3	5.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-05	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.30E-04
4	6.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-05	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.30E-04
5	7.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-05	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.30E-04
6	7.40E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-05	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.30E-04
7	7.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.61E-06	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.30E-04
8	7.85E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.39E-06	2.10E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.29E-04
9	8.01E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.24E-06	2.12E-05	3.06E-05	6.73E-05	4.97E-05	2.00E-05	1.14E-05	1.26E-05	2.26E-04
10	2.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E-06	2.39E-05	5.14E-05	3.75E-05	1.44E-05	7.99E-06	9.62E-06	1.51E-04
11	4.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-05	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.75E-04
12	5.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-05	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.76E-04
13	6.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-05	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.76E-04
14	6.95E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-05	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.76E-04
15	7.27E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-05	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.76E-04
16	7.53E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-05	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.76E-04
17	7.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.45E-06	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.76E-04
18	7.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.22E-06	1.84E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.75E-04
19	7.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.08E-06	1.85E-05	2.40E-05	4.79E-05	3.40E-05	1.42E-05	8.91E-06	1.10E-05	1.72E-04
20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-06	2.20E-05	4.43E-05	3.11E-05	1.19E-05	6.83E-06	8.89E-06	1.29E-04

300 Receptors									Wind Direction								
Receiver	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	3.48E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.36E-06	1.29E-04
2	5.22E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.51E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.91E-06	1.29E-04
3	1.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.31E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.92E-06	1.30E-04
4	1.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.05E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.92E-06	1.30E-04
5	2.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.73E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.93E-06	1.30E-04
6	2.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.93E-06	1.30E-04
7	2.74E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-06	1.15E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.93E-06	1.30E-04
8	2.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-06	1.16E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.93E-06	1.29E-04
9	3.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-07	1.24E-05	1.82E-05	3.97E-05	2.96E-05	1.18E-05	6.75E-06	6.93E-06	1.29E-04
10	3.27E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-07	1.55E-05	3.58E-05	2.60E-05	9.92E-06	5.97E-06	6.87E-06	1.03E-04
11	3.48E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.69E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.17E-06	1.18E-04
12	5.22E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.50E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.71E-06	1.18E-04
13	1.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.29E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.19E-04
14	1.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.19E-04
15	2.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.71E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.19E-04
16	2.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.19E-04
17	2.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.19E-04
18	2.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-06	1.12E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.18E-04
19	3.09E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-07	1.21E-05	1.68E-05	3.56E-05	2.62E-05	1.06E-05	6.25E-06	6.73E-06	1.18E-04
20	3.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-07	1.49E-05	3.34E-05	2.38E-05	9.06E-06	5.56E-06	6.68E-06	9.68E-05

TABLE 13
INCREMENTAL CANCER RISK

500-foot Receptors									Wind Direction								
Receiver	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	2.19E-06	8.99E-05
2	2.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.02E-06	9.26E-05
3	2.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.18E-06	9.28E-05
4	5.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.22E-06	9.29E-05
5	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	8.73E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.23E-06	9.29E-05
6	1.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	8.73E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.24E-06	9.27E-05
7	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.36E-07	8.72E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.24E-05
8	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-07	8.82E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.21E-05
9	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.29E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.25E-05
10	1.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.88E-06	2.75E-05	2.04E-05	7.92E-06	4.78E-06	5.25E-06	7.46E-05
11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	8.64E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	2.15E-06	8.58E-05
12	2.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-06	8.64E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	4.95E-06	8.85E-05
13	2.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.12E-06	8.87E-05
14	5.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.15E-06	8.88E-05
15	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.17E-06	8.88E-05
16	1.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	8.61E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.17E-06	8.86E-05
17	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.36E-07	8.61E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.83E-05
18	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-07	8.69E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.80E-05
19	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.19E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.84E-05
20	1.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.72E-06	2.64E-05	1.94E-05	7.52E-06	4.60E-06	5.18E-06	7.17E-05

2010 and 85 percent by 2020. A number of programs and strategies to reduce diesel particulate matter that have been or are in the process of being developed include the Diesel Risk Reduction Program which aims to reduce diesel particulate emission over the next 5 to 15 years through improved automobile design and alternative fuel efficiency (State of California 2005a, http://www.arb.ca.gov/diesel/dieselrrp.htm). These programs are outside of the jurisdiction of the City of Chula Vista.

However, in recognition of the guidance provided in the CARB handbook, the UCSP Development Design Guidelines (Chapter VII, Section G.5) have incorporated site design measures to be considered by future redevelopment adjacent to I-5, where possible, to help minimize effects. These measures include siting residential uses away from the freeway to the extent possible, tiering residential structures back from the freeway, and incorporating mechanical and structural measures into the building design. While these measures may serve to reduce the severity of diesel particulate emissions impacts, implementation of diesel vehicles source control measures by State authorities would be required to reduce cumulative impacts to below significance.

7.0 Conclusions and Recommendations

Measures have been incorporated into the project design to lessen air quality impacts. These measures include pedestrian paths, on-street bicycle paths, and public transit stops. The UCSP has been prepared using the smart growth principles foundational to the GPU such as providing a mix of compatible land uses; locating highest density near transit; utilizing compact building design and creating walkable communities; providing a range of infill housing opportunities; and increasing transportation choices. In particular, the UCSP focuses new development at key transit nodes and enhances alternative modes of travel by promoting walkability with enhanced pedestrian paths, augmenting existing bicycle paths, and making public transit more accessible and desirable with new and expanded public transit stops.

However, since the GPU is inconsistent with the goals and objectives of the RAQS and the proposed UCSP conforms to the GPU, adoption of the proposed UCSP would result in significant conflict with an applicable air quality plan.

The proportional increase in multi-family units to single-family units--and resulting decrease in number of vehicle trips per unit--and the anticipated improvement in motor vehicle emissions result in an expected decrease in pollutants over existing conditions for all pollutants except SO_2 and PM_{10}. Since the region is not in compliance with the PM_{10} standard, and because the average daily emission is anticipated to increase, impacts are considered significant, until the region is in compliance

The proposed project is not predicted to result in a violation of any air quality standards, but will result in a cumulatively significant contribution to regional ozone levels as a result of projected emissions of ozone precursors. There is no mitigation available at the project level that will mitigate the potential impact from the proposed project, and impacts remain significant.

Although there is no adopted standard for sensitive receivers adjacent to Interstate 5, it was determined that air quality impacts from diesel particulates emanating from the freeway are considered significant.

The project area is not exposed to an incremental cancer risk of greater than 10 in 1,000,000 from a major toxic emitter. Furthermore, CO concentrations do not exceed the California or federal ambient air quality standards for carbon monoxide, and demonstrates that future traffic volumes can operate without exposing people to substantial CO concentrations. These impacts are not significant.

The analysis conducted for the UCSP indicates that there will not be CO hotspots as a result of the buildout of the UCSP. Conformance to Policy LUT 13.2 of the GPU requiring the optimization and maintenance the performance of the traffic signal system and the street system, to facilitate traffic flow and to minimize vehicular pollutant emission levels will ensure that intersections operate at an adequate level of service to avoid potential CO concentrations in excess of adopted standards.

8.0 References Cited

California, State of

1989 Guidelines for Air Quality Impact Assessment for General Development and Transportation-Related Projects. June.

2000 *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* California Air Resources Board. October 2000. Accessed from the CARB website at http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf on March 3, 2005.

2005a *California's Diesel Risk Reduction Program*. California Air Resources Board Internet Site. URL http://www.arb.ca.gov/diesel/dieselrrp.htm. March.

2005b *California Air Quality Data Statistics*. California Air Resources Board Internet Site. URL http://www.arb.ca.gov/adam/welcome.html. April 7.

2005c State Area Designations Maps. California Air Resources Board Internet Site. URL http://www.arb.ca.gov/desig/adm/adm.htm. Last updated, Feb. 8.

2005d *Air Quality and Land Use Handbook: A Community Health Perspective.* California Air Resources Board. April.

Chula Vista, City of
2002 CO_2 Reduction Plan.

Garza, Vicente J., Peter Graney, and Daniel Sperling
1997 Transportation Project-Level Carbon Monoxide Protocol. Institute of Transportation Studies, University of California, Davis. Report Number UCD-ITS-RR-97-21. December.

Kimley-Horn and Associates, Inc.
2005 Traffic Impact Analysis, Chula Vista Urban Core. May 24.

San Diego, County of
1992 1991/1992 Regional Air Quality Strategies. Air Pollution Control District. June.

1998 *Air Quality in San Diego County*. 1997 Annual Report. San Diego Air Pollution Control District.

1999 *Air Quality in San Diego County*. 1998 Annual Report. San Diego Air Pollution Control District.

2000a *Air Quality in San Diego County*. 1999 Annual Report. San Diego Air Pollution Control District.

2001 Fact Sheets. San Diego APCD website: http://www.sdapcd.co.san-diego.ca.us/facts/info_facts.html.

2002a *Fact Sheet – Public Complaint Program* dated November 12. Accessed from the San Diego Air Pollution Control District Internet Site at http://www.sdapcd.org/comply/cplt/english.pdf on June 22, 2004.

2002b *Frequently Asked Questions*. San Diego Air Pollution Control District Internet Site URL http://www.sdapcd.co.san-diego.ca.us/news/FAQS.htm. January.

2003 *Air Quality in 2002 – Fact Sheet*. San Diego Air Pollution Control District. February.

2004 *Air Quality in 2003 – Fact Sheet.* San Diego Air Pollution Control District. April 4.

San Diego Association of Governments (SANDAG)
1994 Regional Transportation Plan. February.

South Coast Air Quality Management District (SCAQMD)
1993 *CEQA Air Quality Handbook.* November.

U.S. Department of Commerce
2000 *San Diego County Climate Archives*, National Weather Service San Diego, National Oceanic and Atmospheric Administration Internet site URL http://www.wrh.noaa.gov/sandiego/county.html#Chula Vista. December.

U.S. Environmental Protection Agency
2004a Air Quality Designations and Classifications for the 8-Hour Ozone National Ambient Air Quality Standards; Early Action Compact Areas With Deferred Effective Dates; Final Rule. *Federal* Register 69(84):23857-23951, April 30.

2004b Final Rule To Implement the 8-Hour Ozone National Ambient Air Quality Standard – Phase 1; Final Rule. *Federal Register* 69(84):23951-24000, April 30.

2004c Air Quality Designations and Classifications for the Fine Particles (PM2.5) National Ambient Air Quality Standards; Final Rule. *Federal* Register 70(3):944-1019, January 5.

2005 Air Quality Designations and Classifications for the Fine Particles (PM2.5) http://www.epa.gov/pmdesignations/states/California.htm

Yolo-Solano Air Quality Management District
2003 *Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module, Version 7.4.* Prepared by Jones & Stokes Associates. May.

ATTACHMENTS

ATTACHMENT 1

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: Urban Core - F/Fourth
             RUN: Hour 1          (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide

  I.  SITE VARIABLES

        U=     .5 M/S             Z0= 100. CM            ALT=      0. (M)
      BRG= WORST CASE             VD=    .0 CM/S
     CLAS=      7 (G)             VS=    .0 CM/S
     MIXH= 1000. M               AMB=   5.8 PPM
    SIGTH=     5. DEGREES       TEMP=  10.0 DEGREE (C)

  II.  LINK VARIABLES

     LINK        *  LINK COORDINATES (M)      *                  EF      H      W
   DESCRIPTION   *   X1     Y1     X2     Y2  * TYPE  VPH     (G/MI)   (M)    (M)
 ----------------*----------------------------*-------------------------------------
 A. Link A       *   600      7    150      7 *  AG    364      .9      .0   28.0
 B. Link B       *   150      7      0      7 *  AG    364     1.5      .0   28.0
 C. Link C       *     0      7   -150      7 *  AG    324     1.7      .0   28.0
 D. Link D       *  -150      7   -600      7 *  AG    324      .9      .0   28.0
 E. Link E       *     7   -600      7   -150 *  AG    760      .9      .0   28.0
 F. Link F       *     7   -150      7      0 *  AG    760     1.8      .0   28.0
 G. Link G       *     7      0      7    150 *  AG    835     1.7      .0   28.0
 H. Link H       *     7    150      7    600 *  AG    835      .9      .0   28.0
 I. Link I       *  -600     -7   -150     -7 *  AG    506      .9      .0   28.0
 J. Link J       *  -150     -7      0     -7 *  AG    506     1.6      .0   28.0
 K. Link K       *     0     -7    150     -7 *  AG    597     1.1      .0   28.0
 L. Link L       *   150     -7    600     -7 *  AG    597      .9      .0   28.0
 M. Link M       *    -7    600     -7    150 *  AG    925      .9      .0   28.0
 N. Link N       *    -7    150     -7      0 *  AG    925     1.8      .0   28.0
 O. Link O       *    -7      0     -7   -150 *  AG   1133     1.8      .0   28.0
 P. Link P       *    -7   -150     -7   -600 *  AG   1133      .9      .0   28.0
 Q. Link Q       *   150      6      0      0 *  AG    118     1.5      .0   28.0
 R. Link R       *  -150     -6      0      0 *  AG     54     1.5      .0   28.0
 S. Link S       *    -6    150      0      0 *  AG    102     1.7      .0   28.0
 T. Link T       *     6   -150      0      0 *  AG     60     1.7      .0   28.0
```

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   2
```

JOB: Urban Core - F/Fourth
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	450	14	1.8
2. Recpt 2	*	150	14	1.8
3. Recpt 3	*	50	14	1.8
4. Recpt 4	*	-50	14	1.8
5. Recpt 5	*	-150	14	1.8
6. Recpt 6	*	-450	14	1.8
7. Recpt 7	*	450	-14	1.8
8. Recpt 8	*	150	-14	1.8
9. Recpt 9	*	50	-14	1.8
10. Recpt 10	*	-50	-14	1.8
11. Recpt 11	*	-150	-14	1.8
12. Recpt 12	*	-450	-14	1.8
13. Recpt 13	*	-14	450	1.8
14. Recpt 14	*	-14	150	1.8
15. Recpt 15	*	-14	50	1.8
16. Recpt 16	*	-14	-50	1.8
17. Recpt 17	*	-14	-150	1.8
18. Recpt 18	*	-14	-450	1.8
19. Recpt 19	*	14	50	1.8
20. Recpt 20	*	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - F/Fourth
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	*	267.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	266.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	265.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	94.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	94.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	93.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	272.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	273.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9	274.	6.1	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	86.	6.1	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	87.	6.1	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	88.	6.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	178.	6.1	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	177.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	176.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	4.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	4.	6.3	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	2.	6.1	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	185.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	355.	6.2	.0	.0	.0	.0	.0	.0	.0	.0

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - F/Fourth
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

□□

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Urban Core - H/Third
     RUN: Hour 1          (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

     U=    .5 M/S              Z0= 100. CM             ALT=     0. (M)
   BRG= WORST CASE             VD=   .0 CM/S
  CLAS=     7 (G)              VS=   .0 CM/S
  MIXH= 1000. M               AMB=  5.8 PPM
 SIGTH=    5. DEGREES         TEMP= 10.0 DEGREE (C)

II.  LINK VARIABLES

    LINK        *   LINK COORDINATES (M)    *              EF      H      W
 DESCRIPTION    *   X1     Y1     X2     Y2 * TYPE  VPH  (G/MI)  (M)    (M)
----------------*---------------------------*------------------------------
A. Link A       *   600     7    150      7 *  AG    968     .9    .0   28.0
B. Link B       *   150     7      0      7 *  AG    968    1.8    .0   28.0
C. Link C       *     0     7   -150      7 *  AG   1238    1.4    .0   28.0
D. Link D       *  -150     7   -600      7 *  AG   1238     .9    .0   28.0
E. Link E       *     7  -600      7   -150 *  AG    769     .9    .0   28.0
F. Link F       *     7  -150      7      0 *  AG    769    1.8    .0   28.0
G. Link G       *     7     0      7    150 *  AG   1658    1.8    .0   28.0
H. Link H       *     7   150      7    600 *  AG   1658     .9    .0   28.0
I. Link I       *  -600    -7   -150     -7 *  AG   1257     .9    .0   28.0
J. Link J       *  -150    -7      0     -7 *  AG   1257    1.8    .0   28.0
K. Link K       *     0    -7    150     -7 *  AG   1440    1.8    .0   28.0
L. Link L       *   150    -7    600     -7 *  AG   1440     .9    .0   28.0
M. Link M       *    -7   600     -7    150 *  AG    821     .9    .0   28.0
N. Link N       *    -7   150     -7      0 *  AG    821    1.8    .0   28.0
O. Link O       *    -7     0     -7   -150 *  AG   1138    1.8    .0   28.0
P. Link P       *    -7  -150     -7   -600 *  AG   1138     .9    .0   28.0
Q. Link Q       *   150     6      0      0 *  AG    280    1.8    .0   28.0
R. Link R       *  -150    -6      0      0 *  AG    170    1.8    .0   28.0
S. Link S       *    -6   150      0      0 *  AG    212    1.7    .0   28.0
T. Link T       *     6  -150      0      0 *  AG    228    1.6    .0   28.0
```

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   2
```

JOB: Urban Core - H/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
	COORDINATES (M)		
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - H/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recpt 1	267.	6.2	.1	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	266.	6.4	.0	.2	.0	.0	.0	.0	.0	.0
3. Recpt 3	265.	6.4	.0	.1	.1	.0	.0	.0	.0	.0
4. Recpt 4	95.	6.4	.0	.1	.1	.0	.0	.0	.0	.0
5. Recpt 5	94.	6.4	.0	.0	.2	.0	.0	.0	.0	.0
6. Recpt 6	93.	6.2	.0	.0	.0	.2	.0	.0	.0	.0
7. Recpt 7	272.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	274.	6.4	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9	274.	6.4	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	86.	6.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	86.	6.4	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	88.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	177.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	176.	6.3	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	176.	6.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	5.	6.4	.0	.0	.0	.0	.0	.0	.1	.0
17. Recpt 17	4.	6.4	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	2.	6.2	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	185.	6.4	.0	.0	.0	.0	.0	.0	.2	.0
20. Recpt 20	356.	6.4	.0	.0	.0	.0	.0	.0	.2	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - H/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Urban Core - Broadway/H
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 0. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 5.8 PPM	
SIGTH= 5. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	1362	.9	.0	28.0
B. Link B	150	7	0	7	AG	1362	1.8	.0	28.0
C. Link C	0	7	-150	7	AG	1763	1.8	.0	28.0
D. Link D	-150	7	-600	7	AG	1763	.9	.0	28.0
E. Link E	7	-600	7	-150	AG	1274	.9	.0	28.0
F. Link F	7	-150	7	0	AG	1274	1.7	.0	28.0
G. Link G	7	0	7	150	AG	1546	1.5	.0	28.0
H. Link H	7	150	7	600	AG	1546	.9	.0	28.0
I. Link I	-600	-7	-150	-7	AG	1503	.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	1503	1.8	.0	28.0
K. Link K	0	-7	150	-7	AG	1801	1.8	.0	28.0
L. Link L	150	-7	600	-7	AG	1801	.9	.0	28.0
M. Link M	-7	600	-7	150	AG	1377	.9	.0	28.0
N. Link N	-7	150	-7	0	AG	1377	1.8	.0	28.0
O. Link O	-7	0	-7	-150	AG	1862	1.8	.0	28.0
P. Link P	-7	-150	-7	-600	AG	1862	.9	.0	28.0
Q. Link Q	150	6	0	0	AG	386	1.8	.0	28.0
R. Link R	-150	-6	0	0	AG	400	1.8	.0	28.0
S. Link S	-6	150	0	0	AG	311	1.8	.0	28.0
T. Link T	6	-150	0	0	AG	359	1.8	.0	28.0

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Urban Core - Broadway/H
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

(COORDINATES (M))

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - Broadway/H
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	267.	6.3	.2	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	266.	6.6	.0	.3	.0	.0	.0	.0	.0	.0
3. Recpt 3	265.	6.6	.0	.1	.2	.0	.0	.0	.0	.0
4. Recpt 4	95.	6.6	.0	.2	.2	.0	.0	.0	.0	.0
5. Recpt 5	94.	6.6	.0	.0	.3	.0	.0	.0	.0	.0
6. Recpt 6	92.	6.4	.0	.0	.0	.2	.0	.0	.0	.0
7. Recpt 7	272.	6.4	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	274.	6.6	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9 *	275. *	6.6 *	.0	.0	.1	.0	.0	.0	.0	.0
10. Recpt 10 *	86. *	6.6 *	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11 *	86. *	6.6 *	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12 *	88. *	6.3 *	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13 *	178. *	6.3 *	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14 *	176. *	6.6 *	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15 *	176. *	6.6 *	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16 *	4. *	6.6 *	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17 *	4. *	6.6 *	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18 *	2. *	6.3 *	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19 *	185. *	6.5 *	.0	.0	.0	.0	.0	.1	.1	.0
20. Recpt 20 *	355. *	6.5 *	.0	.0	.0	.0	.0	.1	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - Broadway/H
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR *	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1 *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2 *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3 *	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4 *	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5 *	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6 *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7 *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8 *	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9 *	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10 *	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11 *	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12 *	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13 *	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14 *	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0
15. Recpt 15 *	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
16. Recpt 16 *	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0
17. Recpt 17 *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
18. Recpt 18 *	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19 *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
20. Recpt 20 *	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Urban Core - E/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S
BRG= WORST CASE
CLAS= 7 (G)
MIXH= 1000. M
SIGTH= 5. DEGREES

Z0= 100. CM
VD= .0 CM/S
VS= .0 CM/S
AMB= 5.8 PPM
TEMP= 10.0 DEGREE (C)

ALT= 0. (M)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	702	.9	.0	28.0
B. Link B	150	7	0	7	AG	702	1.5	.0	28.0
C. Link C	0	7	-150	7	AG	831	1.1	.0	28.0
D. Link D	-150	7	-600	7	AG	831	.9	.0	28.0
E. Link E	7	-600	7	-150	AG	550	.9	.0	28.0
F. Link F	7	-150	7	0	AG	550	1.8	.0	28.0
G. Link G	7	0	7	150	AG	493	1.4	.0	28.0
H. Link H	7	150	7	600	AG	493	.9	.0	28.0
I. Link I	-600	-7	-150	-7	AG	986	.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	986	1.7	.0	28.0
K. Link K	0	-7	150	-7	AG	1120	1.3	.0	28.0
L. Link L	150	-7	600	-7	AG	1120	.9	.0	28.0
M. Link M	-7	600	-7	150	AG	333	.9	.0	28.0
N. Link N	-7	150	-7	0	AG	333	1.8	.0	28.0
O. Link O	-7	0	-7	-150	AG	833	1.8	.0	28.0
P. Link P	-7	-150	-7	-600	AG	833	.9	.0	28.0
Q. Link Q	150	6	0	0	AG	310	1.4	.0	28.0
R. Link R	-150	-6	0	0	AG	52	1.5	.0	28.0
S. Link S	-6	150	0	0	AG	174	1.8	.0	28.0
T. Link T	6	-150	0	0	AG	170	1.8	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Urban Core - E/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	450	14	1.8
2. Recpt 2	*	150	14	1.8
3. Recpt 3	*	50	14	1.8
4. Recpt 4	*	-50	14	1.8
5. Recpt 5	*	-150	14	1.8
6. Recpt 6	*	-450	14	1.8
7. Recpt 7	*	450	-14	1.8
8. Recpt 8	*	150	-14	1.8
9. Recpt 9	*	50	-14	1.8
10. Recpt 10	*	-50	-14	1.8
11. Recpt 11	*	-150	-14	1.8
12. Recpt 12	*	-450	-14	1.8
13. Recpt 13	*	-14	450	1.8
14. Recpt 14	*	-14	150	1.8
15. Recpt 15	*	-14	50	1.8
16. Recpt 16	*	-14	-50	1.8
17. Recpt 17	*	-14	-150	1.8
18. Recpt 18	*	-14	-450	1.8
19. Recpt 19	*	14	50	1.8
20. Recpt 20	*	14	-50	1.8

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - E/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	*	267.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	266.	*	6.2	*	.0	.1	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	265.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	94.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	94.	*	6.1	*	.0	.0	.1	.0	.0	.0	.0	.0
6. Recpt 6	*	93.	*	6.1	*	.0	.0	.0	.1	.0	.0	.0	.0
7. Recpt 7	*	272.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	273.	*	6.2	*	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9	*	274.	*	6.2	*	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	86.	*	6.2	*	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	87.	*	6.2	*	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	88.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	178.	*	6.0	*	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	177.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	176.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	4.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	4.	*	6.2	*	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	2.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	185.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	356.	*	6.1	*	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - E/Third
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
	*	CONC/LINK (PPM)											
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

ATTACHMENT 2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Urban Core - E/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 0. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 2.7 PPM	
SIGTH= 5. DEGREES	TEMP= 30.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	702	1.1	.0	28.0
B. Link B	150	7	0	7	AG	702	1.8	.0	28.0
C. Link C	0	7	-150	7	AG	831	1.3	.0	28.0
D. Link D	-150	7	-600	7	AG	831	1.1	.0	28.0
E. Link E	7	-600	7	-150	AG	550	1.1	.0	28.0
F. Link F	7	-150	7	0	AG	550	2.1	.0	28.0
G. Link G	7	0	7	150	AG	493	1.7	.0	28.0
H. Link H	7	150	7	600	AG	493	1.1	.0	28.0
I. Link I	-600	-7	-150	-7	AG	986	1.1	.0	28.0
J. Link J	-150	-7	0	-7	AG	986	2.0	.0	28.0
K. Link K	0	-7	150	-7	AG	1120	1.5	.0	28.0
L. Link L	150	-7	600	-7	AG	1120	1.1	.0	28.0
M. Link M	-7	600	-7	150	AG	333	1.1	.0	28.0
N. Link N	-7	150	-7	0	AG	333	2.1	.0	28.0
O. Link O	-7	0	-7	-150	AG	833	2.1	.0	28.0
P. Link P	-7	-150	-7	-600	AG	833	1.1	.0	28.0
Q. Link Q	150	6	0	0	AG	310	1.7	.0	28.0
R. Link R	-150	-6	0	0	AG	52	1.8	.0	28.0
S. Link S	-6	150	0	0	AG	174	2.1	.0	28.0
T. Link T	6	-150	0	0	AG	170	2.1	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Urban Core - E/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - E/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	267.	3.1	.1	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	266.	3.2	.0	.2	.0	.0	.0	.0	.0	.0
3. Recpt 3	265.	3.1	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	94.	3.1	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	94.	3.1	.0	.0	.1	.0	.0	.0	.0	.0
6. Recpt 6	93.	3.1	.0	.0	.0	.1	.0	.0	.0	.0
7. Recpt 7	272.	3.1	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	273.	3.2	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9	* 274.	* 3.2 *	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	* 86.	* 3.2 *	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	* 87.	* 3.2 *	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	* 88.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	* 178.	* 3.0 *	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	* 177.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	* 176.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	* 4.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	* 4.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	* 2.	* 3.0 *	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	* 185.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	* 356.	* 3.1 *	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - E/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Urban Core - F/Fourth - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S
BRG= WORST CASE
CLAS= 7 (G)
MIXH= 1000. M
SIGTH= 5. DEGREES

Z0= 100. CM
VD= .0 CM/S
VS= .0 CM/S
AMB= 2.7 PPM
TEMP= 30.0 DEGREE (C)

ALT= 0. (M)

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	600	7	150	7	*	AG	364	1.1	.0	28.0
B. Link B	*	150	7	0	7	*	AG	364	1.8	.0	28.0
C. Link C	*	0	7	-150	7	*	AG	324	2.0	.0	28.0
D. Link D	*	-150	7	-600	7	*	AG	324	1.1	.0	28.0
E. Link E	*	7	-600	7	-150	*	AG	760	1.1	.0	28.0
F. Link F	*	7	-150	7	0	*	AG	760	2.1	.0	28.0
G. Link G	*	7	0	7	150	*	AG	835	2.0	.0	28.0
H. Link H	*	7	150	7	600	*	AG	835	1.1	.0	28.0
I. Link I	*	-600	-7	-150	-7	*	AG	506	1.1	.0	28.0
J. Link J	*	-150	-7	0	-7	*	AG	506	1.8	.0	28.0
K. Link K	*	0	-7	150	-7	*	AG	597	1.3	.0	28.0
L. Link L	*	150	-7	600	-7	*	AG	597	1.1	.0	28.0
M. Link M	*	-7	600	-7	150	*	AG	925	1.1	.0	28.0
N. Link N	*	-7	150	-7	0	*	AG	925	2.1	.0	28.0
O. Link O	*	-7	0	-7	-150	*	AG	1133	2.1	.0	28.0
P. Link P	*	-7	-150	-7	-600	*	AG	1133	1.1	.0	28.0
Q. Link Q	*	150	6	0	0	*	AG	118	1.8	.0	28.0
R. Link R	*	-150	-6	0	0	*	AG	54	1.8	.0	28.0
S. Link S	*	-6	150	0	0	*	AG	102	2.0	.0	28.0
T. Link T	*	6	-150	0	0	*	AG	60	2.0	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Urban Core - F/Fourth - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - F/Fourth - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	267.	2.9	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	266.	3.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	266.	3.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	94.	3.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	94.	3.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	93.	2.9	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	272.	3.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	273.	3.0	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9	*	274.	*	3.0	*	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	86.	*	3.0	*	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	87.	*	3.0	*	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	88.	*	3.0	*	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	178.	*	3.1	*	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	177.	*	3.3	*	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	176.	*	3.2	*	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	4.	*	3.2	*	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	4.	*	3.3	*	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	2.	*	3.1	*	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	185.	*	3.2	*	.0	.0	.0	.0	.0	.1	.1	.0
20. Recpt 20	*	355.	*	3.2	*	.0	.0	.0	.0	.0	.1	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - F/Fourth - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Urban Core - H/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S              Z0= 100. CM          ALT=     0. (M)
   BRG= WORST CASE             VD=    .0 CM/S
  CLAS=     7 (G)              VS=    .0 CM/S
  MIXH= 1000. M               AMB=   2.7 PPM
 SIGTH=     5. DEGREES        TEMP= 30.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	968	1.1	.0	28.0
B. Link B	150	7	0	7	AG	968	2.0	.0	28.0
C. Link C	0	7	-150	7	AG	1238	1.7	.0	28.0
D. Link D	-150	7	-600	7	AG	1238	1.1	.0	28.0
E. Link E	7	-600	7	-150	AG	769	1.1	.0	28.0
F. Link F	7	-150	7	0	AG	769	2.1	.0	28.0
G. Link G	7	0	7	150	AG	1658	2.1	.0	28.0
H. Link H	7	150	7	600	AG	1658	1.1	.0	28.0
I. Link I	-600	-7	-150	-7	AG	1257	1.1	.0	28.0
J. Link J	-150	-7	0	-7	AG	1257	2.1	.0	28.0
K. Link K	0	-7	150	-7	AG	1440	2.1	.0	28.0
L. Link L	150	-7	600	-7	AG	1440	1.1	.0	28.0
M. Link M	-7	600	-7	150	AG	821	1.1	.0	28.0
N. Link N	-7	150	-7	0	AG	821	2.1	.0	28.0
O. Link O	-7	0	-7	-150	AG	1138	2.1	.0	28.0
P. Link P	-7	-150	-7	-600	AG	1138	1.1	.0	28.0
Q. Link Q	150	6	0	0	AG	280	2.1	.0	28.0
R. Link R	-150	-6	0	0	AG	170	2.1	.0	28.0
S. Link S	-6	150	0	0	AG	212	2.0	.0	28.0
T. Link T	6	-150	0	0	AG	228	1.9	.0	28.0

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Urban Core - H/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - H/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	267.	3.2	.2	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	266.	3.4	.0	.2	.0	.0	.0	.0	.0	.0
3. Recpt 3	265.	3.4	.0	.1	.1	.0	.0	.0	.0	.0
4. Recpt 4	95.	3.4	.0	.1	.1	.0	.0	.0	.0	.0
5. Recpt 5	94.	3.4	.0	.0	.2	.0	.0	.0	.0	.0
6. Recpt 6	93.	3.2	.0	.0	.0	.2	.0	.0	.0	.0
7. Recpt 7	272.	3.3	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	274.	3.5	.0	.0	.0	.0	.0	.0	.0	.0

9. Recpt 9	*	274.	*	3.5	*	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	86.	*	3.5	*	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	86.	*	3.5	*	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	88.	*	3.2	*	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	177.	*	3.2	*	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	176.	*	3.4	*	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	176.	*	3.3	*	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	5.	*	3.4	*	.0	.0	.0	.0	.0	.0	.1	.0
17. Recpt 17	*	4.	*	3.4	*	.0	.0	.0	.0	.0	.0	.1	.0
18. Recpt 18	*	2.	*	3.2	*	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	185.	*	3.4	*	.0	.0	.0	.0	.0	.1	.2	.0
20. Recpt 20	*	356.	*	3.4	*	.0	.0	.0	.0	.0	.1	.2	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - H/Third - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
	*						CONC/LINK (PPM)						
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Urban Core - Broadway/H - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 0. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 2.7 PPM	
SIGTH= 5. DEGREES	TEMP= 30.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	600	7	150	7	*	AG	1362	1.1	.0	28.0
B. Link B	*	150	7	0	7	*	AG	1362	2.1	.0	28.0
C. Link C	*	0	7	-150	7	*	AG	1763	2.1	.0	28.0
D. Link D	*	-150	7	-600	7	*	AG	1763	1.1	.0	28.0
E. Link E	*	7	-600	7	-150	*	AG	1274	1.1	.0	28.0
F. Link F	*	7	-150	7	0	*	AG	1274	2.1	.0	28.0
G. Link G	*	7	0	7	150	*	AG	1546	1.7	.0	28.0
H. Link H	*	7	150	7	600	*	AG	1546	1.1	.0	28.0
I. Link I	*	-600	-7	-150	-7	*	AG	1503	1.1	.0	28.0
J. Link J	*	-150	-7	0	-7	*	AG	1503	2.1	.0	28.0
K. Link K	*	0	-7	150	-7	*	AG	1801	2.1	.0	28.0
L. Link L	*	150	-7	600	-7	*	AG	1801	1.1	.0	28.0
M. Link M	*	-7	600	-7	150	*	AG	1377	1.1	.0	28.0
N. Link N	*	-7	150	-7	0	*	AG	1377	2.1	.0	28.0
O. Link O	*	-7	0	-7	-150	*	AG	1862	2.1	.0	28.0
P. Link P	*	-7	-150	-7	-600	*	AG	1862	1.1	.0	28.0
Q. Link Q	*	150	6	0	0	*	AG	386	2.1	.0	28.0
R. Link R	*	-150	-6	0	0	*	AG	400	2.1	.0	28.0
S. Link S	*	-6	150	0	0	*	AG	311	2.1	.0	28.0
T. Link T	*	6	-150	0	0	*	AG	359	2.1	.0	28.0

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Urban Core - Broadway/H - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	450	14	1.8
2. Recpt 2	*	150	14	1.8
3. Recpt 3	*	50	14	1.8
4. Recpt 4	*	-50	14	1.8
5. Recpt 5	*	-150	14	1.8
6. Recpt 6	*	-450	14	1.8
7. Recpt 7	*	450	-14	1.8
8. Recpt 8	*	150	-14	1.8
9. Recpt 9	*	50	-14	1.8
10. Recpt 10	*	-50	-14	1.8
11. Recpt 11	*	-150	-14	1.8
12. Recpt 12	*	-450	-14	1.8
13. Recpt 13	*	-14	450	1.8
14. Recpt 14	*	-14	150	1.8
15. Recpt 15	*	-14	50	1.8
16. Recpt 16	*	-14	-50	1.8
17. Recpt 17	*	-14	-150	1.8
18. Recpt 18	*	-14	-450	1.8
19. Recpt 19	*	14	50	1.8
20. Recpt 20	*	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Urban Core - Broadway/H - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	*	267.	*	3.4	*	.2	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	266.	*	3.7	*	.0	.3	.1	.0	.0	.0	.0	.0
3. Recpt 3	*	266.	*	3.7	*	.0	.2	.2	.0	.0	.0	.0	.0
4. Recpt 4	*	95.	*	3.7	*	.0	.2	.2	.0	.0	.0	.0	.0
5. Recpt 5	*	94.	*	3.7	*	.0	.0	.4	.0	.0	.0	.0	.0
6. Recpt 6	*	92.	*	3.4	*	.0	.0	.0	.3	.0	.0	.0	.0
7. Recpt 7	*	272.	*	3.4	*	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	274.	*	3.7	*	.0	.0	.1	.0	.0	.0	.0	.0

9. Recpt 9	* 275.	* 3.7 *	.0	.0	.2	.0	.0	.0	.0	.0
10. Recpt 10	* 86.	* 3.7 *	.0	.1	.0	.0	.0	.0	.0	.0
11. Recpt 11	* 86.	* 3.7 *	.0	.1	.0	.0	.0	.0	.0	.0
12. Recpt 12	* 88.	* 3.4 *	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	* 178.	* 3.3 *	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	* 176.	* 3.7 *	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	* 176.	* 3.7 *	.0	.0	.1	.0	.0	.0	.0	.0
16. Recpt 16	* 4.	* 3.7 *	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	* 4.	* 3.7 *	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	* 2.	* 3.4 *	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	* 185.	* 3.6 *	.0	.0	.0	.0	.0	.2	.2	.0
20. Recpt 20	* 355.	* 3.6 *	.0	.0	.0	.0	.0	.2	.2	.0

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Urban Core - Broadway/H - Summer
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

	*	CONC/LINK (PPM)											
RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
3. Recpt 3	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.2	.3	.0	.0	.0	.1	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.4	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
12. Recpt 12	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.1	.0	.0	.1	.0	.0	.0	.0	.0	.0

□□

ATTACHMENT 3

URBEMIS 2002 For Windows 7.4.2

ile Name: L:\DRAFT\4066q\Urbemis\UrbanCore.urb
roject Name: Urban Core
roject Location: San Diego County
n-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

REA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	537.12	151.61	64.08	0.00	0.28

PERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	606.24	611.77	7,032.92	20.48	3,582.50
TOTALS (lbs/day, mitigated)	512.53	503.62	5,796.08	16.87	2,949.28

UM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,143.36	763.38	7,097.01	20.49	3,582.79

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

URBEMIS 2002 For Windows 7.4.2

File Name: L:\DRAFT\4066q\Urbemis\UrbanCore.urb
Project Name: Urban Core
Project Location: San Diego County
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	536.96	151.59	62.70	0.00	0.28

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	645.87	916.64	7,245.12	20.10	3,582.50
TOTALS (lbs/day, mitigated)	531.90	754.62	5,967.91	16.55	2,949.28

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,182.83	1,068.23	7,307.82	20.10	3,582.79

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

URBEMIS 2002 For Windows 7.4.2

File Name: L:\DRAFT\4066q\Urbemis\UrbanCore.urb
Project Name: Urban Core
Project Location: San Diego County
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	11.38	151.59	62.70	-	0.28
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	525.58	-	-	-	-
TOTALS(lbs/day,unmitigated)	536.96	151.59	62.70	0.00	0.28

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments low rise	139.06	194.66	1,569.70	4.31	760.99
Hotel	13.65	19.45	152.89	0.42	75.82
Strip mall	316.99	451.64	3,550.18	9.82	1,758.74
General office building	168.38	239.80	1,885.13	5.31	943.63
Government (civic center)	7.79	11.09	87.21	0.24	43.33
TOTAL EMISSIONS (lbs/day)	645.87	916.64	7,245.12	20.10	3,582.50

Does not include correction for passby trips.
Includes a double counting reduction for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2030 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Apartments low rise	6.00 trips / dwelling units	10,743.00	64,458.00
Hotel	10.00 trips / rooms	689.00	6,890.00
Strip mall	40.00 trips / 1000 sq. ft.	4,057.00	162,280.00
General office building	20.00 trips / 1000 sq. ft.	3,723.00	74,460.00
Government (civic center)	8.00 trips / 1000 sq. ft.	480.00	3,840.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	52.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.90	0.00	100.00	0.00
Light Truck 3,751- 5,750	16.70	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.60	0.00	100.00	0.00
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.70	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	33.30	66.70	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.60	0.00	92.30	7.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Government (civic center)				10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The wood stove option switch changed from on to off.
The fireplcase option switch changed from on to off.
The amount of wood burned per year changed from 1.48 to 0.25.
The percentage of wood stoves changed from 35 to 5.
The fireplace cords of wood burned changed from 1.48 to 0.25.
The fireplace percentage of residential units changed from 10 to 5.
The landscape year changed from 2004 to 2020.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2030.
The operational winter selection item changed from 2 to 1.
The operational summer selection item changed from 7 to 6.
The double counting internal work trip limit changed from to 17597.034.
The double counting work trip default changed from to 10.
The double counting work trip factor 1 changed from 0 to 0.0273.
The double counting work trip factor 2 changed from 0 to 7.11077463935022E-03.
The double counting shopping trip limit changed from to 13665.096.
The double counting shopping trip default percentage changed from to 20.
The double counting shopping trip factor 1 changed from 0 to 0.0424.
The double counting shopping trip factor 2 changed from 0 to 0.011043840465511.
The double counting other trip limit changed from to 33195.87.
The double counting other trip default changed from to 20.
The double counting other trip factor 1 changed from 0 to 0.103.
The travel mode environment settings changed from both to: both
The default/nodefault travel setting changed from nodefault to: nodefault
Side Walks/Paths: No Sidewalks
changed to: Side Walks/Paths: Complete Coverage
Street Trees Provide Shade: No Coverage
changed to:Street Trees Provide Shade: Some Coverage
Pedestrian Circulation Access: No Destinations
changed to:Pedestrian Circulation Access: Some Destinations
Visually Interesting Uses: No Uses Within Walking Distance
changed to:Visually Interesting Uses: Large Number and Variety
Street System Enhances Safety: No Streets
changed to: Street System Enhances Safety: Some Streets
Pedestrian Safety from Crime: No Degree of Safety
changed to:Pedestrian Safety from Crime: Moderate Degree of Safety
Visually Interesting Walking Routes: No Visual Interest
changed to:Visually Interesting Walking Routes: Moderate Level
Transit Service: Dial-A-Ride or No Transit Service
changed to: Transit Service: <15 Minute Bus within 1/4 Mile
Interconnected Bikeways: No Bikeway Coverage
changed to: Interconnected Bikeways: Moderate Coverage
Bike Routes Provide Paved Shoulders: No Routes
changed to:Bike Routes Provide Paved Shoulders: Some Routes
Safe Vehicle Speed Limits: No Routes Provided
changed to:Safe Vehicle Speed Limits: Some Destinations
Uses w/in Cycling Distance: No Uses w/in Cycling Distance
changed to:Uses w/in Cycling Distance: Moderate Number and Variety
Mitigation measure Project Density Meets Transit Level of Service Requirements:6
has been changed from off to on.
Mitigation measure Provide Transit Shelters Benches:2
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Route Signs and Displays:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1

has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Project Uses Parking Structures/Small Dispersed Lots:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Project Uses Zero Bldg. Setback with Entrance on Street:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measuremitop5: Park and Ride Lots
has been changed from on to off.

URBEMIS 2002 For Windows 7.4.2

File Name: L:\DRAFT\4066q\Urbemis\UrbanCore.urb
Project Name: Urban Core
Project Location: San Diego County
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	11.38	151.59	62.70	-	0.28
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.16	0.03	1.38	0.00	0.00
Consumer Prdcts	525.58	-	-	-	-
TOTALS(lbs/day,unmitigated)	537.12	151.61	64.08	0.00	0.28

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments low rise	155.36	129.74	1,544.40	4.39	760.99
Hotel	13.86	13.00	146.66	0.43	75.82
Strip mall	276.37	301.86	3,393.54	10.01	1,758.74
General office building	152.41	159.76	1,864.18	5.41	943.63
Government (civic center)	8.24	7.41	84.14	0.25	43.33
TOTAL EMISSIONS (lbs/day)	606.24	611.77	7,032.92	20.48	3,582.50

Does not include correction for passby trips.
Includes a double counting reduction for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2030 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Apartments low rise	6.00 trips / dwelling units	10,743.00	64,458.00
Hotel	10.00 trips / rooms	689.00	6,890.00
Strip mall	40.00 trips / 1000 sq. ft.	4,057.00	162,280.00
General office building	20.00 trips / 1000 sq. ft.	3,723.00	74,460.00
Government (civic center)	8.00 trips / 1000 sq. ft.	480.00	3,840.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	52.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.90	0.00	100.00	0.00
Light Truck 3,751- 5,750	16.70	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.60	0.00	100.00	0.00
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.70	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	33.30	66.70	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.60	0.00	92.30	7.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Government (civic center)				10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The wood stove option switch changed from on to off.
The fireplcase option switch changed from on to off.
The amount of wood burned per year changed from 1.48 to 0.25.
The percentage of wood stoves changed from 35 to 5.
The fireplace cords of wood burned changed from 1.48 to 0.25.
The fireplace percentage of residential units changed from 10 to 5.
The landscape year changed from 2004 to 2020.

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2030.
The operational winter selection item changed from 2 to 1.
The operational summer selection item changed from 7 to 6.
The double counting internal work trip limit changed from to 17597.034.
The double counting work trip default changed from to 10.
The double counting work trip factor 1 changed from 0 to 0.0273.
The double counting work trip factor 2 changed from 0 to 7.11077463935022E-03.
The double counting shopping trip limit changed from to 13665.096.
The double counting shopping trip default percentage changed from to 20.
The double counting shopping trip factor 1 changed from 0 to 0.0424.
The double counting shopping trip factor 2 changed from 0 to 0.011043840465511.
The double counting other trip limit changed from to 33195.87.
The double counting other trip default changed from to 20.
The double counting other trip factor 1 changed from 0 to 0.103.
The travel mode environment settings changed from both to: both
The default/nodefault travel setting changed from nodefault to: nodefault
Side Walks/Paths: No Sidewalks
changed to: Side Walks/Paths: Complete Coverage
Street Trees Provide Shade: No Coverage
changed to:Street Trees Provide Shade: Some Coverage
Pedestrian Circulation Access: No Destinations
changed to:Pedestrian Circulation Access: Some Destinations
Visually Interesting Uses: No Uses Within Walking Distance
changed to:Visually Interesting Uses: Large Number and Variety
Street System Enhances Safety: No Streets
changed to: Street System Enhances Safety: Some Streets
Pedestrian Safety from Crime: No Degree of Safety
changed to:Pedestrian Safety from Crime: Moderate Degree of Safety
Visually Interesting Walking Routes: No Visual Interest
changed to:Visually Interesting Walking Routes: Moderate Level
Transit Service: Dial-A-Ride or No Transit Service
changed to: Transit Service: <15 Minute Bus within 1/4 Mile
Interconnected Bikeways: No Bikeway Coverage
changed to: Interconnected Bikeways: Moderate Coverage
Bike Routes Provide Paved Shoulders: No Routes
changed to:Bike Routes Provide Paved Shoulders: Some Routes
Safe Vehicle Speed Limits: No Routes Provided
changed to:Safe Vehicle Speed Limits: Some Destinations
Uses w/in Cycling Distance: No Uses w/in Cycling Distance
changed to:Uses w/in Cycling Distance: Moderate Number and Variety
Mitigation measure Project Density Meets Transit Level of Service Requirements:6
has been changed from off to on.
Mitigation measure Provide Transit Shelters Benches:2
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Route Signs and Displays:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Residential Oriented):3
has been changed from off to on.
Mitigation measure Provide Sidewalks and/or Pedestrian Paths:1
has been changed from off to on.
Mitigation measure Provide Direct Pedestrian Connections:1
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety:0.5
has been changed from off to on.
Mitigation measure Provide Street Furniture:0.5
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Signalization and Signage:0.5
has been changed from off to on.
Mitigation measure Mixed Use Project (Commercial Oriented):1

has been changed from off to on.
Mitigation measure Floor Area Ratio 0.75 or Greater:1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Project Uses Parking Structures/Small Dispersed Lots:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Project Provides Street Art and/or Street Furniture:0.5
has been changed from off to on.
Mitigation measure Project Uses Zero Bldg. Setback with Entrance on Street:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Shuttle Bus Service to Transit/Multi-Modal Center:2
has been changed from off to on.
Mitigation measuremitop5: Park and Ride Lots
has been changed from on to off.

ATTACHMENT 4

150 Feet

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   1

                   JOB: UCSP - Interstate 5 (winter)
                   RUN: Hour 1
             POLLUTANT: Diesel Particulate (PM-10)
             (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

    I.  SITE VARIABLES

          U=     .9 M/S                 Z0= 100. CM              ALT=       0.
(M)
       BRG= 202.5 DEGREES               VD=    .0 CM/S
      CLAS=     7 (G)                   VS=    .0 CM/S
      MIXH= 1000. M                    AMB=    .0 PPM
     SIGTH=    10. DEGREES            TEMP=   7.2 DEGREE (C)


   II.  LINK VARIABLES

       LINK         *  LINK COORDINATES (M)    *                    EF       H       W
    DESCRIPTION     *   X1     Y1     X2     Y2  * TYPE  VPH   (G/MI)    (M)
(M)
  ----------------*------------------------
*------------------------------
 A. Link A          *   -10   3525    -10      0 *  AG   8566     .3      .0
46.8
 B. Link B          *   -10      0    -86   -332 *  AG   8566     .3      .0
46.8
 C. Link C          *   -66   -332     10      0 *  AG   8566     .3      .0
46.8
 D. Link D          *    10      0     10   3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Tnterstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	155.6	61.2	.0	.0	94.4
2. Recpt 2	155.6	61.2	.0	.0	94.4
3. Recpt 3	155.6	61.2	.0	.0	94.4
4. Recpt 4	155.6	61.2	.0	.0	94.4
5. Recpt 5	155.6	61.2	.0	.0	94.4
6. Recpt 6	155.6	61.2	.0	.0	94.4
7. Recpt 7	155.6	61.2	.0	.0	94.4
8. Recpt 8	155.6	61.2	.0	.0	94.4
9. Recpt 9	156.7	60.9	1.2	.3	94.4
10. Recpt 10	29.8	.0	7.0	22.8	.0
11. Recpt 11	136.3	57.4	.0	.0	78.9
12. Recpt 12	136.3	57.4	.0	.0	78.9
13. Recpt 13	136.3	57.4	.0	.0	78.9
14. Recpt 14	136.3	57.4	.0	.0	78.9
15. Recpt 15	136.3	57.4	.0	.0	78.9
16. Recpt 16	136.3	57.4	.0	.0	78.9
17. Recpt 17	136.3	57.4	.0	.0	78.9
18. Recpt 18	136.3	57.4	.0	.0	78.9
19. Recpt 19	137.4	57.1	1.2	.3	78.9
20. Recpt 20	28.9	.0	6.8	22.1	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

          U=     .9 M/S                  Z0= 100. CM              ALT=       0.
(M)
        BRG= 180.0 DEGREES              VD=    .0 CM/S
       CLAS=     7 (G)                  VS=    .0 CM/S
       MIXH= 1000. M                   AMB=    .0 PPM
      SIGTH=    10. DEGREES           TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)    *                EF      H       W
   DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE  VPH   (G/MI)   (M)
(M)
  ----------------*------------------------
*------------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	94.6	31.9	1.4	1.4	59.9
2. Recpt 2	93.1	30.9	1.6	1.6	59.0
3. Recpt 3	91.4	29.8	1.9	1.9	57.8
4. Recpt 4	89.3	28.3	2.3	2.3	56.3
5. Recpt 5	86.7	26.5	2.8	2.9	54.4
6. Recpt 6	83.2	23.9	3.6	3.9	51.8
7. Recpt 7	78.1	20.1	4.9	5.4	47.7
8. Recpt 8	68.2	13.9	5.9	8.0	40.4
9. Recpt 9	42.6	4.4	4.0	9.4	24.7
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	93.2	31.7	1.4	1.4	58.7
12. Recpt 12	91.8	30.8	1.6	1.6	57.8
13. Recpt 13	90.0	29.6	1.9	1.9	56.6
14. Recpt 14	88.0	28.2	2.3	2.3	55.2
15. Recpt 15	85.3	26.3	2.8	2.9	53.3
16. Recpt 16	81.9	23.8	3.6	3.9	50.6
17. Recpt 17	76.8	20.0	4.9	5.4	46.6
18. Recpt 18	66.8	13.7	5.9	7.9	39.3
19. Recpt 19	41.3	4.4	4.0	9.3	23.7
20. Recpt 20	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=    .9 M/S                ZO= 100. CM              ALT=      0.
(M)
      BRG=  67.5 DEGREES            VD=    .0 CM/S
     CLAS=     7 (G)                VS=    .0 CM/S
     MIXH= 1000. M                 AMB=    .0 PPM
    SIGTH=   10. DEGREES          TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)    *                    EF      H      W
   DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH   (G/MI)   (M)
(M)
 ---------------*-------------------------
*------------------------------
 A. Link A      *   -10  3525   -10     0  *  AG   8566     .3      .0
46.8
 B. Link B      *   -10     0   -86  -332  *  AG   8566     .3      .0
46.8
 C. Link C      *   -66  -332    10     0  *  AG   8566     .3      .0
46.8
 D. Link D      *    10     0    10  3525  *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=    .9 M/S              Z0= 100. CM            ALT=     0.
(M)
       BRG=  90.0 DEGREES          VD=    .0 CM/S
      CLAS=     7 (G)              VS=    .0 CM/S
      MIXH= 1000. M               AMB=    .0 PPM
     SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK      *   LINK COORDINATES (M)    *                 EF      H      W
   DESCRIPTION  *   X1    Y1    X2    Y2    * TYPE  VPH   (G/MI)   (M)
(M)
 ---------------*-------------------------
*-----------------------------
 A. Link A      *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B      *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C      *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D      *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   1

                  JOB: UCSP - Interstate 5 (winter)
                  RUN: Hour 1
            POLLUTANT: Diesel Particulate (PM-10)
            (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=     .9 M/S              Z0= 100. CM              ALT=        0.
(M)
       BRG=     .0 DEGREES          VD=     .0 CM/S
      CLAS=      7 (G)              VS=     .0 CM/S
      MIXH= 1000. M                AMB=     .0 PPM
     SIGTH=    10. DEGREES        TEMP=    7.2 DEGREE (C)


  II.  LINK VARIABLES

       LINK          *  LINK COORDINATES (M)    *               EF       H        W
    DESCRIPTION  *    X1     Y1     X2     Y2   * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*-------------------------
*-------------------------------
 A. Link A        *    -10   3525    -10      0 *  AG    8566     .3      .0
46.8
 B. Link B        *    -10      0    -86   -332 *  AG    8566     .3      .0
46.8
 C. Link C        *    -66   -332     10      0 *  AG    8566     .3      .0
46.8
 D. Link D        *     10      0     10   3525 *  AG    8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	29.3	4.5	.0	.0	24.8
2. Recpt 2	54.5	13.9	.0	.0	40.6
3. Recpt 3	68.1	20.2	.0	.0	47.9
4. Recpt 4	76.0	24.0	.0	.0	52.0
5. Recpt 5	81.2	26.6	.0	.0	54.6
6. Recpt 6	85.0	28.4	.0	.0	56.5
7. Recpt 7	87.8	29.9	.0	.0	58.0
8. Recpt 8	90.2	31.0	.0	.0	59.1
9. Recpt 9	92.1	32.0	.0	.0	60.1
10. Recpt 10	92.0	33.0	.0	1.2	57.8
11. Recpt 11	28.1	4.4	.0	.0	23.8
12. Recpt 12	53.3	13.8	.0	.0	39.4
13. Recpt 13	66.8	20.1	.0	.0	46.7
14. Recpt 14	74.7	23.9	.0	.0	50.8
15. Recpt 15	79.9	26.4	.0	.0	53.4
16. Recpt 16	83.6	28.3	.0	.0	55.3
17. Recpt 17	86.5	29.7	.0	.0	56.8
18. Recpt 18	88.8	30.9	.0	.0	58.0
19. Recpt 19	90.7	31.8	.0	.0	58.9
20. Recpt 20	91.0	32.9	.0	1.1	57.1

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=    .9 M/S              Z0= 100. CM              ALT=     0.
(M)
      BRG= 112.5 DEGREES          VD=    .0 CM/S
     CLAS=     7 (G)              VS=    .0 CM/S
     MIXH= 1000. M               AMB=    .0 PPM
    SIGTH=    10. DEGREES        TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *                EF     H       W
   DESCRIPTION   *   X1     Y1     X2    Y2  * TYPE  VPH  (G/MI)  (M)
(M)
 ----------------*------------------------
*------------------------------
 A. Link A       *   -10   3525   -10      0 *  AG   8566     .3     .0
46.8
 B. Link B       *   -10      0   -86   -332 *  AG   8566     .3     .0
46.8
 C. Link C       *   -66   -332    10      0 *  AG   8566     .3     .0
46.8
 D. Link D       *    10      0    10   3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

            JOB: UCSP - Interstate 5 (winter)
            RUN: Hour 1
      POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

         U=    .9 M/S                 Z0= 100. CM            ALT=      0.
(M)
       BRG= 270.0 DEGREES             VD=    .0 CM/S
      CLAS=     7 (G)                 VS=    .0 CM/S
      MIXH= 1000. M                  AMB=    .0 PPM
     SIGTH=   10. DEGREES           TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)    *                   EF      H      W
   DESCRIPTION    *   X1     Y1     X2    Y2  * TYPE  VPH    (G/MI)   (M)
(M)
 ----------------*-------------------------
*------------------------------
  A. Link A       *   -10   3525   -10     0 *  AG   8566      .3      .0
46.8
  B. Link B       *   -10      0   -86  -332 *  AG   8566      .3      .0
46.8
  C. Link C       *   -66   -332    10     0 *  AG   8566      .3      .0
46.8
  D. Link D       *    10      0    10  3525 *  AG   8566      .3      .0
46.8
```

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   2

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	116.7	48.6	.0	.0	68.1
2. Recpt 2	116.7	48.6	.0	.0	68.1
3. Recpt 3	116.7	48.6	.0	.0	68.1
4. Recpt 4	116.7	48.6	.0	.0	68.1
5. Recpt 5	116.7	48.6	.0	.0	68.1
6. Recpt 6	116.7	48.6	.0	.0	68.1
7. Recpt 7	116.7	48.6	.0	.0	68.1
8. Recpt 8	116.7	48.6	.0	.0	68.1
9. Recpt 9	116.7	48.6	.0	.0	68.1
10. Recpt 10	88.0	.0	39.3	48.7	.0
11. Recpt 11	79.8	38.2	.0	.0	41.5
12. Recpt 12	79.8	38.2	.0	.0	41.5
13. Recpt 13	79.8	38.2	.0	.0	41.5
14. Recpt 14	79.8	38.2	.0	.0	41.5
15. Recpt 15	79.8	38.2	.0	.0	41.5
16. Recpt 16	79.8	38.2	.0	.0	41.5
17. Recpt 17	79.8	38.2	.0	.0	41.5
18. Recpt 18	79.8	38.2	.0	.0	41.5
19. Recpt 19	79.8	38.2	.0	.0	41.5
20. Recpt 20	72.9	.0	34.0	38.9	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=     .9 M/S                Z0= 100. CM              ALT=     0.
(M)
      BRG= 247.5 DEGREES             VD=    .0 CM/S
     CLAS=     7 (G)                 VS=    .0 CM/S
     MIXH= 1000. M                  AMB=    .0 PPM
    SIGTH=    10. DEGREES           TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)    *                  EF      H       W
   DESCRIPTION    *   X1     Y1     X2    Y2  * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*--------------------------
*----------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566      .3      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566      .3      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566      .3      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	121.3	50.5	.0	.0	70.8
2. Recpt 2	121.3	50.5	.0	.0	70.8
3. Recpt 3	121.3	50.5	.0	.0	70.8
4. Recpt 4	121.3	50.5	.0	.0	70.8
5. Recpt 5	121.3	50.5	.0	.0	70.8
6. Recpt 6	121.3	50.5	.0	.0	70.8
7. Recpt 7	121.3	50.5	.0	.0	70.8
8. Recpt 8	121.3	50.5	.0	.0	70.8
9. Recpt 9	121.3	50.5	.0	.0	70.8
10. Recpt 10	92.6	.0	41.3	51.3	.0
11. Recpt 11	86.3	40.8	.0	.0	45.5
12. Recpt 12	86.3	40.8	.0	.0	45.5
13. Recpt 13	86.3	40.8	.0	.0	45.5
14. Recpt 14	86.3	40.8	.0	.0	45.5
15. Recpt 15	86.3	40.8	.0	.0	45.5
16. Recpt 16	86.3	40.8	.0	.0	45.5
17. Recpt 17	86.3	40.8	.0	.0	45.5
18. Recpt 18	86.3	40.8	.0	.0	45.5
19. Recpt 19	86.3	40.8	.0	.0	45.5
20. Recpt 20	79.9	.0	36.8	43.0	.0

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   1

                   JOB: UCSP - Interstate 5 (winter)
                   RUN: Hour 1
             POLLUTANT: Diesel Particulate (PM-10)
             (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=    .9 M/S                  Z0= 100. CM             ALT=     0.
(M)
       BRG= 292.5 DEGREES              VD=    .0 CM/S
      CLAS=     7 (G)                  VS=    .0 CM/S
      MIXH= 1000. M                   AMB=    .0 PPM
     SIGTH=    10. DEGREES            TEMP=  7.2 DEGREE (C)

   II.  LINK VARIABLES

       LINK       *  LINK COORDINATES (M)     *                    EF     H       W
    DESCRIPTION   *   X1    Y1    X2    Y2    * TYPE  VPH   (G/MI)   (M)
(M)
   ---------------*-------------------------
*-----------------------------
 A. Link A        *   -10  3525   -10     0  *  AG   8566     .3     .0
46.8
 B. Link B        *   -10     0   -86  -332  *  AG   8566     .3     .0
46.8
 C. Link C        *   -66  -332    10     0  *  AG   8566     .3     .0
46.8
 D. Link D        *    10     0    10  3525  *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   3

                 JOB: UCSP - Interstate 5 (winter)
                 RUN: Hour 1
           POLLUTANT: Diesel Particulate (PM-10)
           (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

    IV.  MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

                  * PRED  *       CONC/LINK
                  * CONC  *         (PPM)
    RECEPTOR      * (PPM) *   A     B     C     D
    --------------*-------*----------------------
     1. Recpt 1   * 121.3 * 50.5    .0    .0  70.8
     2. Recpt 2   * 121.3 * 50.5    .0    .0  70.8
     3. Recpt 3   * 121.3 * 50.5    .0    .0  70.8
     4. Recpt 4   * 121.3 * 50.5    .0    .0  70.8
     5. Recpt 5   * 121.3 * 50.5    .0    .0  70.8
     6. Recpt 6   * 121.3 * 50.5    .0    .0  70.8
     7. Recpt 7   * 121.3 * 50.5    .0    .0  70.8
     8. Recpt 8   * 121.3 * 50.5    .0    .0  70.8
     9. Recpt 9   * 121.3 * 50.5    .0    .0  70.8
    10. Recpt 10  *  87.1 *    .0  38.9  48.2    .0
    11. Recpt 11  *  86.3 * 40.8    .0    .0  45.5
    12. Recpt 12  *  86.3 * 40.8    .0    .0  45.5
    13. Recpt 13  *  86.3 * 40.8    .0    .0  45.5
    14. Recpt 14  *  86.3 * 40.8    .0    .0  45.5
    15. Recpt 15  *  86.3 * 40.8    .0    .0  45.5
    16. Recpt 16  *  86.3 * 40.8    .0    .0  45.5
    17. Recpt 17  *  86.3 * 40.8    .0    .0  45.5
    18. Recpt 18  *  86.3 * 40.8    .0    .0  45.5
    19. Recpt 19  *  86.3 * 40.8    .0    .0  45.5
    20. Recpt 20  *  71.9 *    .0  33.6  38.4    .0
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

I. SITE VARIABLES

U= .9 M/S Z0= 100. CM ALT= 0. (M)
BRG= 225.0 DEGREES VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 7.2 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	-10	3525	-10	0	*	AG	8566	.3	.0	46.8
B. Link B	*	-10	0	-86	-332	*	AG	8566	.3	.0	46.8
C. Link C	*	-66	-332	10	0	*	AG	8566	.3	.0	46.8
D. Link D	*	10	0	10	3525	*	AG	8566	.3	.0	46.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	130.6	54.5	.0	.0	76.1
2. Recpt 2	130.6	54.5	.0	.0	76.1
3. Recpt 3	130.6	54.5	.0	.0	76.1
4. Recpt 4	130.6	54.5	.0	.0	76.1
5. Recpt 5	130.6	54.5	.0	.0	76.1
6. Recpt 6	130.6	54.5	.0	.0	76.1
7. Recpt 7	130.6	54.5	.0	.0	76.1
8. Recpt 8	130.6	54.5	.0	.0	76.1
9. Recpt 9	130.6	54.5	.0	.0	76.1
10. Recpt 10	102.1	.0	45.1	56.9	.0
11. Recpt 11	102.4	46.4	.0	.0	56.0
12. Recpt 12	102.4	46.4	.0	.0	56.0
13. Recpt 13	102.4	46.4	.0	.0	56.0
14. Recpt 14	102.4	46.4	.0	.0	56.0
15. Recpt 15	102.4	46.4	.0	.0	56.0
16. Recpt 16	102.4	46.4	.0	.0	56.0
17. Recpt 17	102.4	46.4	.0	.0	56.0
18. Recpt 18	102.4	46.4	.0	.0	56.0
19. Recpt 19	102.4	46.4	.0	.0	56.0
20. Recpt 20	94.1	.0	42.5	51.6	.0

```
                   CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                            JUNE 1989 VERSION
                            PAGE   1

                        JOB: UCSP - Interstate 5 (winter)
                        RUN: Hour 1
                 POLLUTANT: Diesel Particulate (PM-10)
                 (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=    .9 M/S                  Z0= 100. CM                ALT=      0.
(M)
       BRG= 135.0 DEGREES              VD=    .0 CM/S
      CLAS=     7 (G)                  VS=    .0 CM/S
      MIXH= 1000. M                   AMB=    .0 PPM
     SIGTH=   10. DEGREES            TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

       LINK        *  LINK COORDINATES (M)    *                  EF      H       W
    DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE  VPH    (G/MI)   (M)
(M)
  ---------------*------------------------
*------------------------------
 A. Link A         *   -10  3525   -10     0 *  AG   8566      .3      .0
46.8
 B. Link B         *   -10     0   -86  -332 *  AG   8566      .3      .0
46.8
 C. Link C         *   -66  -332    10     0 *  AG   8566      .3      .0
46.8
 D. Link D         *    10     0    10  3525 *  AG   8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=     .9 M/S               Z0= 100. CM          ALT=     0.
(M)
      BRG=  22.5 DEGREES            VD=    .0 CM/S
     CLAS=     7 (G)                VS=    .0 CM/S
     MIXH= 1000. M                 AMB=    .0 PPM
    SIGTH=    10. DEGREES          TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *                  EF      H       W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)
(M)
 ----------------*------------------------
*------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566    .3     .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566    .3     .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566    .3     .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566    .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=     .9 M/S                Z0= 100. CM            ALT=     0.
(M)
       BRG=  45.0 DEGREES             VD=    .0 CM/S
      CLAS=     7 (G)                 VS=    .0 CM/S
      MIXH= 1000. M                  AMB=    .0 PPM
     SIGTH=   10. DEGREES           TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *                EF      H      W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*------------------------
*----------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

            JOB: UCSP - Interstate 5 (winter)
            RUN: Hour 1
      POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

         U=     .9 M/S              Z0= 100. CM            ALT=      0.
(M)
      BRG= 337.5 DEGREES            VD=    .0 CM/S
     CLAS=     7 (G)                VS=    .0 CM/S
     MIXH= 1000. M                 AMB=    .0 PPM
    SIGTH=   10. DEGREES          TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

     LINK        *  LINK COORDINATES (M)    *               EF       H       W
  DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*-------------------------
*------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	155.2	60.9	.0	.0	94.4
2. Recpt 2	155.6	61.2	.0	.0	94.4
3. Recpt 3	155.6	61.2	.0	.0	94.4
4. Recpt 4	155.6	61.2	.0	.0	94.4
5. Recpt 5	155.6	61.2	.0	.0	94.4
6. Recpt 6	155.6	61.2	.0	.0	94.4
7. Recpt 7	155.6	61.2	.0	.0	94.4
8. Recpt 8	155.6	61.2	.0	.0	94.4
9. Recpt 9	155.6	61.2	.0	.0	94.4
10. Recpt 10	118.8	43.2	10.9	37.7	27.0
11. Recpt 11	135.9	57.1	.0	.0	78.9
12. Recpt 12	136.3	57.4	.0	.0	78.9
13. Recpt 13	136.3	57.4	.0	.0	78.9
14. Recpt 14	136.3	57.4	.0	.0	78.9
15. Recpt 15	136.3	57.4	.0	.0	78.9
16. Recpt 16	136.3	57.4	.0	.0	78.9
17. Recpt 17	136.3	57.4	.0	.0	78.9
18. Recpt 18	136.3	57.4	.0	.0	78.9
19. Recpt 19	136.3	57.4	.0	.0	78.9
20. Recpt 20	109.7	41.4	9.8	32.9	25.6

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   1

                 JOB: UCSP - Interstate 5 (winter)
                 RUN: Hour 1
           POLLUTANT: Diesel Particulate (PM-10)
           (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=    .9 M/S              Z0= 100. CM              ALT=      0.
(M)
       BRG= 157.5 DEGREES          VD=    .0 CM/S
      CLAS=     7 (G)              VS=    .0 CM/S
      MIXH= 1000. M               AMB=    .0 PPM
     SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)     *                  EF       H       W
   DESCRIPTION    *   X1     Y1     X2     Y2  * TYPE   VPH   (G/MI)    (M)
(M)
 -----------------*-------------------------
*-------------------------------
 A. Link A        *   -10   3525    -10      0 *  AG    8566     .3       .0
46.8
 B. Link B        *   -10      0    -86   -332 *  AG    8566     .3       .0
46.8
 C. Link C        *   -66   -332     10      0 *  AG    8566     .3       .0
46.8
 D. Link D        *    10      0     10   3525 *  AG    8566     .3       .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   3

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)
```

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	* PRED CONC (PPM) *	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   1

                JOB: UCSP - Interstate 5 (winter)
                RUN: Hour 1
          POLLUTANT: Diesel Particulate (PM-10)
          (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=    .9 M/S                 Z0= 100. CM              ALT=      0.
(M)
      BRG= 315.0 DEGREES             VD=    .0 CM/S
     CLAS=     7 (G)                 VS=    .0 CM/S
     MIXH= 1000. M                  AMB=    .0 PPM
    SIGTH=   10. DEGREES           TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *                 EF      H       W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH   (G/MI)   (M)
(M)
  ---------------*-------------------------
*------------------------------
  A. Link A      *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
  B. Link B      *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
  C. Link C      *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
  D. Link D      *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	46	3173	1.8
2. Recpt 2	46	2820	1.8
3. Recpt 3	46	2468	1.8
4. Recpt 4	46	2115	1.8
5. Recpt 5	46	1763	1.8
6. Recpt 6	46	1410	1.8
7. Recpt 7	46	1058	1.8
8. Recpt 8	46	705	1.8
9. Recpt 9	46	353	1.8
10. Recpt 10	46	-100	1.8
11. Recpt 11	46	3173	6.1
12. Recpt 12	46	2820	6.1
13. Recpt 13	46	2468	6.1
14. Recpt 14	46	2115	6.1
15. Recpt 15	46	1763	6.1
16. Recpt 16	46	1410	6.1
17. Recpt 17	46	1058	6.1
18. Recpt 18	46	705	6.1
19. Recpt 19	46	353	6.1
20. Recpt 20	46	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	130.6	54.5	.0	.0	76.1
2. Recpt 2	130.6	54.5	.0	.0	76.1
3. Recpt 3	130.6	54.5	.0	.0	76.1
4. Recpt 4	130.6	54.5	.0	.0	76.1
5. Recpt 5	130.6	54.5	.0	.0	76.1
6. Recpt 6	130.6	54.5	.0	.0	76.1
7. Recpt 7	130.6	54.5	.0	.0	76.1
8. Recpt 8	130.6	54.5	.0	.0	76.1
9. Recpt 9	130.6	54.5	.0	.0	76.1
10. Recpt 10	91.8	1.4	40.0	50.4	.0
11. Recpt 11	102.4	46.4	.0	.0	56.0
12. Recpt 12	102.4	46.4	.0	.0	56.0
13. Recpt 13	102.4	46.4	.0	.0	56.0
14. Recpt 14	102.4	46.4	.0	.0	56.0
15. Recpt 15	102.4	46.4	.0	.0	56.0
16. Recpt 16	102.4	46.4	.0	.0	56.0
17. Recpt 17	102.4	46.4	.0	.0	56.0
18. Recpt 18	102.4	46.4	.0	.0	56.0
19. Recpt 19	102.4	46.4	.0	.0	56.0
20. Recpt 20	78.5	1.3	35.4	41.8	.0

300 Feet

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

          U=     .9 M/S                    Z0= 100. CM                ALT=      0.
(M)
        BRG= 247.5 DEGREES                 VD=     .0 CM/S
       CLAS=      7 (G)                    VS=     .0 CM/S
       MIXH= 1000. M                      AMB=     .0 PPM
      SIGTH=    10. DEGREES              TEMP=    7.2 DEGREE (C)


  II.  LINK VARIABLES

       LINK         *  LINK COORDINATES (M)     *                     EF      H         W
    DESCRIPTION     *   X1    Y1    X2    Y2    * TYPE  VPH     (G/MI)   (M)
(M)
  ----------------*------------------------
*------------------------------
  A. Link A         *   -10  3525   -10      0 *  AG   8566      .3      .0
46.8
  B. Link B         *   -10     0   -86   -332 *  AG   8566      .3      .0
46.8
  C. Link C         *   -66  -332    10      0 *  AG   8566      .3      .0
46.8
  D. Link D         *    10     0    10   3525 *  AG   8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	71.5	33.1	.0	.0	38.5
2. Recpt 2	71.5	33.1	.0	.0	38.5
3. Recpt 3	71.5	33.1	.0	.0	38.5
4. Recpt 4	71.5	33.1	.0	.0	38.5
5. Recpt 5	71.5	33.1	.0	.0	38.5
6. Recpt 6	71.5	33.1	.0	.0	38.5
7. Recpt 7	71.5	33.1	.0	.0	38.5
8. Recpt 8	71.5	33.1	.0	.0	38.5
9. Recpt 9	71.5	33.1	.0	.0	38.5
10. Recpt 10	64.5	.0	30.4	34.2	.0
11. Recpt 11	64.2	30.2	.0	.0	34.0
12. Recpt 12	64.2	30.2	.0	.0	34.0
13. Recpt 13	64.2	30.2	.0	.0	34.0
14. Recpt 14	64.2	30.2	.0	.0	34.0
15. Recpt 15	64.2	30.2	.0	.0	34.0
16. Recpt 16	64.2	30.2	.0	.0	34.0
17. Recpt 17	64.2	30.2	.0	.0	34.0
18. Recpt 18	64.2	30.2	.0	.0	34.0
19. Recpt 19	64.2	30.2	.0	.0	34.0
20. Recpt 20	60.2	.0	28.6	31.6	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
  POLLUTANT: Diesel Particulate (PM-10)
  (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

 I.  SITE VARIABLES

        U=    .9 M/S              Z0= 100. CM            ALT=     0.
(M)
      BRG= 292.5 DEGREES          VD=    .0 CM/S
     CLAS=     7 (G)              VS=    .0 CM/S
     MIXH= 1000. M               AMB=    .0 PPM
    SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)    *                EF     H      W
   DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*------------------------
*------------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	71.5	33.1	.0	.0	38.5
2. Recpt 2	71.5	33.1	.0	.0	38.5
3. Recpt 3	71.5	33.1	.0	.0	38.5
4. Recpt 4	71.5	33.1	.0	.0	38.5
5. Recpt 5	71.5	33.1	.0	.0	38.5
6. Recpt 6	71.5	33.1	.0	.0	38.5
7. Recpt 7	71.5	33.1	.0	.0	38.5
8. Recpt 8	71.5	33.1	.0	.0	38.5
9. Recpt 9	71.5	33.1	.0	.0	38.5
10. Recpt 10	60.1	.0	28.1	32.1	.0
11. Recpt 11	64.2	30.2	.0	.0	34.0
12. Recpt 12	64.2	30.2	.0	.0	34.0
13. Recpt 13	64.2	30.2	.0	.0	34.0
14. Recpt 14	64.2	30.2	.0	.0	34.0
15. Recpt 15	64.2	30.2	.0	.0	34.0
16. Recpt 16	64.2	30.2	.0	.0	34.0
17. Recpt 17	64.2	30.2	.0	.0	34.0
18. Recpt 18	64.2	30.2	.0	.0	34.0
19. Recpt 19	64.2	30.2	.0	.0	34.0
20. Recpt 20	54.9	.0	25.9	29.0	.0

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=     .9 M/S                ZO= 100. CM              ALT=      0.
(M)
       BRG= 270.0 DEGREES             VD=    .0 CM/S
      CLAS=     7 (G)                 VS=    .0 CM/S
      MIXH= 1000. M                  AMB=    .0 PPM
     SIGTH=   10. DEGREES           TEMP=  7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *                    EF      H       W
   DESCRIPTION   *   X1     Y1    X2    Y2  * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*------------------------
*-------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	69.4	32.1	.0	.0	37.3
2. Recpt 2	69.4	32.1	.0	.0	37.3
3. Recpt 3	69.4	32.1	.0	.0	37.3
4. Recpt 4	69.4	32.1	.0	.0	37.3
5. Recpt 5	69.4	32.1	.0	.0	37.3
6. Recpt 6	69.4	32.1	.0	.0	37.3
7. Recpt 7	69.4	32.1	.0	.0	37.3
8. Recpt 8	69.4	32.1	.0	.0	37.3
9. Recpt 9	69.4	32.1	.0	.0	37.3
10. Recpt 10	61.0	.0	28.6	32.4	.0
11. Recpt 11	61.5	29.0	.0	.0	32.5
12. Recpt 12	61.5	29.0	.0	.0	32.5
13. Recpt 13	61.5	29.0	.0	.0	32.5
14. Recpt 14	61.5	29.0	.0	.0	32.5
15. Recpt 15	61.5	29.0	.0	.0	32.5
16. Recpt 16	61.5	29.0	.0	.0	32.5
17. Recpt 17	61.5	29.0	.0	.0	32.5
18. Recpt 18	61.5	29.0	.0	.0	32.5
19. Recpt 19	61.5	29.0	.0	.0	32.5
20. Recpt 20	55.8	.0	26.5	29.4	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

          U=    .9 M/S                 Z0= 100. CM              ALT=      0.
(M)
        BRG= 225.0 DEGREES             VD=    .0 CM/S
       CLAS=     7 (G)                 VS=    .0 CM/S
       MIXH= 1000. M                  AMB=    .0 PPM
      SIGTH=   10. DEGREES           TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

       LINK        *  LINK COORDINATES (M)    *                  EF      H      W
    DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE   VPH    (G/MT)   (M)
(M)
 ---------------*------------------------
*---------------------------
 A. Link A         *   -10  3525   -10     0 *  AG    8566      .3      .0
46.8
 B. Link B         *   -10     0   -86  -332 *  AG    8566      .3      .0
46.8
 C. Link C         *   -66  -332    10     0 *  AG    8566      .3      .0
46.8
 D. Link D         *    10     0    10  3525 *  AG    8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	77.6	35.9	.0	.0	41.7
2. Recpt 2	77.6	35.9	.0	.0	41.7
3. Recpt 3	77.6	35.9	.0	.0	41.7
4. Recpt 4	77.6	35.9	.0	.0	41.7
5. Recpt 5	77.6	35.9	.0	.0	41.7
6. Recpt 6	77.6	35.9	.0	.0	41.7
7. Recpt 7	77.6	35.9	.0	.0	41.7
8. Recpt 8	77.6	35.9	.0	.0	41.7
9. Recpt 9	77.6	35.9	.0	.0	41.7
10. Recpt 10	66.2	.0	30.1	36.1	.0
11. Recpt 11	71.8	33.6	.0	.0	38.2
12. Recpt 12	71.8	33.6	.0	.0	38.2
13. Recpt 13	71.8	33.6	.0	.0	38.2
14. Recpt 14	71.8	33.6	.0	.0	38.2
15. Recpt 15	71.8	33.6	.0	.0	38.2
16. Recpt 16	71.8	33.6	.0	.0	38.2
17. Recpt 17	71.8	33.6	.0	.0	38.2
18. Recpt 18	71.8	33.6	.0	.0	38.2
19. Recpt 19	71.8	33.6	.0	.0	38.2
20. Recpt 20	63.8	.0	29.1	34.6	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

            JOB: UCSP - Interstate 5 (winter)
            RUN: Hour 1
      POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

         U=    .9 M/S              Z0= 100. CM             ALT=     0.
(M)
       BRG= 202.5 DEGREES          VD=    .0 CM/S
      CLAS=     7 (G)              VS=    .0 CM/S
      MIXH= 1000. M               AMB=    .0 PPM
     SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)   *                  EF      H      W
   DESCRIPTION    *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)   (M)
(M)
 ----------------*------------------------
*--------------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	85.5	39.5	.0	.0	45.9
2. Recpt 2	85.5	39.5	.0	.0	45.9
3. Recpt 3	85.5	39.5	.0	.0	45.9
4. Recpt 4	85.5	39.5	.0	.0	45.9
5. Recpt 5	85.5	39.5	.0	.0	45.9
6. Recpt 6	85.5	39.5	.0	.0	45.9
7. Recpt 7	85.5	39.5	.0	.0	45.9
8. Recpt 8	85.8	39.3	.4	.2	45.9
9. Recpt 9	91.9	34.5	9.1	4.3	44.0
10. Recpt 10	1.1	.0	.1	1.0	.0
11. Recpt 11	83.1	38.6	.0	.0	44.5
12. Recpt 12	83.1	38.6	.0	.0	44.5
13. Recpt 13	83.1	38.6	.0	.0	44.5
14. Recpt 14	83.1	38.6	.0	.0	44.5
15. Recpt 15	83.1	38.6	.0	.0	44.5
16. Recpt 16	83.1	38.6	.0	.0	44.5
17. Recpt 17	83.2	38.6	.0	.0	44.5
18. Recpt 18	83.5	38.4	.4	.2	44.5
19. Recpt 19	89.6	33.6	9.0	4.3	42.6
20. Recpt 20	1.1	.0	.1	1.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=     .9 M/S              Z0= 100. CM              ALT=      0.
(M)
      BRG= 112.5 DEGREES           VD=    .0 CM/S
     CLAS=     7 (G)               VS=    .0 CM/S
     MIXH= 1000. M                AMB=    .0 PPM
    SIGTH=   10. DEGREES         TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *                EF      H       W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH   (G/MI)  (M)
(M)
 ----------------*-------------------------
*------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566     .3     .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566     .3     .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566     .3     .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=     .9 M/S                 Z0= 100. CM              ALT=      0.
(M)
      BRG=     .0 DEGREES             VD=    .0 CM/S
     CLAS=      7 (G)                 VS=    .0 CM/S
     MIXH= 1000. M                   AMB=    .0 PPM
    SIGTH=    10. DEGREES           TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK         *   LINK COORDINATES (M)    *                      EF       H       W
   DESCRIPTION     *    X1     Y1     X2     Y2  * TYPE  VPH   (G/MI)   (M)
(M)
  ---------------*-------------------------
*-----------------------------
  A. Link A        *   -10   3525    -10      0 *  AG   8566     .3      .0
46.8
  B. Link B        *   -10      0    -86   -332 *  AG   8566     .3      .0
46.8
  C. Link C        *   -66   -332     10      0 *  AG   8566     .3      .0
46.8
  D. Link D        *    10      0     10   3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.4	.0	.0	.0	.4
2. Recpt 2	6.0	1.7	.0	.0	4.3
3. Recpt 3	14.2	5.2	.0	.0	9.0
4. Recpt 4	20.6	8.2	.0	.0	12.4
5. Recpt 5	25.2	10.4	.0	.0	14.8
6. Recpt 6	28.7	12.1	.0	.0	16.6
7. Recpt 7	31.5	13.5	.0	.0	18.0
8. Recpt 8	33.7	14.6	.0	.0	19.1
9. Recpt 9	35.6	15.5	.0	.0	20.1
10. Recpt 10	37.6	16.5	.0	.0	21.1
11. Recpt 11	.4	.0	.0	.0	.4
12. Recpt 12	6.0	1.7	.0	.0	4.3
13. Recpt 13	14.2	5.2	.0	.0	9.0
14. Recpt 14	20.5	8.1	.0	.0	12.4
15. Recpt 15	25.2	10.4	.0	.0	14.8
16. Recpt 16	28.7	12.1	.0	.0	16.6
17. Recpt 17	31.4	13.5	.0	.0	18.0
18. Recpt 18	33.7	14.6	.0	.0	19.1
19. Recpt 19	35.5	15.5	.0	.0	20.0
20. Recpt 20	37.5	16.5	.0	.0	21.1

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

I.  SITE VARIABLES

        U=    .9 M/S              Z0= 100. CM            ALT=     0.
(M)
      BRG=  45.0 DEGREES          VD=    .0 CM/S
     CLAS=     7 (G)              VS=    .0 CM/S
     MIXH= 1000. M               AMB=    .0 PPM
    SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)

II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)    *                 EF      H      W
   DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH    (G/MI)   (M)
(M)
 ---------------*-------------------------
*------------------------------
 A. Link A      *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B      *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C      *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D      *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   2

                JOB: UCSP - Interstate 5 (winter)
                RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

 III.  RECEPTOR LOCATIONS

                  *     COORDINATES (M)
    RECEPTOR      *     X       Y       Z
 -----------------*-----------------------
  1. Recept 1     *     91    3173     1.8
  2. Recept 2     *     91    2820     1.8
  3. Recept 3     *     91    2468     1.8
  4. Recept 4     *     91    2115     1.8
  5. Recept 5     *     91    1763     1.8
  6. Recept 6     *     91    1410     1.8
  7. Recept 7     *     91    1058     1.8
  8. Recept 8     *     91     705     1.8
  9. Recept 9     *     91     353     1.8
 10. Recept 10    *     91    -100     1.8
 11. Recept 11    *     91    3173     6.1
 12. Recept 12    *     91    2820     6.1
 13. Recept 13    *     91    2468     6.1
 14. Recept 14    *     91    2115     6.1
 15. Recept 15    *     91    1763     6.1
 16. Recept 16    *     91    1410     6.1
 17. Recept 17    *     91    1058     6.1
 18. Recept 18    *     91     705     6.1
 19. Recept 19    *     91     353     6.1
 20. Recept 20    *     91    -100     6.1
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=     .9 M/S                   Z0= 100. CM             ALT=      0.
 (M)
       BRG=  67.5 DEGREES                VD=    .0 CM/S
      CLAS=     7 (G)                    VS=    .0 CM/S
      MIXH= 1000. M                     AMB=    .0 PPM
     SIGTH=    10. DEGREES             TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK         *  LINK COORDINATES (M)   *                  EF      H      W
   DESCRIPTION     *   X1    Y1    X2    Y2  * TYPE  VPH   (G/MI)   (M)
 (M)
  ----------------*------------------------
 *------------------------------
  A. Link A        *  -10  3525   -10     0 *  AG   8566     .3      .0
 46.8
  B. Link B        *  -10     0   -86  -332 *  AG   8566     .3      .0
 46.8
  C. Link C        *  -66  -332    10     0 *  AG   8566     .3      .0
 46.8
  D. Link D        *   10     0    10  3525 *  AG   8566     .3      .0
 46.8
```

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   2

    JOB: UCSP - Interstate 5 (winter)
    RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

    I.  SITE VARIABLES

          U=    .9 M/S              Z0= 100. CM             ALT=      0.
(M)
        BRG= 135.0 DEGREES          VD=    .0 CM/S
       CLAS=     7 (G)              VS=    .0 CM/S
       MIXH= 1000. M               AMB=    .0 PPM
      SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)


   II.  LINK VARIABLES

        LINK        *  LINK COORDINATES (M)    *                    EF      H      W
    DESCRIPTION     *   X1    Y1    X2    Y2   * TYPE   VPH   (G/MI)   (M)
(M)
  ---------------*------------------------
*------------------------------
  A. Link A         *   -10  3525   -10     0 *  AG    8566     .3      .0
46.8
  B. Link B         *   -10     0   -86  -332 *  AG    8566     .3      .0
46.8
  C. Link C         *   -66  -332    10     0 *  AG    8566     .3      .0
46.8
  D. Link D         *    10     0    10  3525 *  AG    8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

            JOB: UCSP - Interstate 5 (winter)
            RUN: Hour 1
      POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

          U=    .9 M/S             Z0= 100. CM             ALT=      0.
(M)
        BRG= 157.5 DEGREES          VD=    .0 CM/S
       CLAS=     7 (G)              VS=    .0 CM/S
       MIXH= 1000. M               AMB=    .0 PPM
      SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *                  EF     H      W
   DESCRIPTION   *   X1    Y1    X2    Y2   * TYPE  VPH   (G/MI)  (M)
(M)
 ----------------*-------------------------
*------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566     .3     .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566     .3     .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566     .3     .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE  1

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

I.  SITE VARIABLES

      U=    .9 M/S              Z0= 100. CM            ALT=      0.
(M)
    BRG= 180.0 DEGREES          VD=    .0 CM/S
   CLAS=     7 (G)              VS=    .0 CM/S
   MIXH= 1000. M               AMB=    .0 PPM
  SIGTH=   10. DEGREES         TEMP=  7.2 DEGREE (C)


II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)    *                EF     H      W
  DESCRIPTION   *   X1    Y1    X2     Y2  * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*-------------------------
*------------------------------
 A. Link A      *   -10  3525   -10     0 *  AG   8566     .3     .0
46.8
 B. Link B      *   -10     0   -86  -332 *  AG   8566     .3     .0
46.8
 C. Link C      *   -66  -332    10     0 *  AG   8566     .3     .0
46.8
 D. Link D      *    10     0    10  3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	38.2	15.5	1.3	1.4	20.0
2. Recpt 2	36.7	14.5	1.5	1.6	19.1
3. Recpt 3	35.0	13.4	1.8	1.8	18.0
4. Recpt 4	32.9	12.1	2.1	2.2	16.6
5. Recpt 5	30.3	10.4	2.5	2.7	14.8
6. Recpt 6	26.9	8.1	3.1	3.3	12.4
7. Recpt 7	21.5	5.2	3.3	4.1	9.0
8. Recpt 8	12.8	1.7	2.9	3.9	4.3
9. Recpt 9	1.6	.0	.2	1.0	.4
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	38.1	15.4	1.3	1.4	20.0
12. Recpt 12	36.6	14.5	1.5	1.6	19.0
13. Recpt 13	34.9	13.4	1.8	1.8	17.9
14. Recpt 14	32.8	12.1	2.1	2.2	16.5
15. Recpt 15	30.2	10.3	2.5	2.7	14.7
16. Recpt 16	26.8	8.1	3.1	3.3	12.3
17. Recpt 17	21.4	5.1	3.3	4.1	9.0
18. Recpt 18	12.8	1.6	2.9	3.9	4.3
19. Recpt 19	1.6	.0	.2	1.0	.4
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=     .9 M/S              Z0= 100. CM              ALT=      0.
(M)
      BRG= 315.0 DEGREES           VD=    .0 CM/S
     CLAS=     7 (G)               VS=    .0 CM/S
     MIXH= 1000. M                AMB=    .0 PPM
    SIGTH=   10. DEGREES         TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

     LINK        *  LINK COORDINATES (M)    *                  EF      H       W
  DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE  VPH    (G/MI)   (M)
(M)
 ----------------*--------------------------
*--------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566      .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566      .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566      .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	77.6	35.9	.0	.0	41.7
2. Recpt 2	77.6	35.9	.0	.0	41.7
3. Recpt 3	77.6	35.9	.0	.0	41.7
4. Recpt 4	77.6	35.9	.0	.0	41.7
5. Recpt 5	77.6	35.9	.0	.0	41.7
6. Recpt 6	77.6	35.9	.0	.0	41.7
7. Recpt 7	77.6	35.9	.0	.0	41.7
8. Recpt 8	77.6	35.9	.0	.0	41.7
9. Recpt 9	77.6	35.9	.0	.0	41.7
10. Recpt 10	68.6	18.3	14.4	26.8	9.0
11. Recpt 11	71.8	33.6	.0	.0	38.2
12. Recpt 12	71.8	33.6	.0	.0	38.2
13. Recpt 13	71.8	33.6	.0	.0	38.2
14. Recpt 14	71.8	33.6	.0	.0	38.2
15. Recpt 15	71.8	33.6	.0	.0	38.2
16. Recpt 16	71.8	33.6	.0	.0	38.2
17. Recpt 17	71.8	33.6	.0	.0	38.2
18. Recpt 18	71.8	33.6	.0	.0	38.2
19. Recpt 19	71.8	33.6	.0	.0	38.2
20. Recpt 20	63.9	17.4	13.4	24.6	8.5

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

          U=    .9 M/S              Z0= 100. CM            ALT=     0.
(M)
        BRG= 337.5 DEGREES          VD=    .0 CM/S
       CLAS=     7 (G)              VS=    .0 CM/S
       MIXH= 1000. M               AMB=    .0 PPM
      SIGTH=   10. DEGREES        TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

       LINK       *  LINK COORDINATES (M)    *                EF     H      W
    DESCRIPTION   *   X1    Y1    X2     Y2  * TYPE  VPH   (G/MI)   (M)
(M)
  ----------------*------------------------
*------------------------------
 A. Link A        *   -10  3525   -10      0 *  AG   8566     .3     .0
46.8
 B. Link B        *   -10     0   -86   -332 *  AG   8566     .3     .0
46.8
 C. Link C        *   -66  -332    10      0 *  AG   8566     .3     .0
46.8
 D. Link D        *    10     0    10   3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	78.5	34.5	.0	.0	44.0
2. Recpt 2	85.3	39.3	.0	.0	45.9
3. Recpt 3	85.4	39.5	.0	.0	45.9
4. Recpt 4	85.4	39.5	.0	.0	45.9
5. Recpt 5	85.5	39.5	.0	.0	45.9
6. Recpt 6	85.5	39.5	.0	.0	45.9
7. Recpt 7	85.5	39.5	.0	.0	45.9
8. Recpt 8	85.5	39.5	.0	.0	45.9
9. Recpt 9	85.5	39.5	.0	.0	45.9
10. Recpt 10	84.8	39.5	.0	.5	44.8
11. Recpt 11	76.2	33.6	.0	.0	42.6
12. Recpt 12	82.9	38.4	.0	.0	44.5
13. Recpt 13	83.1	38.6	.0	.0	44.5
14. Recpt 14	83.1	38.6	.0	.0	44.5
15. Recpt 15	83.1	38.6	.0	.0	44.5
16. Recpt 16	83.1	38.6	.0	.0	44.5
17. Recpt 17	83.1	38.6	.0	.0	44.5
18. Recpt 18	83.1	38.6	.0	.0	44.5
19. Recpt 19	83.1	38.6	.0	.0	44.5
20. Recpt 20	82.5	38.6	.0	.5	43.4

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

          U=     .9 M/S                  Z0= 100. CM              ALT=       0.
(M)
        BRG=  22.5 DEGREES              VD=     .0 CM/S
       CLAS=     7 (G)                  VS=     .0 CM/S
       MIXH= 1000. M                   AMB=     .0 PPM
      SIGTH=   10. DEGREES            TEMP=    7.2 DEGREE (C)

   II.  LINK VARIABLES

        LINK        *  LINK COORDINATES (M)    *                   EF      H        W
     DESCRIPTION    *   X1     Y1     X2    Y2  * TYPE  VPH    (G/MI)   (M)
(M)
   ---------------*-------------------------
*------------------------------
   A. Link A        *   -10  3525    -10      0 *  AG    8566     .3       .0
46.8
   B. Link B        *   -10     0    -86   -332 *  AG    8566     .3       .0
46.8
   C. Link C        *   -66  -332     10      0 *  AG    8566     .3       .0
46.8
   D. Link D        *    10     0     10   3525 *  AG    8566     .3       .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recept 1	91	3173	1.8
2. Recept 2	91	2820	1.8
3. Recept 3	91	2468	1.8
4. Recept 4	91	2115	1.8
5. Recept 5	91	1763	1.8
6. Recept 6	91	1410	1.8
7. Recept 7	91	1058	1.8
8. Recept 8	91	705	1.8
9. Recept 9	91	353	1.8
10. Recept 10	91	-100	1.8
11. Recept 11	91	3173	6.1
12. Recept 12	91	2820	6.1
13. Recept 13	91	2468	6.1
14. Recept 14	91	2115	6.1
15. Recept 15	91	1763	6.1
16. Recept 16	91	1410	6.1
17. Recept 17	91	1058	6.1
18. Recept 18	91	705	6.1
19. Recept 19	91	353	6.1
20. Recept 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

            JOB: UCSP - Interstate 5 (winter)
            RUN: Hour 1
      POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

          U=     .9 M/S                   Z0= 100. CM              ALT=      0.
(M)
        BRG=  90.0 DEGREES                VD=     .0 CM/S
       CLAS=     7 (G)                    VS=     .0 CM/S
       MIXH= 1000. M                     AMB=     .0 PPM
      SIGTH=    10. DEGREES             TEMP=    7.2 DEGREE (C)

   II.  LINK VARIABLES

        LINK          *  LINK COORDINATES (M)     *
     DESCRIPTION      *   X1    Y1     X2    Y2   * TYPE  VPH   EF      H      W
(M)                                                             (G/MI)  (M)
 ---------------*-------------------------
*------------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566    .3      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566    .3      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566    .3      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566    .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	91	3173	1.8
2. Recpt 2	91	2820	1.8
3. Recpt 3	91	2468	1.8
4. Recpt 4	91	2115	1.8
5. Recpt 5	91	1763	1.8
6. Recpt 6	91	1410	1.8
7. Recpt 7	91	1058	1.8
8. Recpt 8	91	705	1.8
9. Recpt 9	91	353	1.8
10. Recpt 10	91	-100	1.8
11. Recpt 11	91	3173	6.1
12. Recpt 12	91	2820	6.1
13. Recpt 13	91	2468	6.1
14. Recpt 14	91	2115	6.1
15. Recpt 15	91	1763	6.1
16. Recpt 16	91	1410	6.1
17. Recpt 17	91	1058	6.1
18. Recpt 18	91	705	6.1
19. Recpt 19	91	353	6.1
20. Recpt 20	91	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

500 Feet

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=    .9 M/S                 Z0= 100. CM             ALT=      0.
(M)
      BRG= 202.5 DEGREES             VD=    .0 CM/S
     CLAS=     7 (G)                 VS=    .0 CM/S
     MIXH= 1000. M                  AMB=    .0 PPM
    SIGTH=   10. DEGREES           TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

       LINK       *  LINK COORDINATES (M)     *                  EF      H       W
    DESCRIPTION   *    X1     Y1     X2    Y2 * TYPE  VPH    (G/MI)   (M)
(M)
 ----------------*------------------------
*------------------------------
 A. Link A        *   -10   3525    -10     0 *  AG   8566      .3      .0
46.8
 B. Link B        *   -10      0    -86  -332 *  AG   8566      .3      .0
46.8
 C. Link C        *   -66   -332     10     0 *  AG   8566      .3      .0
46.8
 D. Link D        *    10      0     10  3525 *  AG   8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   3

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV.  MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

              * PRED   *       CONC/LINK
              * CONC   *         (PPM)
 RECEPTOR     * (PPM)  *   A    B    C    D
--------------*--------*-------------------
 1. Recept 1  *   64.8 * 31.3   .0   .0 33.5
 2. Recept 2  *   64.8 * 31.3   .0   .0 33.5
 3. Recept 3  *   64.8 * 31.3   .0   .0 33.5
 4. Recept 4  *   64.8 * 31.2   .0   .0 33.5
 5. Recept 5  *   64.7 * 31.2   .0   .0 33.4
 6. Recept 6  *   64.7 * 31.1   .1   .0 33.4
 7. Recept 7  *   64.6 * 30.8   .4   .2 33.2
 8. Recept 8  *   65.3 * 29.5  2.1  1.2 32.5
 9. Recept 9  *   68.8 *  9.7 21.7 20.0 17.3
10. Recept 10 *     .0 *   .0   .0   .0   .0
11. Recept 11 *   64.0 * 30.9   .0   .0 33.0
12. Recept 12 *   64.0 * 30.9   .0   .0 33.0
13. Recept 13 *   63.9 * 30.9   .0   .0 33.0
14. Recept 14 *   63.9 * 30.9   .0   .0 33.0
15. Recept 15 *   63.9 * 30.8   .0   .0 33.0
16. Recept 16 *   63.8 * 30.7   .1   .0 32.9
17. Recept 17 *   63.8 * 30.4   .4   .2 32.7
18. Recept 18 *   64.4 * 29.1  2.1  1.2 32.0
19. Recept 19 *   68.1 *  9.6 21.6 19.9 17.0
20. Recept 20 *     .0 *   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

          U=     .9 M/S              Z0= 100. CM              ALT=      0.
(M)
        BRG= 135.0 DEGREES          VD=     .0 CM/S
       CLAS=     7 (G)              VS=     .0 CM/S
       MIXH= 1000. M               AMB=     .0 PPM
      SIGTH=    10. DEGREES        TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

       LINK        *  LINK COORDINATES (M)    *                     EF       H         W
   DESCRIPTION     *    X1     Y1     X2     Y2  * TYPE   VPH   (G/MI)   (M)
(M)
 ----------------*------------------------
*-----------------------------
 A. Link A         *   -10   3525    -10      0 *  AG    8566     .3       .0
46.8
 B. Link B         *   -10      0    -86   -332 *  AG    8566     .3       .0
46.8
 C. Link C         *   -66   -332     10      0 *  AG    8566     .3       .0
46.8
 D. Link D         *    10      0     10   3525 *  AG    8566     .3       .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=    .9 M/S             Z0= 100. CM            ALT=     0.
(M)
      BRG= 270.0 DEGREES         VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=   10. DEGREES       TEMP=  7.2 DEGREE (C)

  II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)    *                 EF      H       W
  DESCRIPTION   *   X1    Y1    X2    Y2   * TYPE  VPH    (G/MI)  (M)
(M)
 ---------------*------------------------
*------------------------------
 A. Link A      *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B      *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C      *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D      *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	152	3173	1.8
2. Recpt 2	*	152	2820	1.8
3. Recpt 3	*	152	2468	1.8
4. Recpt 4	*	152	2115	1.8
5. Recpt 5	*	152	1763	1.8
6. Recpt 6	*	152	1410	1.8
7. Recpt 7	*	152	1058	1.8
8. Recpt 8	*	152	705	1.8
9. Recpt 9	*	152	353	1.8
10. Recpt 10	*	152	-100	1.8
11. Recpt 11	*	152	3173	6.1
12. Recpt 12	*	152	2820	6.1
13. Recpt 13	*	152	2468	6.1
14. Recpt 14	*	152	2115	6.1
15. Recpt 15	*	152	1763	6.1
16. Recpt 16	*	152	1410	6.1
17. Recpt 17	*	152	1058	6.1
18. Recpt 18	*	152	705	6.1
19. Recpt 19	*	152	353	6.1
20. Recpt 20	*	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	49.8	23.9	.0	.0	25.9
2. Recpt 2	49.8	23.9	.0	.0	25.9
3. Recpt 3	49.8	23.9	.0	.0	25.9
4. Recpt 4	49.8	23.9	.0	.0	25.9
5. Recpt 5	49.8	23.9	.0	.0	25.9
6. Recpt 6	49.8	23.9	.0	.0	25.9
7. Recpt 7	49.8	23.9	.0	.0	25.9
8. Recpt 8	49.8	23.9	.0	.0	25.9
9. Recpt 9	49.8	23.9	.0	.0	25.9
10. Recpt 10	47.9	.0	23.2	24.7	.0
11. Recpt 11	46.8	22.6	.0	.0	24.3
12. Recpt 12	46.8	22.6	.0	.0	24.3
13. Recpt 13	46.8	22.6	.0	.0	24.3
14. Recpt 14	46.8	22.6	.0	.0	24.3
15. Recpt 15	46.8	22.6	.0	.0	24.3
16. Recpt 16	46.8	22.6	.0	.0	24.3
17. Recpt 17	46.8	22.6	.0	.0	24.3
18. Recpt 18	46.8	22.6	.0	.0	24.3
19. Recpt 19	46.8	22.6	.0	.0	24.3
20. Recpt 20	45.5	.0	22.1	23.4	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

            JOB: UCSP - Interstate 5 (winter)
            RUN: Hour 1
      POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=    .9 M/S                  Z0= 100. CM             ALT=      0.
(M)
     BRG= 292.5 DEGREES              VD=    .0 CM/S
    CLAS=     7  (G)                 VS=    .0 CM/S
    MIXH= 1000. M                   AMB=    .0 PPM
   SIGTH=   10. DEGREES            TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *                  EF      H      W
   DESCRIPTION   *   X1    Y1    X2    Y2   * TYPE  VPH   (G/MI)   (M)
(M)
 ---------------*------------------------
*------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	51.5	24.8	.0	.0	26.7
2. Recpt 2	51.5	24.8	.0	.0	26.7
3. Recpt 3	51.5	24.8	.0	.0	26.7
4. Recpt 4	51.5	24.8	.0	.0	26.7
5. Recpt 5	51.5	24.8	.0	.0	26.7
6. Recpt 6	51.5	24.8	.0	.0	26.7
7. Recpt 7	51.5	24.8	.0	.0	26.7
8. Recpt 8	51.5	24.8	.0	.0	26.7
9. Recpt 9	51.5	24.8	.0	.0	26.7
10. Recpt 10	48.0	2.0	21.4	24.0	.6
11. Recpt 11	48.8	23.6	.0	.0	25.2
12. Recpt 12	48.8	23.6	.0	.0	25.2
13. Recpt 13	48.8	23.6	.0	.0	25.2
14. Recpt 14	48.8	23.6	.0	.0	25.2
15. Recpt 15	48.8	23.6	.0	.0	25.2
16. Recpt 16	48.8	23.6	.0	.0	25.2
17. Recpt 17	48.8	23.6	.0	.0	25.2
18. Recpt 18	48.8	23.6	.0	.0	25.2
19. Recpt 19	48.8	23.6	.0	.0	25.2
20. Recpt 20	45.6	1.9	20.4	22.7	.6

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

 I.  SITE VARIABLES

      U=    .9 M/S               Z0= 100. CM              ALT=      0.
(M)
    BRG= 225.0 DEGREES           VD=    .0 CM/S
   CLAS=     7 (G)               VS=    .0 CM/S
   MIXH= 1000. M                AMB=    .0 PPM
  SIGTH=   10. DEGREES         TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

     LINK        *  LINK COORDINATES (M)    *                    EF      H       W
  DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE   VPH    (G/MI)   (M)
(M)
 ----------------*------------------------
*-------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG    8566      .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG    8566      .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG    8566      .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG    8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	55.9	26.8	.0	.0	29.1
2. Recpt 2	55.9	26.8	.0	.0	29.1
3. Recpt 3	55.9	26.8	.0	.0	29.1
4. Recpt 4	55.9	26.8	.0	.0	29.1
5. Recpt 5	55.9	26.8	.0	.0	29.1
6. Recpt 6	55.9	26.8	.0	.0	29.1
7. Recpt 7	55.9	26.8	.0	.0	29.1
8. Recpt 8	55.9	26.8	.0	.0	29.1
9. Recpt 9	55.9	26.8	.0	.0	29.1
10. Recpt 10	29.4	.0	11.8	17.6	.0
11. Recpt 11	53.8	25.9	.0	.0	27.9
12. Recpt 12	53.8	25.9	.0	.0	27.9
13. Recpt 13	53.8	25.9	.0	.0	27.9
14. Recpt 14	53.8	25.9	.0	.0	27.9
15. Recpt 15	53.8	25.9	.0	.0	27.9
16. Recpt 16	53.8	25.9	.0	.0	27.9
17. Recpt 17	53.8	25.9	.0	.0	27.9
18. Recpt 18	53.8	25.9	.0	.0	27.9
19. Recpt 19	53.8	25.9	.0	.0	27.9
20. Recpt 20	28.7	.0	11.6	17.1	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: UCSP - Interstate 5 (winter)
     RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

 I.  SITE VARIABLES

        U=    .9 M/S               Z0= 100. CM            ALT=     0.
(M)
      BRG=  22.5 DEGREES           VD=    .0 CM/S
     CLAS=     7 (G)               VS=    .0 CM/S
     MIXH= 1000. M                AMB=    .0 PPM
    SIGTH=   10. DEGREES         TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)     *                  EF      H         W
   DESCRIPTION   *   X1    Y1    X2    Y2    * TYPE  VPH    (G/MI)   (M)
(M)
 ----------------*-------------------------
*------------------------------
 A. Link A       *   -10  3525   -10     0 *  AG   8566      .3      .0
46.8
 B. Link B       *   -10     0   -86  -332 *  AG   8566      .3      .0
46.8
 C. Link C       *   -66  -332    10     0 *  AG   8566      .3      .0
46.8
 D. Link D       *    10     0    10  3525 *  AG   8566      .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: UCSP - Interstate 5 (winter)
              RUN: Hour 1
        POLLUTANT: Diesel Particulate (PM-10)
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

 I.  SITE VARIABLES

         U=    .9 M/S                Z0= 100. CM              ALT=      0.
(M)
      BRG= 315.0 DEGREES             VD=    .0 CM/S
     CLAS=     7 (G)                 VS=    .0 CM/S
     MIXH= 1000. M                  AMB=    .0 PPM
    SIGTH=   10. DEGREES           TEMP=   7.2 DEGREE (C)

 II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)   *                      EF     H      W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)
(M)
 ---------------*-------------------------
*------------------------------
 A. Link A      *   -10  3525   -10     0 *  AG   8566    .3     .0
46.8
 B. Link B      *   -10     0   -86  -332 *  AG   8566    .3     .0
46.8
 C. Link C      *   -66  -332    10     0 *  AG   8566    .3     .0
46.8
 D. Link D      *    10     0    10  3525 *  AG   8566    .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	55.9	26.8	.0	.0	29.1
2. Recpt 2	55.9	26.8	.0	.0	29.1
3. Recpt 3	55.9	26.8	.0	.0	29.1
4. Recpt 4	55.9	26.8	.0	.0	29.1
5. Recpt 5	55.9	26.8	.0	.0	29.1
6. Recpt 6	55.9	26.8	.0	.0	29.1
7. Recpt 7	55.9	26.8	.0	.0	29.1
8. Recpt 8	55.9	26.8	.0	.0	29.1
9. Recpt 9	55.9	26.8	.0	.0	29.1
10. Recpt 10	54.9	26.2	.3	1.7	26.7
11. Recpt 11	53.8	25.9	.0	.0	27.9
12. Recpt 12	53.8	25.9	.0	.0	27.9
13. Recpt 13	53.8	25.9	.0	.0	27.9
14. Recpt 14	53.8	25.9	.0	.0	27.9
15. Recpt 15	53.8	25.9	.0	.0	27.9
16. Recpt 16	53.8	25.9	.0	.0	27.9
17. Recpt 17	53.8	25.9	.0	.0	27.9
18. Recpt 18	53.8	25.9	.0	.0	27.9
19. Recpt 19	53.8	25.9	.0	.0	27.9
20. Recpt 20	52.9	25.3	.3	1.6	25.7

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

           U=     .9 M/S                 Z0= 100. CM            ALT=     0.
(M)
        BRG=  67.5 DEGREES               VD=    .0 CM/S
       CLAS=     7 (G)                   VS=    .0 CM/S
       MIXH= 1000. M                    AMB=    .0 PPM
      SIGTH=    10. DEGREES             TEMP=  7.2 DEGREE (C)

   II.  LINK VARIABLES

       LINK        *  LINK COORDINATES (M)   *                    EF      H       W
    DESCRIPTION    *   X1    Y1    X2    Y2  * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*------------------------
*------------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=     .9 M/S             Z0= 100. CM            ALT=     0.
(M)
      BRG=  45.0 DEGREES          VD=    .0 CM/S
     CLAS=     7 (G)              VS=    .0 CM/S
     MIXH= 1000. M               AMB=    .0 PPM
    SIGTH=    10. DEGREES        TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

     LINK          *  LINK COORDINATES (M)    *                  EF      H      W
  DESCRIPTION      *   X1     Y1    X2     Y2  * TYPE  VPH   (G/MI)   (M)
(M)
 ----------------*-------------------------
*------------------------------
 A. Link A         *   -10  3525   -10      0 *  AG   8566     .3      .0
46.8
 B. Link B         *   -10     0   -86   -332 *  AG   8566     .3      .0
46.8
 C. Link C         *   -66  -332    10      0 *  AG   8566     .3      .0
46.8
 D. Link D         *    10     0    10   3525 *  AG   8566     .3      .0
46.8
```

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   2

                JOB: UCSP - Interstate 5 (winter)
                RUN: Hour 1
          POLLUTANT: Diesel Particulate (PM-10)
          (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

 III.  RECEPTOR LOCATIONS

                 *     COORDINATES (M)
    RECEPTOR     *      X        Y       Z
 ----------------*--------------------------
   1. Recpt 1    *     152     3173     1.8
   2. Recpt 2    *     152     2820     1.8
   3. Recpt 3    *     152     2468     1.8
   4. Recpt 4    *     152     2115     1.8
   5. Recpt 5    *     152     1763     1.8
   6. Recpt 6    *     152     1410     1.8
   7. Recpt 7    *     152     1058     1.8
   8. Recpt 8    *     152      705     1.8
   9. Recpt 9    *     152      353     1.8
  10. Recpt 10   *     152     -100     1.8
  11. Recpt 11   *     152     3173     6.1
  12. Recpt 12   *     152     2820     6.1
  13. Recpt 13   *     152     2468     6.1
  14. Recpt 14   *     152     2115     6.1
  15. Recpt 15   *     152     1763     6.1
  16. Recpt 16   *     152     1410     6.1
  17. Recpt 17   *     152     1058     6.1
  18. Recpt 18   *     152      705     6.1
  19. Recpt 19   *     152      353     6.1
  20. Recpt 20   *     152     -100     6.1
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

          U=     .9 M/S               Z0= 100. CM            ALT=      0.
 (M)
        BRG= 337.5 DEGREES            VD=    .0 CM/S
       CLAS=     7 (G)                VS=    .0 CM/S
       MIXH= 1000. M                 AMB=    .0 PPM
      SIGTH=    10. DEGREES          TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

       LINK        *  LINK COORDINATES (M)    *                  EF      H        W
    DESCRIPTION    *   X1     Y1     X2    Y2  * TYPE  VPH   (G/MI)   (M)
 (M)
  ----------------*------------------------
*------------------------------
  A. Link A        *   -10   3525    -10      0 *  AG    8566     .3      .0
 46.8
  B. Link B        *   -10      0    -86   -332 *  AG    8566     .3      .0
 46.8
  C. Link C        *   -66   -332     10      0 *  AG    8566     .3      .0
 46.8
  D. Link D        *    10      0     10   3525 *  AG    8566     .3      .0
 46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	27.0	9.7	.0	.0	17.3
2. Recpt 2	62.0	29.5	.0	.0	32.5
3. Recpt 3	64.0	30.8	.0	.0	33.2
4. Recpt 4	64.5	31.1	.0	.0	33.4
5. Recpt 5	64.6	31.2	.0	.0	33.4
6. Recpt 6	64.7	31.2	.0	.0	33.5
7. Recpt 7	64.8	31.3	.0	.0	33.5
8. Recpt 8	64.8	31.3	.0	.0	33.5
9. Recpt 9	64.8	31.3	.0	.0	33.5
10. Recpt 10	64.8	31.3	.0	.0	33.5
11. Recpt 11	26.6	9.6	.0	.0	17.0
12. Recpt 12	61.1	29.1	.0	.0	32.0
13. Recpt 13	63.2	30.4	.0	.0	32.7
14. Recpt 14	63.6	30.7	.0	.0	32.9
15. Recpt 15	63.8	30.8	.0	.0	33.0
16. Recpt 16	63.8	30.9	.0	.0	33.0
17. Recpt 17	63.9	30.9	.0	.0	33.0
18. Recpt 18	63.9	30.9	.0	.0	33.0
19. Recpt 19	64.0	30.9	.0	.0	33.0
20. Recpt 20	64.0	30.9	.0	.0	33.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
       (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

        U=    .9 M/S                Z0= 100. CM             ALT=      0.
(M)
      BRG= 247.5 DEGREES            VD=    .0 CM/S
     CLAS=     7 (G)                VS=    .0 CM/S
     MIXH= 1000. M                 AMB=    .0 PPM
    SIGTH=    10. DEGREES          TEMP=   7.2 DEGREE (C)


  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)    *                 EF      H        W
   DESCRIPTION    *   X1     Y1    X2    Y2  * TYPE  VPH  (G/MI)   (M)
(M)
 ----------------*-----------------------
*--------------------------------
 A. Link A       *   -10  3525   -10      0 *  AG   8566     .3     .0
46.8
 B. Link B       *   -10     0   -86   -332 *  AG   8566     .3     .0
46.8
 C. Link C       *   -66  -332    10      0 *  AG   8566     .3     .0
46.8
 D. Link D       *    10     0    10   3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	51.5	24.8	.0	.0	26.7
2. Recpt 2	51.5	24.8	.0	.0	26.7
3. Recpt 3	51.5	24.8	.0	.0	26.7
4. Recpt 4	51.5	24.8	.0	.0	26.7
5. Recpt 5	51.5	24.8	.0	.0	26.7
6. Recpt 6	51.5	24.8	.0	.0	26.7
7. Recpt 7	51.5	24.8	.0	.0	26.7
8. Recpt 8	51.5	24.8	.0	.0	26.7
9. Recpt 9	51.5	24.8	.0	.0	26.7
10. Recpt 10	49.6	.0	23.9	25.7	.0
11. Recpt 11	48.8	23.6	.0	.0	25.2
12. Recpt 12	48.8	23.6	.0	.0	25.2
13. Recpt 13	48.8	23.6	.0	.0	25.2
14. Recpt 14	48.8	23.6	.0	.0	25.2
15. Recpt 15	48.8	23.6	.0	.0	25.2
16. Recpt 16	48.8	23.6	.0	.0	25.2
17. Recpt 17	48.8	23.6	.0	.0	25.2
18. Recpt 18	48.8	23.6	.0	.0	25.2
19. Recpt 19	48.8	23.6	.0	.0	25.2
20. Recpt 20	47.6	.0	23.1	24.6	.0

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=    .9 M/S               Z0= 100. CM             ALT=     0.
(M)
       BRG= 180.0 DEGREES           VD=    .0 CM/S
      CLAS=     7 (G)               VS=    .0 CM/S
      MIXH= 1000. M                AMB=    .0 PPM
     SIGTH=   10. DEGREES         TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)    *                EF      H      W
   DESCRIPTION    *    X1     Y1    X2    Y2   * TYPE  VPH  (G/MI)   (M)
(M)
  ----------------*------------------------
*-------------------------------
 A. Link A        *    -10  3525   -10     0 *  AG   8566     .3     .0
46.8
 B. Link B        *    -10     0   -86  -332 *  AG   8566     .3     .0
46.8
 C. Link C        *    -66  -332    10     0 *  AG   8566     .3     .0
46.8
 D. Link D        *     10     0    10  3525 *  AG   8566     .3     .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	22.0	9.0	1.2	1.3	10.6
2. Recpt 2	20.6	8.1	1.4	1.4	9.7
3. Recpt 3	18.9	7.1	1.6	1.7	8.6
4. Recpt 4	16.9	5.9	1.8	1.9	7.4
5. Recpt 5	14.5	4.5	2.0	2.2	5.8
6. Recpt 6	11.1	2.8	2.0	2.3	4.0
7. Recpt 7	6.8	1.1	1.7	2.2	1.9
8. Recpt 8	1.7	.0	.6	.9	.2
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	22.0	9.0	1.2	1.3	10.5
12. Recpt 12	20.6	8.1	1.4	1.4	9.7
13. Recpt 13	18.9	7.1	1.6	1.6	8.6
14. Recpt 14	16.9	5.9	1.8	1.9	7.3
15. Recpt 15	14.5	4.5	2.0	2.2	5.8
16. Recpt 16	11.1	2.8	2.0	2.3	4.0
17. Recpt 17	6.8	1.1	1.7	2.2	1.9
18. Recpt 18	1.7	.0	.6	.9	.2
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

I. SITE VARIABLES

```
        U=     .9 M/S              Z0= 100. CM              ALT=      0.
(M)
      BRG=     .0 DEGREES          VD=     .0 CM/S
     CLAS=      7 (G)              VS=     .0 CM/S
     MIXH= 1000. M                AMB=     .0 PPM
    SIGTH=    10. DEGREES        TEMP=    7.2 DEGREE (C)
```

II. LINK VARIABLES

```
    LINK       *  LINK COORDINATES (M)     *                  EF      H       W
 DESCRIPTION   *   X1    Y1    X2    Y2    * TYPE  VPH    (G/MI)   (M)
(M)
 --------------*--------------------------
*------------------------------
 A. Link A     *   -10  3525   -10     0 *  AG   8566     .3      .0
46.8
 B. Link B     *   -10     0   -86  -332 *  AG   8566     .3      .0
46.8
 C. Link C     *   -66  -332    10     0 *  AG   8566     .3      .0
46.8
 D. Link D     *    10     0    10  3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.3	.0	.0	.0	.2
3. Recpt 3	3.0	1.1	.0	.0	1.9
4. Recpt 4	6.8	2.8	.0	.0	4.0
5. Recpt 5	10.3	4.5	.0	.0	5.9
6. Recpt 6	13.3	5.9	.0	.0	7.4
7. Recpt 7	15.8	7.1	.0	.0	8.6
8. Recpt 8	17.8	8.1	.0	.0	9.7
9. Recpt 9	19.6	9.0	.0	.0	10.6
10. Recpt 10	21.5	10.0	.0	.0	11.6
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.3	.0	.0	.0	.2
13. Recpt 13	3.0	1.1	.0	.0	1.9
14. Recpt 14	6.8	2.8	.0	.0	4.0
15. Recpt 15	10.3	4.5	.0	.0	5.8
16. Recpt 16	13.3	5.9	.0	.0	7.4
17. Recpt 17	15.7	7.1	.0	.0	8.6
18. Recpt 18	17.8	8.1	.0	.0	9.7
19. Recpt 19	19.6	9.0	.0	.0	10.6
20. Recpt 20	21.5	9.9	.0	.0	11.5

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

               JOB: UCSP - Interstate 5 (winter)
               RUN: Hour 1
         POLLUTANT: Diesel Particulate (PM-10)
         (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   I.  SITE VARIABLES

         U=     .9 M/S               Z0= 100. CM              ALT=      0.
(M)
       BRG=   90.0 DEGREES           VD=    .0 CM/S
      CLAS=      7 (G)               VS=    .0 CM/S
      MIXH= 1000. M                 AMB=    .0 PPM
     SIGTH=    10. DEGREES         TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

        LINK       *   LINK COORDINATES (M)    *                    EF       H       W
    DESCRIPTION    *    X1     Y1     X2     Y2  * TYPE  VPH   (G/MI)   (M)
(M)
  ---------------*-------------------------
*-------------------------------
  A. Link A        *    -10   3525    -10      0 *  AG   8566     .3      .0
46.8
  B. Link B        *    -10      0    -86   -332 *  AG   8566     .3      .0
46.8
  C. Link C        *    -66   -332     10      0 *  AG   8566     .3      .0
46.8
  D. Link D        *     10      0     10   3525 *  AG   8566     .3      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: UCSP - Interstate 5 (winter)
             RUN: Hour 1
       POLLUTANT: Diesel Particulate (PM-10)
      (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  I.  SITE VARIABLES

        U=     .9 M/S              Z0= 100. CM             ALT=      0.
(M)
      BRG=   67.5 DEGREES          VD=    .0 CM/S
     CLAS=      7 (G)              VS=    .0 CM/S
     MIXH=  1000. M               AMB=    .0 PPM
    SIGTH=    10. DEGREES        TEMP=   7.2 DEGREE (C)

  II.  LINK VARIABLES

      LINK        *  LINK COORDINATES (M)   *                    EF       H       W
   DESCRIPTION    *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)
(M)
 ---------------*-------------------------
*------------------------------
 A. Link A        *   -10  3525   -10     0 *  AG   8566    3.2      .0
46.8
 B. Link B        *   -10     0   -86  -332 *  AG   8566    3.2      .0
46.8
 C. Link C        *   -66  -332    10     0 *  AG   8566    3.2      .0
46.8
 D. Link D        *    10     0    10  3525 *  AG   8566    3.2      .0
46.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	152	3173	1.8
2. Recpt 2	152	2820	1.8
3. Recpt 3	152	2468	1.8
4. Recpt 4	152	2115	1.8
5. Recpt 5	152	1763	1.8
6. Recpt 6	152	1410	1.8
7. Recpt 7	152	1058	1.8
8. Recpt 8	152	705	1.8
9. Recpt 9	152	353	1.8
10. Recpt 10	152	-100	1.8
11. Recpt 11	152	3173	6.1
12. Recpt 12	152	2820	6.1
13. Recpt 13	152	2468	6.1
14. Recpt 14	152	2115	6.1
15. Recpt 15	152	1763	6.1
16. Recpt 16	152	1410	6.1
17. Recpt 17	152	1058	6.1
18. Recpt 18	152	705	6.1
19. Recpt 19	152	353	6.1
20. Recpt 20	152	-100	6.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: UCSP - Interstate 5 (winter)
RUN: Hour 1
POLLUTANT: Diesel Particulate (PM-10)
(NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0

ATTACHMENT 5

Roadway Receptors **1-Hour Winter Concentration ug/m^3**

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1.0000	1.9120	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.2430	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
2.0000	2.2810	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.2310	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
3.0000	2.4330	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.2160	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
4.0000	2.5160	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1980	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
5.0000	2.5700	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1760	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
6.0000	2.6080	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1470	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
7.0000	2.6380	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1040	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
8.0000	2.6610	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.0220	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
9.0000	2.6800	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	1.7970	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
10.0000	1.8600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6280	0.9600	0.7260	0.6770	0.7120	1.0550	1.4700
11.0000	1.4770	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.7260	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
12.0000	1.8440	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.7140	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
13.0000	1.9960	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6990	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
14.0000	2.0780	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6820	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
15.0000	2.1320	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6600	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
16.0000	2.1700	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6300	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
17.0000	2.2000	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.5870	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
18.0000	2.2230	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.5050	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
19.0000	2.2420	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.2810	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
20.0000	1.7710	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5380	0.6650	0.3560	0.2940	0.3230	0.7110	1.2430

First Row Receptors **1-Hour Winter Concentration ug/m^3**

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1.0000	0.0350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4380	0.7190	0.5610	0.3970	0.3820	0.4430	0.7460	0.9870
2.0000	0.1570	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4260	0.7190	0.5610	0.3970	0.3820	0.4430	0.7460	1.0100
3.0000	0.2660	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4120	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
4.0000	0.3380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3950	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
5.0000	0.3870	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3730	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
6.0000	0.4230	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3430	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
7.0000	0.4520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2970	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
8.0000	0.4740	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2130	0.7580	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
9.0000	0.4930	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0780	0.7850	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
10.0000	0.5140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0580	0.5380	0.4340	0.4110	0.4310	0.6600	0.9780
11.0000	0.0340	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4350	0.6190	0.3580	0.2010	0.1840	0.2380	0.5630	0.9120
12.0000	0.1560	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4220	0.6190	0.3580	0.2010	0.1840	0.2380	0.5630	0.9340
13.0000	0.2650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4100	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
14.0000	0.3360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3930	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
15.0000	0.3850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3710	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
16.0000	0.4220	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3410	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
17.0000	0.4500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2950	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
18.0000	0.4730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2110	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
19.0000	0.4920	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0770	0.7210	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
20.0000	0.5120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0550	0.4840	0.3430	0.3140	0.3320	0.5800	0.9390

500-foot Receptors **1-Hour Winter Concentration ug/m^3**

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2200	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.2700
2.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2060	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.6200

3.0000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1890	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.6400
4.0000	0.0680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1690	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.6450
5.0000	0.1030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1450	0.6470	0.5590	0.5150	0.4980	0.5150	0.5590	0.6460
6.0000	0.1330	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1110	0.6470	0.5590	0.5150	0.4980	0.5150	0.5590	0.6470
7.0000	0.1580	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0680	0.6460	0.5590	0.5150	0.4980	0.5150	0.5590	0.6480
8.0000	0.1780	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.6530	0.5590	0.5150	0.4980	0.5150	0.5590	0.6480
9.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6880	0.5590	0.5150	0.4980	0.5150	0.5590	0.6480
10.0000	0.2150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2940	0.4960	0.4790	0.4800	0.5490	0.6480
11.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2200	0.6400	0.5380	0.4880	0.4680	0.4880	0.5380	0.2660
12.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2060	0.6400	0.5380	0.4880	0.4680	0.4880	0.5380	0.6110
13.0000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1890	0.6390	0.5380	0.4880	0.4680	0.4880	0.5380	0.6320
14.0000	0.0680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1690	0.6390	0.5380	0.4880	0.4680	0.4880	0.5380	0.6360
15.0000	0.1030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1450	0.6390	0.5380	0.4880	0.4680	0.4880	0.5380	0.6380
16.0000	0.1330	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1110	0.6380	0.5380	0.4880	0.4680	0.4880	0.5380	0.6380
17.0000	0.1570	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0680	0.6380	0.5380	0.4880	0.4680	0.4880	0.5380	0.6380
18.0000	0.1780	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.6440	0.5380	0.4880	0.4680	0.4880	0.5380	0.6390
19.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6810	0.5380	0.4880	0.4680	0.4880	0.5380	0.6390
20.0000	0.2150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2870	0.4760	0.4550	0.4560	0.5290	0.6400

Roadway Receptors

1-Hour Summer Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1.0000	1.9120	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.2430	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
2.0000	2.2810	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.2310	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
3.0000	2.4330	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.2160	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
4.0000	2.5160	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1980	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
5.0000	2.5700	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1760	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
6.0000	2.6080	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1470	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
7.0000	2.6380	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.1040	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
8.0000	2.6610	0.3500	0.1533	0.1727	0.1391	0.1495	0.1475	0.2374	2.0220	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
9.0000	2.6800	0.3500	0.1533	0.1727	0.0000	0.1495	0.1475	0.2374	1.7970	1.6420	1.1510	0.8550	0.8090	0.9420	1.4630	2.2000
10.0000	1.8600	0.0000	0.0000	0.0000	0.0334	0.0000	0.0000	0.0000	0.0000	0.6280	0.9600	0.7260	0.6770	0.7120	1.0550	1.4700
11.0000	1.4770	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.7260	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
12.0000	1.8440	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.7140	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
13.0000	1.9960	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6990	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
14.0000	2.0780	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6820	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
15.0000	2.1320	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6600	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
16.0000	2.1700	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.6300	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
17.0000	2.2000	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.5870	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
18.0000	2.2230	0.1885	0.0601	0.0693	0.0334	0.0406	0.0522	0.0479	1.5050	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
19.0000	2.2420	0.1885	0.0601	0.0693	0.0000	0.0406	0.0522	0.0479	1.2810	0.8910	0.3920	0.1590	0.1420	0.2030	0.7530	1.6050
20.0000	1.7710	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.5380	0.6650	0.3560	0.2940	0.3230	0.7110	1.2430

First Row Receptors

1-Hour Summer Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1.0000	0.0350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4380	0.7190	0.5610	0.3970	0.3820	0.4430	0.7460	0.9870
2.0000	0.1570	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4260	0.7190	0.5610	0.3970	0.3820	0.4430	0.7460	1.0100
3.0000	0.2660	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4120	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
4.0000	0.3380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3950	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
5.0000	0.3870	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3730	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
6.0000	0.4230	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3430	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370

7.0000	0.4520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2970	0.7570	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
8.0000	0.4740	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2130	0.7580	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
9.0000	0.4930	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0780	0.7850	0.6570	0.5000	0.4900	0.5470	0.8220	1.0370
10.0000	0.5140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0580	0.5380	0.4340	0.4110	0.4310	0.6600	0.9780
11.0000	0.0340	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4350	0.6190	0.3580	0.2010	0.1840	0.2380	0.5630	0.9120
12.0000	0.1560	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4220	0.6190	0.3580	0.2010	0.1840	0.2380	0.5630	0.9340
13.0000	0.2650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4100	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
14.0000	0.3360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3930	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
15.0000	0.3850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3710	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
16.0000	0.4220	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3410	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
17.0000	0.4500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2950	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
18.0000	0.4730	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2110	0.6930	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
19.0000	0.4920	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0770	0.7210	0.5020	0.3370	0.3210	0.3810	0.6970	0.9910
20.0000	0.5120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0550	0.4840	0.3430	0.3140	0.3320	0.5800	0.9390

500-foot Receptors

1-Hour Summer Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2200	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.2700
2.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2060	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.6200
3.0000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1890	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.6400
4.0000	0.0680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1690	0.6480	0.5590	0.5150	0.4980	0.5150	0.5590	0.6450
5.0000	0.1030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1450	0.6470	0.5590	0.5150	0.4980	0.5150	0.5590	0.6460
6.0000	0.1330	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1110	0.6470	0.5590	0.5150	0.4980	0.5150	0.5590	0.6470
7.0000	0.1580	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0680	0.6460	0.5590	0.5150	0.4980	0.5150	0.5590	0.6480
8.0000	0.1780	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.6530	0.5590	0.5150	0.4980	0.5150	0.5590	0.6480
9.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6880	0.5590	0.5150	0.4980	0.5150	0.5590	0.6480
10.0000	0.2150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2940	0.4960	0.4790	0.4800	0.5490	0.6480
11.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2200	0.6400	0.5380	0.4880	0.4680	0.4880	0.5380	0.2660
12.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2060	0.6400	0.5380	0.4880	0.4680	0.4880	0.5380	0.6110
13.0000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1890	0.6390	0.5380	0.4880	0.4680	0.4880	0.5380	0.6320
14.0000	0.0680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1690	0.6390	0.5380	0.4880	0.4680	0.4880	0.5380	0.6360
15.0000	0.1030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1450	0.6390	0.5380	0.4880	0.4680	0.4880	0.5380	0.6380
16.0000	0.1330	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1110	0.6380	0.5380	0.4880	0.4680	0.4880	0.5380	0.6380
17.0000	0.1570	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0680	0.6380	0.5380	0.4880	0.4680	0.4880	0.5380	0.6380
18.0000	0.1780	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.6440	0.5380	0.4880	0.4680	0.4880	0.5380	0.6390
19.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6810	0.5380	0.4880	0.4680	0.4880	0.5380	0.6390
20.0000	0.2150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2870	0.4760	0.4550	0.4560	0.5290	0.6400

DIRECTIONAL %	0.0290	0.0290	0.0450	0.0500	0.0830	0.0630	0.0380	0.0310	0.0410	0.0450	0.0780	0.1850	0.1420	0.0550	0.0290	0.0270	0.9700

Roadway Receptors (25 meters - 82 feet) — 1-Hour Weighted Wind Direction Winter Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total**
1.0000	0.0554	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0920	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8212
2.0000	0.0661	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0915	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8317
3.0000	0.0706	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0909	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8356
4.0000	0.0730	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0901	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8373
5.0000	0.0745	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0892	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8380
6.0000	0.0756	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0880	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8379
7.0000	0.0765	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0863	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8370
8.0000	0.0772	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0829	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8342
9.0000	0.0777	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0737	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8253
10.0000	0.0539	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0749	0.1343	0.0961	0.0392	0.0306	0.0397	0.5118
11.0000	0.0428	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0708	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3405
12.0000	0.0535	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0703	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3509
13.0000	0.0579	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0697	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3549
14.0000	0.0603	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0690	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3566
15.0000	0.0618	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0681	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3573
16.0000	0.0629	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0668	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3571
17.0000	0.0638	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0651	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3562
18.0000	0.0645	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0617	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3534
19.0000	0.0650	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0525	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3446
20.0000	0.0514	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0242	0.0519	0.0659	0.0417	0.0178	0.0206	0.0336	0.3162

First Row Receptors (70 meters - 230 feet) — 1-Hour Weighted Wind Direction Winter Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total**
1.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0180	0.0324	0.0438	0.0734	0.0542	0.0244	0.0216	0.0266	0.3042
2.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0175	0.0324	0.0438	0.0734	0.0542	0.0244	0.0216	0.0273	0.3080
3.0000	0.0077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0169	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3645
4.0000	0.0098	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0162	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3659
5.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0153	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3665
6.0000	0.0123	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0141	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3663
7.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0122	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3652
8.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0087	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3623
9.0000	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0353	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3585
10.0000	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0026	0.0420	0.0803	0.0584	0.0237	0.0191	0.0264	0.2754
11.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0178	0.0279	0.0279	0.0372	0.0261	0.0131	0.0163	0.0246	0.1977
12.0000	0.0045	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0173	0.0279	0.0279	0.0372	0.0261	0.0131	0.0163	0.0252	0.2014
13.0000	0.0077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0168	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2788
14.0000	0.0097	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0161	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2802
15.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0152	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2807
16.0000	0.0122	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0140	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2805
17.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0121	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2794
18.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0087	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2766
19.0000	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0324	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2728
20.0000	0.0148	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0025	0.0378	0.0635	0.0446	0.0183	0.0168	0.0254	0.2302

500-foot Receptors — 1-Hour Weighted Wind Direction Winter Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total**
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0073	0.3085
2.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0084	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0167	0.3178
3.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0077	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0173	0.3184
4.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0069	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0174	0.3189

5.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0059	0.0291	0.0436	0.0953	0.0707	0.0283	0.0162	0.0174	0.3189
6.0000	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0291	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3184
7.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0291	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3173
8.0000	0.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0294	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3160
9.0000	0.0057	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0310	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3175
10.0000	0.0062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0229	0.0918	0.0680	0.0264	0.0159	0.0175	0.2562
11.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0072	0.2947
12.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0084	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0165	0.3038
13.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0077	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0171	0.3044
14.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0069	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0172	0.3048
15.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0059	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0172	0.3049
16.0000	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0287	0.0420	0.0903	0.0665	0.0268	0.0156	0.0172	0.3043
17.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0287	0.0420	0.0903	0.0665	0.0268	0.0156	0.0173	0.3032
18.0000	0.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0290	0.0420	0.0903	0.0665	0.0268	0.0156	0.0173	0.3020
19.0000	0.0057	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0306	0.0420	0.0903	0.0665	0.0268	0.0156	0.0173	0.3036
20.0000	0.0062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0224	0.0881	0.0646	0.0251	0.0153	0.0173	0.2461

Roadway Receptors

1-Hour Weighted Wind Direction Summer Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total**
1.0000	0.0554	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0920	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8212
2.0000	0.0661	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0915	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8317
3.0000	0.0706	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0909	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8356
4.0000	0.0730	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0901	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8373
5.0000	0.0745	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0892	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8380
6.0000	0.0756	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0880	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8379
7.0000	0.0765	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0863	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8370
8.0000	0.0772	0.0102	0.0069	0.0086	0.0115	0.0094	0.0056	0.0074	0.0829	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8342
9.0000	0.0777	0.0102	0.0069	0.0086	0.0000	0.0094	0.0056	0.0074	0.0737	0.0739	0.0898	0.1582	0.1149	0.0518	0.0424	0.0594	0.8134
10.0000	0.0539	0.0000	0.0000	0.0000	0.0028	0.0000	0.0000	0.0000	0.0000	0.0283	0.0749	0.1343	0.0961	0.0392	0.0306	0.0397	0.5147
11.0000	0.0428	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0708	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3405
12.0000	0.0535	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0703	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3509
13.0000	0.0579	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0697	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3549
14.0000	0.0603	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0690	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3566
15.0000	0.0618	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0681	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3573
16.0000	0.0629	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0668	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3571
17.0000	0.0638	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0651	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3562
18.0000	0.0645	0.0055	0.0027	0.0035	0.0028	0.0026	0.0020	0.0015	0.0617	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3534
19.0000	0.0650	0.0055	0.0027	0.0035	0.0000	0.0026	0.0020	0.0015	0.0525	0.0401	0.0306	0.0294	0.0202	0.0112	0.0218	0.0433	0.3417
20.0000	0.0514	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0242	0.0519	0.0659	0.0417	0.0178	0.0206	0.0336	0.3162

First Row Receptors

1-Hour Weighted Wind Direction Summer Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total**
1.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0180	0.0324	0.0438	0.0734	0.0542	0.0244	0.0216	0.0266	0.3042
2.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0175	0.0324	0.0438	0.0734	0.0542	0.0244	0.0216	0.0273	0.3080
3.0000	0.0077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0169	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3645
4.0000	0.0098	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0162	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3659
5.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0153	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3665
6.0000	0.0123	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0141	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3663
7.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0122	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3652
8.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0087	0.0341	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3623
9.0000	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0353	0.0512	0.0925	0.0696	0.0301	0.0238	0.0280	0.3585
10.0000	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0026	0.0420	0.0803	0.0584	0.0237	0.0191	0.0264	0.2754

11.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0178	0.0279	0.0279	0.0372	0.0261	0.0131	0.0163	0.0246	0.1977
12.0000	0.0045	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0173	0.0279	0.0279	0.0372	0.0261	0.0131	0.0163	0.0252	0.2014
13.0000	0.0077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0168	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2788
14.0000	0.0097	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0161	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2802
15.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0152	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2807
16.0000	0.0122	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0140	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2805
17.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0121	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2794
18.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0087	0.0312	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2766
19.0000	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0324	0.0392	0.0623	0.0456	0.0210	0.0202	0.0268	0.2728
20.0000	0.0148	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0025	0.0378	0.0635	0.0446	0.0183	0.0168	0.0254	0.2302

500-foot Receptors

1-Hour Weighted Wind Direction Winter Concentration ug/m^3

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total**
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0073	0.3085
2.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0084	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0167	0.3178
3.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0077	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0173	0.3184
4.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0069	0.0292	0.0436	0.0953	0.0707	0.0283	0.0162	0.0174	0.3189
5.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0059	0.0291	0.0436	0.0953	0.0707	0.0283	0.0162	0.0174	0.3189
6.0000	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0291	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3184
7.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0291	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3173
8.0000	0.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0294	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3160
9.0000	0.0057	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0310	0.0436	0.0953	0.0707	0.0283	0.0162	0.0175	0.3175
10.0000	0.0062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0229	0.0918	0.0680	0.0264	0.0159	0.0175	0.2562
11.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0072	0.2947
12.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0084	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0165	0.3038
13.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0077	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0171	0.3044
14.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0069	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0172	0.3048
15.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0059	0.0288	0.0420	0.0903	0.0665	0.0268	0.0156	0.0172	0.3049
16.0000	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0287	0.0420	0.0903	0.0665	0.0268	0.0156	0.0172	0.3043
17.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0287	0.0420	0.0903	0.0665	0.0268	0.0156	0.0173	0.3032
18.0000	0.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0290	0.0420	0.0903	0.0665	0.0268	0.0156	0.0173	0.3020
19.0000	0.0057	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0306	0.0420	0.0903	0.0665	0.0268	0.0156	0.0173	0.3036
20.0000	0.0062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0224	0.0881	0.0646	0.0251	0.0153	0.0173	0.2461

**assume the percentage of calm time is missing data

Roadway Receptors

Excess Cancer Risk Winter

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.00E+00	1.66E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.76E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.39E-04
2.00E+00	1.98E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.74E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.42E-04
3.00E+00	2.12E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.73E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.43E-04
4.00E+00	2.19E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.70E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
5.00E+00	2.24E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.68E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
6.00E+00	2.27E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.64E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
7.00E+00	2.30E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.59E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
8.00E+00	2.32E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.49E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.43E-04
9.00E+00	2.33E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.21E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.40E-04
1.00E+01	1.62E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.48E-06	2.25E-05	4.03E-05	2.88E-05	1.17E-05	9.18E-06	1.19E-05	1.49E-04
1.10E+01	1.28E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.12E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	9.92E-05
1.20E+01	1.60E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.11E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.02E-04
1.30E+01	1.74E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.09E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.03E-04
1.40E+01	1.81E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.07E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.50E+01	1.85E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.04E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.60E+01	1.89E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.00E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.70E+01	1.91E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	1.95E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.80E+01	1.93E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	1.85E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.03E-04
1.90E+01	1.95E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	1.58E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.00E-04
2.00E+01	1.54E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.26E-06	1.50E-05	1.98E-05	1.25E-05	5.33E-06	6.19E-06	1.01E-05	9.21E-05

First Row Receptors

Excess Cancer Risk Winter

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.00E+00	3.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-06	9.71E-06	1.31E-05	2.20E-05	1.63E-05	7.31E-06	6.49E-06	7.99E-06	8.86E-05
2.00E+00	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.24E-06	9.71E-06	1.31E-05	2.20E-05	1.63E-05	7.31E-06	6.49E-06	8.18E-06	8.97E-05
3.00E+00	2.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.07E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.06E-04
4.00E+00	2.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.86E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.07E-04
5.00E+00	3.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.59E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.07E-04
6.00E+00	3.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.07E-04
7.00E+00	3.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.06E-04
8.00E+00	4.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.62E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.06E-04
9.00E+00	4.29E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.59E-07	1.06E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.04E-04
1.00E+01	4.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.83E-07	1.26E-05	2.41E-05	1.75E-05	7.11E-06	5.74E-06	7.92E-06	8.02E-05
1.10E+01	2.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.35E-06	8.36E-06	8.38E-06	1.12E-05	7.84E-06	3.93E-06	4.90E-06	7.39E-06	5.76E-05
1.20E+01	1.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.19E-06	8.36E-06	8.38E-06	1.12E-05	7.84E-06	3.93E-06	4.90E-06	7.57E-06	5.87E-05
1.30E+01	2.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.04E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.12E-05
1.40E+01	2.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.83E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.16E-05
1.50E+01	3.35E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.18E-05
1.60E+01	3.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.19E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.17E-05
1.70E+01	3.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.63E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.14E-05
1.80E+01	4.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.06E-05
1.90E+01	4.28E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.47E-07	9.73E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	7.95E-05
2.00E+01	4.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.43E-07	1.13E-05	1.90E-05	1.34E-05	5.48E-06	5.05E-06	7.61E-06	6.71E-05

500-foot Receptors

Excess Cancer Risk Winter

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	2.19E-06	8.99E-05
2.00E+00	2.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.02E-06	9.26E-05
3.00E+00	2.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.18E-06	9.28E-05
4.00E+00	5.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.22E-06	9.29E-05
5.00E+00	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	8.73E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.23E-06	9.29E-05
6.00E+00	1.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	8.73E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.24E-06	9.27E-05
7.00E+00	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.36E-07	8.72E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.24E-05
8.00E+00	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-07	8.82E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.21E-05
9.00E+00	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.29E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.25E-05
1.00E+01	1.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.88E-06	2.75E-05	2.04E-05	7.92E-06	4.78E-06	5.25E-06	7.46E-05
1.10E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	8.64E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	2.15E-06	8.58E-05
1.20E+01	2.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-06	8.64E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	4.95E-06	8.85E-05
1.30E+01	2.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.12E-06	8.87E-05
1.40E+01	5.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.15E-06	8.88E-05
1.50E+01	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.17E-06	8.88E-05
1.60E+01	1.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	8.61E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.17E-06	8.86E-05
1.70E+01	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.36E-07	8.61E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.83E-05
1.80E+01	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-07	8.69E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.80E-05
1.90E+01	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.19E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.84E-05
2.00E+01	1.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.72E-06	2.64E-05	1.94E-05	7.52E-06	4.60E-06	5.18E-06	7.17E-05

Roadway Receptors

Excess Cancer Risk Summer

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.00E+00	1.66E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.76E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.39E-04
2.00E+00	1.98E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.74E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.42E-04
3.00E+00	2.12E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.73E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.43E-04
4.00E+00	2.19E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.70E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
5.00E+00	2.24E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.68E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
6.00E+00	2.27E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.64E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
7.00E+00	2.30E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.59E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.44E-04
8.00E+00	2.32E-05	3.05E-06	2.07E-06	2.59E-06	3.46E-06	2.83E-06	1.68E-06	2.21E-06	2.49E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.43E-04
9.00E+00	2.33E-05	3.05E-06	2.07E-06	2.59E-06	0.00E+00	2.83E-06	1.68E-06	2.21E-06	2.21E-05	2.22E-05	2.69E-05	4.75E-05	3.45E-05	1.55E-05	1.27E-05	1.78E-05	2.37E-04
1.00E+01	1.62E-05	0.00E+00	0.00E+00	0.00E+00	8.32E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.48E-06	2.25E-05	4.03E-05	2.88E-05	1.17E-05	9.18E-06	1.19E-05	1.50E-04
1.10E+01	1.28E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.12E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	9.92E-05
1.20E+01	1.60E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.11E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.02E-04
1.30E+01	1.74E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.09E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.03E-04
1.40E+01	1.81E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.07E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.50E+01	1.85E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.04E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.60E+01	1.89E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	2.00E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.70E+01	1.91E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	1.95E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.04E-04
1.80E+01	1.93E-05	1.64E-06	8.11E-07	1.04E-06	8.32E-07	7.67E-07	5.95E-07	4.45E-07	1.85E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	1.03E-04
1.90E+01	1.95E-05	1.64E-06	8.11E-07	1.04E-06	0.00E+00	7.67E-07	5.95E-07	4.45E-07	1.58E-05	1.20E-05	9.17E-06	8.82E-06	6.05E-06	3.35E-06	6.55E-06	1.30E-05	9.95E-05
2.00E+01	1.54E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.26E-06	1.56E-05	1.98E-05	1.25E-05	5.33E-06	6.19E-06	1.01E-05	9.21E-05

First Row Receptors

Excess Cancer Risk Summer

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.00E+00	3.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-06	9.71E-06	1.31E-05	2.20E-05	1.63E-05	7.31E-06	6.49E-06	7.99E-06	8.86E-05
2.00E+00	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.24E-06	9.71E-06	1.31E-05	2.20E-05	1.63E-05	7.31E-06	6.49E-06	8.18E-06	8.97E-05
3.00E+00	2.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.07E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.06E-04
4.00E+00	2.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.86E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.07E-04
5.00E+00	3.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.59E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.07E-04
6.00E+00	3.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.07E-04
7.00E+00	3.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.06E-04
8.00E+00	4.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.62E-06	1.02E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.06E-04
9.00E+00	4.29E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.59E-07	1.06E-05	1.54E-05	2.78E-05	2.09E-05	9.03E-06	7.15E-06	8.40E-06	1.04E-04
1.00E+01	4.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.83E-07	1.26E-05	2.41E-05	1.75E-05	7.11E-06	5.74E-06	7.92E-06	8.02E-05
1.10E+01	2.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.35E-06	8.36E-06	8.38E-06	1.12E-05	7.84E-06	3.93E-06	4.90E-06	7.39E-06	5.76E-05
1.20E+01	1.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.19E-06	8.36E-06	8.38E-06	1.12E-05	7.84E-06	3.93E-06	4.90E-06	7.57E-06	5.87E-05
1.30E+01	2.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.04E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.12E-05
1.40E+01	2.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.83E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.16E-05
1.50E+01	3.35E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.18E-05
1.60E+01	3.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.19E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.17E-05
1.70E+01	3.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.63E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.14E-05
1.80E+01	4.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E-06	9.36E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	8.06E-05
1.90E+01	4.28E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.47E-07	9.73E-06	1.17E-05	1.87E-05	1.37E-05	6.29E-06	6.06E-06	8.03E-06	7.95E-05
2.00E+01	4.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.43E-07	1.13E-05	1.90E-05	1.34E-05	5.48E-06	5.05E-06	7.61E-06	6.71E-05

500-foot Receptors

Excess Cancer Risk Summer

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	2.19E-06	8.99E-05
2.00E+00	2.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.02E-06	9.26E-05
3.00E+00	2.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.18E-06	9.28E-05
4.00E+00	5.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	8.75E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.22E-06	9.29E-05
5.00E+00	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	8.73E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.23E-06	9.29E-05
6.00E+00	1.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	8.73E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.24E-06	9.27E-05
7.00E+00	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.36E-07	8.72E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.24E-05
8.00E+00	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-07	8.82E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.21E-05
9.00E+00	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.29E-06	1.31E-05	2.86E-05	2.12E-05	8.50E-06	4.86E-06	5.25E-06	9.25E-05
1.00E+01	1.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.88E-06	2.75E-05	2.04E-05	7.92E-06	4.78E-06	5.25E-06	7.46E-05
1.10E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	8.64E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	2.15E-06	8.58E-05
1.20E+01	2.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-06	8.64E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	4.95E-06	8.85E-05
1.30E+01	2.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.12E-06	8.87E-05
1.40E+01	5.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.15E-06	8.88E-05
1.50E+01	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	8.63E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.17E-06	8.88E-05
1.60E+01	1.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	8.61E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.17E-06	8.86E-05
1.70E+01	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.36E-07	8.61E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.83E-05
1.80E+01	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-07	8.69E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.80E-05
1.90E+01	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.19E-06	1.26E-05	2.71E-05	1.99E-05	8.05E-06	4.68E-06	5.18E-06	8.84E-05
2.00E+01	1.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.72E-06	2.64E-05	1.94E-05	7.52E-06	4.60E-06	5.18E-06	7.17E-05

Chronic Health Hazard Index Winter

Roadway Receptors

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.0000	0.0111	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0184	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1595
2.0000	0.0132	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0183	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1615
3.0000	0.0141	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0182	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1623
4.0000	0.0146	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0180	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1626
5.0000	0.0149	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0178	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1627
6.0000	0.0151	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0176	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1627
7.0000	0.0153	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0173	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1625
8.0000	0.0154	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0166	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1620
9.0000	0.0155	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0147	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1603
10.0000	0.0108	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0057	0.0150	0.0269	0.0192	0.0078	0.0061	0.0079	0.0994
11.0000	0.0086	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0142	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0661
12.0000	0.0107	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0141	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0682
13.0000	0.0116	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0139	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0689
14.0000	0.0121	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0138	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0692
15.0000	0.0124	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0136	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0694
16.0000	0.0126	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0134	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0694
17.0000	0.0128	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0130	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0692
18.0000	0.0129	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0123	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0686
19.0000	0.0130	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0105	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0669
20.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0048	0.0104	0.0132	0.0083	0.0036	0.0041	0.0067	0.0614

Chronic Health Hazard Index Winter

First Row Receptors

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.0065	0.0088	0.0147	0.0108	0.0049	0.0043	0.0053	0.0591
2.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0035	0.0065	0.0088	0.0147	0.0108	0.0049	0.0043	0.0055	0.0598
3.0000	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0034	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0708
4.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0711
5.0000	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0712
6.0000	0.0025	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0711
7.0000	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0709
8.0000	0.0027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0704
9.0000	0.0029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0071	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0696
10.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0084	0.0161	0.0117	0.0047	0.0038	0.0053	0.0535
11.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.0056	0.0056	0.0074	0.0052	0.0026	0.0033	0.0049	0.0384
12.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0035	0.0056	0.0056	0.0074	0.0052	0.0026	0.0033	0.0050	0.0391
13.0000	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0034	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0541
14.0000	0.0019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0544
15.0000	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0545
16.0000	0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0545
17.0000	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0543
18.0000	0.0027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0537
19.0000	0.0029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0065	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0530
20.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0076	0.0127	0.0089	0.0037	0.0034	0.0051	0.0447

Chronic Health Hazard Index Winter

500-foot Receptors

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0018	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0015	0.0599
2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0033	0.0617
3.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0015	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0618
4.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0014	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0619
5.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0619
6.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0618
7.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0616
8.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0059	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0614
9.0000	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0062	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0617

10.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0184	0.0136	0.0053	0.0032	0.0035	0.0498
11.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0018	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0014	0.0572
12.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0033	0.0590
13.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0015	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0591
14.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0014	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0592
15.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0592
16.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0057	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0591
17.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0057	0.0084	0.0181	0.0133	0.0054	0.0031	0.0035	0.0589
18.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0035	0.0586
19.0000	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0061	0.0084	0.0181	0.0133	0.0054	0.0031	0.0035	0.0590
20.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0176	0.0129	0.0050	0.0031	0.0035	0.0478

Roadway Receptors — Chronic Health Hazard Index Summer

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.0000	0.0111	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0184	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1595
2.0000	0.0132	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0183	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1615
3.0000	0.0141	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0182	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1623
4.0000	0.0146	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0180	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1626
5.0000	0.0149	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0178	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1627
6.0000	0.0151	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0176	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1627
7.0000	0.0153	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0173	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1625
8.0000	0.0154	0.0020	0.0014	0.0017	0.0023	0.0019	0.0011	0.0015	0.0166	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1620
9.0000	0.0155	0.0020	0.0014	0.0017	0.0000	0.0019	0.0011	0.0015	0.0147	0.0148	0.0180	0.0316	0.0230	0.0104	0.0085	0.0119	0.1580
10.0000	0.0108	0.0000	0.0000	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0057	0.0150	0.0269	0.0192	0.0078	0.0061	0.0079	0.0999
11.0000	0.0086	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0142	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0661
12.0000	0.0107	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0141	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0682
13.0000	0.0116	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0139	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0689
14.0000	0.0121	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0138	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0692
15.0000	0.0124	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0136	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0694
16.0000	0.0126	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0134	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0694
17.0000	0.0128	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0130	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0692
18.0000	0.0129	0.0011	0.0005	0.0007	0.0006	0.0005	0.0004	0.0003	0.0123	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0686
19.0000	0.0130	0.0011	0.0005	0.0007	0.0000	0.0005	0.0004	0.0003	0.0105	0.0080	0.0061	0.0059	0.0040	0.0022	0.0044	0.0087	0.0664
20.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0048	0.0104	0.0132	0.0083	0.0036	0.0041	0.0067	0.0614

First Row Receptors — Chronic Health Hazard Index Summer

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.0065	0.0088	0.0147	0.0108	0.0049	0.0043	0.0053	0.0591
2.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0035	0.0065	0.0088	0.0147	0.0108	0.0049	0.0043	0.0055	0.0598
3.0000	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0034	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0708
4.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0711
5.0000	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0712
6.0000	0.0025	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0711
7.0000	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0709
8.0000	0.0027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0068	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0704
9.0000	0.0029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0071	0.0102	0.0185	0.0139	0.0060	0.0048	0.0056	0.0696
10.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0084	0.0161	0.0117	0.0047	0.0038	0.0053	0.0535
11.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.0056	0.0056	0.0074	0.0052	0.0026	0.0033	0.0049	0.0384
12.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0035	0.0056	0.0056	0.0074	0.0052	0.0026	0.0033	0.0050	0.0391
13.0000	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0034	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0541
14.0000	0.0019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0544
15.0000	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0545
16.0000	0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0028	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0545
17.0000	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0543
18.0000	0.0027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0062	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0537
19.0000	0.0029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0065	0.0078	0.0125	0.0091	0.0042	0.0040	0.0054	0.0530
20.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0076	0.0127	0.0089	0.0037	0.0034	0.0051	0.0447

500-foot Receptors

Chronic Health Hazard Index Summer

Wind Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0018	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0015	0.0599
2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0033	0.0617
3.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0015	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0618
4.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0014	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0619
5.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0619
6.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0618
7.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0058	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0616
8.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0059	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0614
9.0000	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0062	0.0087	0.0191	0.0141	0.0057	0.0032	0.0035	0.0617
10.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0046	0.0184	0.0136	0.0053	0.0032	0.0035	0.0498
11.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0018	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0014	0.0572
12.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0017	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0033	0.0590
13.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0015	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0591
14.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0014	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0592
15.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0592
16.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0057	0.0084	0.0181	0.0133	0.0054	0.0031	0.0034	0.0591
17.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0057	0.0084	0.0181	0.0133	0.0054	0.0031	0.0035	0.0589
18.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0058	0.0084	0.0181	0.0133	0.0054	0.0031	0.0035	0.0586
19.0000	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0061	0.0084	0.0181	0.0133	0.0054	0.0031	0.0035	0.0590
20.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0176	0.0129	0.0050	0.0031	0.0035	0.0478

APPENDIX F

Water Supply Assessment, City of Chula Vista Urban Core Specific Plan

WATER SUPPLY ASSESSMENT

City of Chula Vista
Urban Core Specific Plan

June 2005

Sweetwater Authority

Approved by the Sweetwater Authority Governing Board
June 8, 2005

Prepared By:

Jack Adam, Engineer
Sue Mosburg, Training Coordinator

Sweetwater Authority
Water Supply Assessment
June 2005

City of Chula Vista
Urban Core Specific Plan

Table of Contents

Table of Contents

List of Tables

List of Appendices

Section 1 - Introduction

The City of Chula Vista (City) is currently preparing the Urban Core Specific Plan (UCSP) as shown on the Specific Plan Key Map included in Appendix A. The City has determined that the UCSP is subject to the California Environmental Quality Act under California Water Code (Water Code) Section 10910(a) and meets the definition of a "Project" as described in Water Code Section 10912(a) and as such a Water Supply Assessment (WSA) pursuant to Senate Bill (SB) 610 is required for the project.

The UCSP is a neighborhood level planning document which provides updated zoning regulations, development standards and design guidelines to implement the planned land uses, through the year 2030, as envisioned by the City's General Plan. In addition to being a land use regulatory document, the UCSP also outlines the framework for the provision of urban amenities and other public improvements associated with new development. The UCSP has been prepared in accordance with Government Code Section 65450.

The UCSP Study Area is an approximately 554-acre area where revitalization is anticipated to occur and the new zoning regulations will apply. The area encompasses three planning districts: the Village, the Urban Core, and the Corridors. The three larger districts are refined into smaller planning subdistricts, each with proposed land use mixes, development regulations and standards. The new zoning regulations would replace existing zoning classifications and introduce new zoning classifications for mixed use (retail/office), mixed use with residential, and urban core residential (high density residential). The new regulations would accommodate new growth and revitalization of the area and would be applied as new development or redevelopment occurs.

The City also plans to prepare a Master Environmental Impact Report (MEIR) for the project. For purposes of the MEIR analysis, the City provided a potential development scenario that was derived using as a basis the planned land uses identified in the City's General Plan. The City refined the land use mix based on the recommendations of the UCSP Market Analysis prepared by City's consultant Economic Research Associates (May 2005). The market analysis was prepared to evaluate the planned land use mix and growth capacity against likely absorption through the projected buildout (2005-2030). The actual mix of uses and buildout of the UCSP will be driven largely by market forces and may differ from the potential development scenario. Future development proposals will be reviewed by the City for consistency with the UCSP land use regulations, development standards and design guidelines. The design review process for future development projects will vary depending on the size of the project.

Section 2 - Identification of the Pubic Water Provider

In accordance with Water Code Section 10912(c) Sweetwater Authority (Sweetwater) is the "public water system" for the area in which the City's UCSP is proposed. As such, in a letter dated March 4, 2005, the City requested Sweetwater prepare a WSA for the UCSP. The WSA is intended to be used by the City of Chula Vista in its evaluation of the Project under the California Environmental Quality Act process.

Sweetwater was formed by the condemnation of a private water company that served the City of National City, City of Chula Vista and a portion of the County of San Diego. The condemnation suit was filed by the South Bay Irrigation District (SBID) and the City of National City on May 10, 1968 and was finalized on August 30, 1977. SBID and the City of National City formed Sweetwater by the Joint Powers Agreement of February 1, 1972. The Agreement was amended and re-adopted on July 22, 1977. Sweetwater was formed pursuant to the provisions of Article 1, Chapter 5, Division 7, Title 1 of the Government Code of the State of California. Sweetwater is empowered by the Joint Powers Agreement to acquire, own, lease, operate, manage, maintain and improve the water system.

SBID was formed during March 1951, under the Irrigation Law of California (Division 11, Section 20500 of the Water Code), and includes most of the City of Chula Vista and the unincorporated area within and adjacent to the Sweetwater River Valley. It also overlaps small segments of the City of National City and the City of San Diego. On May 1, 1990, SBID transferred ownership of the water system, including all of the property deeds and easements, to Sweetwater. The City of National City is part of the urbanized South Bay region of the San Diego metropolitan area located on San Diego Bay. Incorporated in 1887, National City is the second oldest city in San Diego County. SBID and the City of National City are members of the San Diego County Water Authority (Water Authority).

Section 3 – Previous Water Supply Assessments

Sweetwater has not prepared any previous water supply assessment that considered the future demands associated with the City's UCSP. As such, Sweetwater has prepared this WSA in consultation with the Water Authority and the City pursuant to Public Resources Code Section 21151.9, and California Water Code Sections 10631, 10657, 10910, 10911, 10912, and 10915 referred to as SB 610, and Business and Professions Code Section 11010. SB 610 amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties.

Section 4 – Sweetwater's Urban Water Management Plan

Sweetwater prepares Urban Water Management Plans (UWMP) every five years in accordance with Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act), which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. The Act, which was Assembly Bill (AB) 797, requires that every urban water supplier providing water for municipal purposes to more than 3000 customers or supplying more than 3000 acre-feet of water annually, shall prepare and adopt, in accordance with the prescribed requirements, an UWMP.

The Act requires urban water suppliers to file plans with the California Department of Water Resources (DWR) describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. As required by law, Sweetwater's UWMP includes projected water supplies required to meet future demands. Sweetwater prepared UWMPs in 1985, 1990, 1995, and 2000, and filed those plans with DWR.

The adopted 2000 UWMP did not account for the water demands associated with the City's UCSP. Therefore, in accordance with Water Code Section 10910 (c)(3), this WAS includes a discussion with regard to whether Sweetwater's total projected water supplies, available during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to Sweetwater's existing and planned future uses. Applicable information from Sweetwater's 2000 UWMP as well as its' 2002 Distribution System Master Plan, has been used in the preparation of this WSA.

Section 5 – Supply and Demand Assessment

5.1 Project Demand Analysis

Sweetwater's water system provides water service to approximately 176,920 persons within the City of National City, a portion of the City of San Diego, and the South Bay Irrigation District, which consists of a portion of the City of Chula Vista and the unincorporated portion of the County of San Diego known as Bonita. The Sweetwater service area covers 36.5 square miles and contains approximately 33,928 service connections. In addition, the system has emergency interconnections to three water agencies: Otay Water District, the City of Can Diego and California American Water Company. At the present time, there are no plans for expansion of the Sweetwater service area.

5.1.1 Climate

Climate conditions within the service area are characteristically Mediterranean along the coast, with mild temperatures year-round. The majority of the service area is within two miles of San Diego Bay. However, the Bonita area and the reservoirs are located farther inland, and experience slightly hotter summers and colder winters. More than 80 percent of the region's rainfall occurs in the period between December through March. Average annual rainfall is approximately 11.3 inches per year at the Sweetwater Reservoir based on records dating back to 1888. Climate data is included in Table 1, and consists of the 116-year Sweetwater Reservoir average monthly rainfall and average Sweetwater Reservoir monthly high temperature based on records dating back to 1961. Average monthly evapotranspiration (ETo) data was obtained from the California Irrigation Management Information System (CIMIS) website for the Otay Lakes Station.

Table 1
Climate Data

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ave precip (in.)	2.15	2.12	1.99	0.87	0.35	0.08	0.04	0.07	0.20	0.55	1.06	1.83
Ave temp (°F)	68.7	69.1.	69.1	71.8	72.9	76.2	81.4	84.1	82.8	79.0	73.6	68.9
ETo	0.98	1.43	2.44	3.31	4.03	4.49	4.64	4.03	3.31	2.44	1.18	0.61

5.1.2 Population

Population and housing growth data for Sweetwater was obtained from the San Diego Association of Governments (SANDAG) 2030 Regional Growth Forecast, as provided to Sweetwater by the Water Authority. These estimates do not include the increase in population due to the UCSP.

The City forwarded to Sweetwater the land uses and densities associated with the redevelopment included in the UCSP. Using this information, Sweetwater adjusted the existing land uses in the redevelopment area, and recalculated the estimated population due to the UCSP. Population projections are shown in Table 2.

Table 2
SANDAG Population and Urban Core Population Adjustment

	2000[1]	2005	2010	2015	2020	2025	2030
SANDAG Population Projection	174,012	179,485	180,906	185,447	190,387	192,660	198,752
Urban Core Increase	---	---	3,498	6,996	10,494	13,992	17,490
Revised Population Projection	174,012	179,485	184,404	192,443	200,881	206,652	216,062

1. 2000 Population taken from Sweetwater's 2002 Distribution System Master Plan.

5.1.3 Demand Assessment

Table 3 shows the historical and projected water demands by use sector through 2030, not considering the City's UCSP. The projected water demands for Sweetwater's service area are based on Sweetwater's 2002 Water Distribution Master Plan for years 2010 through 2020 and Sweetwater's growth rate projections for years 2025 and 2030.

Table 3
Historical and Projected Potable Water Demands
(Not Including the Urban Core Specific Plan)
(acre-feet)

Water Use Sectors	Fiscal Year Ending [1]								
	1990	1995	2000	2005 [2]	2010	2015	2020	2025	2030
Residential [3]	11,855	14,979	16,885	16,528	18,277	18,447	18,561	18,691	18,882
Commercial [4,5]	10,845	3,873	4,321	4,321	4,321	4,823	4,853	4,886	4,921
Industrial	822	402	408	481	532	537	541	544	548
Public	1,633	1,363	1,743	1,532	1,695	1,710	1,721	1,733	1,745
Irrigation/ Agricultural	31	31	43	35	39	39	39	40	40
Other [6]	132	21	18	25	28	28	28	28	29
Unaccounted for Water	720	1,623	2,423	578	1,432	1,407	1,416	1,426	1,435
Total	**22,533**	**22,292**	**25,841**	**23,501**	**26,780**	**26,991**	**27,159**	**27,349**	**27,540**

Notes:
1. Fiscal Year July 1 through June 30.
2. Actual production through April 2005; Estimated for May and June.
3. Residential includes domestic and irrigation for single family, multifamily, and mobile homes.
4. Commercial includes domestic and irrigation for businesses and golf courses.
5. Prior to Fiscal Year 1991-92, commercial included mobile homes and apartments. Beginning in Fiscal Year 1991-92 mobile homes and apartments have been included in residential.
6. "Other" includes construction meters and golf courses to Fiscal Year 1989-90. Subsequent to Fiscal Year 1989-90 "Other" only includes construction meters.

The existing demands for the UCSP area are shown in Table 4. Projected ultimate water demands for the UCSP are shown in Table 5. These demands have been developed by Sweetwater based on the project density and land use information provided by the City, combined with water duty factors developed by Sweetwater.

Table 4
Existing Demands for the Urban Core Specific Plan Area

Description	Acres	Units	Water Duty	Average Water Demand, (MGD)
Residential		5035	125.0 gpcd	1.89
Retail	192.39	---	1.5 ac-ft/ac/yr	0.04
Office	81.20	---	1.5 ac-ft/ac/yr	0.01
Visitor	8.30	---	8 ac-ft/ac/yr	0.01
Civic	32.04	---	2 ac-ft/ac/yr	0.01
Miscellaneous	20.49	---	2 ac-ft/ac/yr	0.01
Total Demand				**1.96**

Table 5
Urban Core Specific Plan Projected Water Demands

Description	Acres	Units	Water Duty	Average Water Demand, (MGD)
Residential		10,865	105.0 gpcd	3.42
Retail	180.17	---	1.5 ac-ft/ac/yr	0.03
Office	107.67	---	1.5 ac-ft/ac/yr	0.02
Visitor	52.00	---	8 ac-ft/ac/yr	0.05
Civic	47.55	---	2 ac-ft/ac/yr	0.01
Total Demand				**3.54**

Using this information, Sweetwater adjusted the existing land uses in the redevelopment area, and recalculated the ultimate system demand considering the UCSP. The City has indicated that this development will occur incrementally over the next 10 to 20 years, with buildout occurring by 2030. Therefore, system demand was increased incrementally over the years 2010 through 2030. The projected demands, including the increase in demands associated with the UCSP, are shown in Table 6.

Table 6
Historical and Projected Potable Water Demands
(Including the Urban Core Specific Plan)
(acre-feet)

Water Use Sectors	Fiscal Year Ending [1]								
	1990	1995	2000	2005 [2]	2010	2015	2020	2025	2030
Residential [3]	11,855	14,979	16,885	16,528	18,604	19,101	19,543	19,999	20,458
Commercial [4,5]	10,845	3,873	4,321	4,321	4,787	4,840	4,878	4,920	4,963
Industrial	822	402	408	481	532	537	541	544	548
Public	1,633	1,363	1,743	1,532	1,692	1,706	1,714	1,723	1,733
Irrigation/ Agricultural	31	31	43	35	39	39	39	40	40
Other [6]	132	21	18	25	28	28	28	28	29
Unaccounted for Water	720	1,623	2,423	578	1,412	1,444	1,471	1,499	1,527
Total	**22,533**	**22,292**	**25,841**	**23,501**	**27,094**	**27,694**	**28,213**	**28,754**	**29,298**

Notes:
1. Fiscal Year July 1 through June 30.
2. Actual production through April 2005; Estimated for May and June.
3. Residential includes domestic and irrigation for single family, multifamily, and mobile homes.
4. Commercial includes domestic and irrigation for businesses and golf courses.
5. Prior to Fiscal Year 1991-92, commercial included mobile homes and apartments. Beginning in Fiscal Year 1991-92 mobile homes and apartments have been included in residential.
6. "Other" includes construction meters and golf courses to Fiscal Year 1989-90. Subsequent to Fiscal Year 1989-90 "Other" only includes construction meters.

As previously stated, Sweetwater has not prepared any previous water supply assessment that considers the future demands associated with the City's UCSP. Therefore, these demands have not been specifically included in any Water Authority or Metropolitan Water District of Southern California (Metropolitan) planning document. In the March 2003 Report, Metropolitan identified a potential reserve or system replenishment supply that can also be used to meet demands in cases where the identified growth had not been included in the SANDAG regional growth forecast. It is intended that the additional demand associated with the City's UCSP be met through purchase of imported water from Metropolitan's reserve supply.

5.1.4 Demand Management Measures (Water Conservation)

Demonstrating its commitment to conservation, Sweetwater Authority officials became an original signatory to the *Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California*, which created the California Urban Water Conservation Council (CUWCC) in 1991 in an effort to reduce California's long-term water demands. As defined in the MOU, a water conservation Best Management Practices (BMP) is a "generally accepted practice among water suppliers that results in more efficient use or conservation of water". Since becoming a signatory in 1991, Sweetwater has made implementation of the BMPs for water conservation, the cornerstone of its conservation programs, and a key element in its water resource management strategy.

Sweetwater recognizes water conservation and demand management as a priority in its water use planning. The long-term goal of Sweetwater's water conservation program is to achieve and maintain water use limits for various use categories that are reasonable for that category. Water conservation is addressed in Sweetwater's UWMP as an element of the long-term strategy for meeting present and future water needs. Sweetwater's BMP Implementation Status Reports, BMP Water Savings Reports, and BMP Coverage Report are included in Appendices B, C, and D respectively.

Sweetwater started a water conservation program in 1990. Initial efforts included a long-term public information program and cooperation with the conservation efforts of the Water Authority. The water conservation program expanded significantly during the 1987-1992 drought, and the backbone of a long-term conservation program was formed. Since that time, Sweetwater has continued to revamp the conservation program by developing a variety of innovative and effective approaches to demand management.

Water conservation programs are developed and implemented on the premise that water conservation increases water supply by reducing the demand on available supply, which is vital to the optimal use of the region's supply resources. Sweetwater actively participates in countywide and regional conservation programs through the Water Authority and Metropolitan. As a member of the Water Authority, Sweetwater benefits from regional programs performed on behalf of its member agencies. Sweetwater also participates in many water conservation programs designed and typically operated on a shared-cost participation program basis among the Water Authority, Metropolitan, and their member agencies.

The vast majority of water savings result from the residential and commercial Ultra Low Flow Toilets (ULFT) and High Efficiency Washers (HEW). Additional water savings are derived from showerhead replacement programs, and public education. Sweetwater is gradually shifting emphasis towards more water efficient landscaping and commercial appliances, as these programs continue to evolve. Opportunities for ULFT savings will decline and landscape water efficiency will be increasingly emphasized and practiced. The resulting savings in supply, directly relates to additional available water in the San Diego region for beneficial use within the Water Authority service area, including Sweetwater. In partnership with the Water Authority, the County, and developers, Sweetwater's water conservation efforts are expected to grow and expand.

The BMP programs implemented by Sweetwater include the following:

- **BMP 1 - Water Survey Programs for Single-Family and Multi-Family Residential Customers -** The Residential Survey Program is free to both single and multi-family residential customers, and has been available since 1995. The program helps customers learn how to save water in their own homes, which in turn saves the customer money. The survey includes a review of landscaping, outdoor irrigation system, indoor use, identification of indoor leaks, a complete educational packet, information about other water conservation programs and free faucet aerators and low-flow showerheads. An irrigation surveyor will perform a meter leak detection test, check the irrigation system, suggest seasonal adjustments for a customer's individual water schedule, check the soil to ensure that watering coincides with moisture absorption, discuss proper lawn maintenance and offer low water use landscape information.

- **BMP 2 - Residential Plumbing Retrofit –** Retrofit water conservation device packages, which include toilet tank displacement devices and shower head flow restrictors, were made available to essentially all households within Sweetwater's service area in 1977, as part of a DWR pilot water conservation study. Sweetwater offered retrofit devices, which include low-flow showerheads, toilet tank displacement kits and faucet aerators, to its customers from 1991 through 2003. To present, Sweetwater has distributed 20,833 low flow showerheads, and continues to offer incentive vouchers for installing water efficient toilets, washers and other appliances.

  The Water Authority and its member agencies distributed over 550,000 showerheads between 1991 and 2002. Since January 1, 1994, showerheads manufactured in the United States must be in compliance with 2.5 gpm maximum flow. Data gathered from the Residential Survey Program (BMP 1) showed 80-90% saturation of low flow showerheads in homes surveyed.

- **BMP 3 - System Water Audits, Leak Detection, and Repair –** Many of Sweetwater's system water audits, leak detection, and repair programs contribute to better water management and reduction in water loss.

  Water Audits. Sweetwater conducts a monthly audit of its overall system for unbilled and unaccounted for water loss. Using these comparisons, Sweetwater can evaluate the need for implementation of a formal water loss reduction program.

Unbilled water loss represents the difference between water sales and water production. Sweetwater's 12 month average unbilled water loss was 5.6% in 2003 and 5.2% in 2004.

Unaccounted for water loss is determined by comparing total water use (water sales, meter inaccuracy due to aging, main breaks, major fire fighting use, system flushing, etc.) with total water production. Sweetwater's 12-month average unaccounted for water loss was 2.76% in 2003 and 1.51% in 2004.

Leak Detection. A Supervisory Control and Data Acquisition (SCADA) system was installed on the distribution system in 2001, and is used to monitor water flow through the system. Rapid changes in water quantity and/or pressure at any of the monitoring points within the system are immediately evaluated. On the rare occasion a leak is discovered, it is quickly detected and corrected. A leak detection survey was performed on 19.49 miles of the distribution system in September 2002. Total annual water loss for surveyed portions of the system was calculated at 0.0 gallons.

Water System Improvements. Routine and preventative maintenance is performed on the distribution system. In addition, Sweetwater implements a capital improvement program to maintain adequate transmission and storage facilities.

Facility Inspection. Critical facilities, including pump stations and valve vaults are inspected bi-weekly. Other distribution facilities are inspected weekly. As part of Sweetwater's preventative maintenance program, each system valve is exercised at least every three years and each fire hydrant is visually inspected and maintained every one to two years.

Meter Maintenance and Replacement Program. A 15-year repair/replacement program covers every service meter within the Sweetwater system. Meters sized below ⅝-inch are calibrated and replaced as needed. Meters sized 1-½ to 2-inches are calibrated and rebuilt as needed. Meters sized at 3-inches and larger are calibrated and maintained annually.

Water Theft. Sweetwater monitors incidents of water theft, and has the ability to charge up to three times the water service rate when it is determined that water theft has occurred.

- **BMP 4 - Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections** – Sweetwater requires the installation of water meters on all services throughout its distribution system, and bills by volume of water metered.

- **BMP 5 – Large Landscape Conservation Programs and Incentives** - From 1991 to 2004, large landscape (defined as landscape with one acre or more) irrigation surveys were available to customers at no charge through the *Professional Assistance for Landscape Management (PALM)* program, sponsored by the Water Authority. Using methodology developed by the Irrigation Training and Research Center at California Polytechnic State University at San Luis Obispo, the surveyor performs catch can tests, makes numerous soil and plant observations, and calculates Eto based irrigation schedule.

  Beginning in 2005, residential and commercial customers with large landscapes (currently defined as over 2,000 square feet) can receive the follow services at no charge through the *Smart Landscape* program, sponsored by Sweetwater, the Water Authority, Metropolitan, and DWR;

  Landscape irrigation audits. Audits are available at no charge to residential and commercial customers with a minimum of 2,000 square feet of irrigated landscaping. Site audits include a review of irrigation conditions, watering schedule, and sprinkler distribution uniformity, by a trained technician. Landscape area measurement and water use recommendations are provided.

  Weather-Based Irrigation Controllers. Vouchers are available to residential and commercial customers with a minimum of 2,000 square feet of irrigated landscaping for weather-based irrigation controllers to retrofit old timers. Residential ($65) and commercial ($13.33 per active station) vouchers are available.

  Irrigation System Upgrade Grants. Grants up to $2,500 in matching funds are available through the *Commercial Landscape Incentive Program*. Sites must have a minimum of one acre of irrigated landscape, and be currently over-irrigated to qualify.

  Water Budgets. A voluntary program for customers with dedicated irrigation meters is being developed by the Water Authority for member agencies. Water use data is converted into web-accessible water budgets. Each billing cycle, participating customer water use is charted against previous use and calculated landscape water needs. Water budgets help customers determine the right amount of water needed to maintain healthy landscaped areas, given weather conditions. Water budgets can decrease outside water use by 20 percent.

- **BMP 6 – High-Efficiency Washing Machine Voucher Program** - Since 2000, Sweetwater has participated in the Water Authority's Voucher program. New technology in washing machine design provides for more efficient water use and savings. Residential customers have taken advantage of the $100 to $125 voucher offers to replace their standard top-loading washers with a low-water use, energy-efficient model. Prior to March 10, 2004, high-efficiency washers had water factor values of 9.5 or less. With greater availability of ultra-high efficiency washers, vouchers are now limited to machines with water factor values of 6.0 or less.

- **BMP 7 – Public Information Programs** - Sweetwater promotes water conservation in coordination with the Water Authority and Metropolitan. Regional activities include: public service announcements, demonstration gardens, monthly conservation strategy meetings, water awareness month activities, water efficiency workshops and landscape water use classes. Sweetwater independently distributes public information through its website, bill inserts, on-hold telephone messages, annual Consumer Confidence Report, newsletters, news releases, brochures, keynote speakers, classroom presentations, facility tours, video library, and participation in year-round special events and community festivals.

  Sweetwater also partners with neighboring water agencies to put on water conservation public awareness events, including water-wise technology expos and landscape contests.

- **BMP 8 – School Education Programs** – Sweetwater has had an active school education program, that includes water conservation messages, since 1991. In 2000, Sweetwater created a regular education specialist position to support, in addition to other activities, the school education program. Sweetwater has provided copies of water conservation films and books to each elementary school library in the service area. Sweetwater's Education Specialist provides instructional assistance, educational materials, and classroom lessons that identify urban, agricultural, and environmental issues and conditions in the local watershed.

  Sweetwater provides mini-grants to teachers for the development and presentation of water-based lessons, to assist with providing conservation demonstration gardens at local school sites, and to host use of the Water Authority's *Splash Science Lab* at local schools.

  Sweetwater also participates in the Water Authority's countywide education programs. The Water Authority offers students from kindergarten through high school, a wide array of educational opportunities including water testing kits, and computer programs.

- **BMP 9 – Conservation Programs for Commercial, Industrial, and Institutional Accounts** – Sweetwater participates in the Water Authority's Commercial, Industrial & Institutional Program (CII), which offers point-of-purchase vouchers to customers for water-efficient devices. Vouchers are available for commercial Ultra Low-Flush Toilets ($95), for low-flow and waterless urinals ($95), for single-load commercial clothes washers installed in Laundromats, and multi-family common areas ($150), for multi-load commercial clothes washers ($775), for cooling tower conductivity controllers ($500), and for hospital X-ray processor water conservation units ($3,247). The vouchers reduce the up-front costs for businesses, and the equipment produces long-term savings in water, sewer and energy costs. Incentives are also available for pre-rinse spray valves (free installation).

- **BMP 10 – Wholesale Agency Assistance Program** - This BMP applies only to wholesale agencies. The Water Authority provides conservation-related technical support and information to its member agencies, and typically manages the programs on behalf of its member agencies. Sweetwater, the Water Authority and Metropolitan share funding for most conservation incentives. Typically, Sweetwater and the Water Authority each contribute one-quarter of the cost and Metropolitan provides one-half of the incentive.

- **BMP 11- Conservation Pricing** – Sweetwater's water rate structure is set up as an increasing block rate which increases the cost of water in seven steps for residential use. This encourages residential users to limit their water use by charging more for units above a base amount. The increasing rate structure was implemented with a higher rate starting at the 90^{th} percentile of the average consumer use, to encourage average consumers to cut their use by ten percent to avoid the higher rate. All other water users such as commercial, industrial, public, and agricultural are billed at a single uniform rate structure. This rate is higher than the base block rates for residential customers, in order to encourage large users to control excess use of water. Sweetwater currently offers a financial incentive ($.61 per unit) for single-family residential customers who use less than 10 units per billing cycle.

- **BMP 12 – Water Conservation Coordinator** – Sweetwater first designated a Conservation Coordinator in 1991. During this same year, Sweetwater used three temporary staff positions to handle the increased volume of conservation-related activities caused by the drought. In June 1992 a Water Conservation – Information Specialist staff position was created.

  Sweetwater currently has a program coordinator and assistant who oversee the water conservation program along with employee training and professional development programs.

- **BMP 13 – Water Waste Prohibition** – The following water waste prohibitions are designed to encourage efficient water use within the region, and provide a method for meeting demand reduction goals, should an extended water shortage occur.

  Region. The County of San Diego enforces several state and local ordinances requiring water conservation, to assure available water resources are put to beneficial use for all citizens of the County. California Plumbing Code, Section 402 requires the installation of water conserving fixtures in new construction.

Section 67.101 of the County's Code of Regulatory Ordinances simply prohibits water waste: "No person shall waste or cause or permit to be wasted any water furnished or delivered by any agency distributing for public benefit any water dedicated to or provided for public use within the unincorporated territory of the County of San Diego."

In addition, cities and counties are required to enforce California's Model Water Efficient Landscape Ordinance as it applies to new and rehabilitated public and private landscapes that require a permit and on developer installed residential landscapes (Section 6717c.1 of the County's Zoning Ordinance). The County's Water Conservation and Landscape Design Manual implements Zoning Ordinance Section 6712 (d), which requires efficient irrigation uses (including rain sensors), transitional zones, use of native plantings, restriction on turf, use of mulch, the preservation of existing vegetation and natural features, and the use of reclaimed water when available.

Agency. With Resolution 92-7 passed on March 25, 1992, Sweetwater established rules and requirements for water conservation. This resolution prohibits wasteful use of water and is in effect until more stringent measures are required.

For use during emergency conditions such as drought or catastrophic interruption in service where additional water use restrictions are necessary, Sweetwater has developed a six-stage drought response plan allowing for water use cutbacks of 10-40% and more, and has established an allocation method of rationing water during drought stages. Although Resolution 92-1, which describes Sweetwater's allocation program is not currently in effect, the program could be instituted on short notice if required.

Stage 1 – Demand reduction goal 0% – no shortage. Encourages measures to use water wisely.

Stage 2 – Designed to reduce water use by up to 10 percent. Calls for voluntary compliance with measures.

Stage 3, 4, 5 and 6 – Designed to reduce water use by 15, 20, 30 and 40 percent, respectively. Calls for mandatory compliance with measures to reduce water use. In addition to surcharges for use above predetermined allotment, imposes penalties for non-compliance. These stages are used when the water supply may not meet demand, due to drought or other prolonged shortage circumstance.

According to Resolution 93-2, "When the amount of water supply available to Sweetwater Authority for service to customers falls below the Stage 2 triggering levels," the General Manager has the authority to declare that a shortage emergency condition exists and implement Sweetwater's Water Shortage Contingency Plan.

- **BMP 14 – Residential ULFT Replacement Program** – Since 1991, Sweetwater has participated in the Water Authority's Residential Ultra Low Flush Toilet (ULFT) voucher (previously rebate) program. This program offers point-of-purchase vouchers ($75) to residential customers to be used towards the purchase of water efficient devices to replace older, less efficient units.

  Since 1992, toilets manufactured in the United States must comply with a 1.6 gallons per flush (gpf) maximum flow. Toilets with consistently lower water use continue to be developed. Beginning in 2005, ULFT vouchers are only available for toilets on the Supplemental Purchase Specifications (SPS) list to encourage customers to install toilets that have met more rigorous water efficiency standards. Vouchers ($95) are also available for dual flush toilets.

5.1.5 Demand Management Measures Not Fully Implemented

As defined in the MOU, a water conservation BMP is a "generally accepted practice among water suppliers that results in more efficient use or conservation of water." As more and better data are collected over time, the BMP's are refined and revised based upon the most objective criteria available. The MOU sets agency-specific implementation schedules and coverage goals based on standardized criteria including signatory date and base year data. The MOU recognizes specific BMP goals may be delayed or remain unmet due to varying local conditions and provides for good faith efforts towards implementation.

Sweetwater is making the following good faith efforts:

- **BMP 1 - Water Survey Programs for Single-Family and Multi-Family Residential Customers** – Sweetwater's customer service staff perform high bill investigations each billing cycle on all accounts to assist customers in identifying leaks on their premises.

  Plumbing code changes and improvements in the efficiency of water fixtures have significantly reduced the water savings potential from performing indoor residential water surveys. The CUWCC is scheduled to discontinue BMP 1 in 2007. It is anticipated that a new BMP 15 incorporating outdoor water survey elements from BMP 1 will be adopted by the CUWCC prior to 2008. Upon adoption, Sweetwater will develop an implementation schedule for BMP 15.

- **BMP 5 – Large Landscape Conservation Programs and Incentives** - Sweetwater has historically given first consideration for water conservation program resources to retrofit and replacement programs (ULFT, showerhead, and HEW vouchers) which have demonstrated long term water savings with minimal effort and action required on the part of the consumer to maintain savings.

Sweetwater is gradually shifting emphasis towards more water efficient landscape customer support programs as the technologies to support water efficient landscaping continue to evolve. The Water Authority, for member agencies, is developing a web-based water budget program. In 2005, Sweetwater will begin to offer water budgets to customers with dedicated irrigation meters.

- **BMP 13 – Water Waste Prohibition** – One condition of BMP 13 requires enforceable measures to prohibit single-pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash businesses and commercial laundry systems, and non-recycling decorative water fountains. These measures have not specifically been addressed in regional, local and agency policies; however, water waste ordinances and regulations have been enacted for general water waste and for areas not specifically addressed by BMP 13. An evaluation of the impacts of additional water waste prohibitions and legal authority for implementation of these measures is planned in 2006.

5.2 Existing and Projected Supplies

Water used in Sweetwater's service area comes from various sources. These sources include local groundwater, a brackish groundwater desalination facility, surface water and imported water from the Colorado River, and the State Water Project. The imported water is delivered by the Water Authority, it being either purchased from or wheeled by Metropolitan and is then purchased by Sweetwater. Since 1955, local sources have met 40.6% of the water needs within Sweetwater's service area while the 59.4% balance has been met with imported water. The percentage of local to imported water varies greatly with time due to local rainfall amounts. Historic and projected local and imported water deliveries from the Water Authority to Sweetwater are shown in Table 7.

Table 7
Historic and Normal Water Year Projected Sweetwater Supplies

Fiscal Year Ending	Total Supply (acre feet)	Source (acre feet)				
		Imported		Local		
		Raw	Treated	Reservoirs	National City Wells	Reynolds Desal. Facility
1980	21,671	---	2,71	17,392	1,308	---
1985	25,905	---	4,634	20,052	1,219	---
1990	25,872	---	24,019	---	1,853	---
1995	22,292	---	5,045	15,855	1,392	---
2000	25,839	5,429	91	16,302	1,899	2,118
2005[1]	23,501	10,963	---	8,375	1,979	2,184
2010[2]	26,780	9,480	---	7,700	2,400	7,200
2015[2]	26,991	9,691	---	7,700	2,400	7,200
2020[2]	27,159	9,859	---	7,700	2,400	7,200
2025[3]	27,349	10,049	---	7,700	2,400	7,200
2030[3]	27,540	10,240		7,700	2,400	7,200

1. Actual production through April 2005, Estimated May and June.
2. Based on Sweetwater's 2000 Urban Water Management Plan
3. Projected values.

5.2.1 Local Supply

5.2.1.1 Surface Water Sources

Sweetwater owns and operates two storage reservoirs known as Sweetwater Reservoir and Loveland Reservoir. Sweetwater was constructed in 1888 and Loveland in 1945. Sweetwater Reservoir has an approximate capacity of 28,079 acre-feet and Loveland's is 25,400 acre-feet for a combined capacity of 53,160 acre-feet. The watershed for the Sweetwater River is approximately 186 square miles. Sweetwater Reservoir is downstream of Loveland and has a treatment plant capable of producing 30 million gallons of water per day (MGD). Local supply from Sweetwater Reservoir varies from zero to 100 percent depending on the local runoff conditions.

During wet years when Sweetwater and Loveland Reservoirs are at or near full capacity, they are capable of providing up to a two-year supply to Sweetwater customers. As part of Metropolitan's Seasonal Storage Operators Agreement (SSOA) program, Sweetwater has the ability to purchase water from the Water Authority in the winter and store it in Sweetwater Reservoir for use in the summer when there may be a shortage of available water. Storing water in the winter for summer use is a regional benefit due to the fact that more water becomes available for other local agencies in the summer.

5.2.1.2 Groundwater Sources

Sweetwater produces groundwater from the Sweetwater Valley Groundwater Basin identified in State of California Department of Water Resources (DWR) Bulletin 118 as Basin Number 9-17. Sweetwater adopted an interim groundwater management plan that governs groundwater management until a subsequent groundwater management plan can be prepared in accordance with Water Code Section 10750 (AB3030). The interim groundwater management plan is included as Appendix E.

The Sweetwater Valley Groundwater Basin underlies an alluvial valley that empties into the San Diego Bay and is bounded on the east by the impermeable Santiago Peak volcanic rocks. The north and south are Pliocene and Pleistocene semi-permeable terrestrial deposits, which constitute valley walls. The western boundary is San Diego Bay. Basin recharge is derived from seasonal runoff from precipitation, discharge from the Sweetwater and Loveland Reservoirs,and underflow from the reservoirs.

Two water-bearing formations in the Basin are the Quaternary Alluvium and the San Diego Formation. In 1997, the Water Authority estimated a groundwater storage capacity of 13,000 acre-feet in the Quaternary Alluvium and about 960,000 in the San Diego Formation. The Sweetwater Valley Groundwater basin is not an adjudicated basin, therefore there has never been any restriction on the rate of extraction since groundwater production began. In addition, the Sweetwater Valley Groundwater Basin has not been identified in DWR Bulletin 118 as in overdraft.

Sweetwater operates the National City Wells, which produce drinking water quality groundwater (Total Dissolved Solids [TDS] approximately 600 mg/l) and the Richard A. Reynolds Groundwater Desalination Facility (Desalination Facility) that produces drinking water from brackish groundwater (TDS between 2,000 and 2,500 mg/l). Both well fields pump from the San Diego Formation.

The National City Wells consist of three wells: Nos. 2, 3 and 4. Well Nos. 3 and 4 operate while the oldest well, No. 2 acts as a backup. Sweetwater has produced an average of 1,770 acre-feet per year from the National City Wells from 1954 to 2004.

The Desalination Facility commenced operation in January 2000. The facility was designed to take groundwater from four alluvial wells and five deep San Diego Formation wells, located on the north side of the Sweetwater River. A sixth San Diego Formation well is currently being constructed. The facility removes the salt from the brackish groundwater using reverse osmosis technology (R/O). Currently, the alluvial wells are not operated for the following reasons: 1) summertime vegetative distress in the Sweetwater River, and 2) because of surface water influence on the relatively shallow alluvial formation and the R/O membranes not being approved for surface water treatment. Groundwater production for the past five years is included in Table 8.

Table 8
Groundwater Production 2000 through 2004

Fiscal Year Ending	Total GW Produced (acre-feet)	Source (acre-feet)	
		NC Wells	Desalination Facility
2000	4,017	1,899	2,118
2001	4,890	1,775	3,115
2002	4,658	1,406	3,252
2003	4,447	1,637	2,840
2004	3,637	1,595	2,042

Phase I of the Desalination Facility was designed to produce four MGD of drinking water. The facility was constructed with space to accommodate a Phase 2 expansion to produce up to eight MGD.

The Phase 2 project will consist of five production deep wells constructed to a depth of approximately 800 feet in the San Diego Formation aquifer. Each well is estimated to produce 700 gallons per minute for a total combined capacity of 5 MGD. Two monitoring wells will be constructed to monitor for seawater intrusion. Approximately one mile of transmission main will be constructed to deliver the brackish groundwater to the existing Desalination Facility. Piping modification and additional R/O membranes will be required at the existing Desalination Facility to increase its capacity to a total of 8 MGD.

Additionally, one MGD ultrafiltration membrane system will be installed at the Desalination Facility to allow the treatment of the existing alluvial groundwater wells. The alluvial groundwater would then be treated by the R/O system. A one MGD green sand filter would also be installed to remove iron and manganese from a portion of the groundwater.

Preliminary design and siting of the wells has begun. A test well for the first production well is planned to be drilled in January 2005, and the first production well is scheduled to be constructed in October 2005. The expansion in proposed to be completed by the end of 2008 at a total cost of approximately $8.6 million. Permitting through the California Department of Health Services, Regional Water Quality Control Board, DWR, San Diego Department of Environmental Health, as well as the California Environmental Quality Act is required for implementation of the expansion.

5.2.1.3 Water Recycling

Sweetwater does not produce recycled water. The City of San Diego is the largest water recycling agency in the area. Sweetwater is currently preparing a master plan for the distribution of recycled water within its service area, either from the City of San

Diego's South Bay Water Reclamation Plant or from a future facility within Sweetwater's service area that could be constructed by the Authority.

Because the customer base and timetable for implementation of recycled water service is unknown at this time, the use of recycled water has not been considered in the preparation of this WSA.

5.2.2 Imported Supply

Sweetwater represents two (City of National City and South Bay Irrigation District) of the 24 member agencies of the Water Authority. Member agency status entitles Sweetwater to directly purchase water from the Water Authority on a wholesale basis. One hundred percent of Sweetwater's imported water is purchased from the Water Authority. The Water Authority is a member agency of Metropolitan. The statutory relationships between the Water Authority and its member agencies, and Metropolitan and its member agencies, respectively, establish the scope of the Authority's entitlements to water from these two agencies. The quantities of water purchased from the Water Authority by Sweetwater are represented as imported supply on Table 7.

The Water Authority was organized on June 9, 1944 under the County Water Authority Act for the sole purpose of importing Colorado River Water into San Diego county. The imported water, now a combination of Colorado River water and State Project water, is sold wholesale to the 24 member agencies of the Water Authority. The member agencies are autonomous and their City Councils or Board of Directors set local policies and pricing structures.

Imported water delivered by the Water Authority is either purchased from or wheeled by Metropolitan from Metropolitan facilities located just south of the San Diego County/Riverside County line. Metropolitan is a public agency organized in 1928 by a vote of the electorates of 13 Southern California cities. Since its formation, Metropolitan has grown to include 27 member agencies of which the Water Authority is the largest. Metropolitan was formed for the purpose of developing, storing, and distributing water to the residents of Southern California.

5.2.2.1 March 2003 Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability

In March 2003, Metropolitan produced a document entitled, *Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability* (March 2003 Report). The objective of the March 2003 Report was to provide the member agencies, retail water utilities, cities, and counties within its service area with water supply information for purposes of developing water supply assessments and written verifications. The March 2003 Report states that the approach to evaluating water supplies and demands is consistent with Metropolitan's 2000 Regional UWMP. As part of this process, Metropolitan also uses SANDAG's regional growth forecast in calculating regional water demands for the Water Authority's service area. In the March 2003 Report, Metropolitan has identified a potential reserve or system replenishment supply, in excess of the forecasted demands, that can also be used to meet demands in cases where the identified growth has not been included in the SANDAG regional growth forecast. Copies of the March 2003 Report and Metropolitan's 2000 Regional UWMP are available at Sweetwater's business office.

Metropolitan has not yet updated the March 2003 Report and pertinent actions and activities have occurred over the past year that should be documented. To ensure a thorough analysis of the water supplies available to serve existing and future water demands, supplemental information to the March 2003 Report is included in the Water Authority's 2004 Annual Water Supply Report.

5.2.2.2 San Diego County Water Authority's 2004 Annual Water Supply Report

In June 2004, the Water Authority Board of Directors approved the Water Authority's *2004 Annual Water Supply Report* (Supply Report) for distribution to member agencies, the County of San Diego, and cities within the County. The purpose of the Report is to provide an annual statement regarding the Water Authority's supplies and implementation of Water Authority plans and programs to meet the future water supply requirements of its member agencies. The Supply Report contains documentation on the Water Authority/Imperial Irrigation District Water Conservation and Transfer Agreement, All American Canal and Coachella Canal Lining Projects, and planned seawater desalination facility at the Encina Power Station. In addition, the Supply Report provides documentation on Colorado River supply activities that were not included in Metropolitan's March 2003 Report. The documentation included in the Supply Report was prepared for use by the Water Authority's member agencies in preparation of the water supply assessments and written verifications required under state law.

The Water Authority is planning to build a regional water treatment facility to increase the amount of treated water available to San Diego County. The Twin Oaks Valley Water Treatment Plant will produce up to 100 MGD of treated water, enough to supply up to 220,000 typical households each year. The project is currently under environmental review and is scheduled to begin operation in Summer 2008.

5.3 Dry Year Demand Assessment

The dry year demand assessment is shown in Table 9 and includes demands during single and multiple dry water years. The estimated demands for multiple dry years are reflective of years 2011, 2012, and 2013. Studies have shown that hot, dry weather may generate urban water demands that are about seven percent* greater than normal demands. These percentages were utilized to generate the dry year demands shown in Table 9. No extraordinary conservation measures, beyond BMP implementation, are reflected in the demand projections.

*Source: *Weather-Related Water Demand Variability in Metropolitan Water District Service Area, 09/1990*

Table 9
Projected Water Demand during Single and Multiple Dry-Year Period
(acre-feet per year)

	Normal Water Year (2010)	Single Dry Water Year (2010)	Multiple Dry Water Years		
			Year 1 (2011)	Year 2 (2012)	Year 3 (2013)
Total Demand	**27,094**	**28,990**	**29,119**	**29,274**	**29,376**

5.4 Dry Year Supply Assessment

Probability estimates for usable runoff (runoff not spilled to San Diego Bay) were calculated using the Sweetwater Watershed hydrologic data for the period between 1926 and 2004. Based on this data the historical amount of useable runoff for normal, dry and critical dry years (60% 10% and 5% of the years dryer than) were determined. The National City Wells and the Desalination Facility are relatively fixed supplies that are not weather dependent, therefore the production from these sources has not been reduced during a drought event. Table 10 shows the estimated supply from local sources The dry year supply assessment is shown in Table 11 and includes supplies during single and multiple dry water years. The estimated supplies for multiple dry years are reflective of years 2011, 2012, and 2013.

Table 10
Local Projected Water Supply during Normal, Dry and Critical Dry Years
(acre-feet per year)

Supply Source	Normal Year 60%	Dry Year 10%	Critical Dry 5%
Sweetwater Watershed	7,700	1,300	1,000
National City Wells	2,400	2,400	2,400
Reynolds Desalination	7,200	7,200	7,200
Total Available Supply	**17,300**	**10,900**	**10,600**

Table 11
Projected Water Supply during Single and Multiple Dry-Year Period
(acre-feet per year)

Supply Source	Normal Water Year (2010)	Single Dry Water Year (2010)	Multiple Dry Water Years		
			Year 1 (2011)	Year 2 (2012)	Year 3 (2013)
Imported Water	9,794	18,090	18,219	18,674	19,776
Sweetwater Reservoir	7,700	1,300	1,300	1,000	0
National City Wells	2,400	2,400	2,400	2,400	2,400
Reynolds Desalination	7,200	7,200	7,200	7,200	7,200
Total Supplies Available	**27,094**	**28,990**	**29,119**	**29,274**	**29,376**

Section 6 – Conclusion: Availability of Sufficient Supplies

Sweetwater, Metropolitan, and the Water Authority are implementing plans that include projects and programs to help ensure that the existing and planned water users within Sweetwater's service area have an adequate supply. Table 12 shows the forecasted water demands compared with projected supplies within Sweetwater's service area. This demonstrates that with implementation of the projects discussed in agencies planning documents there will be adequate water supplies to serve the proposed Project along with existing and future uses.

Table 12
Projected Water Supply and Demand during
Normal Year for Period 2005 to 2025
(acre-feet per year)

Supply Source	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Imported Water	10,963	9,794	10,394	10,913	11,454	11,998
Sweetwater Reservoir	8,375	7,700	7,700	7,700	7,700	7,700
National City Wells	1,979	2,400	2,400	2,400	2,400	2,400
Reynolds Desalination	2,184	7,200	7,200	7,200	7,200	7,200
Total Available Supply	**23,501**	**27,094**	**27,694**	**28,213**	**28,754**	**29,298**
Total Projected Demand	**23,501**	**27,094**	**27,694**	**28,213**	**28,754**	**29,298**

The normal, single, and multiple dry-year scenarios are shown in Table 13 and demonstrate that supplies will be adequate to meet future demands in dry-year periods. If projected imported and local supplies are available as indicated, no shortages are anticipated within the Authority's service area in the dry-year scenarios analyzed.

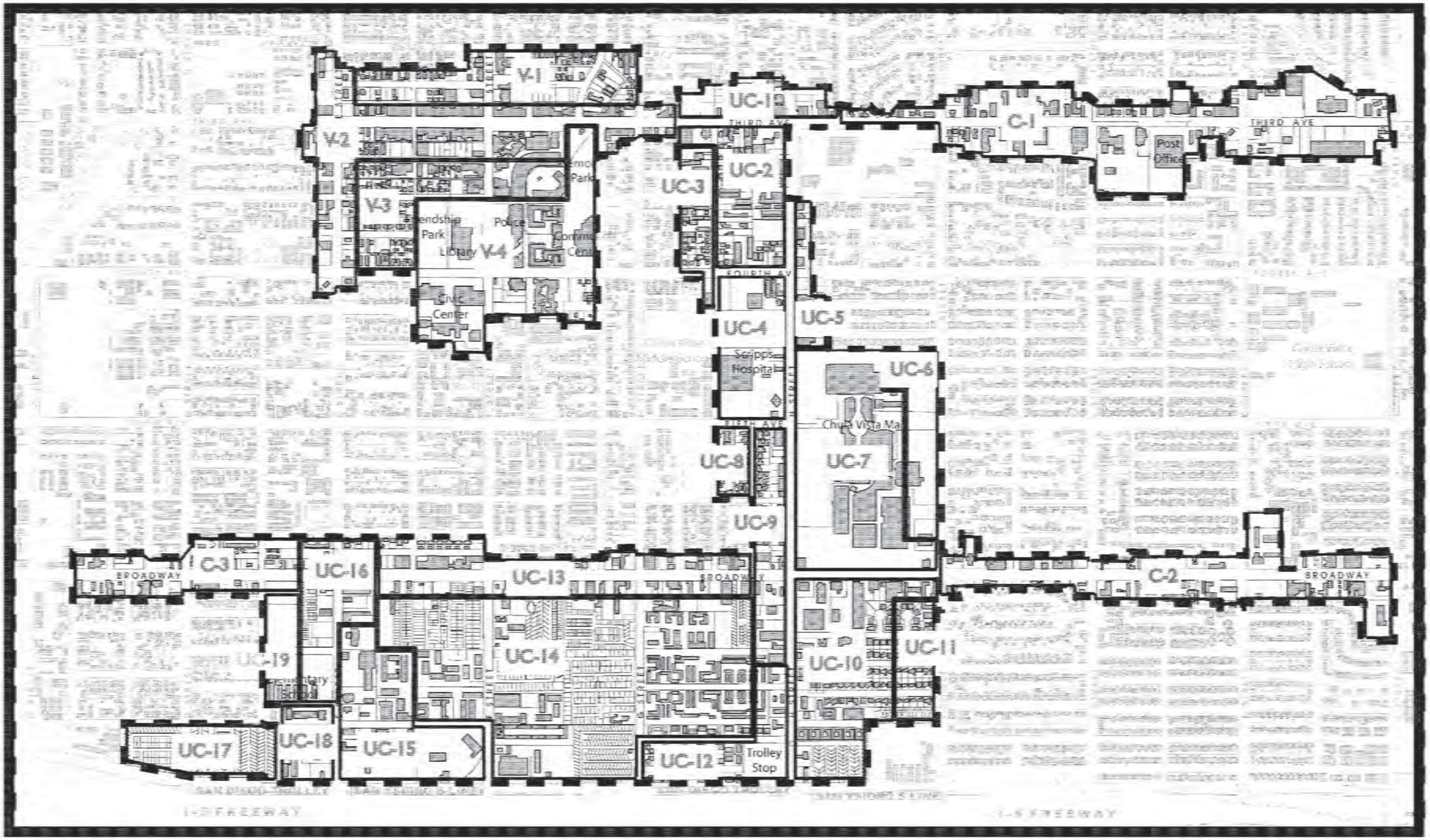
Table 13
Projected Water Supply and Demand during
Single and Multiple Dry-Year Period
(acre-feet per year)

			Multiple Dry Water Years		
Supply Type	Normal Water Year (2010)	Single Dry Water Year (2010)	Year 1 (2011)	Year 2 (2012)	Year 3 (2013)
Imported Water	9,794	18,090	18,219	18,674	19,776
Sweetwater Reservoir	7,700	1,300	1,300	1,000	0
National City Wells	2,400	2,400	2,400	2,400	2,400
Reynolds Desalination	7,200	7,200	7,200	7,200	7,200
Total Supplies Available	**27,094**	**28,990**	**29,119**	**29,274**	**29,376**
Total Projected Demand	**27,094**	**28,990**	**29,119**	**29,274**	**29,376**

This WSA Report demonstrates and verifies that with development of the resources identified, there will be sufficient water supplies, over a 20-year planning horizon, to meet the projected demands of the proposed Project and the existing and planned development projects within Sweetwater's service area.

These findings further verify that there is a sufficient water supply to serve the proposed Project, including existing and other planned projects in both normal and dry year forecasts. An adequate supply is further confirmed by Metropolitan's March 2003 Report, which identifies reserve supply and states that Metropolitan will have adequate supplies to meet dry-year demands within its service area over the next 20 years.

Appendix A
Urban Core Specific Plan Key Map



DRAFT

Specific Plan Key Map

KRM DESIGN GROUP

500' 0 1000'

SCALE

Focus Area

Specific Plan Subarea

V - Village District
UC - Urban Core
C - Corridor

Chula Vista Urban Core

City of Chula Vista, California
Edited April 2005

Appendix B
BMP Implementation Status Reports

Reported as of 4/18/05

Water Supply & Reuse

Reporting Unit: **Sweetwater Authority**

Year: **2004**

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Desalination Facility	2036	Groundwater
San Diego County Water Authority	20162	Imported
National City Wells	1595	Groundwater
Sweetwater Authority	1595	Local Watershed

Total AF: 25388

Reported as of 4/18/05

Accounts & Water Use

Reporting Unit Name:	Submitted to CUWCC	Year:
Sweetwater Authority	**02/28/2005**	**2004**

A. Service Area Population Information:

1. Total service area population 175000

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	26306	10033	0	0
2. Multi-Family	3373	6417	0	0
3. Commercial	3251	3859	0	0
4. Industrial	45	446	0	0
5. Institutional	319	1250	0	0
6. Dedicated Irrigation	686	1883	0	0
7. Recycled Water	0	0	0	0
8. Other	9	51	0	0
9. Unaccounted	NA	1449	NA	0
Total	33989	25388	0	0
	Metered		**Unmetered**	

Reported as of 4/18/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Based on your signed MOU date, 08/29/1991, your Agency STRATEGY DUE DATE is:	08/28/1993
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	7/1/1995
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	7/1/1995

B. Water Survey Data

Survey Counts:	**Single Family Accounts**	**Multi-Family Units**
1. Number of surveys offered:	26306	3373
2. Number of surveys completed:	4	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	yes	yes
Outdoor Survey:		
6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)		Pacing
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?		database
b. Describe how your agency tracks this information.		

Contractor tracks survey data, including number of surveys, in a database

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	1905	2083
2. Actual Expenditures	115	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Surveys are offered to all accounts through marketing efforts, so number of surveys offered is equal to number of accounts.

Reported as of 4/18/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

    a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — yes

3. Estimated percent of single-family households with low-flow showerheads: — 75%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — yes

5. Estimated percent of multi-family households with low-flow showerheads: — 75%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

    The San Diego county Water Authority and its member agencies distributed over 550,000 showerheads between 1991 and 2002. The average rate of natural replacement is 4.0%, while housing demolition is 0.5. Since January 1, 1994 showerheads manufactured in the United States must be in compliance with 2.5 gpm maximum. Data gathered from the Residential Survey Program showed an 80-95% saturation of showerheads in homes surveyed. The Water Authority was unable to secure monies for a formal saturation study on showerheads during this period, but is continuing to pursue grant-funding opportunities.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

    a. If YES, when did your agency begin implementing this strategy? — 7/1/1996

    b. Describe your targeting/ marketing strategy.

    -residential survey distribution -direct distribution to customers -distribution at community events -by customer request -distribution at CBO events

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0

6. Does your agency track the distribution and cost of low-flow devices? — no

    a. If YES, in what format are low-flow devices tracked?

    b. If yes, describe your tracking and distribution system :

The San Diego County Water Authority documented distribution in the region on a spreadsheet by region - however these items were not tracked at the agency level.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

The San Diego county Water Authority and its member agencies distributed over 550,000 showerheads between 1991 and 2002. The average rate of natural replacement is 4.0%, while housing demolition is 0.5. Since January 1, 1994 showerheads manufactured in the United States must be in compliance with 2.5 gpm maximum. Data gathered from the Residential Survey Program showed an 80-95% saturation of showerheads in homes surveyed. The Water Authority was unable to secure monies for a formal saturation study on showerheads during this period, but is continuing to pursue grant-funding opportunities.

E. Comments

Reported as of 4/18/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	
b. Determine other system verifiable uses (AF)	
c. Determine total supply into the system (AF)	
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	no
6. Does your agency operate a system leak detection program?	yes

a. If yes, describe the leak detection program:

We compare all metered sales, meter inaccuracy (due to aging), main breaks, major fire fighting use, system flushing, etc., to arrive at a total monthly usage. This usage is compared to our total production number to compile the percentage of unaccounted water. In 2003 the 12 month average percentage was 5.6, and in 2004 it was 5.2.

B. Survey Data

1. Total number of miles of distribution system line.	390
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

We compare all metered sales, meter inaccuracy (due to aging), main breaks, major fire fighting use, system flushing, etc., to arrive at a total monthly usage. This usage is compared to our total production number to compile the percentage of unaccounted water. In 2003 the 12 month average percentage was 5.6, and in 2004 it was 5.2.

E. Comments

Reported as of 4/18/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use?	yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use?	no
a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?	
b. Describe the program:	
3. Number of previously unmetered accounts fitted with meters during report year.	0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	no
a. If YES, when was the feasibility study conducted? (mm/dd/yy)	
b. Describe the feasibility study:	
2. Number of CII accounts with mixed-use meters.	840
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.	0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	92500	92500
2. Actual Expenditures	112557	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

No unmetered connections within the system at the time MOU was signed. Total number of CII accounts derived by totalling Commercial, Industrial and Public accounts and subtracting from this amount the landscape only meters. May include "indoor only" water use. Program expenditures is cost of meter changeout(replacement)program.

Reported as of 4/18/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	686
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	yes
a. If YES, when did your agency begin implementing this strategy?	08/10/1990
b. Description of marketing / targeting strategy:	

Marketing/targeting strategy on behalf of Sweetwater Authority via consultant: -Potential customers are prescreened by the review of water usage data records and the comparison of typical patterns of other industry or SIC water usage. -Customers that exhibit unusually high water usage relative to the size of the property are sent a letter and a program brochure, inviting them to participate in the program. -Dispersal of brochures and advertising to a variety of candidates, homeowners associations as well as large turf customers -Outreach to landscape organizations i.e. California Landscape Contractors Association.

2. Number of Surveys Offered.	345
3. Number of Surveys Completed.	1
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	yes
b. Distribution Uniformity Analysis	yes
c. Review / Develop Irrigation Schedules	yes
d. Measure Landscape Area	yes
e. Measure Total Irrigable Area	yes
f. Provide Customer Report / Information	yes
5. Do you track survey offers and results?	yes
6. Does your agency provide follow-up surveys for previously completed surveys?	yes
a. If YES, describe below:	

All customers receive an offer for a follow-up survey.

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with	no

landscape budgets?	
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve landscape water use efficiency?	yes

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services?	No
a. If YES, describe below:	
6. Do you have irrigated landscaping at your facilities?	yes
a. If yes, is it water-efficient?	yes
b. If yes, does it have dedicated irrigation metering?	no
7. Do you provide customer notices at the start of the irrigation season?	yes
8. Do you provide customer notices at the end of the irrigation season?	no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	574	2415
2. Actual Expenditures	656	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 4/18/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — yes

    a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

    San Diego Gas & Electric offered tiered rebates of $75 and $125 on qualified high-effieiency clothes washers in their service area.

2. Does your agency offer rebates for high-efficiency washers? — yes
3. What is the level of the rebate? — 125
4. Number of rebates awarded. — 423

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10258	11800
2. Actual Expenditures	9729	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

    a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 4/18/05

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Agency level: Communications Director, One Education Specialist, One Graphic Designer and One Communications Specialist. On-hold messages, billing messages promotional items and publications in all lobbies. Regular newsletters videos, poster boards, banners, irrigation and water landscape (Protector del Agua) classes, Speaker's Bureau and facility tours. Listings in business and education directories. News releases, advertising in local and regional papers. Community festivals and events, demonstration garden. Partnered events with other agencies. Internet website. Regional level through SDCWA: Advertise in local newspapers, public service announcements (PSA), Demonstration Garden. This demonstration garden is available to all SDCWA member agencies, community events (i.e. Earth Day), Monthly Joint Public Information meetings that provice a regional conservation strategy, Conservation Action Committee, Speakers' Bureau, Water Awareness Month, Recycled Water Certification workshops are available to customers, Voucher Incentive Program (both Residential & Comercial) provide ongoing workshops to retail home improvement stores as well as dealers, Irrigation and water efficiency landscape classes (i.e. Protector del Agua workshops), Website information.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	**Yes/No**	**Number of Events**
a. Paid Advertising	yes	8
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	1
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	2
f. Special Events, Media Events	yes	9
g. Speaker's Bureau	yes	8
h. Program to coordinate with other government agencies, industry and public interest groups and media	no	

B. Conservation Information Program Expenditures

	This Year	**Next Year**
1. Budgeted Expenditures	175550	175400
2. Actual Expenditures	122300	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Demonstration gardens includes mini-grants for school gardens and partnerships with other agencies, SDG&E Etc. Most of our agency's activities are a partnership with the San Diego County Authority. Recordkeeping changes resulted in increased reported funding for this period.

Reported as of 4/18/05

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no	19	3009	0
Grades 4th-6th	no	133	4644	6
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 9/9/1990

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	44250	44150
2. Actual Expenditures	31000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

School education programs coordinated internally by Communications Section, and regionally by the San Diego County Water Authority. The SD County Water Authority's regional school program is an established program with a renowned reputation throughout the region. The Program offers students from kindergarten through high school, a wide array of educational opportunities including the Splash Mobile, water testing kits, and computer programs.

Reported as of 4/18/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	yes
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	yes
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	160.79
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	5646	5646
2. Actual Expenditures	12590	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 4/18/05

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

Potential savings
CII Sector or subsector

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Our CII Voucher Incentive Program contract, HDMC, has been a significant player in the promotion of water-efficient products in the San Diego County. Working in cooperation with WSA Marketing, a San Diego-based marketing and communications firm, HDMC has conducted extensive education, outreach, public relations, advertising and direct-marketing activities. HDMC and WSA Marketing have created relationships with the owners, managers, and related customer service supervisors and staff at water-efficient product suppliers from Valley Center to San Ysidro for the past five years. Partnerships have been established with business owners, as well as key employees at wholesale and retail suppliers. Understanding of suppliers' business profiles, sales operations and accounting policies and procedures are key to the success of the program. Working relationships and/or qualified data has been gathered on over 200 plumbers. Dealers sign contracts each year in order to participate in a program that is responsible for increasing their sales substantially.

2. How does your agency advertise this program? Check all that apply.

Direct letter
Bill insert
Bill message
Newsletter
Telephone
Web page
Newspapers
Other print media
Trade shows and events

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

EXTENSIVE MARKETING IN THE REGION, OUTREACH TO RETAIL AND WHOLESALE DEALERS WITH ONGOING COMMUNICATION AND TRAINING HAS MADE THIS PROGRAM SUCCESSFUL IN THIS REGION.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) — Yes

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? — Yes

3. What is the total number of customer accounts — 11

participating in the program during the last year ?

CII Subsector 4.	Number of Toilets Replaced Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Govern-ment	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design. Rebate or voucher

6. Does your agency use outside services to implement this program? Yes

a. If yes, check all that apply.

Consultant
Plumbing contractors/subcontracts

7. Participant tracking and follow-up. Telephone
Site Visit

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	4
b. Inadequate payback	5
c. Inadequate ULFT performance	3
d. Lack of funding	5
e. American's with Disabilities Act	2
f. Permitting	2
g. Other. Please describe in B. 9.	

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

The CII Voucher Incentive Program continues to increase in popularity in the San Diego region. Extensive marketing by our contractor, coupled with our member agency support, has proven to be quite successful.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Our agency used all funds allocated to this program this fiscal year, it exceeded our expectations.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	4457	585
e. Outside Services	0	0
f. Total	4457	585

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	1080
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	4457
e. Total	5537

D. Comments

Section C.2 This total represents the amount of funds available in our CII Voucher Incentive Program which besides ULFT's includes; CTCC's, Urinals, and HEW's. The contributing wholesale agencies are MWD and the SDCWA. Study was to end in 2003 - Unable to submit 2004 report without data for BMP 9a Therefore 2003 BMP 9a data also used for 2004.

Reported as of 4/18/05

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$16963709
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$5410540

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$4945124
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$1068382

3. Industrial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$443715
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$41788

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$2255190
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$414629

5. Irrigation

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$39358
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$5770

6. Other

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$433378
d. Total Revenue from Non-Volumetric	

Charges, Fees and other Revenue Sources	$355888

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	69600	68700
2. Actual Expenditures	48278	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Detail provided by Director of Finance.

Reported as of 4/18/05

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	no
4. Partner agency's name:	

5. If your agency supplies the conservation coordinator:

a. What percent is this conservation coordinator's position?	10%
b. Coordinator's Name	Sue Mosburg
c. Coordinator's Title	Training Coordinator
d. Coordinator's Experience and Number of Years	Program oversite and coordination 2 years
e. Date Coordinator's position was created (mm/dd/yyyy)	9/1/1991

6. Number of conservation staff, including Conservation Coordinator.	2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	26000	22300
2. Actual Expenditures	22989	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Conservation Specialist (10% position time) with 13+ years experience assists.

Reported as of 4/18/05

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area?	no
a. If YES, describe the ordinance:	
2. Is a copy of the most current ordinance(s) on file with CUWCC?	no
a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:	

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding	yes
b. Single-pass cooling systems for new connections	no
c. Non-recirculating systems in all new conveyor or car wash systems	no
d. Non-recirculating systems in all new commercial laundry systems	no
e. Non-recirculating systems in all new decorative fountains	yes
f. Other, please name	no

2. Describe measures that prohibit water uses listed above:

A policy adopted by Sweetwater Authority Board prohibits water from irrigation systems to run on the sidewalk and street. This policy is voluntary at this time. National City portion of service area: - Guidelines for On-Site Landscaping [revised June, 1992] Section V. Design Considerations

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

a. Allow the sale of more efficient, demand-initiated regenerating DIR models.	no
b. Develop minimum appliance efficiency standards that:	
i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.	no
ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced.	yes
c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.	no
4. Does your agency include water softener checks in home water	no

audit programs?

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 4/18/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
Sweetwater Authority	**100% Complete**	**2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	600	383
Total	**600**	**383**

6. Describe your agency's ULFT program for single-family residences.

Through this program, residential customers are offered a voucher redeemable for up to $75 off the purchase price of an approved ultra-flush toilet. The voucher is for a point-of-purchase discount only. ULFTs must be from the list of approved toilets. No after-purchase rebates are available.

7. Describe your agency's ULFT program for multi-family residences.

Same as above. Single-family and multi-family customers must be replacing existing high-volume fixtures.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	20221	20502
2. Actual Expenditures	21652	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Program managed regionally through San Diego County Water Authority. San Diego region uses vouchers rather than rebates.

Appendix C
BMP Water Savings Reports

Total Water Savings (AF) Report

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data	
BMP01: Water Survey Programs for Single-Family and Multi-Family Residential Customers	**286**
BMP02: Residential Plumbing Retrofit	**485**
BMP04: Metering with Commodity Rates for all New Connections and Retrofit of Existing	**0**
BMP05: Large Landscape Conservation Programs and Incentives	**8,246**
BMP06: High-Efficiency Washing Machine Rebate Programs	**38**
BMP09: Conservation Programs for CII Accounts	**2,634**
BMP09a: CII ULFT Water Savings	**34**
BMP14: Residential ULFT Replacement Programs	**7,957**
Total:	**19,680**

Water Savings (AFY) Detail Report for BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year	Water Savings (AF)
1991	2
1992	18
1993	34
1994	32
1995	30
1996	26
1997	24
1998	24
1999	21
2000	18
2001	15
2002	13
2003	11
2004	9
2005	8
TOTAL:	**286**

Water Savings (AFY) Detail Report for BMP 02: Residential Plumbing Retrofit

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Plumbing Code
1991	5	5
1992	11	10
1993	17	13
1994	22	14
1995	25	14
1996	32	18
1997	36	17
1998	39	16
1999	41	14
2000	42	11
2001	43	9
2002	43	7
2003	43	5
2004	43	4
2005	43	3
TOTALS:	**485**	**162**

Water Savings (AFY) Detail Report for BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year		Water Savings (AF)
1991		0
1992		0
1993		0
1994		0
1995		0
1996		0
1997		0
1998		0
1999		0
2000		0
2001		0
2002		0
2003		0
2004		0
2005		0
	TOTAL:	**0**

Water Savings (AFY) Detail Report for
BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year		Water Savings (AF)
1991		468
1992		912
1993		860
1994		779
1995		710
1996		672
1997		607
1998		555
1999		505
2000		461
2001		418
2002		376
2003		340
2004		307
2005		276
	TOTAL:	**8,246**

Water Savings (AFY) Detail Report for
BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year		Gross Water Savings (AFY)	Water Savings (AFY) Net of Program Freeridership Effects
1991		0	0
1992		0	0
1993		0	0
1994		0	0
1995		0	0
1996		0	0
1997		0	0
1998		0	0
1999		0	0
2000		0	0
2001		1	1
2002		3	3
2003		7	6
2004		14	12
2005		13	12
	TOTAL:	**38**	**35**

Water Savings (AFY) Detail Report for BMP 09: Conservation Programs for CII Accounts

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year	Water Savings (AF)
1991	44
1992	84
1993	124
1994	127
1995	126
1996	113
1997	102
1998	92
1999	148
2000	158
2001	536
2002	529
2003	187
2004	215
2005	49
TOTAL:	**2,634**

Water Savings (AFY) Detail Report for BMP 09a: CII ULFT Water Savings

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Plumbing Code	Water Savings (AFY) Net of Plumbing Code and Program Freeridership Effects
1991	0	0	0
1992	0	0	0
1993	0	0	0
1994	0	0	0
1995	0	0	0
1996	0	0	0
1997	0	0	0
1998	0	0	0
1999	0	0	0
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
TOTALS:	**0**	**0**	**0**

Water Savings (AFY) Detail Report for BMP 14: Residential ULFT Replacement Programs

Reporting Unit:
Sweetwater Authority

Estimated Water Savings from BMP Annual Report Data

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Plumbing Code	Water Savings (AFY) Net of Plumbing Code and Program Freeridership Effects
1991	51	51	38
1992	118	116	87
1993	152	146	109
1994	205	192	144
1995	312	292	219
1996	392	360	270
1997	492	446	334
1998	574	509	382
1999	652	567	426
2000	742	635	477
2001	783	650	488
2002	829	670	504
2003	862	677	508
2004	896	684	514
2005	896	657	493
TOTALS:	**7,957**	**6,653**	**4,995**

Appendix D
BMP Coverage Report

Reported as of 4/18/05

BMP 01 Coverage: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	Reporting Period:
Sweetwater Authority	**03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1.

Condition 1: Adopt survey targeting and marketing strategy on time

Condition 2: Offer surveys to 20% of SF accounts and 20% of MF units during report period

Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

Test for Condition 1

	Single-Family	Multi-Family
Sweetwater Authority to Implement Targeting/Marketing Program by:	1999	
Year Sweetwater Authority Reported Implementing Targeting/Marketing Program:	1950	1950
Sweetwater Authority Met Targeting/Marketing Coverage Requirement:	YES	YES

Test for Condition 2

			Single-Family	Multi-Family
Survey Program to Start by:	1998	Residential Survey Offers (%)	215.16%	201.71%
Reporting Period:	03-04	Survey Offers ≥ 20%	YES	YES

Test for Condition 3

	Completed Residential Surveys	
	Single Family	Multi-Family
Total Completed Surveys 1999 - 2004:	13	7
Past Credit for Surveys Completed Prior to 1999 (Implementation of Reporting Database):	1,041	192
Total + Credit	1,054	199
Residential Accounts in Base Year	24,419	3,333
Sweetwater Authority Survey Coverage as % of Base Year Residential Accounts	4.32%	5.97%

Coverage Requirement by Year 7 of Implementation per Exhibit 1	7.90%	7.90%
Sweetwater Authority on Schedule to Meet 10-Year Coverage Requirement	NO	NO

BMP 1 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 4/18/05

BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? Yes

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1: The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2: An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3: The agency has distributed or directly installed low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period.

Test for Condition 1

		Single-Family		Multi-Family	
Report Year	Report Period	Reported Saturation	Saturation > 75%?	Reported Saturation	Saturation > 75%?
1999	99-00	75.00%	YES	75.00%	YES
2000	99-00	75.00%	YES	75.00%	YES
2001	01-02	75.00%	YES	75.00%	YES
2002	01-02	75.00%	YES	75.00%	YES
2003	03-04	75.00%	YES	75.00%	YES
2004	03-04	75.00%	YES	75.00%	YES

Test for Condition 2

Report Year	Report Period	Sweetwater Authority has ordinance requiring showerhead retrofit?
1999	99-00	NO
2000	99-00	NO
2001	01-02	NO
2002	01-02	NO
2003	03-04	NO
2004	03-04	NO

Test for Condition 3

Reporting Period: 03-04

1992 SF Accounts	Num. Showerheads Distributed to SF Accounts	Single-Family Coverage Ratio	SF Coverage Ratio > 10%
23,766			NO

1992 MF Accounts	Num. Showerheads Distributed to MF Accounts	Multi-Family Coverage Ratio	MF Coverage Ratio > 10%
7,922			NO

BMP 2 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 03 Coverage: System Water Audits, Leak Detection and Repair

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? Yes

An agency must meet one of two conditions to be in compliance with BMP 3:

Condition 1: Perform a prescreening audit. If the result is equal to or greater than 0.9 nothing more needs be done.

Condition 2: Perform a prescreening audit. If the result is less than 0.9, perform a full audit in accordance with AWWA's Manual of Water Supply Practices, Water Audits, and Leak Detection.

Test for Conditions 1 and 2

Report Year	Report Period	Pre-Screen Completed	Pre-Screen Result	Full Audit Indicated	Full Audit Completed
1999	99-00	NO			NO
2000	99-00	NO			NO
2001	01-02	NO			NO
2002	01-02	NO			NO
2003	03-04	NO			NO
2004	03-04	NO			NO

BMP 3 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 4/18/05

BMP 04 Coverage: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	Reporting Period:
Sweetwater Authority	**03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must be on track to retrofit 100% of its unmetered accounts within 10 years to be in compliance with BMP 4.

Test for Compliance

Total Meter Retrofits Reported through 2004	
No. of Unmetered Accounts in Base Year	
Meter Retrofit Coverage as % of Base Year Unmetered Accounts	
Coverage Requirement by Year 6 of Implementation per Exhibit 1	42.0%
RU on Schedule to meet 10 Year Coverage Requirement	YES

BMP 4 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

Test for Condition 1

Year	Report Period	BMP 5 Implementation Year	No. of Irrigation Meter Accounts	No. of Irrigation Accounts with Budgets	Budget Coverage Ratio	90% Coverage Met by Year 4
1999	99-00	1	586			NA
2000	99-00	2	177			NA
2001	01-02	3	641			NA
2002	01-02	4	646			No
2003	03-04	5	661			No
2004	03-04	6	686			No

Test for Condition 2a (survey offers)

Select Reporting Period:	03-04
Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts	18.4%
Survey Offers Equal or Exceed 20% Coverage Requirement	NO

Test for Condition 2a (surveys completed)

Total Completed Landscape Surveys Reported through	24
Credit for Surveys Completed Prior to Implementation of Reporting Database	1,385
Total + Credit	1,409
CII Accounts in Base Year	3,513
RU Survey Coverage as a % of Base Year CII Accounts	40.1%
Coverage Requirement by Year of Implementation per Exhibit 1	6.3%
RU on Schedule to Meet 10 Year Coverage Requirement	YES

Test for Condition 2b (mixed use budget or meter retrofit program)

Report Year	Report Period	BMP 5 Implementation Year	Agency has mix-use budget program	No. of mixed-use budgets
1999	99-00	1	NO	
2000	99-00	2	NO	
2001	01-02	3	NO	
2002	01-02	4	NO	
2003	03-04	5	NO	
2004	03-04	6	NO	

Report Year	Report Period	BMP 4 Implementation Year	No. of mixed use CII accounts	No. of mixed use CII accounts fitted with irrig. meters
1999	99-00	1	980	
2000	99-00	2	984	
2001	01-02	3	983	
2002	01-02	4	985	
2003	03-04	5	900	
2004	03-04	6	840	

Test for Condition 3

Report Year	Report Period	BMP 5 Implementation Year	RU offers financial incentives?	No. of Loans	Total Amt. Loans
1999	99-00	1	NO		
2000	99-00	2	NO		
2001	01-02	3	YES		
2002	01-02	4	YES		
2003	03-04	5	YES		
2004	03-04	6	YES		

Report Year	Report Period	No. of Grants	Total Amt. Grants	No. of rebates	Total Amt. Rebates
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04				
2004	03-04				

BMP 5 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 4/18/05

BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive for high-efficiency washers if one or more energy service providers in service area offer financial incentives for high-efficiency washers.

Test for Condition 1

Year	Report Period	BMP 6 Implementation Year	Rebate Offered by ESP?	Rebate Offered by RU?	Rebate Amount
1999	99-00	1	NO	NO	
2000	99-00	2	YES	YES	100.00
2001	01-02	3	YES	YES	125.00
2002	01-02	4	YES	YES	125.00
2003	03-04	5	YES	YES	125.00
2004	03-04	6	YES	YES	125.00

Year	Report Period	BMP 6 Implementation Year	No. Rebates Awarded	Coverage Met?
1999	99-00	1		YES
2000	99-00	2	9	YES
2001	01-02	3	50	YES
2002	01-02	4	132	YES
2003	03-04	5	266	YES
2004	03-04	6	423	YES

BMP 6 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 07 Coverage: Public Information Programs

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must meet one condition to comply with BMP 7.

Condition 1: Implement and maintain a public information program consistent with BMP 7's definition.

Test for Condition 1

Year	Report Period	BMP 7 Implementation Year	RU Has Public Information Program?
1999	99-00	2	YES
2000	99-00	3	YES
2001	01-02	4	YES
2002	01-02	5	YES
2003	03-04	6	YES
2004	03-04	7	YES

BMP 7 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 08 Coverage: School Education Programs

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must meet one condition to comply with BMP 8.

Condition 1: Implement and maintain a school education program consistent with BMP 8's definition.

Test for Condition 1

Year	Report Period	BMP 8 Implementation Year	RU Has School Education Program?
1999	99-00	2	YES
2000	99-00	3	YES
2001	01-02	4	YES
2002	01-02	5	YES
2003	03-04	6	YES
2004	03-04	7	YES

BMP 8 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 09 Coverage: Conservation Programs for CII Accounts

Reporting Unit:
Sweetwater Authority

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must meet three conditions to comply with BMP 9.

Condition 1: Agency has identified and ranked by use commercial, industrial, and institutional accounts.

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence.
OR
Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence.
OR
Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation.

Test for Condition 1

Year	Report Period	BMP 9 Implementation Year	Ranked Com. Use	Ranked Ind. Use	Ranked Inst. Use
1999	99-00	1	YES	YES	YES
2000	99-00	2	YES	YES	YES
2001	01-02	3	YES	YES	YES
2002	01-02	4	YES	YES	YES
2003	03-04	5	YES	YES	YES
2004	03-04	6	YES	YES	YES

Test for Condition 2a

	Commercial	Industrial	Institutional
Total Completed Surveys Reported through 2004			
Credit for Surveys Completed Prior to Implementation of Reporting Databases	83	18	
Total + Credit	83	18	
CII Accounts in Base Year	3,182	44	287
RU Survey Coverage as % of Base Year CII Accounts	2.6%	40.9%	
Coverage Requirement by Year 6 of Implementation per Exhibit 1	4.2%	4.2%	4.2%
RU on Schedule to Meet 10 Year Coverage Requirement	NO	YES	NO

Test for Condition 2a

Year	Report Period	BMP 9 Implementation Year	Performance Target Savings (AF/yr)	Performance Target Savings Coverage	Performance Target Savings Coverage Requirement	Coverage Requirement Met

1999 99-00	1	57	0.9%	0.5%	YES
2000 99-00	2	76	1.2%	1.0%	YES
2001 01-02	3	462	7.4%	1.7%	YES
2002 01-02	4	462	7.4%	2.4%	YES
2003 03-04	5	127	2.0%	3.3%	NO
2004 03-04	6	161	2.6%	4.2%	NO

Test for Condition 2c

Total BMP 9 Surveys + Credit	101
BMP 9 Survey Coverage	2.9%
BMP 9 Performance Target Coverage	2.6%
BMP 9 Survey + Performance Target Coverage	5.4%
Combined Coverage Equals or Exceeds Coverage Requirement?	YES

BMP 9 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 11 Coverage: Conservation Pricing

Reporting Unit: Reporting Period:
Sweetwater Authority **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates);rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates), seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

Test for Condition 1

Year	Report Period	RU Employed Non Conserving Rate Structure	RU Meets BMP 11 Coverage Requirement
1999	99-00	NO	YES
2000	99-00	NO	YES
2001	01-02	NO	YES
2002	01-02	NO	YES
2003	03-04	NO	YES
2004	03-04	NO	YES

BMP 11 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 12 Coverage: Conservation Coordinator

Reporting Unit: **Sweetwater Authority**

Reporting Period: **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

Test for Compliance

Report Year	Report Period	Conservation Coordinator Position Staffed?	Total Staff on Team (incl CC)
1999	99-00	YES	2
2000	99-00	YES	2
2001	01-02	YES	1
2002	01-02	YES	1
2003	03-04	YES	2
2004	03-04	YES	2

BMP 12 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 4/18/05

BMP 13 Coverage: Water Waste Prohibition

Reporting Unit: Reporting Period:

Sweetwater Authority **03-04**

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 13.

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains.

Test for Condition 1

		Agency or service area prohibits:					
Year	Gutter Flooding	Single-Pass Cooling Systems	Single-Pass Car Wash	Single-Pass Laundry	Single-Pass Fountains	Other	RU has ordinance that meets coverage requirement
1999	yes	no	no	no	no	no	NO
2000	yes	no	no	no	no	no	NO
2001	yes	no	no	no	no	no	NO
2002	yes	no	no	no	no	no	NO
2003	yes	no	no	no	yes	no	NO
2004	yes	no	no	no	yes	no	NO

BMP 13 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 4/18/05

BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: **Sweetwater Authority**

MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.

An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

Status: Water supplier is meeting coverage requirements for this BMP. as of 2004

Coverage Year	BMP 14 Data Submitted to CUWCC	Exemption Filed with CUWCC	ROR Ordinance in Effect	Exhibit 6 Coverage Req'mt (AF)	Toilet Replacement Program Water Savings* (AF)
1998	Yes			58.38	2112.77
1999	Yes	No	No	167.59	2680.18
2000	Yes	No	No	320.84	3315.39
2001	Yes	No	No	512.04	3965.31
2002	Yes	No	No	735.75	4635.70
2003	Yes	No	No	987.08	5312.29
2004	Yes	No	No	1261.67	5996.17
2005	No	No	No	1555.60	
2006	No	No	No	1865.42	
2007	No	No	No	2188.02	

*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

BMP 14 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: **Sweetwater Authority**

BMP 14 Coverage Calculation Detail: Retrofit on Resale (ROR) Ordinance Water Savings

	Single Family	Multi-Family
1992 Housing Stock		
Average rate of natural replacement (% of remaining stock)	.04	.04
Average rate of housing demolition (% of remining stock)	.005	.005
Estimated Housing Units with 3.5+ gpf Toilets in 1997	19398.34	6466.11
Average resale rate	.048	.06
Average persons per unit		
Average toilets per unit		
Average savings per home (gpd; from Exhibit 6)	38.4	48.5

Single Family Housing Units

Coverage Year	Unretrofitted Houses	Houses Sold	Houses Unsold	Sold and Retrofitted	Sold and Already Retrofitted	Unsold and Retrofitted	Gross ROR Savings (AFY)	Nat'l Replacement Only Savings (AFY)	Net ROR Savings (AFY)
1998	17736.88	926.46	18374.89	926.46		735.00	259.29	221.04	38.25
1999	16217.72	921.83	18283.01	847.11	74.72	672.04	324.63	252.93	71.70
2000	14828.68	917.22	18191.60	774.56	142.66	614.48	384.37	283.54	100.83
2001	13558.61	912.64	18100.64	708.22	204.42	561.85	438.99	312.93	126.06
2002	12397.32	908.07	18010.13	647.56	260.51	513.73	488.93	341.16	147.77
2003	11335.50	903.53	17920.08	592.10	311.44	469.73	534.60	368.26	166.34
2004	10364.62	899.02	17830.48	541.38	357.63	429.50	576.35	394.28	182.07
2005	9476.89	894.52	17741.33	495.01	399.51	392.71	614.53	419.27	195.26
2006	8665.20	890.05	17652.62	452.62	437.43	359.08	649.44	443.26	206.18
2007	7923.03	885.60	17564.36	413.85	471.75	328.32	681.36	466.30	215.06

Multi Family Housing Units

Coverage Year	Unretrofitted Houses	Houses Sold	Houses Unsold	Sold and Retrofitted	Sold and Already Retrofitted	Unsold and Retrofitted	Gross ROR Savings (AFY)	Nat'l Replacement Only Savings (AFY)	Net ROR Savings (AFY)
1998	5838.18	386.03	6047.76	386.03		241.91	113.19	93.06	20.13
1999	5271.22	384.10	6017.52	348.54	35.56	218.42	143.99	106.48	37.50
2000	4759.32	382.18	5987.43	314.69	67.48	197.21	171.79	119.37	52.42
2001	4297.13	380.27	5957.49	284.13	96.13	178.06	196.90	131.75	65.15
2002	3879.83	378.36	5927.71	256.54	121.83	160.76	219.57	143.63	75.94
2003	3503.05	376.47	5898.07	231.63	144.85	145.15	240.03	155.04	84.99
2004	3162.86	374.59	5868.58	209.13	165.46	131.06	258.51	166.00	92.51
2005	2855.71	372.72	5839.23	188.82	183.89	118.33	275.19	176.52	98.68
2006	2578.39	370.85	5810.04	170.49	200.37	106.84	290.26	186.62	103.64
2007	2328.00	369.00	5780.99	153.93	215.07	96.46	303.86	196.32	107.54

Appendix E
Sweetwater Authority Interim Groundwater Management Plan

ATTACHMENT A

RESOLUTION 01-19

RESOLUTION OF THE GOVERNING BOARD OF SWEETWATER AUTHORITY ADOPTING AN INTERIM GROUNDWATER MANAGEMENT PLAN

WHEREAS, Sweetwater Authority and its predecessors have been engaged in groundwater management activities associated with the Authority's groundwater projects in the Sweetwater Valley (Department of Water Resources Basin Number 9-17) and the San Diego Formation for over one hundred and thirty-two years, and

WHEREAS, the Governing Board of Sweetwater Authority, by approval of Budget Project Number 99-21A approved funding of the preparation of a Groundwater Management Plan, and

WHEREAS, Sweetwater has plans to contract with an engineering consultant to work with staff to prepare a formal Groundwater Management Plan pursuant to Water Code Section 10750 et seq. (AB 3030), and

WHEREAS, the Governing Board wishes to memorialize it's existing groundwater management activities as an interim Groundwater Management Plan,

NOW, THEREFORE, BE IT RESOLVED by the Governing Board of Sweetwater Authority that, the attached Interim Groundwater Management Plan is adopted to guide the groundwater management activities of Sweetwater Authority until such time as it is replaced by a subsequent Groundwater Management Plan under Water Code Section 10750 et Seq. (AB 3030) or other statutes.

PASSED AND ADOPTED at a regular meeting of the Governing Board of Sweetwater Authority held on this 9th day of November, 2001 by the following vote, to wit:

Ayes: Directors Doud, Jarrett, Pocklington, Waters, Welsh, Wolniewicz, and Wright

Noes: None

Absent: None

Abstain: None

/s/ Margaret Cook Welsh
Margaret Cook Welsh, Chair

Attest:

/s/ Marisa Farpon-Friedman
Marisa Farpon-Friedman, Secretary

SWEETWATER AUTHORITY INTERIM GROUNDWATER MANAGEMENT PLAN

A. Interim Plan

This interim groundwater management plan shall govern the groundwater management activities of the Sweetwater Authority until a subsequent Groundwater Management Plan is adopted by the Sweetwater Authority Governing Board, pursuant to Water Code Section 10750 et seq. (AB 3030).

B. Groundwater Management Area Boundaries

Sweetwater Authority shall engage in groundwater management in the area of the Sweetwater Valley basin. This basin is as described in the State of California Department of Water Resources Bulletin Number 118 as the Sweetwater Valley Basin Number 9-17. Also included in the groundwater management activities are the watershed of the Sweetwater River and the underlying San Diego Formation within the Service area of the Sweetwater Authority.

C. Groundwater Management Strategies

1. Maintain static groundwater levels

It shall be the policy and goal of Sweetwater Authority groundwater management to extract from the San Diego Formation so as to not cause a decline in the long term static water levels. In the Sweetwater Valley basin alluvial areas, the policy and goal of Sweetwater Authority groundwater management shall be to extract groundwater to not increase seawater intrusion or cause environmental impacts or damage other producers in the alluvial portion of the basin through the operations of Sweetwater Authority's groundwater projects.

2. Protect groundwater from pollution by manmade activities

Sweetwater Authority shall work with the San Diego Regional Water Quality Control Board (Region 9) to ensure that the groundwater quality within the Sweetwater Valley Basin and the San Diego Formation is protected from contamination.

3. Monitor seawater intrusion

Sweetwater Authority shall monitor groundwater levels, quality and seawater intrusion to ensure that activities of Sweetwater Authority are not causing seawater intrusion.

4. Monitor groundwater quality and quantity

Sweetwater Authority shall periodically monitor the levels and quality of groundwater in the monitoring wells shown in Appendix A. The Authority shall maintain a database of this period information for display on the Sweetwater Authority web page located at www.sweetwater.org.

5. Sweetwater Authority Groundwater Projects

Current Sweetwater Authority groundwater projects include the following:

a. Existing National City Wells

b. Existing Richard A. Reynolds Brackish Groundwater Desalination Facility and its nine groundwater extraction wells.

c. Monitoring of existing groundwater monitoring wells and maintenance of a groundwater level and groundwater quality database.

d. Proposed National City Aquifer Storage and Recovery (ASR) Project.

6. Develop new or expanded groundwater supplies

Staff shall perform activities to develop new groundwater supplies and expand existing groundwater supplies and provide Budget Requests for the Governing Board's approval for these activities, as follows:

a. Investigate the development of new wells to extract potable or brackish groundwater to facilitate expansion of existing groundwater projects as in paragraph C.5. above.

b. Investigate new technologies and their application to existing groundwater sources.

c. Explore conjunctive use activities to augment or expand existing groundwater supplies.

7. Development of relationships with state and local regulation agencies – Bur. Rec. – USGS

Sweetwater Authority has worked and consulted with the Bureau of Reclamation and the United States Geological Survey to receive funding and develop groundwater projects and to study water quality issues. These relationships have been ongoing since 1997. Sweetwater Authority is currently involved with a contract with the USGS to study groundwater quality issues in the San Diego Formation.

D. Implementation

Sweetwater Authority shall work within the watershed of the Sweetwater River, the Sweetwater Valley Basin (Number 9-17) and the San Diego Formation within the service area of the Sweetwater Authority to manage groundwater levels and protect groundwater quality. By adoption of this document, the Sweetwater Authority Governing Board hereby authorizes staff to maintain databases and perform groundwater management activities as described in this interim groundwater management plan.

E. Data Collection and Management

Sweetwater Authority shall maintain a database of groundwater levels and water quality for the existing monitoring wells shown in Appendix A. Staff shall, to the best of its abilities, carry out groundwater management activities using the strategies in Section C of this interim groundwater management plan.

F. Education

The Sweetwater Authority Stakeholder Survey identifies issues important to stakeholders in the watershed of the Sweetwater River, the Sweetwater Valley basin and the San Diego Formation within the Sweetwater Authority service area. As a part of the groundwater management activities to be carried out under the auspices of this interim groundwater management plan, Sweetwater Authority staff is directed to meet with other public entities and the public interested in the groundwater activities of the Sweetwater Authority. The purpose of these meetings shall be to coordinate information about Sweetwater Authority groundwater management activities and projects, receive input and responses from the public and public entities. Also these meetings shall strive to develop a base of support and a forum for constructive criticism and input to Sweetwater Authority for the groundwater management activities of the Authority.

G. Resolutions of the Governing board, Sweetwater Authority Policy and Legal Authority

1. Resolutions of the Governing Board

Adoption of the attached Resolution 01-19 establishes governing board adoption of this interim groundwater management plan and provides authorization for Sweetwater Authority staff to proceed with the activities described within.

2. Sweetwater Authority Policy concerning groundwater management

Sweetwater Authority's policies regarding groundwater management activities are described within this plan and any subsequent amendments to this interim groundwater management plan authorized by the Governing Board.

3. Legal Authority

Sweetwater Authority operates under the legal authority contained in Irrigation District Law as included in water code section 20500 et seq. Under this authorization the Sweetwater Authority may control, distribute, store, spread, sink, treat, purify, recapture and salvage any water for the beneficial use of the district. Further Sweetwater Authority according to water code 22078 may do any act to put to any beneficial use any water under its control.

Also under water code section 22076 Sweetwater Authority has, though its groundwater management practices have not been previously memorialized in an AB 3030 plan (Water Code section 10750 et seq.) programs that relate to the following:

a. the control of saline water intrusion
b. identification of and management of wellhead protection areas and recharge areas
c. replenishment of groundwater
d. monitoring of groundwater levels and storage
e. construction and operation of a brackish groundwater demineralization facility
f. development of state and federal partnerships in the funding of groundwater management activities
g. review and coordination of land use permitting with the County of San Diego to access development activities and their impact on groundwater
h. management of its groundwater resources by Sweetwater Authority as a local agency thereby making state-controlled groundwater management unnecessary

H. Program Coordination

The General Manager and the Operations Manager of Sweetwater Authority shall be responsible to the Governing Board for the performance of the groundwater management activities described in this interim groundwater management plan.

APPENDIX A

SWEETWATER AUTHORITY MONITORING WELLS

1. ALLUVIAL MONITORING WELL (AMW) #1
2. AMW #2
3. AMW #3
4. AMW #4
5. AMW #5
6. AMW #6
7. AMW #7
8. AMW #8
9. AMW #9

10. SAN DIEGO FORMATION MONITORING WELL (SDFMW) #1 (STEIN FARM)
11. SDFMW #2 (DIXIE LINE)
12. SDFMW #3 (OPS WELL)
13. SDFMW #4 (ALBERTSON WELL)
14. SDFMW #5 (DEMIN PROPERTY)
15. ABRIGO MONITORING WELL
16. EL TOYON MONITORING WELL