Draft Environmental Impact Report

for the

Union Ranch Specific Plan



SCH# 2004092016

VOLUME II – Appendices C through H

Prepared for

City of Manteca

Prepared by

EDAW

January 13, 2005

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Prepared for

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January 13, 2005

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APPENDIX C

AIR QUALITY MODELING OUTPUT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

JOB TITLE: CL4 LATHROP RD & UNION RD EPP NO MIT

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S	TEMP=	15.0 DEGREE (C)
CLAS=	7 (G)	VS=	.0 CM/S	SIGTH=	5. DEGREES
MIXH=	1000. M	AMB=	.0 PPM		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SBAEX	-4	750	-4	150	AG	806	5.4	.0	42.0
B. SBAIN	-4	150	-4	0	AG	806	13.1	.0	42.0
C. SBDIN	-4	0	-4	-150	AG	750	7.3	.0	42.0
D. SBDEX	-4	-150	-4	-750	AG	750	5.4	.0	42.0
E. NBAEX	4	-750	4	-150	AG	642	5.4	.0	42.0
F. NBAIN	4	-150	4	0	AG	642	11.2	.0	42.0
G. NBDIN	4	0	4	150	AG	732	7.3	.0	42.0
H. NBDEX	4	150	4	750	AG	732	5.4	.0	42.0
I. WBAEX	750	4	150	4	AG	732	5.4	.0	42.0
J. WBAIN	150	4	0	4	AG	732	13.0	.0	42.0
K. WBDIN	0	4	-150	4	AG	692	6.5	.0	42.0
L. WBDEX	-150	4	-750	4	AG	692	5.4	.0	42.0
M. EBAEX	-750	-4	-150	-4	AG	757	5.4	.0	42.0
N. EBAIN	-150	-4	0	-4	AG	757	13.0	.0	42.0
O. EBDIN	0	-4	150	-4	AG	763	7.3	.0	42.0
P. EBDEX	150	-4	750	-4	AG	763	5.4	.0	42.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	-8	8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	8	-8	1.8
5. Recpt 5	12	12	1.8
6. Recpt 6	-12	12	1.8
7. Recpt 7	-12	-12	1.8
8. Recpt 8	12	-12	1.8

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-Hour Contribution										
1. Recpt 1	269.	1.5	.0	.2	.0	.0	.0	.0	.0	.0
2. Recpt 2	91.	1.5	.0	.2	.0	.0	.0	.0	.1	.0
3. Recpt 3	1.	1.5	.2	.5	.0	.0	.0	.0	.3	.2
4. Recpt 4	359.	1.6	.2	.5	.0	.0	.0	.0	.3	.2
8-Hour Contribution										
5. Recpt 5	268.	1.5	.0	.3	.0	.0	.0	.0	.1	.0
6. Recpt 6	92.	1.6	.0	.2	.0	.0	.0	.0	.1	.0
7. Recpt 7	2.	1.6	.2	.5	.0	.0	.0	.0	.3	.2
8. Recpt 8	358.	1.6	.2	.5	.0	.0	.0	.0	.3	.2

Predicted Maximum 1-Hour Concentration
Ambient: 8.4
Recpt 4 10.0

Predicted Maximum 8-Hour Concentration
Ambient: 6.0
Persistence Factor: 0.7
Recpts 6,7,8 7.1

RUN TITLE: CL4 LATHROP RD & 5TH ST FPP NOMIT

I. SITE VARIABLES

U= 1.0 M/S	Z0= 100. CM	ALT= 0. (M)	
BRG= WORST CASE	VD= .0 CM/S	TEMP= 15.0 DEGREE (C)	
CLAS= 7 (G)	VS= .0 CM/S	SIGTH= 5. DEGREES	
MIXH= 1000. M	AMB= .0 PPM		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SBAEX	-2	750	-2	150	AG	435	3.0	.0	42.0
B. SBAIN	-2	150	-2	0	AG	435	3.0	.0	42.0
C. SBDIN	-2	0	-2	-150	AG	445	2.0	.0	42.0
D. SBDEX	-2	-150	-2	-750	AG	445	2.0	.0	42.0
E. NBAEX	2	-750	2	-150	AG	275	2.7	.0	42.0
F. NBAIN	2	-150	2	0	AG	275	2.7	.0	42.0
G. NBDIN	2	0	2	150	AG	505	2.0	.0	42.0
H. NBDEX	2	150	2	750	AG	505	2.0	.0	42.0
I. WBAEX	750	4	150	4	AG	1449	3.2	.0	42.0
J. WBAIN	150	4	0	4	AG	1449	3.2	.0	42.0
K. WBDIN	0	4	-150	4	AG	1414	2.3	.0	42.0
L. WBDEX	-150	4	-750	4	AG	1414	2.3	.0	42.0
M. EBAEX	-750	-4	-150	-4	AG	2843	3.2	.0	42.0
N. EBAIN	-150	-4	0	-4	AG	2843	3.2	.0	42.0
O. EBDIN	0	-4	150	-4	AG	2638	2.3	.0	42.0
P. EBDEX	150	-4	750	-4	AG	2638	2.3	.0	42.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	7	8	1.8
2. Recpt 2	-7	8	1.8
3. Recpt 3	-7	-8	1.8
4. Recpt 4	7	-8	1.8
5. Recpt 5	11	12	1.8
6. Recpt 6	-11	12	1.8
7. Recpt 7	-11	-12	1.8
8. Recpt 8	11	-12	1.8

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-Hour Contribution										
1. Recpt 1	269.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	91.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	89.	1.0	.0	.0	.0	.0	.0	.0	.0	.0

CO Modeling Appn Material

4. Recpt 4	* 271. *	1.1 *	.0	.0	.0	.0	.0	.0	.0	.0

8-Hour Contribution

5. Recpt 5	* 268. *	1.1 *	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	* 92. *	1.0 *	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	* 88. *	1.0 *	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	* 272. *	1.1 *	.0	.0	.0	.0	.0	.0	.0	.0

Predicted Maximum 1-Hour Concentration
Ambient: 8.4
Recpt 1 9.6

Predicted Maximum 8-Hour Concentration
Ambient: 6.0
Recpt 5,8 6.8

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Program Files\URBEMIS 2002 For Windows\Projects2k2\Union Ranch.urb
Project Name: Union Ranch
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	46.00	9.85	202.98	0.72	32.28

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	35.95	50.52	440.44	0.31	54.30

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	81.94	60.37	643.43	1.03	86.58

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Program Files\URBEMIS 2002 For Windows\Projects2k2\Union Ranch.urb
Project Name: Union Ranch
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.46	5.94	2.51	-	0.01
Wood Stoves	24.68	3.87	197.79	0.65	32.27
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping	0.31	0.03	2.68	0.08	0.01
Consumer Prdcts	20.54	-	-	-	-
TOTALS (tpy, unmitigated)	46.00	9.85	202.98	0.72	32.28

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	7.99	11.25	99.72	0.07	12.11
Retirement community	11.48	14.81	131.19	0.09	15.94
High Density Residential	2.79	3.61	31.96	0.02	3.88
Mixed Use Commercial	13.69	20.86	177.58	0.13	22.37
TOTAL EMISSIONS (tons/yr)	35.95	50.52	440.44	0.31	54.30

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.57 trips / dwelling units	535.00	5,119.95
Retirement community	4.73 trips / dwelling units	1,425.00	6,735.98
High Density Residential	4.81 trips / dwelling units	341.00	1,640.89
Mixed Use Commercial	28.34 trips / 1000 sq. ft.	385.90	10,937.18

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Mixed Use Commercial				2.0	1.0	97.0

APPENDIX D

NOISE MODELING DATA

RUN NAME: EX LATHROP E OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 11010 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.03
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.8	113.5	243.4

RUN NAME: EX LATHROP W OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 9370 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.33
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	102.1	218.7

RUN NAME: EX LATHROP E OF AIRPORT RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 9210 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.26
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	100.9	216.2

RUN NAME: EX AIRPORT N OF LATHROP RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 6150 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.77
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.1	115.9	249.5

RUN NAME: EX UNION N OF LATHROP RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 5540 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.63
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	71.7	154.1

RUN NAME: EX LOVELACE W OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 1430 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.44
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	94.5

RUN NAME: EXPP LATHROP E OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 14950 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.36
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	65.4	138.9	298.4

RUN NAME: EXPP LATHROP W OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 14490 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.22
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	64.1	136.1	292.2

RUN NAME: EXPP LATHROP E OF AIRPORT RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 14200 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.14
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	63.2	134.3	288.3

RUN NAME: EXPP AIRPORT N OF LATHROP RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 7410 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.58
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.2	131.2	282.5

RUN NAME: EXPP UNION N OF LATHROP RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 15380 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.76
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	62.8	134.8	290.2

RUN NAME: EXPP LOVELACE W OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 2280 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.46
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	60.1	128.9

RUN NAME: FPP LATHROP E OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 26420 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.83
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	94.7	202.7	435.9

RUN NAME: FPP LATHROP W OF UNION RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 24120 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.44
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	89.2	190.8	410.3

RUN NAME: FPP LATHROP E OF AIRPORT RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 15350 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.47
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	66.5	141.4	303.7

RUN NAME: FPP AIRPORT N OF LATHROP RUN DATE: 11/3/04
TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 40070 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 72.91
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.2	187.6	403.9	869.9

RUN NAME: FPP UNION N OF LATHROP RUN DATE: 11/3/04

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 17350 SPEED: 35 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.59

** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.3	153.1	329.5

RUN NAME: FPP LOVELACE W OF UNION RUN DATE: 11/3/04

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ADT: 3040 SPEED: 45 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.71

** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	72.7	156.1

APPENDIX E

BIOLOGICAL RESOURCES CONSTRAINTS ANALYSIS

MONK & ASSOCIATES
Environmental Consultants

BIOLOGICAL RESOURCES CONSTRAINTS ANALYSIS FOR THE UNION RANCH PROJECT MANTECA, CALIFORNIA

September 3, 2003

Prepared for

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1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource constraints analysis for a project site called Union Ranch (hereinafter referred to as the project site). The project site is located outside of Manteca in San Joaquin County, California. This site is approximately 370 acres. The purpose of this biological constraints analysis is to provide a description of existing biological resources on the project site, and to identify potential impacts to biological resources that could affect development of the project site.

2. PROJECT SITE LOCATION, SETTING, AND SURROUNDING LAND USES

The project site is located northwest of Manteca, California (Figures 1 and 2). It is bordered to the north by orchards, to the west it is bordered by Airport Way and more orchards, to the south it is bordered by West Lathrop Road and high density housing, and to the east the project site is bordered by Union Road and more orchards (Figure 3).

Surrounding land uses around the project site are almost exclusively agriculturally oriented, except for the high-density residential housing development to the south, as shown in Figure 4. Much of the area is active farmland that has been cultivated for decades. Figure 3 provides an aerial photograph of the project site showing the extent of agriculture in the vicinity of the project site.

3. ANALYSIS METHODS

To prepare this biological resources constraints report, M&A searched the current California Natural Diversity Data Base (RareFind2 2003) for all records of special-status (that is, threatened, rare, endangered) plants and animals known to occur within 10 miles of the project site. These records were compiled into tables: Table 1 is a list of special-status plant species while Table 2 is a list of special-status wildlife species known to occur within 10 miles of the project site. Figure 5 provides a graphical representation of the density of known records of special-status species within 10 miles of the project site. We examined these lists of special-status species and Figure 5 to determine if such species could potentially occur on the project site.

M&A biologists conducted a general survey on the approximately 370-acre project site in August of 2003 to document the existing conditions. The survey involved searching all habitats on the site and recording all plant and wildlife species observed. Table 3 is a list of plant species observed on the site, while Table 4 is a list of wildlife species observed on the project site during the survey. The results of our literature review and field analysis are provided below.

4. PLANT COMMUNITIES AND ASSOCIATED WILDLIFE HABITATS

The project site is devoted almost entirely to almond orchards. Exceptions occurred including one field of alfalfa (*Medicago sativa*), one field of Sudan grass (*Sorghum sudanense*), which is used to produce paper, and one fallowed (ruderal) field. The entire site is considered to be in agricultural production, except for approximately 40 acres that are developed (housing, ranchettes, backyards and roads). Two of the plant communities, agrestal (orchard and crops) and ruderal (weedy), are the direct result of human disturbance. In addition, irrigation ditches that

bisect the project site support "hydrophytic" plant species and associated wetland habitat communities.

In the following sections, plant communities are characterized by accepted plant community nomenclature (for example, Holland and Keil 1995). They are also labeled to be consistent with habitat types that are mapped on the project site by the San Joaquin Council of Governments (SJCOG). The SJCOG is the administering agency of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Applicants in San Joaquin County can mitigate project related impacts to sensitive biological resources by paying a fee to the SJCOG to use the SJMSCP. Please see Sections 7.2, 8.2.11, and 8.3.8 for further discussion about use of the SJMSCP.

4.1 Mapped SJMSCP Habitats

The project site falls into the areas mapped in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) dated November 14, 2000. According to vegetation maps provided with this plan, the project site has two mapped habitat types: C2 and C4; C2 is orchards and vineyards and C4 is row and field crops (unditched). There are also areas on the project site that would be considered "no pay zones." These areas are limited to existing roads and building locations with surrounding driveways, shed areas, and other areas now intensively used by residents.

4.2 Agrestal (Cropland) – SJMSCP Vegetation Type C2 and C4

The majority of the vegetation on the project site has been disturbed by past and current agricultural practices. The existing vegetation over most of the site is classified as agrestal (Holland & Keil 1995) and is the result of long-term ground manipulation and cultivation. Approximately 300 acres of the 370-acre site would likely be classified by the SJCOG as Type C2 and C4 habitats. The SJMSCP would further break this classification into "*multipurpose orchard habitats*." Agrestal communities are dominated by orchards and cultivated crops. Almond orchards dominate the Union Ranch project site. Other agricultural land uses include one alfalfa field, one Sudan grass field, and one fallow (ruderal) field. Consequently, the SJMSCP would categorize these vegetation types as C2 and C4 (orchard and row and field crops, unditched).

In general, agrestal habitat does not provide conditions that support a wide diversity of resident wildlife species. The intense cultivation and manipulation, including herbicide/pesticide applications, tends to limit the number of species that can occupy or use this habitat. The orchards on the project site attract large numbers of American crow (*Corvus brachyrhynchos*) and yellow-billed magpie (*Pica nuttalli*). Local farmers have resorted to using "zon guns" to discourage depredation of orchard crops. These propane-fueled guns are noisemakers that mimic the discharge of a shotgun. The discharges occur randomly every so often, effective scaring and otherwise discouraging pest avian species from lingering in orchards. Other wildlife species known to commonly utilize the orchards of the project site include Virginia opossum (*Didelphis virginiana*), striped skunk (*Lepus californicus*), black-tailed hare (*Lepus californicus*), California ground squirrel (*Spermophilus beechyi*), lesser goldfinch (*Carduelis psaltria*), bushtits (*Psaltriparus minimus*), house finch (*Carpodacus mexicanus*), Anna's hummingbird (*Calypte*

anna), mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*) and dark-eyed junco (*Junco hyemalis*).

Alfalfa fields, a fallowed field, and a field dedicated to Sudan grass were also identified on the project site, but overall were a small component of the project site totalling approximately 40 acres), are not considered multiple purpose agricultural cropland by the SJMSCP, rather are just considered agricultural lands. Alfalfa fields provide habitat for a number of resident species, particularly rodents, including Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), and California meadow vole (*Microtus californicus*). American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and the state listed Swainson's hawk (*Buteo swainsonii*) were all observed foraging for the small rodents in alfalfa fields in the vicinity of the project site.

Ruderal habitats, or those habitats supporting weedy species adapted to continual disturbance (Holland and Keil 1995) are typically found within Multiple Use Habitats (see below), and in unused portions of farmland. Many of the plant species listed in Table 3 are non-native species and are typical of a ruderal flora. On the project site, ruderal habitats were also found in a fallowed field and in areas adjacent to the almond orchards and cultivated fields. The common ruderal species include milk thistle (*Silybum marianum*), ripgut grass (*Bromus diandrus*), foxtail barley (*Hordeum murinum leporinum*), mallow (*Malva parviflora*), wild radish (*Raphanus sativus*), poison hemlock (*Conium maculatum*), and red-stem filaree (*Erodium botrys*). In the fallow field, the dominant ruderal species included yellow star thistle (*Centaurea solstitialis*), Russian tumbleweed (*Salsola tragus*), sunflower (*Helianthus annuus*) and horseweed (*Conyza canadensis*).

In an agricultural setting, ruderal habitats are often physically removed or sprayed with herbicides that kill undesirable plant growth, circumstances that severely limit the occurrence of wildlife species. Where ruderal habitats are left undisturbed, such as the fallow field located in the southeastern corner of the site (Figure 3), they can provide a varied food source for rodents and birds. Typical mammals include the Botta's pocket gopher, western harvest mouse, and California meadow vole.

Ruderal habitat was also identified on the project site surrounding a water storage basin located in the western portion of the site. The berms around the basin support Botta's pocket gopher and California ground squirrel. Compacted dirt roads on the project site provide basking sites for western fence lizard (*Sceloporus occidentalis*) and possibly other reptile species. The presence of some California ground squirrels and their burrows on the project site provides potential habitat for burrowing owl (*Athene cunicularia*), a special-status species discussed later in this report.

4.3 Aquatic Habitat Associated With Irrigation Ditches

Several irrigation ditches bisect the project site (Figure 3). The primary purpose of these ditches is to provide water to crops and to remove excess irrigation tail water from the project site. These ditches support typical freshwater marsh and wetland species. Freshwater marsh (Holland and Keil 1995) is a herbaceous community consisting of species such as cattails (*Typha* spp.), tall flat sedge (*Cyperus eragrostis*), Lady's-thumb (*Polygonum persicaria*), Dallis grass (*Paspalum dilatatum*), barnyard grass (*Echinochloa crus-galli*), curly dock (*Rumex crispus*), and other

species commonly found in wetlands. Although this vegetation performs a valuable function in natural wetlands (for example, filtering the water, providing wildlife with food and cover), it restricts the flow of water through agricultural ditches; hence, the growth of this vegetation is frequently controlled. That is, it is often cut back, physically removed, or treated with herbicides.

Bird species, including barn swallows (*Hirundo rustica*), song sparrows (*Melospiza melodia)*, black phoebe (*Sayornis nigricans),* great egret (*Ardea alba),* and great blue heron were observed foraging along the irrigation ditches of the project site. Other wildlife species such as bullfrog (*Rana catesbeiana*), Pacific tree frog (*Hyla regilla*), and red swamp crayfish (*Procambarus clarkii*) are expected to occur in these ditches as well. However, the high nitrogen and pesticides/herbicide content in tailwater ditches may deter use of these ditches by many species of wildlife.

4.4 Multiple Use Habitats

During the site assessment, additional habitats were identified on the project site, specifically clusters of trees associated with established homesteads and back yard environments, and ruderal (weedy) habitats. Approximately 30 acres of the project site would likely constitute developed or intensively used areas that would be classified by the SJCOG as *Multiple Use Habitats*. These areas constitute "no pay zones" if applicants choose to use the SJMSCP to mitigate impacts to sensitive biological resources. Tree species observed on the Union Ranch project site in multiple use habitats include box elder (*Acer negundo californica*), magnolia (*Magnolia grandiflora*), California ash (*Fraxinus dipetala*), olive (*Olea europaea*), western sycamore (*Platanus racemosa*), cottonwood (*Populus* sp.), Chinese elm (*Ulmus parvifolia*), verbena (*Verbena* sp.), and almond tree (*Prunus dulcis*).

5. HYDROLOGY

Water is delivered to and from the project site from a permanent piped underground irrigation system and temporary irrigation ditches that are excavated on the project site at various locations. The main irrigation ditch on the project site runs east-west and is connected to another permanent ditch that runs to the south. The main ditch daylights from a pipe that flows from under Union Road, and flows back under ground into a 36-inch concrete pipe under Airport Way (Figure 3). The main ditch is 5-feet wide between the Ordinary High Water Marks (OHWM), and is incised 3 to 5 feet below ground surface. At the time of M&A's site inspection, this ditch had pools of standing water with a low flow rate. Irrigation water had recently entered the ditch from flood irrigated almond orchards that receive water from the underground irrigation system. This ditch likely has water in it for extended periods since mosquito fish (*Gambusia affinis*) were found in this ditch. This fish species is commonly distributed in permanent and semi permanent waters by county mosquito abatement districts.

6. SOILS

Soils on the project site as mapped by the Soil Conservation Service (Soil Conservation Service 1992) include Timor loamy sand (0-2% slopes) (254), Tinnin loamy coarse sand (0-2% slopes) (255), and Veritas fine sandy loam (0-2% slopes) (266). These soils types are mapped as shown in Figure 6. None of these soils are listed as hydric by the Soil Conservation Service (Soil Conservation Service 1991). Soils must be hydric to be classified as a wetland soil by the Corps;

however, it should be noted that an area could still meet all the requirements to be classified as a hydric soil even if the area was not mapped by the Soil Conservation Service as a hydric soil.

7. REGULATORY FRAMEWORK FOR WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. These laws would have a certain affect on any proposal to develop the project site. Under each law we discuss its pertinence to the proposed development.

7.1 Federal Endangered Species Act

The primary focus of the federal Endangered Species Act (FESA) of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA has been amended several times in the past to correct perceived and real shortcomings. FESA contains three key sections. Section 4 (16 USCA §1533) outlines the procedure for listing endangered plants and wildlife. Section 7 (§1536) imposes limits on the actions of federal agencies that might impact listed species. Section 9 (§1538) prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies. In the case of salt-water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below, Sections 7 and 9 of FESA are discussed since they are the two sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Recent court cases have found "harm" includes not only the direct taking of a species itself, but also the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). Section 9 applies not only to federal agencies but also to any local or State agency, and to any individual. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need for consultation under Section 7 of FESA (for federal agencies), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals).

Under Section 7 of FESA, all federal agencies must, in consultation with USFWS, ensure that their actions do not jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Federal actions include permitting, funding, and entitlements for both federal projects, as well as private projects facilitated by federal actions (for example, a private landowner applying to the Corps for a permit). For example, if a federally listed endangered species is present in "waters of the United States" on a project site, prior to authorizing impacts to "waters of the United States," the Corps would be required to initiate "formal consultation" with USFWS pursuant to Section 7 of FESA. As part of the formal consultation, the USFWS would then be required to prepare a Biological Opinion based on a review and analysis of the project applicant's avoidance and mitigation plan. The Biological Opinion will either state that

the project will or will not result in "take" or threaten the continued existence of the species (not just that population). If an endangered species could be harmed by a proposed project, USFWS has to be in complete concurrence with the proposed avoidance and mitigation plan. If USFWS is not in complete concurrence with the mitigation plan, they will submit a Biological Opinion to the Corps containing a "jeopardy decision" and stating that a Corps' permit should not be issued for the pending project. The applicant would then have an opportunity to submit a revised mitigation plan that provides greater protection for the species.

In the 1982 amendments to FESA, Congress established a provision in Section 10 that allows for the "incidental take" of endangered and threatened species of wildlife by non-federal entities (for example, project applicants, state and local agencies). "Incidental take" is defined by FESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps.

Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

7.1.1 Responsible Agency

FESA gives regulatory authority over terrestrial species and non-anadromous fish to the USFWS. The NMFS has authority over marine mammals and anadromous fish.

7.1.2 Applicability to Proposed Project

There are no natural stream channels or waterways on the project site that could provide habitat for anadromous fish species. Therefore, there are no actions that would likely require authorization from the NMFS pursuant to the FESA. Similarly, the project is not likely to result in impacts to any non-anadromous listed fish or any listed terrestrial species under the regulatory authority of the USFWS pursuant to the FESA.

7.2 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin Council of Governments (SJCOG) recently adopted a habitat conservation plan for offsetting impacts to biological resources by projects within San Joaquin County. The plan was prepared with the cooperation of regulatory agencies, cities, and other interested parties. The resulting document is the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) dated November 14, 2000. The purpose of the plan is to balance the often-conflicting interests of agriculture, development, and the environment.

One of the primary goals of the SJMSCP is to obtain permits from state and federal agencies that would cover a variety of project activities for the next 50 years. This goal was partially achieved when the USFWS and the CDFG issued incidental take permits in conformance with FESA and the California Endangered Species Act (CESA). The SJMSCP has a variety of mechanisms for

complying with the CESA and FESA. These are too numerous to discuss here, but they are briefly discussed in Sections 8.27 and 8.3.8 of this document when applicable.

The SJMSCP provides a mechanism for applicants to pay a fee to the SJCOG to mitigate impacts to special-status plant and animal species that could occur on a project site. Use of the SJMSCP can save an applicant considerable time in permitting a project that may affect special-status species and/or those species protected pursuant to the CESA and FESA. The SJMSCP allows applicants to pay a fee to the SJCOG to obtain coverage under the SJCOG's incidental take permits for impacts to most special-status and listed species that may be affected by a proposed project. The fee also covers mitigation requirements for many listed species.

It should be noted that two important federal agencies have not yet issued permits to the SJCOG and so payment of the fee to use the SJMSCP will not modify requirements now imposed by these two federal agencies. Activities affecting marine species, including salmon and steelhead, must still be permitted separately by NMFS. Since there is no habitat on the project site that would be regulate by the NMFS, this exception has no bearing on the development of the project site. Similarly, those projects affecting waters of the United States must still be permitted by the U.S. Army Corps of Engineers (Corps) and the California Regional Water Quality Control Board (RWQCB).

When a project proponent in San Joaquin County chooses to use the SJMSCP, an application is made to SJCOG via a formal letter report. The SJCOG then assigns a biologist from their on-call consultant list to determine how the project can be constructed while remaining in conformance with the SJMSCP. M&A is one of five consulting firms selected by the SJCOG to assist with implementation of the SJMSCP. Accordingly, we believe we have pretty good knowledge of the fee structure and the process for using the SJMSCP. We do caution that fees to use the SJCOG are currently being revised, so our expected costs may not be accurate.

According to vegetation maps that accompany the SJMSCP, the project site has two mapped habitat types: C2 and C4 (orchard and row and field crops, unditched). There are different fee structures for these habitat classifications that must be paid to the SJCOG to use the SJMSCP. The fee for lands mapped C2 and C4 is typically $1690/acre. The entire project site is mapped C2/C4. However, it should be noted that orchards are treated differently than row croplands with respect to the value they have to plants and animals. Orchards are classified as multipurpose agricultural lands and have an assessment fee of $845/acre. There are approximately 300 acres of multipurpose agricultural lands on the project site that likely would be assessed this fee to use the SJMSCP. Row croplands are considered agricultural lands and are assessed a fee of $1690/acre by the SJCOG since they have higher value to plants and wildlife. Finally, multipurpose habitats, or those habitats where houses, barns, roads, and associated infrastructure occur, are classified as by the SJCOG as no fee zones. We estimate that approximately 30 acres of the project site could be classified as a no fee zone. Please note that all acreage figures, and thus costs to use the SJMSCP, are subject to revision based upon changes in cropping activities and as otherwise further analyzed.

7.3 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in 50 CFR 10, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

7.3.1 Applicability to Proposed Project

The Swainson's hawk (*Buteo swainsoni*), White-tailed Kite (*Elanus leucurus*), Burrowing owl (*Athene cunicularia*), and Northern harrier (*Circus cyaneus*), could occur on the project site. These raptors (birds of prey) would be protected by the Migratory Bird Treaty Act. Also, the common songbirds and wading birds (for example, egrets) found on site would be protected pursuant to this Act. As long as there is no direct mortality of species protected pursuant to this Act caused by development of the site, there should be no constraints to development of the site with respect to species protected by pursuant to the Migratory Bird Treaty Act. For most such species that occur in San Joaquin County, mitigation/avoidance measures are detailed in the SJMSCP. Similarly, payment of a fee to the SJCOG would mitigate impacts to most species protected by the Migratory Bird Treaty Act; however, use of SJMSCP still does not allow direct take of species protected pursuant to the Migratory Bird Treaty Act. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while such birds were nesting. Upon completion of nesting, the project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites for potentially occurring species below.

7.4 State Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

CESA requires that all state lead agencies (as defined under CEQA) conduct an endangered species consultation with CDFG if their actions could affect a state listed species. The state lead agency and/or project applicants must provide information to CDFG on the project and its likely impacts. CDFG must then prepare written findings on whether the proposed action would result in the direct take of a listed species. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFG considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFG determines that a proposed project could impact a State listed threatened or endangered species, CDFG will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be threatened or endangered species impacts, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFG

and/or USFWS (if it is a federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a federal incidental take permit for federal listed species). CDFG will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity.

2) The impacts of the authorized take are minimized and fully mitigated.

3) The measures required to minimize and fully mitigate the impacts of the authorized take:

a) are roughly proportional in extent to the impact of the taking on the species;
b) maintain the project applicant's objectives to the greatest extent possible; and,
c) capable of successful implementation; and,

4) Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFG staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

In September 1997, Assembly Bill 21 (Fish and Game Code §2080.1) was passed to streamline issuance of state endangered species incidental take permits. The Section is now termed the "consistency determination." It allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7, or who has received a federal 10(a) permit (federal incidental take permit), to submit the federal biological opinion or permit to CDFG for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFG determines that the federal incidental take permit is consistent with state law, no further permit or consultation is required under CESA for the project. However, if CDFG determines that the federal opinion or permit is not consistent with CESA, the applicant must apply for a state permit under section 2081(b).

The process provided in Fish and Game Code §2080.1 (Assembly Bill 21) may be of use when the incidental take would occur to species that are listed under both the federal and state endangered species acts. §2080.1 is of no use if an affected species is state-listed, but not federally listed. Section 2080.1 will automatically be repealed if and when Congress amends Section 7 or Section 10 of the federal act. Since FESA could be amended at any time, we are recommending that project applicants who are applying for authorization for "incidental take" of a federal and state listed species, enter into a Section 2081 agreement with CDFG in addition to the federal permit so that the project is covered under both FESA and CESA in case AB21 is repealed during the life of the project.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

7.4.1 Applicability to Proposed Project

No state listed plant species would likely be impacted by the proposed project (Table 1). However, there would likely be impacts to Swainson's hawk nesting and/or foraging habitat (Table 2). This hawk is a state listed species that is known to occur near the project site. Mitigation for impacts to this hawk is typically required for proposed projects that occur within five miles of known nesting site. Payment of a fee to the SJCOG to use the SJMSCP covers impacts to this hawk species. Incidental take permits issued to the SJCOG by the California Department of Fish and Game for the SJMSCP can be amended to include impacts to Swainson's hawk from other proposed projects such as the proposed project. Please also read the species account for Swainson's hawk below for further considerations and requirements.

7.5 Applicable CEQA Regulations

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the federal Endangered Species Act. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

7.5.1 APPLICABILITY TO PROPOSED PROJECT

The proposed project is of sufficient size to result in several or many potentially significant adverse impacts to the environment pursuant to CEQA. Traffic would certainly be an issue. So would conversion of agricultural lands to residential housing. Regarding biology, there may be potentially significant adverse impacts to waters of the State and United States, and to the Swainson's hawk, a state listed threatened species. If the lead agency is San Joaquin County, it is likely that San Joaquin County could require a full Environmental Impact Report (EIR). M&A does not have direct experience with the City of Manteca and cannot surmise if a lower level of review, such as a mitigated negative declaration would suffice for the CEQA review. Regardless, it is our contention that a project of this size is subject to considerable legal challenge. To best thwart such challenges, especially to the CEQA review, M&A always recommend a full EIR.

Regarding the biology section of any EIR prepared for the proposed project, the SJCOG allegedly provides a service for preparation of CEQA biology sections. However, to date, M&A knows of no CEQA sections that have been prepared by the SJCOG. It should be noted that any CEQA section prepared by the SJCOG would be inadequate and subject to challenge. This is because SJCOG's Habitat Conservation Plan (i.e., the SJMSCP) does not cover Fish and Game Streambed Alteration Agreement codes, Regional Water Quality Control Board regulations, Corps regulations, and some federal listed species. Accordingly, any biology report prepared by the SJCOG would omit coverage of important issues that could be challenged during circulation of the CEQA document. Accordingly, it would be ill advised to rely on any biology section prepared by the SJCOG. It is our recommendation that Pulte prepare a thorough proponent's biological EIR section that can then be used by San Joaquin County's selected EIR consultant.

7.6 California Fish and Game Code Sections 3503, 3503.5, 3511, 3800

California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

7.6.1 APPLICABILITY TO THE PROJECT

Raptors that potentially could be impacted by the project include the Swainson's hawk, burrowing owl, white-tailed kite, and northern harrier. Preconstruction surveys would have to be conducted for these species to ensure that there is no direct take of these birds including their eggs, or young. Use of the SJMSCP would mitigate any impacts to these species habitats. Any active nests that were found during preconstruction surveys would have to be avoided by the project. Suitable non-disturbance buffers would have to be established around nest sites until the

nesting cycle is complete. More specifics on the size of buffers are provided below by each species that could be affected by the project.

7.7 Protected Amphibians

Under Title 14 of the California Code of Regulations (14 CCR 41), protected amphibians, such as the California tiger salamander may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

7.7.1 Applicability to the Project

No special-status amphibians likely would be found on or near the project site.

8. POTENTIALLY OCCURRING SPECIAL-STATUS PLANT AND ANIMAL SPECIES

Based on the search of the California Natural Diversity Database (CNDDB), several special-status plant and wildlife species occur in the vicinity of the project site. Figure 5 illustrates the density of known CNDDB records of special-status species recorded in the vicinity of the project site. This figure is just a representation of the number of special-status species known from within ten miles of the project site. The project site is indicated by an asterisk on Figure 5. All other circles, dots, lines, etc., represent known locations of special-status species. To see which species are known to occur within ten miles of the project please review Tables 1 and 2. Below we provide the definition of what constitutes a special-status species. We also discuss those special-status species issues pertaining to the project site.

8.1 Definition of a Special-Status Species

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community. Special-status species are defined as:

- Plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq.*; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- Plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- Plants and animals that meet the definition of endangered, rare, or threatened under the CEQA (14 CCR §15380) that may include species not found on either state or federal Endangered Species lists;

- Plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' electronic *Inventory* (2002). The California Department of Fish and Game (CDFG) recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFG requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and

4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

- Migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- Animals that are designated as "species of special concern" by CDFG (2002);

- Animals that are designated as "species of concern" by USFWS (2002);

- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under FESA is protected from unauthorized "take" (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federal listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

Federal Species of Concern. These are species in which the data are insufficient at this time to support a federal listing proposal. Additional field research and data collection are necessary in order to classify these species as either Candidates for listing or remove them from consideration. Federal Species of Concern are not protected under the FESA.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to "take" a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFG prior to initiating the "take."

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS List Species. The California Native Plant Society maintains an inventory of special status species. The Society maintains four species lists of varying rarity. Although plants on these lists

have no formal legal protection (unless they are also listed state or federal species), the California Department of Fish and Game requests the inclusion of List 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. List 1 species have the highest priority: List 1A species are thought to be extinct and List 1B species are known to still exist. List 2 species are rare in California, but more common elsewhere. Lists 3 and 4 contain species, about which there is some concern, and are review and watch lists, respectively.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

Protected Amphibians. Under Title 14 of the California Code of Regulations (14 CCR 41), protected amphibians, such as the California tiger salamander, may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

8.2 Potentially Occurring Special Status Plant Species

Table 1 lists special-status plant species that are known to occur within ten miles of the project site or that are known in similar habitats as those found on the project site in the region of the project site. These plants occur in a variety of habitats, including grasslands, woodlands, marshes and swamps, riparian areas and other relatively undisturbed habitat. Although some of these habitats may have been present on the project site historically, most would have been eliminated by past and present agricultural practices. Special-status plant species having potential habitat on the project site are discussed below.

8.2.1 SANFORD'S ARROWHEAD

Sanford's arrowhead (*Sagittaria sanfordii*) is a perennial member of the water-plantain family. It is a federal species of concern and is on the CNPS List 1B. This species grows in freshwater marshes, and has been found in ponds and ditches in the San Joaquin Valley approximately 9 miles from the project site. Suitable habitat is found on the project site in open drainage ditches. In the SJMSCP, Sanford's arrowhead has restrictions on individual take and conversion of occupied habitat.

8.2.2 DELTA BUTTON-CELERY

Delta button-celery (*Eryngium racemosum*) is a biennial or perennial member of the carrot or parsley family. It occurs in clay depressions in riparian habitats of the San Joaquin Valley. It is a federal species of concern and a state-listed endangered species. Although suitable habitat for this species probably occurred in the vicinity of the project, past and continuing agricultural practices have drastically modified this habitat. Consequently, there is a very low probability of the species being found on the project site. In the SJMSCP, Delta button-celery has restrictions on individual take and conversion of occupied habitat.

8.2.3 SLOUGH THISTLE

Slough thistle (*Cirsium crassicaule*) is an annual or biennial member of the aster family. It is a federal species of concern and is on the CNPS List 1B. Slough thistle is found in marshes and swamp, riparian scrub, and chenopod scrub in the San Joaquin Valley. Marginal habitat for the species exists in drainage ditches on the project site. In the SJMSCP, slough thistle has restrictions on individual take and conversion of occupied habitat.

8.2.4 WRIGHT'S TRICHOCORONIS

Wright's trichocoronis (*Trichocoronis wrightii*) is an annual to perennial member of the aster family. It has no state or federal status and is on the CNPS List 2, although its standing as a native species has been questioned (it is considered non-native in *The Jepson Manual: Higher Plants of California*). The species grows in a variety of wet habitats, including riparian areas, in the Central Valley. It has a very low probability of being found in drainage ditches with riparian habitat.

8.2.5 SAN JACINTO VALLEY CROWN-SCALE

San Jacinto Valley Crown-Scale (*Atriplex coronata notatior*) is a federal listed endangered species and a CNPS List 1B species known to occur in the San Joaquin Valley in Chenopod scrub, valley and foothill grasslands, and in vernal pools, especially those exhibiting alkaline conditions. The closest known record is approximately 12 miles south of the project site. Since no suitable habitat occurs on the project site for this species, no impacts would likely occur to this species from development of the project site.

8.2.6 ALKALI MILKVETCH

Alkali milkvetch (Astragalus tener tener) is a CNPS List 1B species known to occur in the San Joaquin Valley in Alkali playa, valley and foothill grasslands, and vernal pools. Suitable habitat consists of low ground and flooded lands between 3 and 500 feet above sea level. The closest known record is approximately 11 miles south of the project site. Since no suitable habitat occurs on the project site for this species, no impacts would likely occur to this species from development of the project site.

8.2.7 DELTA TULE PEA

Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*) is a perennial member of the pea family. It is a federal species of concern and is on the CNPS List 1B. Delta tule pea is found in coastal and estuarine marshes (including the Delta) inland to Stockton. It has a very low probability of growing in drainage ditches on the site.

8.2.8 LARGE-LEAF STORKSBILL

Large-leaf storksbill (*Erodium macrophyllum*) is a CNPS List 2 species known to occur in the San Joaquin Valley in Valley grassland, foothill woodland. It is typically found in open habitats with friable clay soils. The closest known record is approximately 9 miles south of the project site. Since no suitable habitat occurs on the project site for this species, no impacts would likely occur to this species from development of the project site.

8.2.9 PALMATE BIRD'S-BEAK

Palmate bird's-beak (*Cordylanthus palmatus*) is a federal and state listed endangered species and a CNPS List 1B species known to occur in the San Joaquin Valley in Chenopod scrub, and in valley and foothill grasslands. It is especially prone to occur in alkaline areas that seasonally exhibit saturated but not flooded soils. The closest known record is approximately 9 miles south of the project site. Since no suitable habitat occurs on the project site for this species, no impacts would likely occur to this species from development of the project site.

8.2.10 ROSE-MALLOW

Rose-mallow (*Hibiscus lasiocarpus*) is a perennial member of the mallow family. It has no state or federal status, but is on the CNPS List 1B. It grows on riverbanks and in marshes in the Sacramento Valley and Delta region. Suitable habitat is found on the project site in open drainage ditches.

8.2.11 USE OF THE SJMSCP TO MITIGATE IMPACTS TO SPECIAL-STATUS PLANTS

The SJMSCP does not allow individual take or take of habitat occupied by several special-status species. These species are indicated above in the species accounts. Sanford's arrowhead, delta button-celery, and slough thistle are three species that have low potential for occurring on the project site, are not covered by the SJMSCP, and cannot be discounted without conducting spring surveys. No other special-status plant species would likely occur on the project site. Regardless, all other special-status plant species with the potential for occurring on the site are covered by the SJMSCP and have no take restrictions (that is you can pay a fee to SJCOG to mitigate impacts to these species).

8.3 Potentially Occurring Special-Status Animal Species

Table 2 presents a list of special-status species known from the region of the project site. Most would not be found on the project site. Those species that have potential to occur on the project site are further discussed below.

8.3.1 GIANT GARTER SNAKE

The giant garter snake (*Thamnophis gigas*) is a federal and state listed threatened species. It is restricted to the valley floor of the Sacramento and San Joaquin Valleys of California. It inhabits agricultural wetlands and other waterways, such as irrigation and drainage canals, ricelands, marshes, slough, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Essential habitat components consist of: (1) adequate water during the snake's active season (early spring through mid-fall) to provide adequate permanent water to maintain dense populations of food organisms; (2) emergent, herbaceous wetland vegetation such as cattails and bulrushes for escape cover and foraging habitat during the active season; (3) upland habitat with grassy banks and openings in waterside vegetation for basking; and (4) higher elevation upland habitats for cover and refuge from flood waters during the snake's inactive season in the winter. Giant garter snakes are absent from larger rivers and from wetlands with sand, gravel, or rock substrates. Riparian woodlands do not typically provide suitable habitat because of excessive shade, lack of basking sites, and the absence of prey populations (USFWS 1999).

The project site does not provide suitable habitat for the giant garter snake. M&A biologists believe that the USFWS would not consider the project site to suitable habitat for the giant garter snake. The irrigation ditches do not have any direct connectivity to natural waterways. Rather, the irrigation ditches were excavated in dry ground for agricultural purposes. The ditches on the project site receive water only from piped water supplied by a local irrigation district. Project site ditches do not provide open water, nor would they likely support adequate fish or other prey species necessary for the giant garter snake's survival. In addition, the emergent vegetation found growing along the ditches is cleared on a regular basis during farming activities by means of herbicides and mechanical removal. Hence, under these conditions, project biologists believe it is relatively unlikely that the giant garter snake would be found on the project site.

8.3.2 WHITE-TAILED KITE

The white-tailed kite is fully protected under the California Fish and Game Code. Fully protected birds may not be "taken" or possessed (that is, kept in captivity) at any time (§3511). It is also protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. It prefers scattered trees for breeding and open grasslands and marshes for foraging. Suitable nesting habitat occurs along the margins of the project site, and it is likely that individuals forage over the project site on occasion, particularly over the alfalfa, fallowed, and hay fields (Sudan grass fields).

The SJMSCP covers impacts to white-tailed kite habitat. That is, if they are found on the project site, a fee can be paid to the SJCOG to mitigate impacts to this species. However, direct take of (nesting) white-tailed kites would not be allowed by the SJMSCP and would be in violation of the Federal Migratory Bird Treaty Act. Preconstruction surveys would have to be conducted prior to grading the project site to ensure that direct take of this species would not occur. If they were found nesting on the project site an adequate buffer would have to be established around the nesting site until the nesting cycle ended, typically in August.

8.3.3 SWAINSON'S HAWK

The Swainson's hawk is a state-listed threatened species. This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. It has no special federal status. It breeds in California, but most birds spend the winter months in South America. For breeding it prefers scattered riparian or woodland trees with open fields for foraging. Swainson's hawks often use cropland for foraging. During M&A's biological survey, Swainson's hawks were observed flying over the project site. Foraging habitat is provided on and adjacent to the project site. The site provides only mediocre to poor nesting trees. Orchards are not typically used, and in this part of the Central Valley, trees found in landscaped areas around residences are also rarely used for nesting. Regardless, there are numerous nesting records occur in the vicinity of the project site.

The SJMSCP covers impacts to Swainson's hawk habitat. That is, if the project site is considered to be within 10 miles of any known nesting site, the CDFG has a published policy that applicants shall mitigate or otherwise compensate for impacts to this species foraging habitat. A fee can be paid to the SJCOG to mitigate impacts to this species. However, direct take of (nesting) Swainson's hawks would not be allowed by the SJMSCP. Preconstruction surveys would have to

be conducted prior to grading the project site to ensure that direct take of this species would not occur. According to the SJMSP, if Swainson's hawks are found nesting on the project site, a buffer that is two times the drip line of the tree would have to be established around the nesting tree until the nesting cycle ended, typically in August. M&A would recommend that a buffer that is at least 300 feet be established in order not to cause take of eggs and or nestlings, which would be in violation of the federal Migratory Bird Treaty Act. The nesting tree may only be removed between the dates of September 1st and February 15th (when birds are not nesting).

8.3.4 BURROWING OWL

The burrowing owl is a federal species of concern and a California species of special concern. It should also be noted that a petition that was filed with the CDFG in June 2003 forcing this agency to consider listing the species under the State Endangered Species Act (CESA). The CDFG will make a determination in the next year whether to propose listing the species. If it were proposed listed, it would be protected under the CESA while a formal one-year review period commenced. At the end of this year review period, it could be formally listed or dropped from consideration for listing pursuant to the CESA.

Burrowing owl nests, eggs, and young are also protected under California Fish and Game Codes (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Burrowing owl habitat can be found in annual and perennial grasslands, characterized by low-growing vegetation. Typically, the burrowing owl utilizes rodent burrows, typically ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows, or use man-made objects such as concrete culverts or riprap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the mouths of their burrows, grazed grasslands seem to be their preferred habitat because it allows them to view the world at 360 degrees without obstructions.

While no burrowing owls were observed on the project site during our site investigation, there are numerous records of burrowing owls in the vicinity of the project site (Table 2). As such, this owl could occur on the project site. CDFG would certainly consider the project site to provide suitable habitat for this owl species. The SJMSCP covers impacts to burrowing owl habitat. That is if they are found on the project site, a fee can be paid to the SJCOG to mitigate impacts to this species. However, direct take of (nesting) of burrowing owls would not be allowed by the SJMSCP and would be in violation of the Federal Migratory Bird Treaty Act. Preconstruction surveys would have to be conducted prior to grading the project site to ensure that direct take of this species would not occur. If they were found nesting on the project site, a 75-meter (276-foot) buffer would have to be established around the nesting burrow until the nesting cycle ended, typically in August.

8.3.5 NORTHERN HARRIER

The northern harrier (*Circus cyaneus*) is a state species of special concern. This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. The northern harrier is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Northern harriers build grass-lined nests on the ground within dense, low-lying vegetation in a variety of habitats, though they are typically found nesting in grassland or marsh habitats. They usually nest on level to near level ground. This species is particularly vulnerable to ground predators while nesting, and is subject to disturbance by agricultural practices. Northern harriers likely forage over the project site and may nest in the fallow field that provides suitable nesting habitat for this species. Hence, development of the proposed project could result in impacts to nesting northern harriers.

The SJMSCP covers impacts to this northern harrier habitat. That is if they are found on the project site, a fee can be paid to the SJCOG to mitigate impacts to this species. However, direct take of (nesting) hawks would not be allowed by the SJMSCP and would be in violation of the Federal Migratory Bird Treaty Act. Preconstruction surveys would have to be conducted prior to grading the project site to ensure that direct take of this species would not occur. If they were found nesting on the project site an adequate buffer would have to be established around the nesting site until the nesting cycle ended, typically in August. It is imperative to have a qualified raptor biologist determine the size of the buffer so that direct take is minimized and the project otherwise remains in compliance with the Federal Migratory Bird Treaty Act.

8.3.6 LOGGERHEAD SHRIKE

The loggerhead shrike (*Lanius ludovicianus*) is a federal species of concern and a state species of special concern. It prefers lowland and foothill habitats with scattered shrubs and trees. It nests in shrubs and trees with a dense canopy, and is often observed perched on poles, fences, or utility lines. Suitable nesting habitat occurs in the dense, shrubby vegetation along some irrigation and drainage ditches, and individuals likely occur on the project site.

The SJMSCP covers impacts to this species habitat. That is, if they are found on the project site, a fee can be paid to the SJCOG to mitigate impacts to this species. However, direct take of (nesting) shrikes would not be allowed by the SJMSCP and would be in violation of the Federal Migratory Bird Treaty Act. Preconstruction surveys would have to be conducted prior to grading the project site to ensure that direct take of this species would not occur. If they were found nesting on the project site an adequate buffer would have to be established around the nesting site until the nesting cycle ended, typically in August. It is imperative to have a qualified biologist determine the size of the buffer so that direct take is minimized and the project otherwise remains in compliance with the federal Migratory Bird Treaty Act.

8.3.7 TRICOLORED BLACKBIRD

The tricolored blackbird (*Agelaius tricolor*) is a federal species of concern and a state species of special concern. It nests in large colonies and prefers dense cattail or tule patches, but will also nest in blackberry patches and other dense vegetation. Marginal habitat may exist along the project site's main irrigation and drainage ditches, although much of the preferred vegetation (that is, cattails and bulrushes) is periodically removed from these ditches to permit the free flow

of water. Therefore, M&A believes it is unlikely that tricolored blackbirds would nest on the project site.

The SJMSCP covers impacts to this species habitat. That is if they are found on the project site, a fee can be paid to the SJCOG to mitigate impacts to this species. However, direct take of (nesting) tricolored blackbird would not be allowed by the SJMSCP and would be in violation of the Federal Migratory Bird Treaty Act. Preconstruction surveys would have to be conducted prior to grading the project site to ensure that direct take of this species would not occur. If they were found nesting on the project site a 500-foot buffer would have to be established around the nesting site until the nesting cycle ended, typically in July.

8.3.8 USE OF THE SJMSCP TO MITIGATE IMPACTS TO SPECIAL-STATUS ANIMALS

M&A believe that all potential impacts to special-status species found in the vicinity of the project site could be mitigated using the SJMSCP. This could not be confirmed until such time that a formal application or the project was submitted to the SJCOG.

REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and CDFG to determine those areas within a project site that would be subject to their regulation.

8.4 U.S. Army Corps of Engineers Jurisdiction and General Permitting

8.4.1 SECTION 404 OF THE CLEAN WATER ACT

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States. In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]). Wetlands are defined as "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream

channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

It should be noted that the extent of the Corps jurisdiction pursuant to Section 404 of the Clean Water Act was recently modified. In Solid Waste Agency of Northern Cook County v. - U.S. Army Corps of Engineers, the U.S. Supreme Court [148 L. Ed. 2d 576 (2001) (SWANCC)] ruled that the U.S. Army Corps of Engineers exceeded its authority under the Clean Water Act when it regulated discharges of fill material into "isolated" waters used as habitat by migratory birds. Accordingly, waters (including wetlands) that are not connected hydrologically to navigable waters, are no longer subject to regulation by the Corps.

Finally regarding the extent of the Corps' jurisdiction, the Corps and EPA have amended their permit regulations to state that "prior converted cropland" is not waters of the United States. To qualify as prior converted cropland the Corps generally requires that a commodity crop (e.g., corn, tomatoes) must have been grown on the proposed project site since prior to the enactment of the Clean Water Act, as amended. This rule is generally discretionary on a project-by-project basis. However, in general, hay crops and alfalfa are not considered commodity crops. The Corps generally limits use of prior converted croplands to the specific use of farming. Thus, it is our opinion that the project site for purposes of a housing development would not be treated or even considered as a prior converted cropland.

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting "waters of the United States." In many cases, the Corps must visit a proposed project site (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project site. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of "waters of the United States" found on the project site. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis." The alternatives analysis is also typically reviewed by the federal Environmental Protect Agency (EPA), and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g. a pier). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain

conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 13 general nationwide permit conditions, nine Section 404 only conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.,* must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project site development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.,* impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. Concerning the proposed project site, if project designs call for filling any of the intermittent drainages, mitigation should include recreating the same approximate jurisdictional area (same drainage widths) on at an offsite location or on a set-aside portion of the project site.

8.4.2 Applicability to the Proposed Project

While there are agricultural ditches on the project site that exhibit wetland characteristics (see Figure 3), these ditches circulate pumped irrigation water only. They only hydrological connection is to under ground irrigation district pipes. These ditches were excavated in dry ground, and/or do not otherwise constitute straightened or channelized natural drainageways. In fact, in the preamble to its regulations, 51 Fed. Reg. 41206, 41217 (1986), the Corps states that while it generally does not consider man-made ditches and such to be waters of the United States, it reserves the right to decide otherwise on a case-by-case basis. Accordingly, M&A believes the Corps *may not exert jurisdiction over the ditches* that are found on the project site. However, M&A know the Corps is taking jurisdiction over many irrigation ditches in the region of the project site. To be sure of the extent of the Corps jurisdiction on the project site, it would be necessary to formally submit a preliminary wetlands map to this agency and request that this agency confirm the extent of its jurisdiction.

In a recent court case (United States v. The New Portland Meadows, 2002), "the district court concluded that a man-made drainage ditch that flowed through a series of open channels, pipes, and a pond, and whose flow is forcibly pumped through a flood control levee into a slough, is a tributary to waters of the United States, and is, therefore, a water of the United States. The court rested its decision on the fact that the "ultimate destination" of the water from the drainage ditch was the slough, a water of the United States" (Stoel Rives 2003). Conversely, in another case (United States v. Newdunn Associates, 2002), the court found that "Congress did not intend to vest the Corps with the authority 'to greatly expand what qualifies as jurisdictional waters' or 'to

decide on a case-by-case basis which ditches constructed partially through dry lands and which culverts should be defined as tributaries of the United States'" (Stoel Rives 2003). As such, it is unclear how the courts would rule if the Corps were to decide the irrigation ditches on site were jurisdictional.

The most compelling reason to disqualify these man-made features as jurisdictional is the fact that they are hydrologically isolated from navigable waters. Consequently, M&A would argue that the irrigation ditches on the project site are not waters of the United States. Regardless, it should be noted that only the Corps can actually determine the extent of its jurisdiction on a project site. In order to determine if there could be impacts to waters of the United States from any proposal to develop the project site, it is imperative to conduct a preliminary wetlands delineation and to have this delineation confirmed by the Corps. This is the only way that Pulte Homes would be provided with a map that could be relied upon, showing the extent of Corps regulated areas on the project site.

8.5 Rivers and Harbors Act

Under Section 10 of the Rivers and Harbors Act, the Corps has jurisdiction over navigable waters of the U.S. to the historic limit of mean high water. Section 10 requires that a permit be obtained from the Corps for all activities in navigable waters that involve excavating, filling, dredging, construction or placement of an obstruction in or to a navigable water body. Section 10 jurisdiction extends to the entire surface and bed of all water bodies subject to tidal action (33 CFR 329.12[b]).

8.5.1 Applicability to the Proposed Project

The proposed project will not result in impacts to any tidal waters, or navigable water body regulated by the Corps pursuant to Section 10 of the Rivers and Harbors Act.

8.6 State Water Resources Control Board (SWRCB) / California Regional Water Quality Control Board (RWQCB)

8.6.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers permitting programs that authorize impacts to waters of the United States, including wetlands, and other waters, any Corps NWP authorized for a proposed project would be invalid unless the NWP being used has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the issued NWP (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification or waiver of water quality.

Additionally, if a proposed project would impact waters of the State, including wetlands, and the project applicant cannot demonstrate that the project is unable to avoid these adverse impacts, water quality certification will most likely be denied. Section 401 Certification may also be denied based on significant adverse impacts to waters of the United States, including wetlands. The RWQCB has also adopted the Corps' policy that there shall be "no net loss" of wetlands. Thus, prior to certifying water quality, the RWQCB will impose avoidance mitigation requirements on project proponents that impact waters of the State.

8.6.2 Applicability to the Proposed Project

Since the RWQCB does not have a formal method for technically defining what constitutes waters of the state, M&A expect that the RWQCB should remain consistent with the Corps' determination. Therefore, if the Corps determines there are no waters of the United States within the project site boundaries, the RWQCB will likely concur. Please refer to the applicability section of the Porter-Cologne Water Quality Control Act below for other applicable actions that may be imposed on the project by the Corps prior to the time any certification of water quality is authorized for the project pursuant to Section 401 of the Clean Water Act.

8.7 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). The RWQCB, one of the Porter-Cologne Authorities, considers clean fill in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state, which unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

8.7.1 Applicability to Proposed Project

If the Corps determines there are waters of the U.S. on the project site, the RWQCB would also exert its jurisdiction over these areas pursuant to Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB may exert jurisdiction over the site outside of the Clean Water Act, relying strictly on the Porter-Cologne Water Quality Control Act. Adequate preproject planning will be to ensure that adequate pre and post construction BMPs, which are routinely now required by the RWQCB, are incorporated into the project implementation plans.

Any permit application submitted to the RWQCB would provide a legal hook for the RWQCB to regulate development of the project site. Permit applications could be filed for outfall structures, or in some cases, even as necessary to remain in compliance with the National Pollutant Discharge Elimination System. Also, cities and counties now routinely require applicants seek approval for development projects. Thus, it is prudent to consider it likely that there will be a RWQCB permitting loop.

The RWQCB will be looking for a complete pre and post Best Management Practices Plan (BMPs) for development of the entire project site. This means that a water quality treatment plan for the pre and post developed project site would be required. Preconstruction BMP requirements imposed by the RWQCB would be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is a *Stormwater Pollution Prevention Plan* would have to be developed prior to the time the site was graded. This erosion control plan ensures that all potential receiving waters are protected from siltation and other runoff contributions from a recently graded project site.

A post construction BMPs plan would also have to be developed and incorporated into the site development plan. The RWQCB's goal is to see a treatment plan that treats 85 percent of the average annual runoff from the developed project site. While post construction BMP plans are complex, some of the basics are that pretreatment water quality basins would likely have to be designed into the site development plan. Typically, water quality retention/detention basins would account for the watershed area of the project site and would be sized and piped to collect and treat 85 percent of all stormwater runoff. In addition, the RWQCB typically now looks for site development plans that incorporate grassy drainages ("bioswales") into the site development plan. Finally, typically roof leaders would have to be diverted into bubble-ups or splash blocks and grassy swales in side and front yards. Runoff from these swales typically runs through monument curs to the storm water collection system that delivers these waters to the treatment basins prior to be jettisoned into any natural drainageway. These measure are now standard policies of the RWQCB prior to issuance of any discretionarily permit(s) for the development project.

Finally, prior to issuance of any permit from the RWQCB, this agency will require submittal of a Notice of Determination from San Joaquin County indicating that the proposed project has completed a review conducted pursuant to CEQA.

8.8 California Department of Fish and Game Protections

8.8.1 Sections 1601-1603 of California Fish and Game Code

Pursuant to Sections 1601-1603 of the California Fish and Game Code, California Department of Fish and Game (CDFG) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream or its riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing with work in the stream. However, prior to authorizing such permits, CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts, and engineering and erosion control plans. CDFG must also be sure that the proposed permitted action has been reviewed pursuant to CEQA. If the proposed permitted action has not been reviewed pursuant to CEQA, CDFG must assume a lead agency role and must determine either that the proposed permitted action is exempt from CEQA, or that a review must be conducted by CDFG. If CDFG becomes the "lead agency" reviewing a proposed action, they will charge the project applicant an hourly rate for their services conducting the CEQA review.

When reviewing proposed development plans, CDFG examines stream set-back proposals, and typically requires set-backs of 25 feet to 100 feet from the "top-of-bank." When proposed projects would not result in significant adverse biological impacts, or if such impacts would be adequately mitigated to a level considered less than significant, CDFG will enter into a SBAA with project applicants. The SBAA presents conditions that the applicant must follow to remain in compliance with Fish and Game Code. These conditions often include prohibiting work in as stream channel between October 15 and April 15.

8.8.2 APPLICABILITY TO PROPOSED PROJECT

The U.S. Geological Survey Terminus 7.5 minute quadrangle (Figure 2) indicates a few blue lines on the project site. Our field examination determined that there are no stream channels or natural drainages on the project site; only the main irrigation ditch that daylights out of a pipe from under Union Road (as shown in Figures 2 and 3) remains along the same alignment as the blue lines shown in Figure 2. Accordingly, it is likely a streambed alteration agreement would not be required from CDFG for development of the project site. However, we must note that sometimes blue line streams on U.S. Geological Survey quadrangles are considered to be historically channelized streams. In such cases, CDFG takes jurisdiction over "agricultural ditches." To be safe in the assumption that CDFG would not take jurisdiction over the "blue line" ditches on the project site, it would be prudent to ask CDFG to concur with our assumption that the ditches on the project do not constitute stream channels.

9. REVIEW OF PERTINENT ISSUES

- Based upon past and present agricultural disturbance, the project site provides little habitat for special-status plant and animal species. Most potentially occuring special-status plant and animal species that occur on the site could be mitigated using San Joaquin County's SJMSCP. M&A estimate the fee that would have to be paid to the SJCOG to use the SJMSCP that would be approximately $253,500. This is only an estimate that should be reconfirmed with the SJCOG.

- Several special-status plant species could occur in the agricultural ditches on the project site. Some of these plants are not covered by use of the SJMSCP. As such, spring surveys would be required prior to development of the site, preferably prior to any review conducted for the project pursuant to CEQA.

- Several special-status animal species including burrowing owl, white-tailed kite, northern harrier, and Swainson's hawk could occur on the project site now or in the future. Impacts to these species are covered by use of the SJMSCP. That is, loss of these species' habitats could be mitigated through payment of a fee to the San Joaquin Council of Governments. It should be noted that nesting surveys would still be required to demonstrate that there is no direct take of these species (typically while nesting). If these species were found nesting on the project site, the nest site would have to be avoided until the nesting cycle is completed.

- Based upon standards practiced as recently as last year by the Corps, M&A does not believe that the irrigation ditches on the site constitute Corps or RWQCB jurisdictional

waters. However, recent court cases have determined that agricultural irrigation waters can be regulated by the Corps; hence, this agency may disagree with our summation and may take jurisdiction over the irrigation ditches on the project site. See the main document for court cases supporting and refuting our position. During any site visit conducted with the Corps in the future, Monk & Associates would present the best case we can to support an argument that the ditches are not jurisdictional.

- In order to determine if there could be impacts to waters of the United States from any proposal to develop the project site, it is imperative to conduct a preliminary wetlands delineation and to have this delineation confirmed by the Corps. This is the only way that Pulte Homes would be provided with a map that could be relied upon, showing the extent of Corps regulated areas on the project site.

- If some or all of the ditches are found to be within the jurisdiction of the Corps, mitigation may include creation replacement of any impacted wetlands in a protected preserve. There may also be wetland mitigation banks available (likely) that would allow Pulte Homes to pay a fee to mitigate impacts to wetlands.

- The RWQCB will be looking for a complete pre and post Best Management Practices Plan (BMPs) for development of the entire project site. This means that a water quality treatment plan for the pre and post-developed project site would be required. Please review the RWQCB applicability section for details on expected regulatory requirements.

- Regarding the biology section of any EIR prepared for the proposed project, the San Joaquin Council of Governments (SJCOG) allegedly provides a service for preparation of CEQA biology sections. However, to date, M&A knows of no CEQA sections that have been prepared by the SJCOG. It should be noted that any CEQA section prepared by the SJCOG would be subject to challenge. This is because SJCOG's Habitat Conservation Plan (i.e., the SJMSCP) does not cover Fish and Game Streambed Alteration Agreement codes, Regional Water Quality Control Board regulations, Corps regulations, and some federal listed species. Accordingly, any biology report prepared by the SJCOG would omit coverage of important issues that could be challenged during circulation of the CEQA document.

- M&A recommends checking with San Joaquin County about converting agricultural land to residential development lands. On a similar project that Monk & Associates worked on four miles east of the City of Stockton (1999 to 2002), agricultural preservation groups were a significant commenter during the CEQA review and held up adoption of the EIR for almost a year. In the end, a significant payoff to the agricultural community was required to preserve an equivalent amount of acreage as the project site in a permanent agricultural easement.

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TABLES

Table 1

Special-Status Plant Species Known To Occur Within Ten Miles of the Project Site.

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Alismataceae					
Sagittaria sanfordii Sanford's arrowhead	Fed: FSC State: - CNPS: List 1B	May-August	Marshes and swamps (assorted shallow freshwater).	Closest known record is 8.8 miles north by northwest (Occ. No. 54).	Unlikely to occur in irrigatioin ditches.
Apiaceae					
Eryngium racemosum Delta button-celery	Fed: FSC State: CE CNPS: List 1B	June-August	Riparian scrub (vernally mesic clay depressions).	Closest known record is 4 miles southwest (Occ. No. 3).	None. No suitable habitat on the project site
Asteraceae					
Cirsium crassicaule Slough thistle	Fed: FSC State: - CNPS: List 1B	May-August	Chenopod scrub; marshes and swamps (sloughs); riparian scrub.	Closest known record is 4.3 miles west (Occ. No. 2).	None. No suitable habitat on the project site
Trichocoronis wrightii wrightii Wright's trichocoronis	Fed: - State: - CNPS: List 2	May-September	Meadows; marshes and swamps; riparian forest; venal pools; [alkaline].	Closest known record is 4.8 miles southwest (Occ. No. 6).	None. No suitable habitat on the project site.
Chenopodiaceae					
Atriplex coronata notatior San Jacinto Valley Crown-scale	Fed: FE State: - CNPS: List 1B	April-August	Playas; vernal pools; [alkaline]. Valley and foothill grasslands.	Closest known record is 11.7 miles south (Occ. No. 17).	None. No suitable habitat on the project site

Table 1

Special-Status Plant Species Known To Occur Within Ten Miles of the Project Site.

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Fabaceae					
Astragalus tener tener Alkali milkvetch	Fed: - State: - CNPS: List 1B	March-June	Alkali playa, valley and foothill grassland, vernal pools. Low ground and flooded lands (elev. 3-500 feet).	Closest known record is 10.8 miles northwest by north (Occ. No. 10)	None. No suitable habitat on the project site
Lathyrus jepsonii jepsonii Delta tule pea	Fed: FSC State: - CNPS: List 1B	May-June	Marshes and swamps (freshwater and brackish).	Closest known record is 10 miles northwest (Occ. No. 9).	None. No suitable habitat on the project site
Geraniaceae					
Erodium macrophyllum Large-leaf storksbill	Fed: - State: - CNPS: List 2	March-May	Valley grassland, foothill woodland. Elevation range 0-3950 feet. Found in open habitats with friable clay soils.	Closest known record is 8.8 miles north by northwest (Occ. No. 45).	None. No suitable habitat on the project site
Malvaceae					
Hibiscus lasiocarpus Rose-mallow	Fed: - State: - CNPS: List 2	August-September	Marshes and swamps (freshwater). River banks and low peat islands in sloughs (elev 450 feet).	Closest known record is 11.6 miles northwest (Occ. No. 82).	None. No suitable habitat on the project site
Scrophulariaceae					
Cordylanthus palmatus Palmate bird's-beak	Fed: FE State: CE CNPS: List 1B	May-October	Chenopod scrub; valley and foothill grassland; (alkaline). Espeically in areas that seasonally exhibit saturated but not flooded soils.	Closest known record is 8.8 miles north by northwest (Occ. No. 8).	None. No suitable habitat on the project site

Table 1

Special-Status Plant Species Known To Occur Within Ten Miles of the Project Site.

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FSC - Federal Species of Concern; USFWS Sacramento Office designation only.

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
List 1A - Extinct
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
List 3 - Plants about which more information is needed, a review list
List 4 - Plants of limited distribution, a watch list

Table 2

Special-Status Animal Species Known To Occur Within Ten Miles of the Project Site.

	*Status	Habitat	General Locations	Probability on Project Site
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in static rain-filled pools. Inhabit small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Closest known record is 10.7 miles south (Occ. No. 188).	None. No suitable habitat within project site.
Insects				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: FT State: - Other:	Riparian and other habitats with blue elderberries (Sambucus mexicana). Prefers shrubs with stems 1 to 5 inches in diameter.	Closest known record is 8.7 miles west (Occ. No. 158). Numerous other records found within 10 miles of the project site.	None. No elderberry bushes present on project site.
Amphibians				
California tiger salamander *Ambystoma californiense*	Fed: FPT State: CSC Other:	Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose.	Closest known record is 3.8 miles southwest (Occ. No. 37). Numerous other records found within 10 miles of the project site.	None. No aquatic habitats suitable for this species and no suitable estivation habitat.
Reptiles				
Giant garter snake *Thamnophis gigas*	Fed: FT State: CT Other:	Inhabits freshwater marshes and low gradient streams. Also found in drainage canals and irrigation ditches.	Closest known record is 11.8 miles northeast (Occ. No. 83).	None. Irrigation ditches on project site only connect to underground irrigation district pipes. There is no connecitvity to any natural stream or waterway. There is also no open water sunning habitat.

Table 2

Special-Status Animal Species Known To Occur Within Ten Miles of the Project Site.

	*Status	Habitat	General Locations	Probability on Project Site
Birds				
Swainson's hawk *Buteo swainsoni*	Fed: - State: CT Other: *	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Closest known location is 2.4 miles northeast (Occ. No. 588). Numerous other records found within 10 miles of the project site.	May occasionally forage over site. Swainson's hawks observed flying over site. No likely nesting habitat.
California yellow-billed cuckoo *Coccyzus americanus occidentalis*	Fed: State: CE Other:	Riparian forest nester along broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods w/ lower story of blackberry, nettles, or wild grape.	Closest known record is 9.9 miles south (Occ. No. 141).	None. No riparian or otherwise suitable habitat for this species on the project site.
Burrowing owl *Athene cunicularia*	Fed: FSC State: CSC Other: *	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California Ground Squirrel.	Closest known location is approximately 1.7 miles west (Occ. No. 265). Numerous other records found within 10 miles of the project site.	Unlikely to occur on the project site due to ground squirrel control practices. Some suitable habitat occurs along the edges of orchards and within a berm surround a water storage basin.
Mammals				
Riparian brush rabbit *Sylvilagus bachmani riparius*	Fed: FE State: CE Other:	There are only three known populations of this subspecies. One population occurs in Caswell Memorial State Park in Stanislaus County, two populations occur in San Joaquin County. One in Paradise Cut. And in a SJRiver oxbow west of the City of Lathrop.	Closest known record is 8.7 miles south (Occ. No. 2).	None. No riparian habitat or otherwise suitable habitat on the project site.
Riparian woodrat *Neotoma fuscipes riparia*	Fed: FE State: CSC Other:	Found only in riparian habitats along the San Joaquin, Stanislaus, and Tuolumne Rivers. Requires areas with a mix of trees and shrubs.	Closest known record is 8.7 miles south (Occ. No. 5). Another record (Occ. No. 4) found within 10 miles of the project site.	None. No riparian habitat or otherwise suitable habitat on the project site.

Table 2

Special-Status Animal Species Known To Occur Within Ten Miles of the Project Site.

	*Status	Habitat	General Locations	Probability on Project Site
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	Closest known record is 13.5 miles west (Occ. No. 17).	Project site in a sea of extensive orchard and agricultual habitats. No connectivity remotely possible to any natural grassland habitats. Unlikely to occur in the area due to extensive region of intensive agriculture.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federally Proposed for delisting
FSC - Federal Species of Concern; FSC species are recognized by USFWS' Sacramento field office only.
SLC - Species of Local Concern or regional significance; USFWS designation.

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

*Other:
Most birds have protection under the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. A few species, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.

Table 3

Plants Species Observed on the Project Site.

Ferns and Allies	
Equisetaceae	
Equisetum sp.	Horsetail
Angiosperms - Dicots	
Aceraceae	
Acer negundo californica	Box elder
Amaranthaceae	
Amaranthus sp.	Pigweed
Asteraceae	
**Centaurea solstitialis*	Yellow star-thistle
Conyza canadensis	Horseweed
Helianthus annuus	Sunflower
Brassicaceae	
**Lepidium latifolium*	Broad-leaf peppergrass
Chenopodiaceae	
**Chenopodium sp.*	Goosefoot
**Salsola tragus*	Russian thistle
Euphorbiaceae	
Eremocarpus setigerus	Turkey mullein
Fabaceae	
Lotus purshianus purshianus	Spanish-clover
**Medicago sativa*	Alfalfa
**Melilotus alba*	White sweetcover
Robinia neomexicana	Hairy locust
Juglandaceae	
**Juglans regia*	English walnut
Magnoliaceae	
**Magnolia grandiflora*	Magnolia
Malvaceae	
**Malva parviflora*	Cheeseweed
Oleaceae	
Fraxinus dipetala	California ash
**Olea europaea*	Olive
Onagraceae	
Epilobium brachycarpum	Summer cottonweed
Epilobium ciliatum ciliatum	Hairy willow-herb
Platanaceae	
Platanus racemosa	Western sycamore
Polygonaceae	
**Polygonum arenastrum*	common knotweed
**Polygonum persicaria*	Lady's-thumb

* Indicates a non-native species

**Rumex crispus*	curly dock

Portulacaceae

**Portulaca oleracea*	Common purslane

Rosaceae

**Prunus dulcis*	Almond tree

Salicaceae

Populus sp.	Cottonwood

Ulmaceae

**Ulmus parvifolia*	Chinese elm

Verbenaceae

Verbena sp.	Verbena

Zygophyllaceae

**Tribulus terrestris*	Puncture vine

Angiosperms -Monocots

Cyperaceae

Cyperus eragrostis	Tall flatsedge

Poaceae

**Bromus diandrus*	ripgut grass
**Cynodon dactylon*	Bermuda grass
**Echinochloa crus-galli*	Barnyard grass
**Festuca pratensis*	Meadow fescue
**Paspalum dilatatum*	Dallis grass
Piptatherum micranthum	Small-flowered ricegrass
**Polypogon monspeliensis*	Annual beard grass
**Sorghum bicolor*	Sorghum

* Indicates a non-native species

Table 4

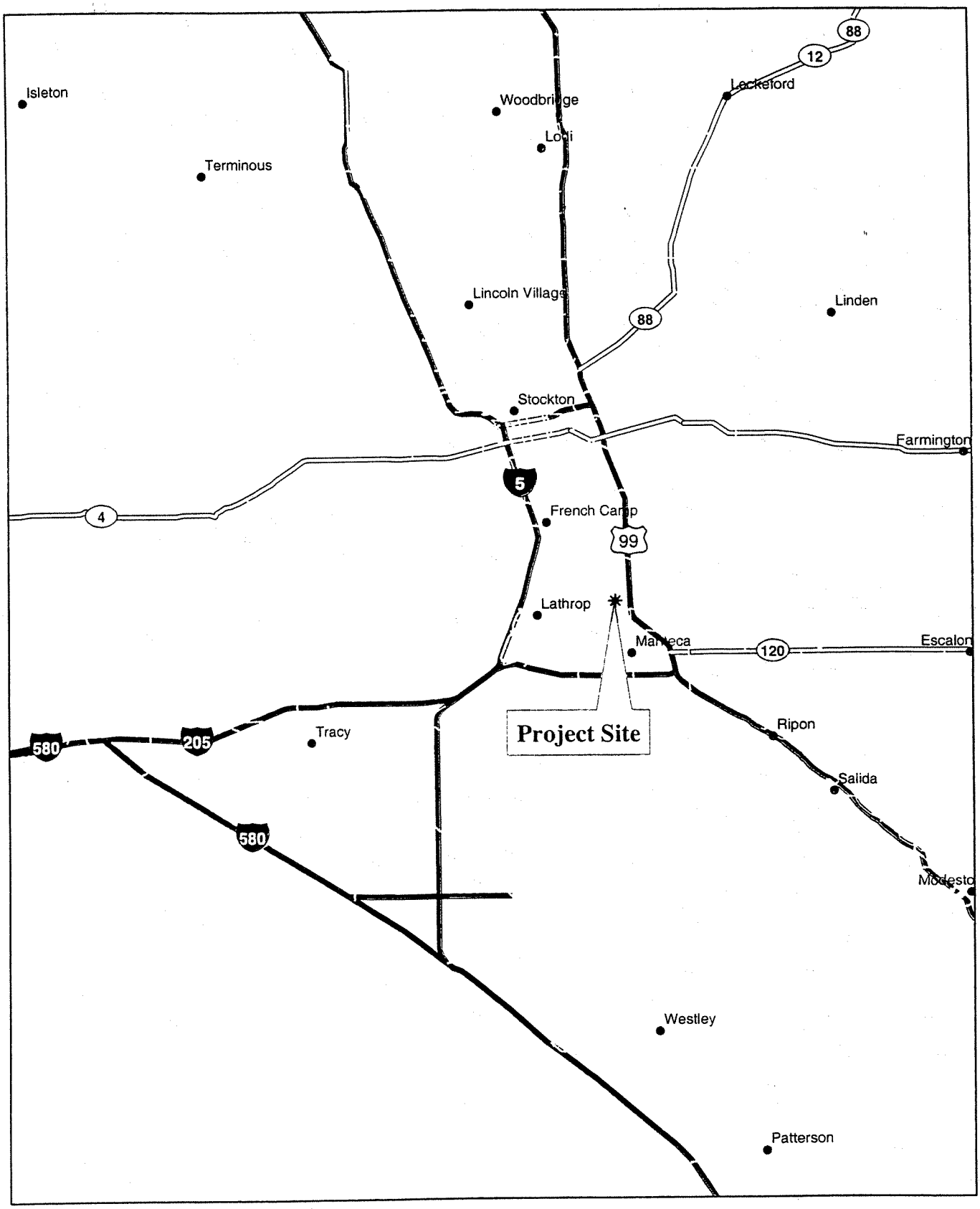
Species Observed on the Project Site.

Birds	
Swainson's hawk	*Buteo swainsoni*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
Anna's hummingbird	*Calypte anna*
Nuttall's woodpecker	*Picoides nuttallii*
Western scrub-jay	*Aphelocoma californica*
Yellow-billed magpie	*Pica nuttalli*
American crow	*Corvus brachyrhynchos*
Barn swallow	*Hirundo rustica*
Bushtit	*Psaltriparus minimus*
American pipit	*Anthus rubescens*
Dark-eyed junco	*Junco hyemalis*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Carduelis psaltria*

Mammals	
Virginia opossum	*Didelphis virginiana*
Black-tailed hare	*Lepus californicus*
California ground squirrel	*Spermophilus beechyi*
Botta's pocket gopher	*Thomomys bottae*
Striped skunk	*Mephitis mephitis*

FIGURES

MONK & ASSOCIATES



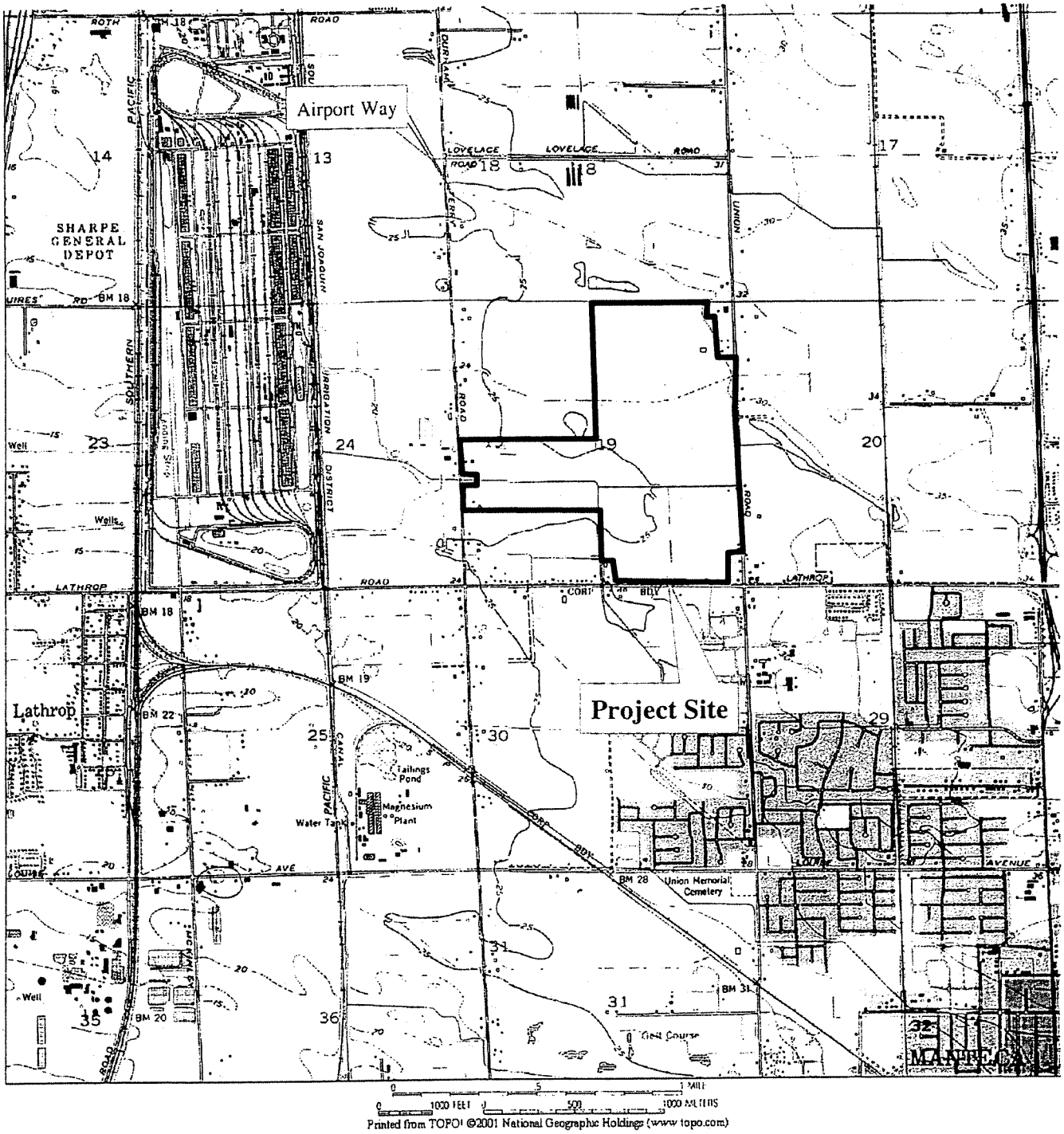
Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek California 94595
(925) 947-4867

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Figure 1. Union Ranch Project Site
Manteca, California

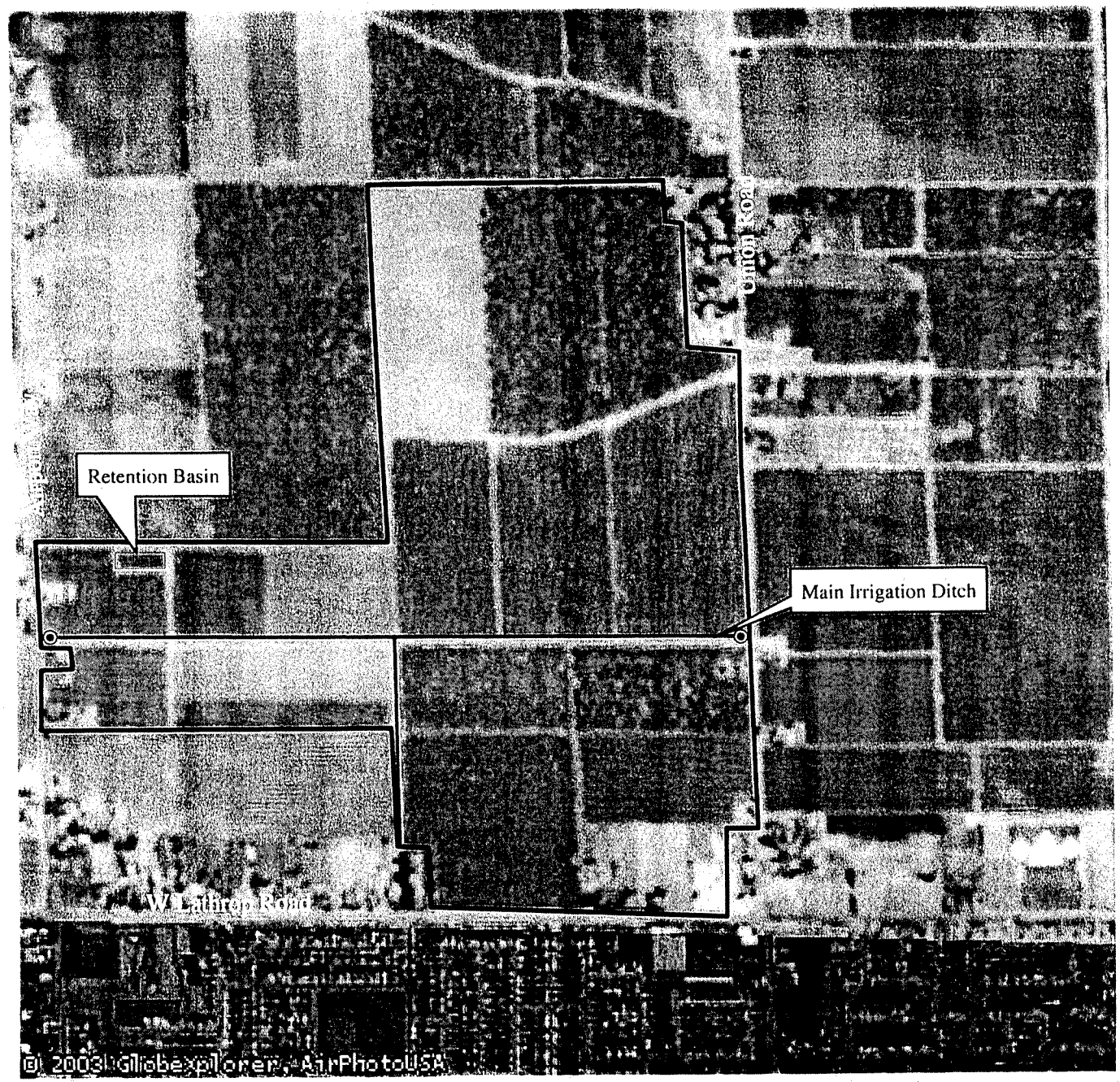
County: San Joaquin
Map Preparation Date: August 13, 2003



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Figure 2. Union Ranch Project Site
Manteca, California

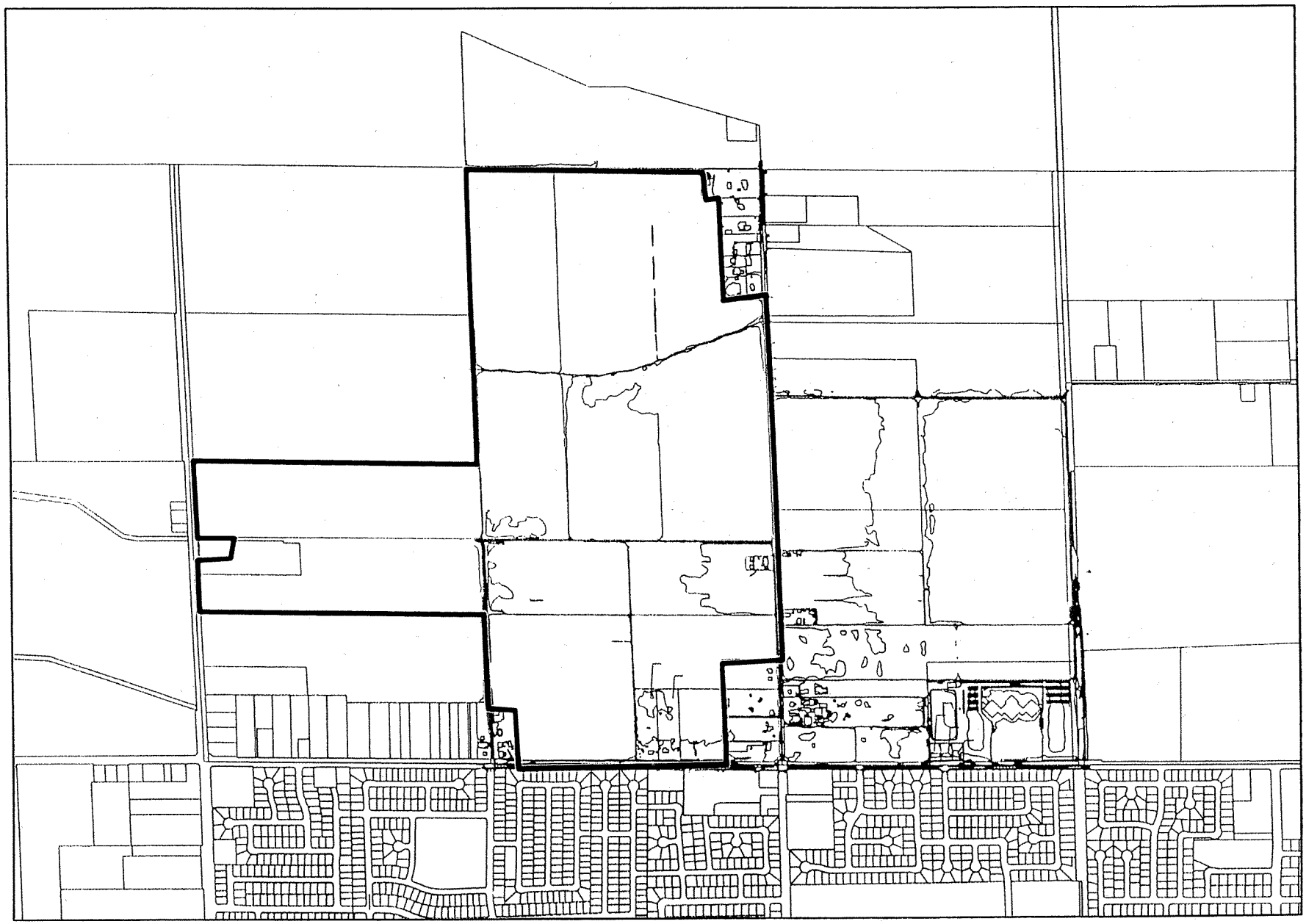
Source: California Natural Diviersity Data Base, 2003
7.5-Minute Manteca Quadrangle.
Map Preparation Date: August 13, 2003



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Figure 3. Aerial Photograph of
Union Ranch Project Site

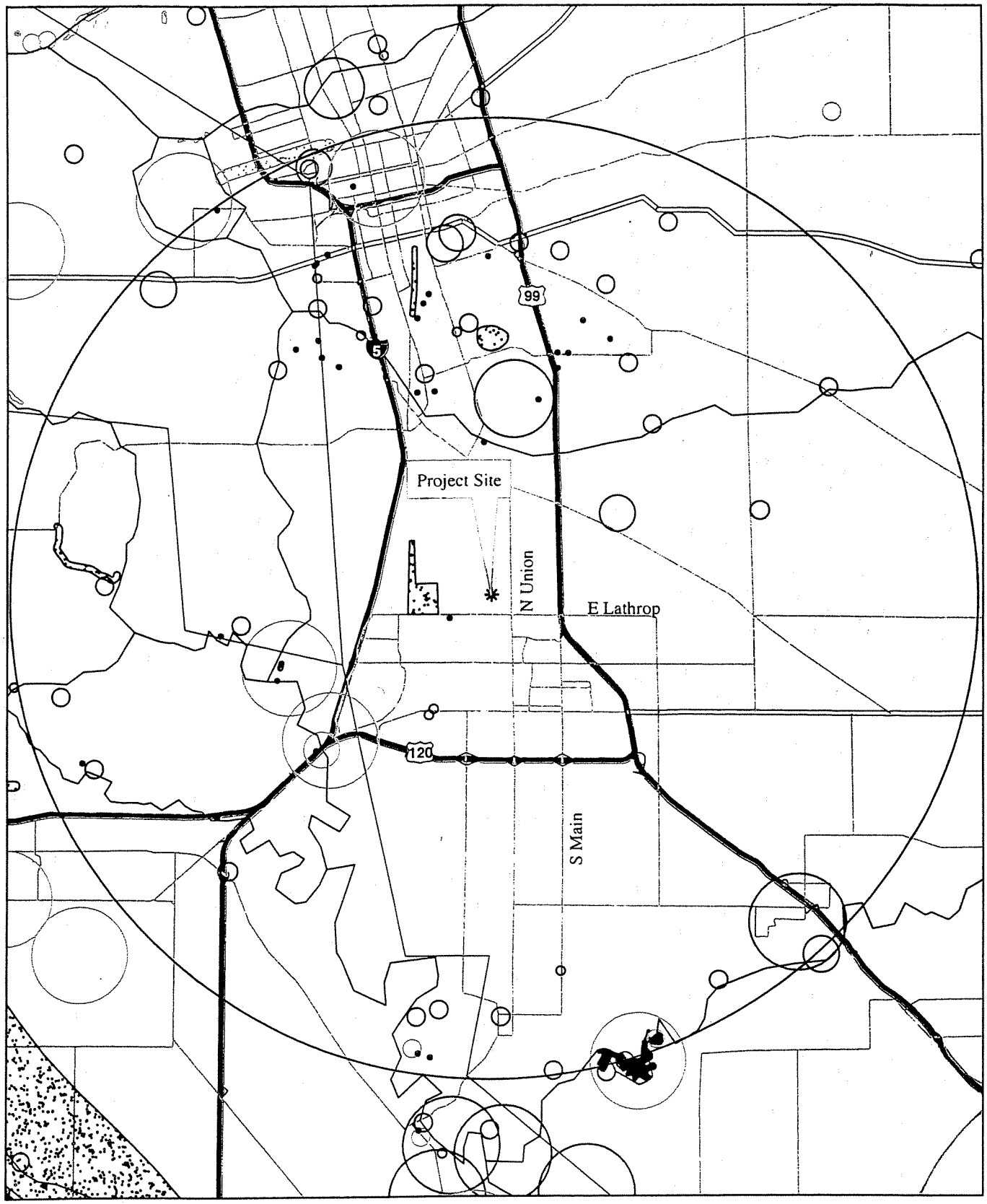
County: San Joaquin
Map Preparation Date: August 13, 2003



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Figure 4. Union Ranch Project Site and Surrounding Land Use.

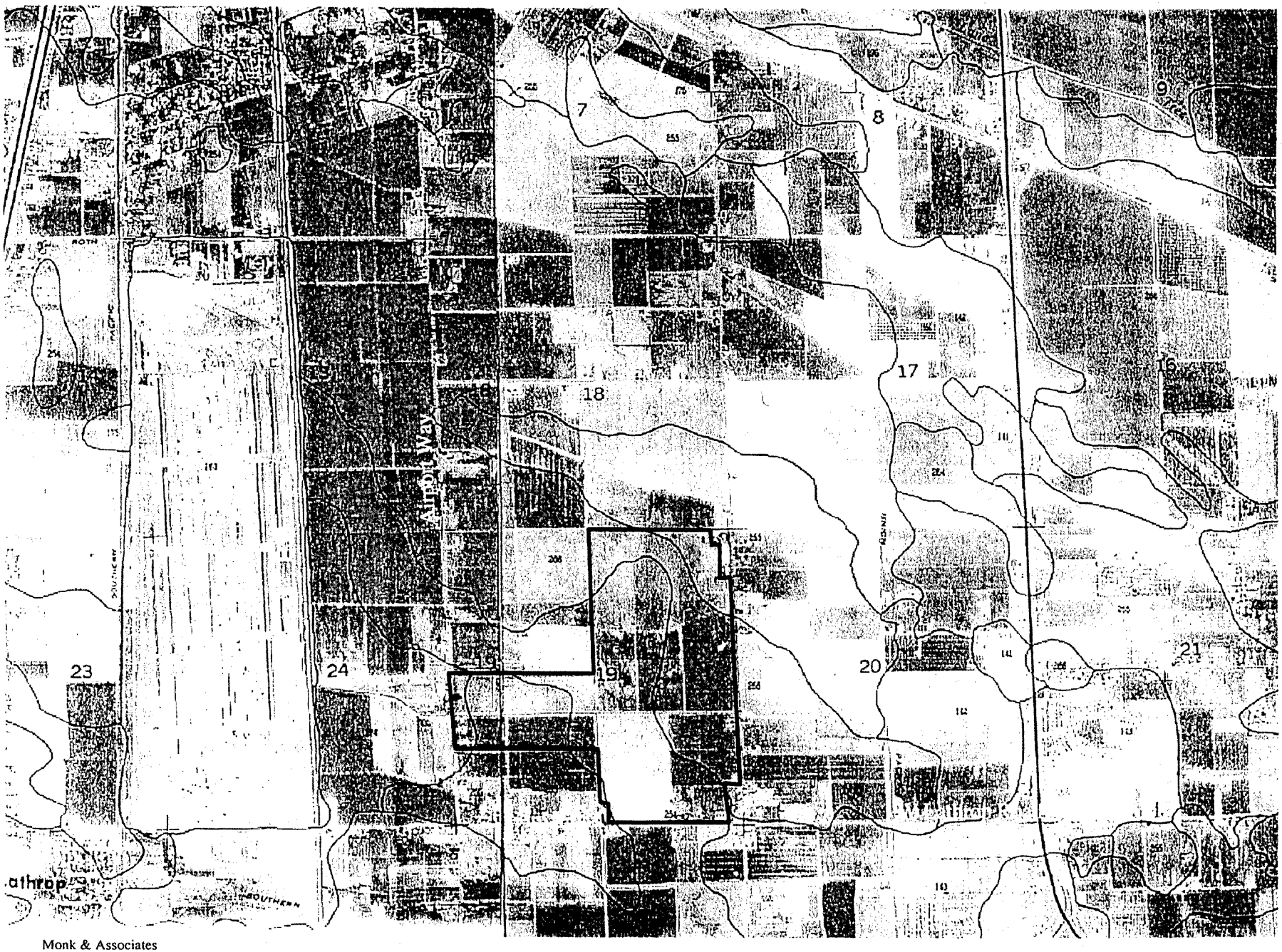
County: San Joaquin
Map Preparation Date: August 21, 2003



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Figure 5. CNDDB for Union Ranch Project Site.

— 10-mile radius
Map Preparation Date: August 21, 2003



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Figure 6. Soil Types at the Union Ranch Project Site

Source: Soil Survey of San Joaquin County
(USDA, Soil Conservation Service 1992)
Map Preparation Date: August 27, 2003

APPENDIX F

UNION RANCH WATER SUPPLY ASSESSMENT/VERIFICATION

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Memo

To: **Ben Cantu**

From: **Keith Conarroe** KTC

CC: **Mike Brinton, Jim Podesta**

Date: **November 10, 2004**

Re: **Union Ranch Water Supply Assessment/Verification**

Introduction

This memorandum presents the water supply assessment for the Union Ranch Development. The water supply assessment is required to comply with water supply planning requirements of Senate Bill 610 and 221. Water supply assessments and verifications are required for developments that exceed 500 dwelling units. The Union Ranch development has proposed building 1,960 units. The development will be constructed in phases.

The water supply assessment evaluates the water demand of the proposed development and sufficiency of the water supply to for the next 20 years to meet the demands of the project, existing users and other future users in normal, single and multiple dry year conditions. The 2000 Urban Water Management Plan – 2002 Update includes information required in the water supply assessment. Additional information is contained in the Water Master Plan. Both documents have used in the completion of this water supply assessment and verification.

Water Demand

The Union Ranch water demand consists of potable and landscape irrigation demands. The estimated peak hour demand plus a 15 percent redundancy for the development is 2,992 gallons per minute. The water will be supplied by the City of Manteca water system.

The water demand for is based on the gross residential demand of 0.474 gallons per minute per dwelling unit. The gross demand is based on the City of Manteca's historical per capita water demand of 214 gallons per day. The actual water demand for residential use is 168 gallon per capita per day. The use of the gross demand in water supply planning allocates water for non-residential uses, such as commercial development and institutional demands. A peak to average demand ratio of 2.8 is applied to the average demand to determine the peak hour demand.

Senate Bill 610

Senate Bill 610 requires a water supply assessment on the water supply sufficiency for a 20 year planning period. The water supply assessment requires documentation on existing water sources and quantities used and future water supplies and quantities. The water supply assessment must evaluate the adequacy of these supplies to meet the demands for the development as well as existing and other future uses during the 20 year planning period. The assessment must include normal, single and multiple dry years. Where groundwater is used, a description of the aquifer must be provided and along with information regarding the overdraft of the basin aquifer. The governing body must also approve the water supply assessment.

Senate Bill 221

Senate Bill 221 requires a water supply verification must determine if there is a sufficient water supply to provide during single and multiple dry years within a 20 year planning period to meet the water demand projected for the development in addition to the existing and planned future uses. The water supply verification must consider the following:

- Historical record of at least 20 years
- Urban Water Shortage Contingency Analysis
- Supply Reduction for specific use sectors per supplier's resolution, ordinance or contract
- Amount of water that can be reasonably relied upon from specified water supply projects

Water Supply Sufficiency

Water modeling for the Union Ranch development showed there is not enough water to supply the development with the surface water and planned wells through well 25. Additional groundwater supplies will be required to assure an adequate water supply.

An additional groundwater supply of 1,800 gallon per minute will be required to supply water to the Union Ranch Development. The groundwater supply can consist of a single 1800 gpm well or the construction of two smaller wells to provide the 1800 gpm capacity.

Water Supply Planning

The City Manteca water supply planning is documented in the 2002 Water Master Plan and the 2000 Urban Water Management Plan – 2002 Update. The City limits the number of new residential sewer connections to 3.9 percent per year. The 3.9 percent growth limit is used in both the Water Master Plan and the Urban Water Management Plan to project future water demand. Beginning in 2005, both the Water Master Plan and Urban Water Management Plan include groundwater and surface water from the South County Surface Water Supply Project as sources of water for the City of Manteca.

The 2000 Urban Water Management Plan – 2002 Update was adopted in December of 2002. The Urban Water Management Plan includes water supply and demand comparisons through 2020 assuming a 3.9% growth in water demand. During the planning period water is supplied by groundwater from City wells and surface water from the South County Water Supply Project. The Urban Water Management Plan also contains the single and multiple dry year water demand-supply comparisons and the water supply shortage contingency planning. The water supply and demand comparisons from the Urban Water Management Plan are included in Attachment 1. The comparisons show the water supply should exceed projected demand through the planning period. The increase in future water supplies is provided by the planned increase in surface water deliveries and drilling of new wells to meet peak water demands and supplement surface water in dry years.

Groundwater Supply. The City of Manteca draws groundwater from the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a subbasin of the San Joaquin Valley Groundwater Basin. The California Department of Water Resources identified the ESJCGB as a basin in a state of overdraft in DWR Bulletin 160-98. The basin is described in the 2000 Urban Water Management Plan – 2002 Update and is included in Attachment 1.

The Water Master Plan included the construction of wells 24, 25, 26 and 27 in its capital improvement plan. These wells provide water for planned developments. Wells 24 and 25 were drilled in 2003 and have capacities of 1,800 and 2,500 gallons per minute, respectively. Wells 24 and 25 improvements are scheduled for completion in 2005. Well 26 is scheduled for construction in 2005. Well 27 will be drilled by the Union Ranch developer in fall or winter of 2004 for the initial phase of the development..

Additional wells would be required for other future development. The developers are required to fund construction of new wells to provide water to the development. The wells and water distribution system become part of the City water system. Anticipated groundwater requirements by 2027 are 16,500 acre-feet per year. This will be provided by existing wells and wells to be constructed to accommodate future growth.

Surface Water. The City of Manteca, along with the Cities Escalon, Lathrop and Tracy contracted with the South San Joaquin Irrigation District in 1995 for treated surface water. The contract for the surface water is included in Attachment 2. Construction began on the project in 2004 and is scheduled for completion in 2005. The capital outlay and permits for the surface water project are summarized in Attachment 3.

The surface water deliveries are scheduled to increase by about 4 percent per yearly until full capacity of 18,500 acre feet per year is reached. The project planned in two phases. Phase 1 will be completed in the summer of 2005 and will provide up to 11,500 acre feet by 2010. Phase 2 would be constructed after 2010 and would provide up to 18,500 acre feet by 2027.

Reclaimed Water. The Urban Water Management Plan and the Water Master Plan did not include reclaimed water in future water planning. Reclaimed water requires construction of tertiary filters and disinfection facilities to meet Title 22 Reclamation Criteria. A reclaimed water distribution system is also required. At the time the Urban Water Management Plan and the Water Master Plan were adopted reclaimed water was not cost effective when compared to other wastewater disposal alternatives. Recent NPDES disposal and treatment requirements require the construction of tertiary filters and disinfection facilities. The treatment requirements make the use of reclaimed water for irrigation feasible in some areas of the City but will be limited due to the lack of a reclaimed water distribution system. At present, irrigation of the Big League Dream sports complex is the only planned use of the reclaimed water. Reclaimed water for irrigation in the Union Ranch development is not planned.

Groundwater Management. A groundwater management plan has not been adopted for the ESJCGB. The San Joaquin County Flood Control and Water Conservation District is developing a groundwater management plan for San Joaquin County and is currently in the process of adopting the plan. The City of Manteca participated in the development of the groundwater management plan.

The City of Manteca plans to manage its groundwater use to meet the safe aquifer yield for the area, which has been estimated at 1 acre-ft/acre/year. Historically, Manteca has been extracting groundwater at a rate of 2.4 acre-ft/acre/year. Both the Water Master Plan and the Urban Water Management Plan recognize the overdraft

in the basin. To reduce Manteca's overdraft, the City is obtaining surface water from the South County Water Supply Project in the 2005. The City will reduce its groundwater extraction to the safe aquifer yield of 1 acre-ft/acre/year when the surface water is available.

Water Supply Reliability. Water supply reliability is addressed in the Urban Water Management Plan. In past droughts, the groundwater supply has been very reliable. Groundwater levels have dropped during severe droughts but recovered in subsequent years. However, there has been a long-term drop in groundwater levels (approximately 4 feet since 1964) in the Manteca area. The drop in groundwater is due to both the local groundwater pumping and the severe overdraft in the central and eastern portions of the groundwater basin. An objective of the groundwater management plan is to stabilize the groundwater level in the central and eastern portions of the basin. The combined effort of Manteca to reduce groundwater overdraft and the San Joaquin County Groundwater Management Plan should help maintain the historical reliability Manteca's groundwater.

The South San Joaquin Irrigation District, which is supplying the surface water from the Stanislaus River, has pre-1914 water rights. With the construction of New Melones Reservoir, the SSJID entitlement was negotiated with the DWR at 300,000 acre-ft per year. The entitlement is subject to reductions when the New Melones inflow is less than 600,000 acre-feet. An examination of the inflows between 1922 and 2000 indicated that SSJID would have received its full allocation of 300,000 acre-ft in all but 16 years during this period. The severity of possible reductions was estimated by examining the three lowest inflow years of 1977, 1924 and 1988, which would have reduced SSJID's allocation by 37, 24 and 23 percent, respectively. Conservation and increased groundwater development can sustain reductions of this order. Based on SSJID water rights and minimal reductions in past low flow years, the surface water supply is considered a reliable source. Manteca plans to construct additional groundwater wells to maintain full water supply with a 50% reduction in surface water supply.

Long term overdraft of the basin groundwater poses a water supply reliability threat from the intrusion of saline water. Surface water supplies will enable groundwater pumping to be reduced the Manteca area and reduce the intrusion of saline water into the area.

Changes in water quality standards have the potential to reduce available groundwater available to the City. The Federal Maximum Contaminant Level (MCL) for arsenic was lowered from 50 ug/l to 10 ug/l in 2001. The State of California is also evaluating the arsenic MCL, which could be lower than the Federal MCL. The revised arsenic MCL becomes effective in 2006. Twelve of the City wells exceed the revised Federal arsenic MCL, with concentrations ranging from 12 to 19 ug/l. Manteca is currently evaluating arsenic treatment and water management

alternatives to maintain Manteca's water supply capacity while meeting the new arsenic standard.

Summary

The City of Manteca will have an adequate supply of water for the Union Ranch development with the construction of a 1800 gallon per minute well. Surface water in combination with existing and planned groundwater supplies will supply potable water for the development.

The City is addressing issues that may affect the reliability of its potable water supply, which include overdraft of the basin groundwater and the lower arsenic Maximum Contaminant Level. Additional information on Manteca's water supply planning is available in the 2002 Water Master Plan and the Urban Water Management Plan – 2002 Update.

ATTACHMENT 1

URBAN WATER MANAGEMENT PLAN- 2002 UPDATE
EXCERPTS ON WATER SUPPLY, DEMAND AND RELIABILITY

Water Sources (Supply)

Law

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments [to 20 years or as far as data is available.]

Water Supply Sources

The City water supply is from groundwater from City owned and operated wells. The wells are located within the City limits. The City is participating in the South County Water Supply project, which will deliver treated surface water to the Cities of Manteca, Escalon, Lathrop and Tracy in 2005. The projected City water supplies are presented in Table 3.

In 2000, there were 13 operating wells in the system. One additional well was started in 2001 and two wells were started in 2002 for a total of 16 wells. The wells range in depth from 190 feet to 400 feet. Three new wells are planned for construction and startup in 2003. The locations of the existing and planned wells are shown on Figure 3.

The City's annual water production has increased from 4,600 acre-feet in 1975 to 12,600 acre-feet in 2000. The combined production capacity of the 16 wells is 21,900 gallons per minute.

Table 3.
Current and Projected Water Supplies

Water Supply Sources	2000	2005	2010	2015	2020
Purchased from USBR					
Purchased from DWR					
Purchased from wholesaler (SSJID South County Surface Water Project)	0	9,900	12,000	14,200	16,300
City produced groundwater	12,600	8,100	10,000	12,200	14,400
City produced surface water					
Transfers					
Exchanges In					
Recycled Water					
Recycled Water used for ground water recharge (adds to gw supply)					
Other					
Total	12,600	18,000	22,000	26,400	30,700
Units of Measure: Acre-feet/Year					

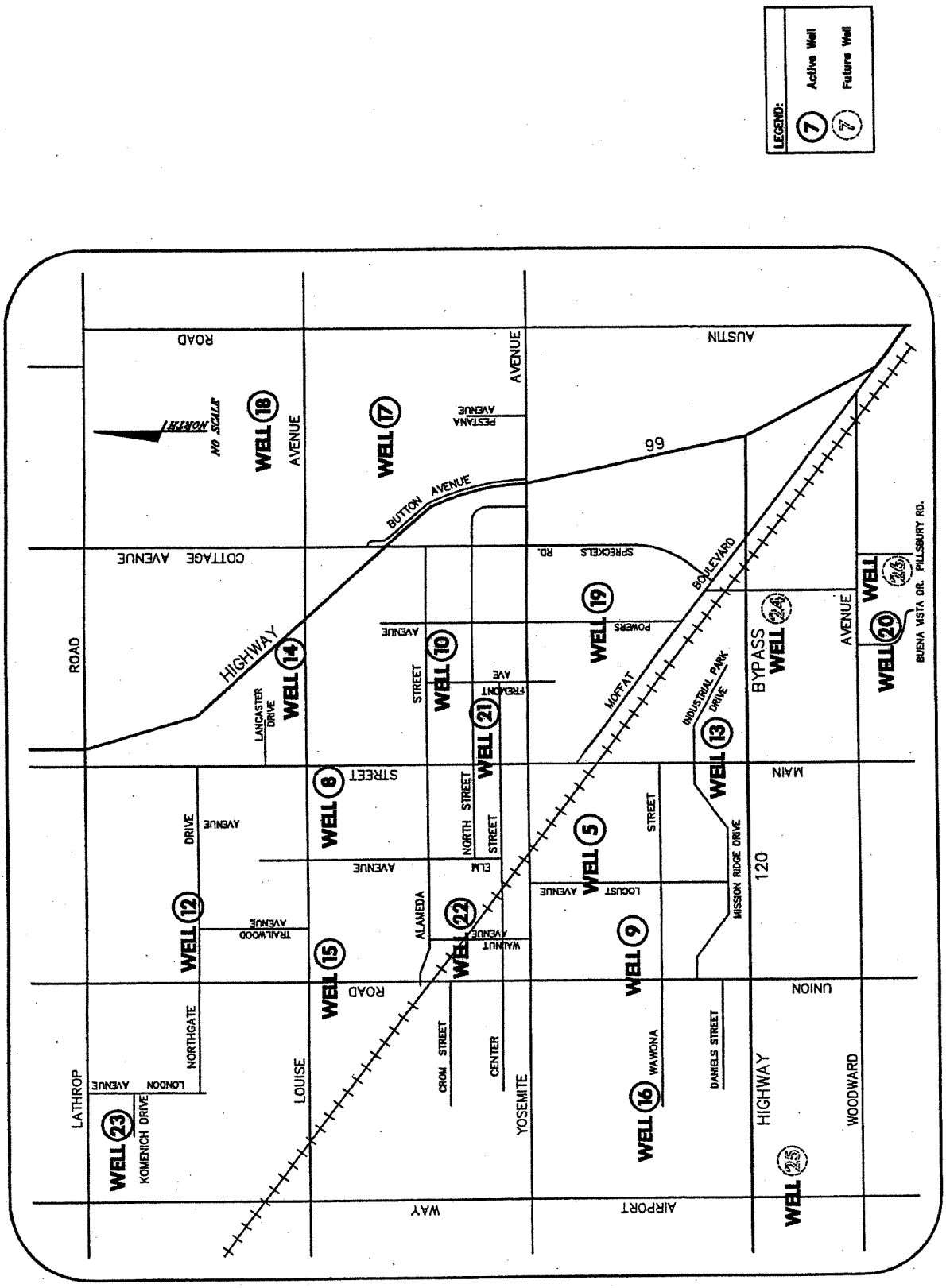


FIGURE 3
City of Manteca Well Location Map

Groundwater

The City is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a sub-basin of the San Joaquin Valley Groundwater Basin. The Department of Water Resources classified the ESJCGB as a basin in a state of overdraft in DWR Bulletin 160-98. A groundwater management plan for the ESJCGB has not been adopted. The San Joaquin County Flood Control and Water Conservation District issued the Water Management Plan Phase 1-Planning Analysis and Strategy report in October of 2001. This document discusses water issues and presents a prioritized list of groundwater and surface water projects for developing and managing water supplies in the San Joaquin County, but has not been proposed or adopted as a groundwater management plan for the ESJCBG.

The groundwater aquifers underlying the City extend to depths in excess of 600 feet have been identified to include four geologic formations. In increasing depth from the surface, the identified aquifers are Victor Formation, Laguna Formation, Mehrten Formation, and Valley Springs Formation. Due to the alluvial generation of these aquifers, there is significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material and lower permeability clays. In general, the strata slope from the hills east of the City downward to the west, providing good recharge from hill runoff as well as from the Stanislaus River. The City's wells primarily withdraw water from the Laguna and Victor Formations.

The groundwater basin safe yield was estimated in a 1985-groundwater study at 1.0 acre-foot per acre per year. The City is extracting groundwater at a rate of approximately 2.4 acre-feet per acre per year, based on the developed City area of 4,900 acres. The planned addition of the SSJID surface water supply will reduce the City's groundwater extraction to the basin safe yield of 1.0 acre-foot per acre per year.

Recycled Water

The City wastewater quality control facility (WQCF) treats an average dry-weather wastewater flow of about 6 mgd and has an average dry weather design capacity of 6.95 mgd. A WQCF expansion is currently in progress to increase the average dry weather capacity to 9.87 mgd. Approximately 15 percent of the wastewater treated at the WQCF is from the City of Lathrop.

The City disposes of treated wastewater to both land and the San Joaquin River. The wastewater disposed to land is used to irrigate fodder crops on City owned and leased agricultural lands near the WQCF. Land disposal occurs from May through September each year and is required to reduce discharges to the San Joaquin River. The discharges to land average about 3.65 mgd and are applied at the crop's agronomic rate. The remainder of the wastewater is discharged to the San Joaquin River. The treated wastewater for agricultural irrigation is unchlorinated secondary effluent. Wastewater discharged to the San Joaquin River is secondary effluent that has been disinfected to 23-mpn/100 ml with chlorine and dechlorinated with sulfur dioxide before discharge.

The City evaluated reclaiming the wastewater for irrigation of City parks and other open spaces as an alternative to currently used potable water and onsite groundwater supplied irrigation systems. To provide reclaimed water for these uses additional treatment (filtration and disinfection system improvements) would be required along with a recycled water distribution system. The City determined that it is not cost effective at this time to treat and distribute reclaimed water for this purpose.

Reliability Planning

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.

10631 (c) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

10631 (c) Provide data for each of the following:
(1) An average water year, (2) A single dry water year, (3) Multiple dry water years.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632 (b) An estimate of the minimum water supply available during each of the next three-water years based on the driest three-year historic sequence for the agency's water supply.

Reliability

The reliability of the City's groundwater was evaluated with respect to seasonal conditions, climatic variations and long term groundwater overdraft. The effects of seasonal conditions and climatic variations on the water supply were assessed on the basis of historical groundwater levels in the Manteca area. Long-term water reliability was assessed from groundwater modeling on the groundwater level and saline intrusion along the western edge of the groundwater basin.

The City's groundwater supply has been highly reliable with respect to seasonal conditions and climatic variations. During the peak summer water demands, the static and pumped water levels at the wells remain fairly consistent throughout the season. Fluctuations in groundwater levels from climatic variations have been documented in monitoring by the San Joaquin County Flood Control and Water Conservation District (Flood Control District), which monitors water quality and groundwater levels at a number of wells throughout San Joaquin County. The Flood Control District groundwater monitoring includes one SSJID well to the east of Manteca. The most notable variations in groundwater from climatic conditions were the steep declines observed at this well during the droughts of 1976-77 and 1989-94 as shown on Figure 4. Groundwater levels declined during the drought, but the City did not experience any groundwater pumping problems. Although the groundwater levels recovered following the droughts, the recovered level was below the predought level and tended to follow the long-term pattern of decline observed in the area.

Groundwater overdraft in the basin and the City's groundwater withdrawal rate of 2.4 acre-feet per acre per year is a concern to the City as this poses a long-term threat to the reliability of the groundwater supply. There has been a gradual drop in groundwater levels over time with the current groundwater level

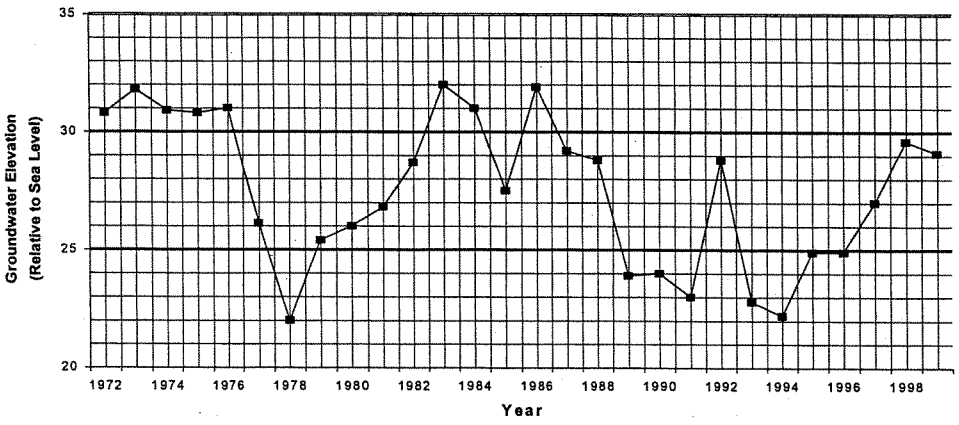


Figure 4
Manteca Area Groundwater Level

is about 4 to 5 feet below the 1964 groundwater level. Basin groundwater modeling predicts a continued decline in groundwater levels if the overdraft continues. The models predict groundwater levels drops of 10 to 15 feet in the Manteca area by the 2030 if there are no changes in groundwater pumping in the basin. The most recent model results reported in the Flood Control District's Comprehensive Water Management Plan Report of 2001 predicted a groundwater decline of 10 feet from the 2000 levels by 2030 if there is no change groundwater pumping. The drop in groundwater level is primarily due to the excessive groundwater pumping in the central and eastern portion of the groundwater basin but all groundwater withdrawals contribute to the basin overdraft problem, including the City of Manteca's withdrawal.

A 10-foot drop in groundwater levels would not result in a significant loss in well capacity as the pump bowls at all but two wells are located at greater depths and would not be affected by 10-foot drop in groundwater levels. The pumps in the two wells that would be affected by 10-foot groundwater drop could be lowered to maintain production if necessary.

One of the most serious consequences of the drop in groundwater levels is the possible saline intrusion along the western boundary of the basin. Saline intrusion has already occurred in portions of Stockton. The extent of saline intrusion in the Manteca area is not well defined but is known to be west of Lathrop. Saline intrusion would be a significant issue on the reliability of the existing groundwater system as this may require well abandonment or treatment to maintain water quality.

The periodic droughts as experienced in the past have caused short-term fluctuations in the groundwater levels. Future droughts are expected to cause similar groundwater fluctuations and could create a need to lower pump bowls at the two wells discussed above if the short-term drop exceeded 10 feet. A more significant concern is an accelerated eastward movement of the saline water due to the rapid drop in groundwater levels during a drought.

Contamination of a well or the groundwater and changes in regulatory water quality standards could effect the reliability of the City's water supply but are not considered to be significant for the following reasons. Changes in water quality are likely to occur gradually and would not effect all wells simultaneously. The gradual change in water quality would allow time for treatment or alternative supplies to be investigated and developed. Similarly, changes in regulatory water quality requirements would be known in advance and allow time for treatment or alternative supplies to be developed. Should these conditions occur, the

City would undertake well modification or treatment to eliminate or remove the contaminant or if necessary drill new wells to maintain the water supply. Even if the contamination occurred rapidly at a well, the City has sufficient capacity to take the well out of service without serious loss in system reliability.

Supply Deficiencies

The City experienced supply deficiencies in the early 1990's from limited well capacity and distribution system deficiencies, which resulted in low water system pressures during periods of peak water demand. The low pressures experienced were due to a lack of well capacity and deficiencies in the distribution system and not from the availability of the groundwater supply. The City has subsequently constructed new wells to assure an adequate supply of water to its existing customers and requires new residential and commercial developers to fund the construction of new water wells for development projects. The City also began correcting deficiencies in the water distribution system to provide a more redundant and robust system throughout the City. The City continues to develop new wells and improve its distribution system to correct and prevent future capacity problems.

Although the City has developed additional wells and improved the water distribution system since the early 1990's, the system pressures can drop during periods of peak water demand. This becomes especially acute if two or more wells are offline during the peak demand period of summer. The pressure drops are not as severe as experienced in the early 1990's but underscores the need for the City to continue developing new wells to keep up with new development in the City.

Plans to Assure a Reliable Water Supply

The planned use of surface water and groundwater by the City in 2005 will reduce the groundwater withdrawal to the safe aquifer yield of 1acre-foot per year per acre. The resulting reduction in groundwater withdrawal is expected to stabilize groundwater levels in the Manteca area in the near term and reduce the long-term drop in groundwater levels. Preserving Manteca's groundwater supply will help assure the reliability of the water supply in drought conditions as groundwater will be available for use should there be a reduction in surface water delivery during drought conditions. Without the surface water supply, the groundwater levels are projected to drop 10 feet over the next 20 to 25 years. Maintaining the groundwater level also reduces the potential for saline intrusion into the aquifers underlying the City.

Groundwater modeling conducted for the South County Water Supply project to assess the impact the use of surface water and the reduction in groundwater use would have on local groundwater level. This modeling indicated a gain in Manteca groundwater levels of approximately 2.5 feet through 2010. By the year 2025 the modeling indicated a lesser gain in groundwater over present levels of about 1.5 feet. The loss in groundwater level by 2025 is the result of the continued groundwater pumping and loss of surface water imports in the central and eastern portion of the groundwater basin. These combine to cause a greater groundwater depression in the central basin and increase the outflow of local groundwater to the central basin depression. The south county water project did result in an improvement over the no project alternatives in which the local groundwater levels drop by 10 feet by 2025.

Since the surface water will play an important role in assuring the reliability of the City's water supply planning the reliability of this source must also be considered. SSJID's entitlement is 300,000 acre-feet per year. However, the entitlement is dependent on New Melones Reservoir inflow and is subject to curtailment in dry years. Normal water deliveries would be provided when the New Melones inflows exceed 600,000 AF. Water deliveries are reduced when inflows are less than 600,000 AF according to the following.

$$\text{Inflow} + [(600{,}000 - \text{Inflow}) \div 3]$$

The water available for distribution when inflows are less than 600,000 acre-feet is shared equally between SSJID and Oakdale Irrigation District. The South County Surface Water Project participants'

agreement with SSJID indicates the municipal and agricultural users would share surface water reductions equally.

An examination of the Stanislaus River flows from 1922 to 2000 indicated the full entitlement has been available about 80 percent of the time. The lowest inflow year into New Melones Reservoir was 1977 at 271,000 acre-feet and would have resulted in 37 percent reduction in surface water delivery. Other low inflow years were 1924 (385,000 acre-feet) and 1988 (390,000 acre-feet) and would have reduced surface water delivery by 24 percent and 23 percent, respectively. Based on this historical record of inflows and potential reductions in surface water delivery, the City plans to continue to develop new wells to maintain full water delivery with a 50 percent surface water reduction. This planning will help assure there is an adequate supply of water in the future.

Reliability Comparison

Table 4 details the existing water supply for single and multiple dry year water scenarios. Water supply is based on withdrawal of 14,457 acre-feet per year, estimated from the developed City area and an annual withdrawal of 2.4 acre-feet per acre. Because the groundwater has been a reliable supply there is no projected decrease in water supply during the single or multiple dry year supply reliability scenarios presented in Table 4. During past droughts the groundwater levels did drop but there was no loss in well capacity. The per capita water use dropped during the drought by about 10 percent through conservation and public awareness of the drought. While the per capita consumption dropped by 10 percent, the water production dropped by only 5 percent due to the additional demand created by an increase in population. The per capita water supply in Table 4 is greater than the historical per capita use of 214 gpd. Additional assumptions made in the reliability comparison include the following:

- No additional wells are added to the water supply.
- No decrease in per capita water supply is assumed for a single dry year.
- Per capita supply is decreased by 3.5 percent, 7.3 percent and 10 percent in the first, second and third year respectively for multiple dry water years due to an increase in population.

Table 4.
Supply Reliability

		Multiple Dry Water Years		
Average/ Normal Water Year 2001	**Single Dry Water Year 2001**	**Year 1 2002**	**Year 2 2003**	**Year 3 2004**
14,457 AF	14,457AF	14,457 AF	14,457 AF	14,457 AF
248 gpd/cap	248 gpd/cap (0% Reduction)	239 gpd/cap (3.5% Reduction)	230 gpd/cap (7.3% Reduction)	221 gpd/cap (10% Reduction)
51,920 pop.	51,920 pop.	53,945 pop.	56,049 pop.	58,235 pop.

Three Year Minimum Water Supply

The aquifer has provided an adequate supply to meet a three-year minimum water supply as experienced in the dry years of 1989 through 1991. Projected supply shown in Table 4 would be at a withdrawal of 2.4

AF/Acre. For withdrawals at this rate we would expect to see some decline in groundwater during a drought. Because there has been additional development in Manteca and in nearby communities that withdraw water from the aquifer, a greater drop in groundwater levels may be seen than in past droughts but the decline is not expected to threaten production capacity over a three year dry period.

If the drop in groundwater was significant enough in a multi-year drought to threaten well production capacity it would be possible to implement more extensive water conservation measures within the City. More restrictive landscape irrigation requirements can provide significant reductions in water demand during the peak summer months.

The future consideration of the surface water supply has a significant effect on the three-year minimum supply planning. The surface water supply reduces demand on the groundwater supply, thus preserving it for use during dry periods when the surface water supply is reduced. The demand on the groundwater during the drought would also be reduced as some surface water is anticipated to be available. For example, if the surface water supply was reduced by 50 percent, the groundwater withdrawal rate, to make up the difference would be 1.6 acre-feet per acre year, as compared to the 2.4 acre-feet per acre per year without a surface water supply.

Transfer or Exchange Opportunities

Law

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631 (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

Water Transfers

Currently, there are no opportunities to share or import groundwater or surface water into or from the City. There are irrigation wells in the agricultural lands surrounding the City. These wells are not suitable for potable water use as they are not constructed to potable water standards and generally withdraw water from the upper part of the aquifer (within 100 feet of the ground surface). The nearby City of Lathrop operates its own groundwater wells, and distribution system. The Lathrop water system is independent of the Manteca water system, and there are no plans to connect the two systems.

The South County Water Supply Project could provide some opportunities for the transfer or exchange of water. The South County Surface Water Project will provide water to the cities of Manteca, Lathrop, Escalon and Tracy. The initial delivery of water from the South County Surface Water Project is scheduled for 2005. The City of Manteca is scheduled to receive 12,494 acre-feet per year of surface water by 2011 and 18,500 acre-feet per year by 2025. The total water delivery planned for the project is 30,263 acre-feet in 2011 and 43,090 acre-feet in 2025. With the surface water supply, it is possible that some water could be obtained from other project participants if the water demands in their respective areas are lower than projected. These are most likely to be short-term transfers, although long term agreements for this water supply could be possible. Water transfer arrangements and protocols among the surface water project participants can be expected to develop over the next five years.

There may also be opportunities to obtain additional water that could be treated and transported to Manteca through the South County Surface Water Project facilities. The most likely supply would be agricultural irrigation water from SSJID and Oakdale Irrigation District, which have surface water rights to this water. There is no planning for this at present.

To accommodate additional flows above the planned surface water delivery, Manteca and Tracy had additional capacity built into the surface water transmission line. The total transmission capacity available

to Manteca is 26,900 acre-feet. There is no planning to expand the water treatment system to match the transmission system capacity. Any planning and construction of treatment capacity to match the transmission system capacity would not be expected prior to 2025.

WATER QUALITY

Law

> 10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Future Water Quality

The quality of Manteca's groundwater is expected to remain relatively unchanged for the next 20 years. Appendix H presents a summary of existing and future water quality. While the water quality is expected to remain unchanged within the planning period, there are conditions that could effect water quality, management strategy and reliability of the water supply as discussed below.

Saline intrusion, as discussed previously, poses a long-term threat to the groundwater quality in Manteca. The saline intrusion is the possible result of excessive groundwater withdrawal from the aquifer. The planned conjunctive use of surface water and groundwater beginning in 2005 is directed at stabilizing existing groundwater levels and thereby prevent or delay the possibility of saline intrusion into the area. If City wells are impacted at some point in the future the City will evaluate treatment or abandonment of an affected well based on water demands and the ability to construct a replacement well. Currently, the Flood Control District is investigating the saline intrusion to provide better information on the extent and progression of saline water into San Joaquin County that will enable the development of strategies to control the saline intrusion.

There are several known contaminants with the potential to affect the water supply. The concentrations of these have remained relatively stable for a number of years but could change as a result of groundwater movement. The known contaminants are nitrate, arsenic, manganese, organic chemicals (dibromo chloro propane (DBCP), ethylene dibromide (EDB), and perchloro ethylene (PCE)) and radiological contaminants. The effect of these contaminants on the City water supply is discussed below.

Nitrate

Nitrate at elevated levels is found at six City wells at 30 mg/l or higher (as NO_3). The nitrate levels are below the Maximum Contaminant Level (MCL) of 45 mg/l. The source of the nitrate is believed to be from past agricultural activities in the Manteca area and is generally in upper portion of the aquifer (100 to 150 ft below ground surface). If the levels were to increase above the MCL it would be necessary to stop production from the well immediately and either modify the well by screening off the upper portion of the aquifer, or treating the water. Screening off the upper portion of the one City well has proven effective in lowering the nitrate level from 35 mg/l to 25 mg/l. There was no measurable loss in water production from the modified well.

Long term expectation is for the nitrate levels to decline as sources of contamination have been removed. However, levels could increase, as it is possible for more highly contaminated water to move into the well pumping zone.

Arsenic

The MCL for arsenic was lowered from 50 ug/l to 10 ug/l in 2001 and will become effective in 2006. The lower arsenic MCL will effect the City water supply as 12 of the 16 wells have arsenic concentrations of 12 to 19 ug/l. The City plans to install treatment to lower the arsenic level to acceptable levels and is currently investigating methods of treatment. The City will begin design and installation of arsenic treatment systems in 2003 and plans to install treatment at three to four wells each year between 2003 and 2006. Arsenic treatment would be installed at any new wells constructed that exceed the future 10 ug/l MCL. Some loss in production (2 to 3 percent) may result from the arsenic treatment.

Manganese

Manganese is a secondary MCL that affects the aesthetic quality of the water by imparting a bitter taste to the water and staining fixtures. The City has one well (Well 14) that exceeds the manganese MCL of 50 ug/l. The well has been shut down temporarily for the installation of a greensand filter to remove the manganese. Well 14 is also one of the wells that exceeds the proposed arsenic MCL. The greensand filter can remove arsenic by the addition of iron to the filter feed water. The treatment will result in some loss of production (2 to 3 %) from filter to backwashing.

Organic Chemicals

Three organic contaminants have been detected at low levels in seven of the City's wells. The three contaminants are ethylene dibromide (EDB), dibromo chloro propane (DBCP) and perchloro ethylene (PCE). EDB and DBCP are agricultural pesticides that were used in the surrounding agricultural areas and have been detected in six wells. With the exception of one well (Well 17) these contaminants have been below the MCL. An activated carbon filter was installed at Well 17 to remove the EDB and DBCP. PCE has also been found at one City well and is also below the MCL.

The long-term expectation is for these chemical contaminants to decline over time as EDB and DBCP have not been used for over 20 years. The EDB and DBCP levels have declined below the MCL at Well 17 for the past two years and we are currently planning to remove the activated carbon filters at the well in 2003. PCE is also expected to decline as the use of these organic chemicals is more closely regulated.

Should the City encounter these or other organic contaminants above their MCL, an activated carbon treatment would be installed to remove the contaminant from the water supply. There is a minimal loss of production from such treatment.

Radiological

Gross alpha and Uranium have been detected at several of the City wells. None of these radiological contaminants are at concentrations that affect the reliability of the water supply. Historically, Well 7 was abandoned in 1993 because of an elevated level of Uranium. Well 7 was a shallow well with a capacity of 700 gpm. The City opted to abandon the well rather than treat the well water given the well's age, its limited capacity and cost of treatment. A similar analysis to abandon or treat would be performed should radiological parameters at any of the existing wells exceed the MCL.

Water Use Provisions

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

(A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and (I) Agricultural.

(2) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.

Past, Current and Projected Water Use

Table 5 illustrates City water uses from 1990 to 2020 in acre-feet per year for residential, commercial, institutional and government, industrial, landscape, and unaccounted water losses. Table 6 summarizes the number of residential, commercial, institutional and government, industrial, and landscape connections from 1990 to 2020. A brief description of these water use sectors is provided below.

Residential Sector

The single and multi-family residential sectors account for 74 percent of the City water produced. Between 1990 and 2000, new connections were added at an annual rate of about 2 percent per year. The projected water demand and number of connections in Tables 5 and 6 are based on the maximum allowed City growth of 3.9 percent per year between 2000 and 2020.

The single-family residential customers average 3 persons per connection. Multi-family residential customers average 2.7 persons per housing unit, and average 10 units per multi-family complex. Total system per capita water use averaged about 217 gallons per day between 1996 and 2000. The recent water use is slightly higher than the long-term average (1960 to 2000) of about 214 gallons per capita per day. The per capita water use based on the single and multi-family residential consumption was about 168 gallons in 2000.

Commercial Sector

The City has a complex mix of commercial customers, ranging from markets, restaurants, stores, beauty shops, gas stations, retail stores, outlet and regional shopping centers, and high-volume restaurants and other facilities serving the visitor population. The growth in the commercial sector is driven by the need for services for the increasing permanent population. Businesses for the visiting population along Highway 99 and Interstate 5 are also contributing to the growth. The number of commercial water accounts increased by about 23 percent between 1990 and 2000 but the water use by this sector increased by only about 8.4

percent. This growth and water use trend is expected to continue through 2020. The commercial sector accounts for about nine percent of the City water use.

Table 5.
Past, Current and Projected Water Use

Water Use Sectors	1990	1995	2000	2005	2010	2015	2020
Single family residential	6,235	5,789	8,035	9,729	11,780	14,263	17,270
Multi-family residential	1,267	1,068	1,260	1,526	1,847	2,237	2,708
Commercial	828	815	1,103	1,336	1,617	1,958	2,371
Industrial	173	213	145	176	213	257	312
Institutional and governmental	220	251	363	440	532	644	780
Landscape	548	598	658	724	796	875	962
Sales to other agencies	0	0	0	0	0	0	0
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge (recycled water)	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0	0
Unaccounted-for system losses	602	1,988	1,044	1,339	1,695	2,146	2,697
Total	9,873	10,631	12,608	15,270	18,480	22,380	27,100
Unit of Measure: Acre-feet/Year							

Table 6.
Number of Connections by Customer Type

Customer Type	1990	1995	2000	2005	2010	2015	2020
Single family residential	9,263	10,507	12,200	14,772	17,886	21,657	26,222
Multi-family residential	539	546	549	665	805	975	1,180
Commercial	457	491	562	679	822	996	1,206
Industrial	11	13	15	18	22	27	32
Institutional and governmental	63	72	75	90	108	131	159
Landscape/recreation	68	74	81	89	98	108	119
Agriculture	0	0	0	0	0	0	0
Other (Recycle water)	0	0	0	0	0	0	0
Total	10,401	11,703	13,482	16,313	19,741	23,894	28,918

Industrial Sector

The City has a small industrial sector, which includes one large food processor, electronics manufacturing, trucking and warehousing, and light manufacturing. The industrial sector has grown slowly in the last decade. The industrial sector accounts for about one percent of the City water use.

Institutional/Governmental Sector

The City has a stable institutional/governmental sector, primarily local government, schools, and hospitals. This sector will keep pace with the growth of the city. This sector accounts for about 3 percent of the City water use.

Landscape/Recreational Sector

Landscape and Recreational customer demand is expected to increase due to continued growth in the City. Conversion of some existing City park irrigation systems to shallow groundwater wells and installation of irrigation wells in new City parks may decrease the demand for water in this sector. The landscape/recreational sector use accounts for about 5 percent of the City water use

Agricultural Sector

The City does not provide water for agricultural irrigation. The conversion of agricultural land to residential areas will be expected to decrease groundwater pumping from private wells for agricultural purposes.

Unaccounted Water Losses

Unaccounted water losses are about 8 to 10% of total production. The unaccounted water loss included unmetered water uses, such as traffic island landscape irrigation and irrigation of unmetered City property and parks. City irrigation records estimate these unmetered uses at 5 to 6 percent of total production. The remaining unaccounted for water losses are about 4.5 percent of the total production and include losses for water main flushing, fire fighting, leakage, and water main breaks. In 1995 the City began considering ways to eliminate, reduce or account for City water used for irrigation purposes. Meters have been installed at some City parks. The City is currently investigating the installation of shallow groundwater wells for irrigation at some City parks and is installing meters at other parks to measure actual water usage. Shallow wells for irrigation of City parks would draw from the upper aquifer, which is not used by the City for potable water.

Supply and Demand Comparison Provisions

Law

> 10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.

Supply and Demand Comparison

Table 7 compares current and projected water supply and demand. It indicates that in average water years, the City has sufficient water to meet its customers' needs, through 2020. This is based on continued development of groundwater wells and completion of the South County Surface Water Project. As noted in Table 7, the supply totals assume a groundwater withdrawal rate of 1.0 acre ft per acre per year beginning in 2005.

Table 7
Projected Supply and Demand Comparison

	2000	2005	2010	2015	2020
Supply totals [1]	14,457	18,000	22,000	26,450	30,700
Demand totals	12,608	15,270	18,480	22,380	27,100
Difference	1,849	2,730	3,520	4,070	3,600

Units of Measure: Acre-feet/Year
1. Supply totals assume normal year surface water delivery beginning in 2005 and groundwater withdrawal of 1.0 acre ft per acre.

Table 8 presents a supply and demand comparison where demand decreases in response to dry year conditions. This analysis assumes that existing groundwater supply is sufficient to meet demands during multi-year droughts. The water demands presented in Table 8 assume the water demand increases 3.9 percent annually due to an increase in population. With conservation, there is a net 5 percent decrease in demand in the single dry water year and in the first year of multiple dry water year scenarios and a net decrease of 6.5 percent in the second and third years of the multiple dry water year scenario. The supply demand comparison assumes that there is no additional water supply added to the system. The water supply demand scenario calculation is included in Appendix C.

Table 8 Single Dry Year and Multiple Dry Water Years Water Demand-Supply Comparison					
Water Supply Sources	**Current Supply 2001 (Volume)**	**Single Dry Water Year (Volume) 2002**	**Multiple Dry Water Years**		
			Year 1 (Volume) 2002	**Year 2 (Volume) 2003**	**Year 3 (Volume) 2004**
Supply totals	14,457	14,457	14,457	14,457	14,457
Percent Shortage	0	0	0	0	0
Demand totals	13,044	12,875	12,875	12,673	13,167
Difference	1,413	1,582	1,582	1,784	1,290
Unit of Measure: Acre-feet/Year					

ATTACHMENT 2

SOUTH SAN JOAQUIN IRRIGATION DISTRICT
WATER SUPPLY DEVELOPMENT AGREEMENT

EXECUTION COPY

WATER SUPPLY DEVELOPMENT AGREEMENT

This Agreement, dated as of October 1, 1995, by and between the South San Joaquin Irrigation District (the "District"), an irrigation district duly organized and existing pursuant to the Irrigation District Act (the "Irrigation District Act"), commencing with California Water Code, Section 20500 and the City of Manteca (the "City"), a municipal corporation created pursuant to the constitution and laws of the State of California.

WITNESSETH:

WHEREAS, the City and certain other water purveyors in San Joaquin County have expressed interest in purchasing treated water from the District (capitalized terms used herein and not otherwise defined shall have the meanings set forth below);

WHEREAS, in order for the City to receive treated water, certain facilities, including the Project, must be constructed;

WHEREAS, by entering into this Agreement, the City intends to preserve its ability to receive treated water from the Project in the future through subsequent construction of project facilities, in addition to those initially constructed, sufficient to serve the City;

WHEREAS, the District and the City now wish to enter into this Agreement to provide for the construction, operation and financing of the Project, for the sale by the District to the City of the City's Project Allotment and certain other matters;

NOW, THEREFORE, the parties hereto do agree as follows:

Section 1. Definitions.

The following terms shall, for all purposes of this Agreement have the following meanings:

"Additional Project Participant" means any public district, agency or entity or private water company, other than those entities listed in Part I of Appendix A hereto, which executes a Water Supply Agreement in accordance with Section 18 hereof, together with their respective successors or assigns.

"Bonds" mean all bonds, notes or similar obligations (but not including Contracts) of the City authorized and issued by the City under and pursuant to applicable laws of the State of California after the date of execution of this Agreement, the principal of and interest on which are an operation and maintenance expense of the City Water System determined in accordance with generally accepted accounting principles and which are secured by a pledge or a lien on City Net Water System Revenues and which are on a parity with the obligations of the City under this Agreement.

"Bond Resolution" means the resolution or resolutions providing for the issuance of District Bonds and the terms thereof.

"City" shall have the meaning assigned thereto in the preamble hereto.

"City Fiscal Year" means the twelve month period commencing on July 1 of each year and ending on the following June 30 or such other twelve month period which may be designated by the City as its fiscal year.

"City Net Water System Revenues" means, for any City Fiscal Year, the City Water System Revenues for such City Fiscal Year less the City Operation and Maintenance Expenses for such City Fiscal Year.

"City Operation and Maintenance Expenses" means the costs spent or incurred by the City for maintaining and operating the City Water System, calculated in accordance with generally accepted accounting principles, including (among other things) the expenses of management and repair and other expenses necessary to maintain and preserve the City Water System, in good repair and working order, and including administrative costs of the City, salaries and wages of employees, payments to the Public Employees Retirement System, overhead, insurance, taxes (if any), fees of auditors, accountants, attorneys or engineers and insurance premiums, and all other reasonable and necessary costs of the City, but excluding in all cases (i) depreciation, replacement and obsolescence charges or reserves therefor, (ii) amortization of intangibles or other bookkeeping entries of a similar nature, and (iii) charges for the payment of principal and interest on City Prior Debt, Bonds or Contracts.

"City Prior Debt" means notes, bonds or other obligations of the City existing prior to the date of execution hereof, which are identified in Exhibit D hereto and which are payable from City Water System Revenues.

"City Water System" means all properties and assets, real and personal, tangible and intangible, of the City now or hereafter existing, used or pertaining to the acquisition, treatment, reclamation, transmission, distribution and sale of water, including all additions, extensions, expansions,

improvements and betterments thereto and equipment relating thereto; provided, however, that to the extent the City is not the sole owner of an asset or property or to the extent that an asset or property is used in part for the above described water purposes, only the City's ownership interest in such asset or property or only the part of the asset or property so used for water purposes shall be considered to be part of the City Water System.

"City Water System Revenues" means all income, rents, rates, fees, charges, and other moneys derived by the City from the ownership or operation of City Water System including, without limiting the generality of the foregoing, (i) all income, rents, rates, fees, charges or other moneys derived from the sale, furnishing, and supplying of water and other services, facilities, and commodities sold, furnished, or supplied through the facilities of City Water System, including standby and availability charges, capital water facilities fees for design, construction and reconstruction expenses, development fees and other fees allocable to the City Water System, (ii) such taxes or assessments as may be imposed for payment of Fixed Project Costs, Variable O&M Costs or Fixed O&M Costs if the levy thereof and payment hereunder is permitted by law and (iii) the earnings on and income derived from amounts set forth in clauses (i) and (ii) above, and shall not include (y) customers' deposits or any other deposits subject to refund until such deposits have become the property of the City and (z) proceeds of any taxes or assessments except taxes or assessments described in clause (ii) above.

"Contract Payments" means the Fixed Project Costs payable by the City hereunder in any City Fiscal Year and provided that the term Contract Payments shall also include the sum of;

(1) the interest accruing during such City Fiscal Year on all outstanding Bonds, assuming that all outstanding serial Bonds are retired as scheduled and that all outstanding term Bonds are redeemed or paid from sinking fund payments as scheduled (except to the extent that such interest is to be paid from the proceeds of the sale of any Bonds);

(2) that portion of the principal amount of all outstanding serial Bonds maturing during such City Fiscal Year;

(3) that portion of the principal amount of all outstanding term Bonds required to be redeemed or paid during such City Fiscal Year; and

(4) that portion of payments under Contracts (other than under this Agreement) constituting principal and interest required to be made at the times provided in the Contracts.

"Contracts" means this Agreement and all contracts of the City authorized and executed by the City under and pursuant to the applicable

laws of the State of California after the date of execution of this Agreement, the payments under which are an operation and maintenance expense of the City Water System determined in accordance with generally accepted accounting principles and which are secured by a pledge of or lien on the City Net Water System Revenues and which are on a parity with the obligations of the City under this Agreement.

"Debt Service" means, as of the date of calculation and with respect to District Bonds, an amount equal to the sum of (i) interest payable during such District Fiscal Year on District Bonds, except to the extent that such interest is to be paid from capitalized interest and (ii) that portion of principal of District Bonds payable during such District Fiscal Year. Such interest and principal installment for such series shall be calculated on the assumption that no District Bonds outstanding at the date of calculation will cease to be outstanding except by reason of the payment of principal on the due date thereof;

provided further that, as to any such District Bonds bearing or comprising interest at other than a fixed rate, the rate of interest used to calculate Debt Service shall be one hundred ten percent (110%) of the greater of (a) the daily average interest rate on such District Bonds during the twelve (12) calendar months preceding the date of calculation (or the portion of the then current District Fiscal Year that such District Bonds have borne interest) or (b) the most recent effective interest rate on such District Bonds prior to the date of calculation; and

provided further that, as to any such District Bonds or portions thereof bearing no interest but which are sold at a discount and which discount accretes with respect to such District Bonds or portions thereof, such accreted discount shall be treated as interest in the calculation of Debt Service; and

provided further that the amount on deposit in a debt service reserve fund on any date of calculation of Debt Service shall be deducted from the amount of principal due at the final maturity of the District Bonds for which such debt service reserve fund was established and in each preceding District Fiscal Year until such amount is exhausted.

"District Bonds" means bonds, notes or other evidences of indebtedness of the District issued to finance or refinance the Project and includes additional District Bonds to complete the Project.

"District Fiscal Year" means the twelve month period commencing on January 1 of each Year and ending on the following December 31 or such other twelve month period which may be designated by the District as its fiscal year.

"Feasibility Certificate" means a certificate of a consulting engineer to the effect that, based on contracts awarded by the District for construction of the Project and the consulting engineer's estimates of the cost of the portions of the Project for which contracts have not been awarded, the District has sufficient District Bond proceeds together with estimated proceeds to be derived from any authorized but unissued District Bonds and moneys on deposit with the District and legally available for the Project to complete the Project.

"Fixed O&M Costs" means operation, maintenance, power, replacement and other costs, including Project Operation and Maintenance Expenses and a reasonable reserve for contingencies, in each case incurred by the District with respect to the Project, irrespective of the amount of water delivered to the Project Participants.

"Fixed Project Costs" means capital costs, including Debt Service and reserves for the payment of Debt Service of the Project, incurred by the District in accordance with Sections 13 and 14 hereof.

"Independent Certified Public Accountant" means any firm of certified public accountants appointed by the City, or the District, as the case may be, and each of whom is independent pursuant to the Statement on Auditing Standards No. 1 of the American Institute of Certified Public Accountants.

"Operating Committee" means the Operating Committee created in accordance with Section 4 of the Water Supply Agreement.

"Project" means certain facilities necessary to deliver treated water to the Project Participants, including the following; (i) a raw water pipeline from the District's existing raw water system to the Treatment Plant, (ii) the Treatment Plant, and (iii) treated water pipelines from the Treatment Plant to the Project Participants. The District and the City acknowledge that the feasibility of the Project is currently being investigated by the District and that the definition of the Project shall be revised prior to commencement of construction as provided in Section 4 hereof without amendment to this Agreement and that the City may elect to cause certain Project facilities to be sized to include the City's Project Allotment and may elect to cause certain Project facilities to not be sized to include the City's Project Allotment.

"Project Allotment" means 12,700 acre-feet of water per year for Phase I as identified in Exhibit A and 24,500 acre-feet of water per year for Phase II unless such Project Allotment for Phase II is reduced in accordance with the Water Supply Agreement.

"Project Milestones" means the events described in Section 4(b) hereof.

"Project Operation and Maintenance Expenses" means the costs spent or incurred by the District for maintaining and operating the Project, calculated in accordance with generally accepted accounting principles and Section 20 hereof, including (among other things) the expenses of management and repair and other expenses necessary to maintain and preserve the Project, in good repair and working order, and including administrative costs of the District, salaries and wages of employees, payments to the Public Employees Retirement System, overhead, insurance, taxes (if any), fees of auditors, accountants, attorneys or engineers and insurance premiums, and including all other reasonable and necessary costs of the District, or charges required to be paid by it to comply with the terms of the District Bonds or of this Agreement, but excluding in all cases (i) depreciation, replacement and obsolescence charges or reserves therefor, (ii) amortization of intangibles or other bookkeeping entries of a similar nature, (iii) costs of capital additions, replacements, betterments, extensions or improvements to the Project, which under generally accepted accounting principles are chargeable to a capital account or to a reserve for depreciation and (iv) charges for the payment of principal and interest on the District Bonds.

"Project Participant" means the City and each entity listed in Part I of Appendix A hereto executing Water Supply Agreements with the District, and each Additional City.

"Reaches" means the segments of the Project from or through which Project Participants receive water which will be determined in accordance with Section 5(a) hereof.

"Request" means a written certificate of the City Manager of the City specifying the portion of the City's Project Allotment which the City requests be delivered by the District to the City in each month of a Year in accordance with Section 6 hereof.

"Treatment Plant" means water treatment facilities to be located at a site to be determined by the District after consultation with the Operating Committee and with capacity sufficient so as to treat the Project Allotments of all Project Participants, including all associated facilities, rights, properties, electrical facilities and improvements appurtenant thereto as provided and necessary therefor.

"Trustee" means the entity or entities designated by the District pursuant to any Bond Resolution to administer any funds or accounts required by such Bond Resolution or otherwise.

"Variable O & M Costs" means the operation, maintenance, power, replacement and other costs, including Project Operation and Maintenance

Expenses and water supply costs at a cost per acre-foot established in accordance with this Agreement (which cost shall be lower for Project Participants located within the District and higher for those Project Participants located outside the District), incurred by the District in connection with the Project in an amount which is dependent upon and varies with the amount of water delivered to the Project Participants.

"Water Supply Agreement" means this Agreement and each Water Supply Development Agreement by and between the District and a Project Participant, as the same may be amended or supplemented from time to time.

"Year" means the twelve-month period from January 1 through December 31, both dates inclusive.

Section 2. Purpose.

The purpose of this Agreement is for the District to sell Project Allotment to the City, to deliver Project Allotment to the City available from the Project, to provide the terms and conditions of such delivery and sale and to provide for the financing of the Project. The parties hereto confirm that this Agreement constitutes a contractual right to purchase treated water and that no water right is being transferred by the District to any Project Participant under this Agreement. Each Project Participant acknowledges that the District is entering into Agreements with cities located within the District and outside the District and upon execution hereof each Project Participant waives any claim such Project Participant may have to the Project Allotment of other Project Participants.

Section 3. Financing, Construction and Operation.

(a) District to Develop Project. Subject to compliance with all necessary federal and state laws, including but not limited to the California Environmental Quality Act ("CEQA"), the terms and conditions of the District's water rights, permits and licenses and all agreements relating thereto, the District will use its best efforts to cause or accomplish the construction, operation and financing of the Project, the obtaining of all necessary authority and rights, consents and approvals, and the performance of all things necessary and convenient therefor.

The parties acknowledge that the construction and operation of the Project constitutes a project subject to environmental review under CEQA. At the time of execution of this Agreement, the specific nature of the Project is still uncertain and only vaguely defined. As contemplated by this Agreement, the specific nature of the Project will be developed after further study in the next feasibility and preliminary design phase of the Project development, and through those phases City retains full discretion whether

to proceed. Accordingly, the District and each City agree that CEQA review should be deferred to a subsequent phase of Project development after the Project is more specifically defined. The District shall conduct and complete appropriate CEQA environmental review no later than commencement of final Project engineering design. Such environmental review may be tiered to enable the Cities to perform related but independent CEQA analysis.

(b) Project Milestones. The District may approve a Project Milestone only in the event the District has received a certified resolution of the Operating Committee and, in the event of the commencement of construction, the following conditions are met: (i) the District has received a report of a consulting engineer setting forth a description of the Project, which may include amendments to the definition of the Project, (ii) has received a Feasibility Certificate with respect to the Project, (iii) the District has approved any and all conditions imposed by any federal, state or local agency on Project approvals, and (iv) evidence that any approvals, permits, licenses or similar actions required by the State Water Resources Control Board necessary to permit the District to deliver treated water to the Project Participants shall have been received or progress satisfactory to the District and the City has been achieved.

(c) Termination of Participation or Reduction of Project Allotment. The City may terminate its participation in the Project or reduce its Project Allotment (i) on or prior to the issuance of any District Bonds, (ii) on or prior to the commencement of final design of the Project or (iii) on or prior to the commencement of construction determined in accordance with Section 3(b) hereof by delivery of a certified resolution of the City Council delivered to the District. In the event of a termination after the issuance of any District Bonds, the City shall have the option of (a) paying to the District all Fixed Project Costs allocable to the City in accordance with Section 14 hereof, in which case this Agreement shall terminate, or (b) to remain obligated to pay Fixed Project Costs allocable to the City in accordance with Section 14 hereof until paid in full, in which case this Agreement shall not terminate until such payment in full. On and after the date such resolution is delivered to the District, the City shall not be obligated to pay any Fixed Project Costs with respect to construction of the Project or any Fixed O&M Costs or Variable O&M Costs relating to delivery of treated water. Within ten days of notice to the District of a termination of participation or a reduction in the Project Allotment by any Project Participant, the District shall provide written notice thereof to the City. The District shall not issue any District Bonds within 30 days of such notice to the City without written approval thereof by the City.

(d) Obligation to Pay Construction Costs. The District shall not incur any Fixed Project Costs with respect to costs of construction prior to commencement of construction in accordance with Section 3(b) hereof and the City shall not be obligated to pay any Fixed Project Costs with respect to

construction prior to such commencement of construction. In the event that the City elects to terminate its participation in the Project prior to commencement of construction in accordance with Section 3(c) hereof, the City shall have no obligation to pay any Fixed Project Costs with respect to costs of construction.

Section 4. Operating Committee.

(a) General. The District shall establish an Operating Committee for the Project. The Operating Committee shall consist of the General Manager of the District and the City Manager of each Project Participant unless the District or a Project Participant designates another staff member or consultant to serve on the Operating Committee and shall be chaired by the General Manager of the District or his or her designee. The Operating Committee shall meet at least quarterly and at other times when a meeting is called by the chair of the Operating Committee or upon written request thereof by two Project Participants. The Operating Committee shall (i) have authority to approve Project Milestones, (ii) develop operating procedures and may recommend to the District that the District and the Project Participants enter into operating agreements to supplement this Agreement from time to time, and (iii) meet to review, evaluate and recommend to the District by majority vote items related to the acquisition, construction, financing, operation and maintenance of the Project and the status of any water rights issues relating to the District's ability to deliver treated water to the City, including but not limited to review of the construction budget, the annual operations and maintenance budget and other financial and operational matters relating to delivery of treated water to the Project Participants.

(b) The District shall give written notice to the Operating Committee 45 days prior to commencing any Project Milestone. The District may commence any Project Milestone on or after the 45th day following such written notice unless a Project Participant shall have disapproved commencement of such Project Milestone in writing on or before such 45th day. Such disapproval shall include the reason or reasons for the disapproval. In the event the District receives a written disapproval from a Project Participant the District shall work to address and resolve such Project Participant's concerns and then request the written authorization to proceed for the Project Milestone. In the event that the District and such Project Participant cannot resolve such disapproval within 60 days, either the District or the Project Participant may terminate this Agreement by giving written notice to the other party subject to such Project Participant's obligation to pay Fixed Project Costs incurred prior to said date. The Project Milestones are:

(i) Commencement of Final Design. Prior to commencing with the final design phase under an engineering services contract, the District shall provide the City with the preliminary design plans and

preliminary cost estimate The District shall not award a contract for final design work until Section 3(a) and (b) have been complied with.

(ii) Commencement of Construction. Prior to commencing construction, the District shall provide the City with the final design work, including construction-ready final plans and specifications and final cost estimate and a final pricing and delivery policy for raw water. The District shall not commence construction until Section 3(a) and (b) have been complied with.

(iii) Financing. Prior to issuing District Bonds to finance the Project, the District shall give written notice of the District's finance plan and proposed not-to-exceed terms which shall be binding upon the District. The District shall not issue any District Bonds until Section 3(a) and (b) have been complied with.

(c) Compliance with Agreements. No action by the Operating Committee pursuant to the Water Supply Agreements or otherwise shall in any way affect the ability of the District to act with respect to any Bond Resolution, any agreement entered into by the District for the construction or operation of the Project or any applicable licenses, permits or regulatory provisions and the District shall be responsible for executing contracts relating to construction and operation of the Project and fulfilling the obligations of the District thereunder.

Section 5. Construction of the Project.

(a) Determination of Capacities of Reaches and Treatment Plant. Unless otherwise determined by the District after consultation with the Operating Committee, the capacity of the Reaches of the Project will be determined by the Consulting Engineer based upon the Contract Project Allotment and Treatment Plant capacity, at one or more turnouts for the City as agreed to by the District and the City. Unless otherwise agreed by the District and the City in writing, and subject to Section 4 hereof, the Treatment Plant will have sufficient capacity to serve the City its full Project Allotment.

Subject to the rights of the City under subsection (b) of this Section and the other provisions of this Agreement, the District shall provide in each appropriate Reach of the Project and in the Treatment Plant capacity to serve the City with the daily amount requested by the City as agreed to by the City and the District in writing prior to the commencement of the construction of the Project.

(b) Criteria for Determining Capacity of Project. The District shall design and construct the Project with the Reaches and Treatment Plant capacity determined as set forth in subsection (a) of this Section and necessary

to enable delivery of daily delivery of water in each Year to the City and to other Project Participants and at the locations, times, maximum rates and minimum pressure agreed to by the District and the City.

(c) Inspection of Project Plans and Specifications; Preparation of Bid Materials; Award of Contracts. Unless otherwise determined by the District, the District shall prepare and put out to public bid a single set of bid materials (which may include multiple schedules) relating to construction and acquisition of each Reach and of the Treatment Plant. Prior to the award of any such contract or contracts, the District shall determine whether the total amount of such contract or contracts, together with contracts previously awarded with respect to the Project, together with the estimated costs for those portions of the Project for which contracts have not been awarded as determined by a consulting engineer, can be funded from the proceeds derived from District Bonds, estimated proceeds to be derived from any authorized but unissued District Bonds and other amounts then on deposit with the District and legally available therefor, including estimated investment earnings thereon. The District shall not award any contracts which would cause the District to be obligated for an amount which is in excess of the proceeds to be derived from District Bonds and other amounts on deposit with the District and legally available for the Project.

Section 6. Delivery of Water.

(a) Request by City. Pursuant to the terms of this Agreement, the District shall provide to the City, and the City shall take, or cause to be taken, in each Year an amount of water equal to the amount set forth in a Request of the City, but in no event shall the District be obligated to deliver an amount of water in excess of the City's Project Allotment. Subject to the Project Participant's payment obligations hereunder, the District agrees to use its best efforts to deliver water pursuant to this Agreement meeting all applicable local, state and federal water quality standards as such standards may be in effect from time to time.

(b) Maximum Project Allotment. The District is currently entitled to appropriate water from the Stanislaus River and the District shall make available to the City its Project Allotment from such appropriated water, subject to the availability of water and compliance with all local, state and federal laws, rules and regulations.

(c) Points of Delivery. The District will deliver or cause to be delivered to or for the account of the City the amount of water specified in each request at a point along the Project to be agreed upon by the District and the City. The District will remain available to make or cause to be made all necessary and possible arrangements for transmission and delivery of such water in accordance with this Agreement

(d) Procedure for Determining Water Delivery Schedule. The amounts, times and rates of delivery of water to the City during any Year shall be in accordance with a water delivery schedule for that Year, such schedule to be determined in the following manner:

(1) On or before October 15 of each year, the City shall submit in writing to the District a preliminary water delivery schedule indicating the amounts of water desired by the City during each month of the succeeding three Years or such lesser or greater period as the District shall determine.

(2) Upon receipt of a preliminary schedule the District shall review it and, after consultation with the City, shall make such modifications in it as are necessary to insure that the amounts, times, and rates of delivery to the City will be consistent with the District's overall delivery ability, considering the then current delivery schedules of all Project Participants and the District.

(3) A water delivery schedule may be amended by the District upon the City's written request. Proposed amendments shall be submitted by the City within a reasonable time before the desired change is to become effective, and shall be subject to review and modification by the District in like manner as the schedule itself.

(e) Limit on Peak Deliveries of Water. In no event shall the District contract to deliver to the City from the Project in any Year nor to deliver to the City from the Project in any one day a total amount of Project Allotment greater than that agreed to by the District and each Project Participant prior to the issuance of any District Bonds.

(f) Limit on Rate of Delivery to City. In no event shall the District be obligated to deliver water to the City through any delivery structure at a total combined instantaneous rate of flow exceeding the cubic feet per second and minimum pressure which will be determined upon the initial operation date, except as this rate of flow or pressure may be revised by mutual written agreement of the District and the City.

(g) Delivery of Water Not Delivered in Accordance with Schedule. If in any Year the District, as a result of causes beyond its control, is unable to deliver any portion of the City's Project Allotment for such Year as provided for in the delivery schedule established for that Year, the City may elect to receive the amount of water which otherwise would have been delivered to it during such period at other times during the Year, to the extent that such water is then available and such election is consistent with the District's

overall delivery ability, considering the then current delivery schedules of all Project Participants and the District.

Section 7. Curtailment of Delivery for Maintenance Purposes.

(a) District May Curtail Deliveries. The District may temporarily discontinue or reduce the delivery of water to the City hereunder for the purposes of necessary investigation, inspection, maintenance, repair, or replacement of any of the Project facilities necessary for the delivery of water to the City. The District shall notify the City as far in advance as possible of any such discontinuance or reduction, except in cases of emergency, in which case notice need not be given.

(b) City May Receive Later Delivery of Water Not Delivered. In the event of any discontinuance or reduction of delivery of water pursuant to subsection (a) of this Section, the City may elect to receive the amount of water which otherwise would have been delivered to it during such period under the water delivery schedule for that Year at other times during the Year to the extent that such water is then available and such election is consistent with the District's overall delivery ability, considering the then current delivery schedules of all Project Participants and the District.

Section 8. Shortage in Water Supply.

(a) Shortages. In any Year in which there may occur a shortage or interruption due to drought or other cause in the supply of water available for delivery to the Project Participants, including but not limited to shortages or interruptions caused by changes in laws, regulations or rulings relating to or affecting the District's water rights, permits and licenses, with the result that such supply is less than the total of the annual Project Allotments of all Project Participants for that Year, the District shall reduce the delivery of water to the City pro rata with deliveries to all Project Participants based upon the Project Allotment of the City and each Project Participant without preference or priority among the City and the Project Participants.

(b) Allocation of Shortages. The District shall allocate any shortage or interruption in the supply of water available for delivery by District hereunder between agricultural users and the Project Participants such that any percentage reduction in the delivery of water to the City is approximately equal to the percentage reduction in the delivery of water to the District's agricultural customers.

(c) Future Annexations of Land to District. The District shall not annex any land to the District other than land the acquisition of which has been approved by the Board of Directors prior to the effective date of this Agreement unless said annexation shall include an express condition that the

lands so annexed shall have an entitlement to receive water from District that is subordinate in priority to the right of City to receive water from District pursuant to this Agreement. In any Year in which there may occur a shortage or interruption in the supply of water available hereunder with the result that such supply is less than the total of the annual Project Allotment of all Project Allotments of all Project Participants for the Year, the District shall reduce or suspend the delivery of water by District to lands annexed to District following the effective date of this Agreement.

(d) Future Transfers of Water by District. In the event that, following the effective date of this Agreement, District enters into any agreement for the sale or transfer of water to any retail or wholesale water provider for consumptive use outside District boundaries, the District shall ensure that such transfer agreement includes an express condition that the transferee shall have an entitlement to receive water from the District that is subordinate in priority to the right to City hereunder. In any Year in which there may occur a shortage or interruption in the supply of water with the result that said supply available to the Project Participants is less than the annual Project Allotment of all Project Participants for the year, District will reduce or suspend the delivery of water by the District to such transferee. The District represents and warrants that, as of the effective date of this Agreement, it has not entered into any agreement, other than this Agreement, for the sale or transfer of water for use outside the District's boundaries which is not subordinate in priority to the right or the City and the Project Participants hereunder.

(e) No Liability for Shortages. Neither the District nor any of its officers, agents, or employees shall be liable for any damage, direct or indirect, arising from the shortages in the amount of water to be made available for delivery to the City under this Agreement caused by drought or any other cause beyond its control; provided however that nothing in this clause (e) shall excuse the District from compliance with clauses (a), (b), (c) and (d) hereof.

Section 8.A. Agreements to Meet Statutory, Regulatory and Permitting Requirements

(a) The District and the City hereby acknowledge and agree that the District may from time to time enter into or be obligated to enter into agreements, including water transfer agreements, as part of one of the following statutory, regulatory or permitting purposes:

(1) Settle petitions, proceedings, or hearings before the SWRCB, not instituted by the District, at which the District's consumptive water diversion rights are at issue;

(2) Mitigate the environmental effects of, obtain or maintain necessary governmental approvals for, or resolve challenges to, the Project in accordance with the California Environmental Quality Act or the National Environmental Protection Act; or

(3) Satisfy requirements arising out of Federal Energy Regulatory Commission relicensing of hydro-generation plants owned in whole or in part by the District or by a joint powers agency of which the District is a member, or the licensing of such a plant that is, as of the time of execution of this Agreement, being planned by the District.

(b) (1) To the extent that the District enters into an agreement or agreements for the purposes set forth in sub-section (a) above that commit the District to forego the use of a portion of its water entitlements or to transfer water to other entities, the City and the District agree that the District shall be free to negotiate the terms and conditions of the agreement or agreements without first obtaining the City's concurrence so long as the quantities of water involved will not reduce City's supply of water from the Project in excess of ten percent (10%), excluding reductions caused by any other reason.

(2) Prior to the District entering into any agreement or agreements for the purposes set forth in sub-section (a) above, which commit the District to forego the use of a portion of its water entitlements or to transfer water to other entities and the quantity of water involved cumulatively exceeds ten percent (10%) of City's Project Allotment per year, the District shall obtain the City's approval of the terms and conditions of the agreement or agreements. City agrees that its approval shall not be unreasonably withheld. City will have a period of thirty (30) days from the time District provides written notice of a proposed transfer, to review the proposed transfer. If City reasonably objects to the proposed transfer, it shall provide written notice of its objections to District within the thirty (30) day review period. If City does not object in this manner within the thirty (30) day period, it will be deemed to have given its consent to the proposed transfer.

(3) The City and District agree to proceed as expeditiously as possible to develop a program or programs geared toward insuring water reliability for agricultural and municipal customers within the District and to off-set any losses of water entitlements associated with the application of the provisions of sub-sections (b)(1) and (2) above.

Section 9. Measurement of Water Delivered.

The District shall measure, or cause to be measured, all water delivered to the City and shall keep and maintain accurate and complete records thereof. For this purpose and in accordance with Section 6 hereof, the District

shall install, operate, and maintain, or cause to be installed, operated and maintained, at all delivery structures for delivery of water to the City such measuring devices and equipment as are satisfactory and acceptable to both parties. Said devices and equipment shall be examined, tested, and serviced by the District regularly to insure their accuracy. At any time or times, the City may inspect such measuring devices and equipment, and the measurements and records taken therefrom.

Section 10. Responsibility for Delivery and Distribution of Water.

(a) Neither the District nor any of its officers, agents, or employees shall be liable for the control, carriage, handling, use, disposal, or distribution of water supplied to the City after such water has passed the delivery structures established in accordance with Sections 5(a) and 6(c) hereof; nor for claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal or distribution of such water beyond said delivery structures and including attorneys fees and other costs of defense in correction therewith; the City shall indemnify and hold harmless the District and its officers, agents, and employees from any such damages or claims of damages.

(b) Neither the City nor any of its officers, agents or employees shall be liable for the control, carriage, handling, use, disposal, or distribution of water to be supplied to the City until such water has reached the Project facilities, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal or distribution of such water before it has reached said delivery structures and including attorneys fees and other costs of defense in connection therewith; the District shall indemnify and hold harmless the City and its officers, agents, and employees from any such damages or claims of damages.

Section 11. Sale or Other Disposition of Project Allotment By City.

(a) Sale or Other Disposition of Project Allotment Without Approval. The City may sell or otherwise dispose of all or any portion of its Project Allotment within its boundaries and within its sphere of influence as determined by the San Joaquin County Local Agency Formation Committee, or any successor entity thereto, or to another Project Participant without approval by the District.

(b) Sale or Other Disposition of Project Allotment Subject to Approval. The City may sell or dispose of all or any portion of its Project Allotment to retain water providers within San Joaquin County, with the approval of the District, provided however that such sale shall be subject to a

right of first refusal of all Project Participants and the District on a pro rata basis to take delivery of such Project Allotment on the same terms and conditions.

(c) No Other Sales or Other Disposition. The City may not sell or otherwise dispose of all or any portion of its Project Allotment or its rights or obligations with respect thereto except as set forth in subsections (a) and (b) of this Section or Section 17 hereof.

(d) No Reduction in City Obligation. In no event shall any sale or other disposition of all or any portion of the City's Project Allotment relieve the City of any of its obligations hereunder.

(e) Notice of Sale or Other Disposition. The City shall give ninety (90) days' advance written notice to the District of any proposed sale or other disposition pursuant to this Section.

Section 12. Rates and Charges.

(a) Establishment of Rates and Charges. The District shall fix charges to the City under this Agreement to produce revenues to the District from the Project equal to the amounts anticipated to be needed by the District to meet the following costs of the District to deliver the City's Project Allotment (including Treatment Plant capacity) through the Project: (i) Fixed Project Costs, (ii) Fixed O&M Costs, and (iii) Variable O&M Costs. The District shall fix charges to the City to produce revenues to the District from the Project to meet the costs described in (i) and (ii) above as set forth in Section 14 hereof and to meet the cost described in (iii) above based on Requests of the City for water and the amount of water received by the District.

(b) Insufficiency of Funds. Because costs determined in accordance with this Agreement are based on estimates if such funds are not sufficient for such purposes, the City shall pay to the District an amount equal to such City's share of the total cost to pay Fixed Project Costs in the proportions established in accordance with Section 14 hereof. The obligation of this Section is incurred by the City for the benefit of future owners of District Bonds, and shall commence and continue to exist and be honored by the City whether or not water is furnished to it from the Project at all times or at all (which provision may be characterized as an obligation to pay all costs on a take-or-pay basis whether or not water is delivered or provided and whether or not the Project is completed or is operable).

(c) Source of Payments. The obligation of the City to make payments under this Agreement is not a general obligation of the City and the City shall make payments under this Agreement solely from City Water System Revenues as a City Operation and Maintenance Expense. The City

shall make such payments prior to any payment therefrom, other than City Prior Debt and on a parity with other City Operation and Maintenance Expenses. Nothing herein shall be construed as prohibiting (i) the City from using any other funds and revenues for purposes of satisfying any provisions of this Agreement or (ii) from incurring obligations payable on a parity with the obligations under this Agreement so long as the City complies with subsection (a) of Section 19(a) hereof.

(d) Obligation Is Not Subject To Reduction. The City shall make payments under this Agreement whether or not the Project is completed, operable, operated or retired and notwithstanding the suspension, interruption, interference, reduction or curtailment of operation of the Project or of water contracted for in whole or in part for any reason whatsoever. Such payments are not subject to any reduction, whether offset or otherwise, and are not conditioned upon performance by the District or any other Project Participant under this Agreement or any other agreement.

(e) Several Obligation. The City shall not be liable under this Agreement for the obligations of any other Project Participant. The City shall be solely responsible and liable for performance of its obligations under this Agreement. The obligation of the City to make payments under this Agreement is a several obligation and not a joint obligation with those of the other Project Participants.

Section 13. Annual Budget and Billing Statement.

The District will prepare a preliminary annual budget for the first year of Project operation at least six months prior to the projected date of Operation. Thereafter, the District will prepare a preliminary annual budget for each applicable Year for credits, costs and expenses relating to the Project, including Fixed Project Costs, Variable O&M Costs and Fixed O&M Costs on or before September 1 of each Year. The District shall submit a draft of such budget to the Operating Committee on or prior to each September 15 for review and comment by the Operating Committee. District staff shall use its best efforts to resolve any questions or concerns caused by a Project Participant during such review. The Board of Directors of the District will adopt a final annual budget for the applicable Year on or before December 1 of each Year after at least one public hearing on the budget and shall allow any Project Participant which may object to any provision of the budget to present such objection during such hearing. The District shall supply a copy of said final annual budget to the City on or before December 15 of each Year. Any amendment to the budget shall be submitted to the Operating Committee for review and comment at least 30 days prior to action thereon by the District Board of Directors. Any such amendment shall be subject to the same hearing requirements applicable to the budget set forth above.

Section 14. Allocation of Costs and Expenses.

For the purpose of allocations of costs and expenses pursuant to this Agreement, the Project shall be allocated (i) to such Reaches as are determined by the District to be necessary for such allocations of costs and (ii) to the Treatment Plant. Except as permitted herein, the District shall not allocate costs and expenses in any way which discriminates among Project Participants which take delivery through the same Reaches except that the cost of raw water included in Variable O&M Costs may be varied between Project Participants within the boundaries of the District and those outside the boundaries of the District. After the execution of this Agreement and prior to commencement of construction of the Project, the District and the Project Participants shall develop a cost allocation method for District general fund and other general overhead and allocable raw water system costs to be allocated to the Project.

(a) Method of Computation of Fixed Project Costs. The Fixed Project Costs shall be sufficient to return to the District those capital costs of the District necessary to treat and deliver water to the City. The total amount of Fixed Project Costs of the Treatment Plant and each Reach of the Project utilized by the City shall be allocated to the City based upon the ratio of the Project Allotment including Treatment Plant capacity of the City to the Project Allotments including Treatment Plant capacity of all Project Participants utilizing the Treatment Plant and such Reach. The City and the District acknowledge that if the City has not elected to have all facilities which are a part of the Project sized to enable the City to take treated water, the City shall not be liable for any Fixed Project Costs for such unconstructed facilities.

(b) Method of Computation of Fixed O&M Costs. The Fixed O&M Costs shall return to the District those costs of the Project necessary to deliver water to the Project Participants which constitute Fixed O&M Costs. The total amount of Fixed O&M Costs of the Treatment Plant and each Reach of the Project for each Year shall be allocated among all Project Participants entitled to delivery of water from or through the Treatment Plant and each Reach based upon the ratio of the Project Allotment including Treatment Plant capacity of each Project Participant to which water is treated at the Treatment Plant or delivered through the Reach to the total Project Allotment including Treatment Plant capacity of all Project Participants for which water is treated at the Treatment Plant or delivered through the Reach, as the case may be. The City and the District acknowledge that if the City has not elected to have all facilities which are a part of the Project sized to enable the City to take treated water, the City shall not be liable for any Fixed O&M Costs for such unconstructed facilities.

(c) Method of Computation of Variable O&M Costs. The Variable O&M Costs shall return to the District those costs of the Project which constitute Variable O&M Costs. There shall be computed for the Treatment Plant and for each Reach of the Project a charge per acre-foot of water which will return to the District the total projected Variable O&M Costs of the Treatment Plant and each Reach for each Year, which computation will reflect the differing cost of raw water to Project Participants within the District and those outside the District. The amount of the Variable O&M costs for the Treatment Plant and for each Reach of the Project shall be the sum of the products obtained when the charges per acre-foot of water determined above for the Treatment Plant and for each Reach necessary to deliver water to the City are multiplied by the number of acre-feet of water treated by the Treatment Plant and water delivered to the City from or through that Reach during the Year, as the case may be. The City and the District acknowledge that if the City has not elected to have all facilities which are a part of the Project sized to enable the City to take treated water, the City shall not be liable for any Variable O&M Costs.

(d) Adjustments of Allocation. On or after the date the Project is in operation, the District shall update the values and amounts of Fixed Project Costs, Fixed O&M Costs and Variable O&M Costs on a quarterly basis, including year-to-date comparisons to the approved Project Budget in order that the costs and expenses to the City may accurately reflect increases or decreases form Year to Year in projected costs, principal and interest payments on District Bonds, annual Project Allotments, estimated deliveries, and all other factors which are determinative of such charges. In addition, each such determination shall include an adjustment to be paid by the City for succeeding Years which shall account for the differences, if any, between projections of costs used by the District in determining the amounts of said costs and expenses for all preceding Years and actual costs incurred by the District during such Years.

Section 15. Time and Method of Payment.

(a) Fixed Project Costs. Payments by the City of the Fixed Project Costs shall commence on December 1, 1995. Thereafter, the City shall pay to the District, on or before January 1 of each Year, 100% of the charge to the City for the next succeeding District Fiscal Year of the Fixed Project Costs.

(b) Fixed O&M Costs. Payments by the City of the Fixed O&M Costs shall commence on ~~December 1, 1995~~ January 1 preceding the estimated Year of the initial operation date. Thereafter, the City shall pay to the District, on or

before January 1 of each Year, the sum of the charges to the City for the Year for the Fixed O&M Costs.

(c) Variable O&M Costs. Payments by the City of the Variable O&M Costs shall commence on the January 1, April 1, July 1 or October 1 which is closest to, but is at least three months immediately preceding, the date on which initial water delivery is estimated to be made to the City. Thereafter, the City shall pay to the District the charges to the City for the Variable O&M Costs for the three-month period commencing on the next succeeding January 1, April 1, July 1 or October 1 so that the District receives quarterly payments of Variable O&M Costs three months in advance of the time when such Variable O&M Costs will begin to be incurred by the District.

(d) Statement of Charges. The District shall furnish the City with a written statement of the estimated Fixed Project Costs and Fixed O&M Costs of the City for the next succeeding District Fiscal Year, taking into account applicable credits received by the District and estimated investment earnings on moneys related to the Project held by the District. The District shall, on or before March 15, June 15, September 15 and December 15 of each Year, commencing with the District Fiscal Year in which the initial operation date is estimated to occur furnish the City with a statement of the charges to the City for the Variable O&M Costs for the three-month period commencing on the July 1, October 1, January 1 or April 1, commencing three and one-half months subsequent to such date.

(e) Contest of Accuracy of Charges. If a City questions or disputes the correctness of any billing statement by the District, it shall pay the District the amount claimed when due and shall within thirty (30) days of receipt of such billing statement request an explanation from the District. If the bill is determined to be incorrect, the District will adjust the bill to such City in the next District Fiscal Year. If the District and the City fail to agree on the correctness of a bill within thirty (30) days after the City has requested an explanation, the parties shall promptly submit the dispute to arbitration under Section 1280 et seq. of the Code of Civil Procedure.

Section 16. Obligation in the Event of Default.

(a) Written Demand Upon Failure to Make Payment. Upon failure of the City to make any payment in full when due under this Agreement or to perform any other obligation hereunder, the District shall make written demand upon the City, and if said failure is not remedied within thirty (30) days from the date of such demand or, if District Bonds are outstanding, for such additional time as is reasonably required, in the sole discretion of the Trustee, to correct the same, such failure shall constitute a default at the expiration of such period. Notice of such demand shall be provided to each other Project Participant by the District. Upon failure of the District to

perform any obligation of the District hereunder, the City shall make written demand upon the District, and if said failure is not remedied within thirty (30) days from the date of such demand or, if District Bonds are outstanding, for such additional time as is reasonably required, in the sole discretion of the Trustee, to correct the same, such failure shall constitute a default at the expiration of such period. Notice of such demand shall be provided to each Project Participant by the City making such written demand.

In addition to any default resulting from breach by the District or the City of any agreement, condition, covenant or term hereof, if the District or the City shall file any petition or institute any proceedings under any act or acts, state or federal, dealing with or relating to the subject of bankruptcy or insolvency or under any amendment of such act or acts, either as a bankrupt or as an insolvent or as a debtor or in any similar capacity, wherein or whereby the District or the City asks or seeks or prays to be adjudicated a bankrupt, or is to be discharged from any or all of its debts or obligations, or offers to its creditors to effect a composition or extension of time to pay its debts, or asks, seeks or prays for a reorganization or to effect a plan of reorganization or for a readjustment of its debts or for any other similar relief, or if the District or the City shall make a general or any assignment for the benefit of its creditors, then in each and every such case the District or the City, as the case may be, shall be deemed to be in default hereunder.

(b) Transfer for Defaulting City's Account. Upon the failure of the City to make any payment which failure constitutes a default under this Agreement, the District shall use its best efforts to transfer for the City's account all or a portion of the City's Project Allotment for all or a portion of the remainder of the term of this Agreement. Notwithstanding that all or any portion of the City's Project Allotment is so transferred, the City shall remain liable to the District to pay the full amount of its share of costs hereunder as if such sale or transfer has not been made, except that such liability shall be discharged to the extent that the District shall receive payment from the transferee thereof.

(c) Termination of Entitlement to Project Allotment; Continuing Obligations. Upon the failure of the City to make any payment which failure constitutes a default under this Agreement and causes the District to be in default under any Bond Resolution, the District may (in addition to the remedy provided by subsection (b) of this Section) give notice of termination of the provisions of this Agreement insofar as the same entitle the City to its Project Allotment which notice shall be effective within 30 days thereof unless such termination shall be enjoined, stayed or otherwise delayed by judicial action. Irrespective of such termination, the City shall remain liable to the District to pay the full amount of costs hereunder.

(d) Enforcement of Remedies. In addition to the remedies set forth in this Section, upon the occurrence of an event of default as defined herein, the District or the City, as the case may be, shall be entitled to proceed to protect and enforce the rights vested in such party by this Agreement by such appropriate judicial proceeding as such party shall deem most effectual, either by suit in equity or by action at law, whether for the specific performance of any covenant or agreement contained hereon or to enforce any other legal or equitable right vested in such party by this Agreement or by law. The provisions of this Agreement and the duties of each party hereof, their respective boards, officers or employees shall be enforceable by the other party hereto by mandamus or other appropriate suit, action or proceeding in any court of competent jurisdiction, with the losing party paying all costs and attorney fees. Without limiting the generality of the foregoing, the District or the City, as the case may be, shall have the right to bring the following actions:

(1) Accounting. By action or suit in equity to require an accounting by the District or the City, as the case may be, including its officers, employees and assigns.

(2) Injunction. By action or suit in equity to enjoin any acts or things which may be unlawful or in violation of the rights of the District or the City, as the case may be.

(3) Mandamus. By mandamus or other suit, action or proceeding at law or in equity to enforce its rights against the other party hereto (and its board, officers and employees) and to compel the other party hereto to perform and carry out its duties and obligations under the law and its covenants and agreements as provided herein.

(e) Waiver. The waiver by the District or the Trustee of any breach by the City of any agreement, condition, covenant or term hereof shall not operate as a waiver of any subsequent breach of the same or any other agreement, condition, covenant or term hereof.

(f) Trustee is Third Party Beneficiary. Any Trustee for District Bonds shall have the right, as a third party beneficiary, to initiate and maintain suit to enforce this Agreement to the extent provided in any Bond Resolution.

Section 17. Transfers, Sales and Assignments of Project Allotment or Water System.

(a) Transfer of Project Allotment. The City has rights to make transfers, sales, assignments and exchanges (collectively "transfers") of its Project Allotment or its rights or obligations with respect thereto only as expressly provided in Section 11 hereof or in clause (b) of this Section.

(b) Transfer of Ownership. Except as may be expressly required by law, the City shall not transfer ownership of all or any substantial portion of its Water System to another entity except in an annexation, consolidation, merger or reorganization with another governmental entity or a change in governmental form in accordance with the Cortese-Knox Local Government Reorganization Act of 1985, as amended (commencing with California Government Code Section 56000, et seq.) or any similar successor statute, in which the surviving entity or entities assume in the aggregate all obligations of the City under this Agreement and in which the rights under this Agreement may be enforced as provided in Government Code Section 56121.

(1) The City shall not consent to such annexation, consolidation, merger or reorganization or change in governmental form unless the City shall have delivered to the District a certificate of an independent financial advisor certifying that, based upon the rates and charges of the surviving entity in effect on the date of such annexation, consolidation, merger or reorganization or change in governmental form, shall be in compliance with Section 19(a) hereof and the surviving entity agrees in writing on or prior to such date to assume all obligations of the City hereunder.

(2) The City shall give ninety (90) days advance written notice to the District of any proposed transfer pursuant to this subsection. Appendix A to this Agreement shall be amended as appropriate to reflect any transaction pursuant to this subsection.

Section 18. Additional Project Participants.

The City acknowledges that the District may enter into Water Supply Agreements with Additional Project Participants subsequent to the execution of this Agreement to the extent the District determines that sufficient capacity exists to supply such Additional Project Participant's Project Allotment consistent with the District's overall delivery abilities. Prior to the execution of a Water Supply Agreement with an Additional Project Participant, the District shall promptly provide to the City a revised Exhibit A to this Agreement setting forth the revised list of Project Allotments of the Project Participants. No Water Supply Agreement with an Additional Project Participant shall be executed with an Additional Project Participant outside the boundaries of the District unless the District shall first offer such Project Allotment to each Project Participant on the same terms and conditions as offered to such Additional Project Participant. The Water Supply Agreement with such Additional Project Participant shall establish a price to be paid by the Additional Project Participant to the City an amount which reasonably compensates the City for Fixed Project Costs and Fixed O&M Costs previously paid by the City which are fairly allocable to the Additional Project Participant,

including but not limited to costs incurred by the City in connection with the Project prior to execution of this Agreement, and, if such Additional Project Participant is located outside of the boundaries of the District, is not less than the highest price paid by any Project Participant.

Section 19. Covenants of the City.

(a) Amount of Rates and Charges. The City will fix, prescribe and collect rates and charges for the City Water System which will be at least sufficient to yield during each City Fiscal Year City Net Water System Revenues (excluding Contract Payments) equal to one hundred twenty-five percent (125%) of the Contract payments for such City Fiscal Year. The City may make adjustments from time to time in such rates and charges and may make such classification thereof as it deems necessary, but shall not reduce the rates and charges then in effect unless the City Net Water System Revenues from such reduced rates and charges will at all times be sufficient to meet the requirements of this section.

(b) Against Sale or Other Disposition of Property. The City will not sell, lease or otherwise dispose of the City Water System or any part thereof, except as provided in Section 17 hereof, unless the City determines that such sale, lease or other disposition will not materially adversely affect the City's ability to comply with subsection (a) of this Section. The City will not enter into any agreement or lease which impairs the operation of the City Water System or any part thereof necessary to secure adequate City Net Water System Revenues for the payment of the obligations imposed under this Agreement or which would otherwise impair the rights of the District with respect to the City Water System Revenues or the operation of the City Water System.

(c) Against Competitive Facilities. To the extent permitted by existing law and within the scope of its powers but only to the extent necessary to protect the rights of the owners of District Bonds, the City will not acquire, construct, maintain or operate and will use its best efforts not to permit any other public or private agency, corporation, district or political subdivision or any person whomsoever to acquire, construct, maintain or operate within the boundaries of the City any water system competitive with the City Water System which might have the effect of materially adversely affecting the City's ability to pay Fixed Project Costs, Fixed O&M Costs and Variable O&M Costs.

(d) Maintenance and Operation of the City Water System; Budgets. The City will maintain and preserve the City Water System in good repair and working order at all times and will operate the City Water System in an efficient and economical manner and will pay all City Operation and Maintenance Expenses as they become due and payable. On or before the first

day of each City Fiscal Year thereafter, the City will adopt and file with the District a budget approved by the legislative body of the City, including therein in the estimated City Operation and Maintenance Expenses for such City Fiscal Year the estimated Fixed Project Costs, Fixed O&M Costs and Variable O&M Costs payable. Any budget may be amended at any time during any City Fiscal Year and such amended budget shall be filed by the City with the District. The District may enforce this clause (d) only to the extent necessary to protect the rights of the owners of District Bonds.

(e) Insurance. The City shall procure and maintain or cause to be procured and maintained insurance on the City Water System with responsible insurers so long as such insurance is available from reputable insurance companies, or, alternatively, shall establish a program of self-insurance, or participate in a joint powers agency providing insurance or other pooled insurance program, in such amounts and against such risks (including accident to or destruction of the City Water System) as are usually covered in connection with water systems similar to the City Water System.

(f) Accounting Records and Financial Statements.

(i) The City will keep appropriate accounting records in which complete and correct entries shall be made of all transactions relating to the City Water System, which records shall be available for inspection by the District and the Trustee at reasonable hours and under reasonable conditions.

(ii) The City will prepare and file with the District annually within one hundred eighty (180) days after the close of each City Fiscal Year (commencing with the City Fiscal Year ending June 30, 1995) financial statements of the City for the preceding City Fiscal Year prepared in accordance with generally accepted accounting principles, together with a report of an Independent Certified Public Accountant thereon. The City will promptly furnish a copy of such report to the District and to the Trustee.

(g) Protection of Security and Rights of the District. The City will preserve and protect the rights of the District and the Trustee to the obligations of the City hereunder and will warrant and defend such rights against all claims and demands of all persons.

(h) Payment of Taxes and Compliance with Governmental Regulations. The City will pay and discharge all taxes, assessments and other governmental charges which may hereafter be lawfully imposed upon the City Water System or any part thereof or upon the City Water System Revenues when the same shall become due. The City will duly observe and conform with all valid regulations and requirements of any governmental

authority relative to the operation of the City Water System or any part thereof, but the City shall not be required to comply with any regulations or requirements so long as the validity or application thereof shall be contested in good faith.

(i) Further Assurances. The City will adopt, deliver, execute and make any and all further assurances, instruments and resolutions as may be reasonably necessary or proper to effect the financing and refinancing of the Project, to assure the District of the City's intention to perform hereunder and for the better assuring and confirming unto the District and the Trustee of the rights and benefits provided to them herein.

(j) Maintenance of Tax-Exempt Status of District Bonds. Notwithstanding any other provision of this Agreement, the City shall not take any action or omit to take any action, directly or indirectly, in any manner, which would result in any of the District Bonds being treated as an obligation not described in Section 103(a) of the Internal Revenue Code of 1986, as amended, by reason of classification of such District Bond as a "private activity bond" within the meaning of Section 141 of said Code or for any other reason.

Section 20. Covenants of the District.

(a) Insurance. The District shall procure and maintain or cause to be procured and maintained insurance on the Project with responsible insurers so long as such insurance is available from reputable insurance companies, or, alternatively, shall establish a program of self-insurance, or participate in a joint powers agency providing insurance or other pooled insurance program, covering such risks, in such amounts and with such deductibles as shall be determined by the District. The District shall indemnify and hold harmless the City from any liability for personal injury or property damage resulting from any accident or occurrence arising out of or in any way related to the construction or operation of the Project.

(b) Accounting Records and Financial Statements.

(i) The District will keep appropriate accounting records in which complete and correct entries shall be made of all transactions relating to the Project, which records shall be available for inspection, copying and audit by the City and its accountants, attorneys and agents at reasonable hours and under reasonable conditions.

(ii) The District will prepare annually within one hundred eighty (180) days after the close of each District Fiscal Year (commencing with the District Fiscal Year ending December 31, 1995) financial statements of the District for the preceding District Fiscal Year prepared

in accordance with generally accepted accounting principles, together with a report of an Independent Certified Public Accountant thereof. The District will promptly furnish a copy of such report to the City and to the Trustee.

(c) Compliance with Law. The District shall comply with all local, state and federal laws applicable to the Project.

(d) Against Sale or Other Disposition of Project. The District will not sell, lease or otherwise dispose of the Project or any part thereof unless the Board of Directors of the District determines that such sale, lease or other disposition will not materially adversely affect the District's ability to comply with its obligations hereunder and such determination is approved by the Operating Committee.

(e) Maintenance and Operation of the Project. Subject to the payment obligations of the Project Participants hereunder, the District will maintain and preserve the Project in good repair and working order at all times and will operate the Project in an efficient and economical manner.

Section 21. Term.

(a) No provision of this Agreement shall take effect until it and Water Supply Agreements with all Project Participants (other than Additional Project Participants) have been duly executed and delivered to the District together with an opinion for each Project Participant of an attorney or firm of attorneys in substantially the form attached hereto as Exhibit B and an opinion for the District of Brown & Wood, Special Counsel to the District, in substantially the form attached hereto as Exhibit C.

(b) Notwithstanding the delay in effective date of this Agreement until all Project Participants have complied with subsection (a) of this Section, it is agreed by the City that in consideration for the District's signature hereto, and for its commitment to use its best efforts to obtain the commitment of all Project Participants, the City upon its execution and delivery of this Agreement to the District along with the required opinion and any required evidence of compliance as required by subsection (a) of this Section shall be immediately bound not to withdraw its respective offer herein made to enter into this Agreement as executed and/or supplemented or to decrease or terminate its Project Allotment before December 1, 1995.

(c) Unless terminated in accordance with Section 3(c), the term of this Agreement shall continue until the later of December 31, 2029 and the final maturity of District Bonds. The parties hereto agree to negotiate in good faith to amend this Agreement on or prior to such date to extend the term hereof and to include terms and conditions as are mutually agreeable to the

parties, provided that the price to be paid with respect to the Project Allotment in such amendment shall reflect the payment of capital costs to such date. In the event that the District and all Project Participants cannot agree to amend the Agreement, the District agrees to cause ownership of the Project to be transferred to a joint powers agency or similar entity created by the Project Participants and to enter into a raw water sale agreement with such entity on terms and conditions consistent with the raw water pricing and delivery policy in effect under this Agreement at the time of such transfer.

In the event the ownership of the Project is transferred pursuant to this subparagraph (c), the quantity of raw water that will be made available to the entity created by the Project Participants shall not be reduced from the quantity of raw water being made available by the District to the Project Participants immediately prior to the expiration of the term of this Agreement. Should the ownership of the Project be transferred to a new entity, the price paid to the District for raw water shall be on the same terms as prior to the transfer, plus any costs incurred by the District for operation, maintenance or capital improvement reimbursements relating to facilities necessary to deliver raw water to the Project.

Section 22. Assignment.

The District may pledge and assign to any Trustee for District Bonds, all or any portion of the payments received under this Agreement from the City and the District's other rights and interests under this Agreement. Such pledge and assignment by the District shall be made effective for such time as the District shall determine and provide that the Trustee shall have the power to enforce this Agreement in the event of a default by the District under a Bond Resolution. The City may assign its rights or obligations under this Agreement only in accordance with Section 17 hereof.

Section 23. Amendments.

Except as otherwise provided in this Agreement, on and after the date District Bonds are issued and so long as any District Bonds are outstanding in accordance with the applicable Bond Resolution, Sections 11(d), 12(a), (c) and (d), 14(a), 16, 17, 19 and 21 of this Agreement shall not be amended, modified or otherwise changed or rescinded by agreement of the parties without the consent of each Trustee for District Bonds whose consent is required under the applicable Bond Resolution. This Agreement may only be otherwise amended, modified, changed or rescinded in writing by each of the parties hereto.

Notwithstanding the foregoing, the sections of this Agreement set forth in the prior paragraph of this Section may be amended without the consent of each Trustee for District Bonds for any of the following purposes:

(a) to add to the agreements, conditions, covenants and terms contained herein required to be observed or performed by the District or the City other agreements, conditions, covenants and terms hereafter to be observed or performed by the District or the City, or to surrender any right reserved herein to or conferred herein on the District or the City, and which in either case shall not adversely affect the interests of the owners of any District Bonds;

(b) to make such provisions for the purpose of curing any ambiguity or of correcting, curing or supplementing any defective provision contained herein or in regard to questions arising hereunder which the District or the City may deem desirable or necessary and not inconsistent herewith, and which shall not materially adversely affect the interests of the owners of any District Bonds;

(c) to make any modifications or changes necessary or appropriate in the opinion of a firm of nationally recognized standing in the field of law relating to municipal bonds to preserve or protect the exclusion from gross income of interest on the District Bonds for federal income tax purposes;

(d) to make any modifications or changes to this Agreement in order to enable the execution and delivery of District Bonds on a parity with any District Bonds previously issued and to make any modifications or changes necessary or appropriate in connection with the execution and delivery of District Bonds;

(e) to make any other modification or change to the provisions of this Agreement which does not materially adversely affect the interests of the owners of any District Bonds;

(f) to make changes to the definition of "Project," including but not limited to changes resulting from the operation of Sections 3 and 4 hereof.

Section 24. Additional Water in Future.

The District agrees that on or about January 1, 2005, to the extent the Board of Directors of the District determines that water surplus to the needs of agricultural water users within the District is then available and subject to compliance with federal and state laws, including CEQA, and to the District's water rights, permits and licenses, and to state laws applicable thereto, the

District shall commence proceedings to expand the Project to make additional treated water available to the Project Participants, but such expansion shall occur only on terms and conditions reasonably agreeable to the District and the Project Participants. In the event that the District and the Project Participants cannot agree upon terms and conditions for expansion of the Project and delivery of additional treated water, the District shall not be obligated to expand the Project or to make additional treated water available to the Project Participants. Nothing in this Agreement shall be construed to require the District to deliver treated water to the City in excess of the City's Project Allotment or to enter into any agreement to deliver treated water to the City in excess of the City's Project Allotment unless the District Board of Directors determines that water surplus to the needs of agricultural water users within the District is available to the District.

Section 25. Miscellaneous

The headings of the sections hereof are inserted for convenience only and shall not be deemed a part of this Agreement.

If any one or more of the covenants or agreements provided in this Agreement to be performed should be determined to be invalid or contrary to law, such covenant or agreement shall be deemed and construed to be severable from the remaining covenants and agreements herein contained and shall in no way affect the validity of the remaining provisions of this Agreement.

This Agreement may be executed in several counterparts, all or any of which shall be regarded for all purposes as one original and shall constitute and be but one and the same instrument.

This Agreement shall be governed by and construed in accordance with the laws of the State of California.

IN WITNESS WHEREOF the City has executed this Agreement with the approval of its governing body, and caused its official seal to be affixed and the District has executed this Agreement in accordance with the authorization of its Board of Directors, and caused its official seal to be affixed.

SOUTH SAN JOAQUIN
IRRIGATION DISTRICT

[SEAL]

By _____
President

Attest:

By _____
Secretary

CITY OF MANTECA

[SEAL]

By _____
Mayor

Attest:

By _____
City Clerk

Approved as to form

By: _____
Special Legal Counsel

EXHIBIT A

PHASE I - UP TO YEAR 2010

City		Project Allotment
1.	City of Escalon	2,015
2.	City of Lathrop	8,007
3.	City of Manteca	12,700
4.	City of Ripon	1,232
5.	City of Tracy	10,000
		33,954

PHASE II - UP TO YEAR 2025
SCHEDULE OF PROJECT ALLOTMENTS

City		Project Allotment
1.	City of Escalon	2,799
2.	City of Lathrop	11,791
3.	City of Manteca	24,500
4.	City of Ripon	3,919
5.	City of Tracy	10,000
		53,009

EXHIBIT "B"

RICHARDS, WATSON & GERSHON

ATTORNEYS AT LAW

A PROFESSIONAL CORPORATION

GLENN R. WATSON
ROBERT G. BEVERLY
HARRY L. GERSHON
DOUGLAS W. ARGUE
MARK L. LAMKEN
ARNOLD SIMON
ERWIN E. ADLER
DAROLD D. PIEPER
ALLEN E. RENNETT
STEVEN L. DORSEY
WILLIAM L. STRAUSZ
ROBERT M. GOLDFRIED
ANTHONY B. DREWRY
MITCHELL E. ABBOTT
TIMOTHY L. NEUFELD
GREGORY W. STEPANICICH
ROCHELLE BROWNE
DONALD STERN
MICHAEL JENKINS
WILLIAM B. RUDELL
DAVID L. COHEN
QUINN M. BARROW
CAROL W. LYNCH
JEFFREY A. RABIN
GREGORY M. KUNERT
THOMAS M. JIMBO
MICHELLE BEAL BAGNERIS
AMANDA F. SUSSKIND
ROBERT C. CECCON
SAYRE WEAVER

STEVEN H. KAUFMANN
GARY E. GANS
JOHN J. HARRIS
KEVIN G. ENNIS
ROBIN D. HARRIS
MICHAEL ESTRADA
LAURENCE S. WIENER
C. EDWARD DILKES
STEVEN R. ORR
DEBORAH R. HAKMAN
SCOTT K. SHINTANI
MICHAEL G. COLANTUONO
TERRY P. KAUFMANN MACIAS
B. TILDEN KIM
RUBIN D. WEINER
SASKIA T. ASAMURA
KAYSER O. SUME
CRAIG A. STEELE
T. PETER PIERCE
ALISON E. MAKER
BENJAMIN BARNOUW
TERENCE R. BOGA
DOUGLAS A. CARLEN
DANIEL L. PINES
LISA MARIE BOND
WINNIE TSIEN
JENNIFER L. HART
DIANE ARKOW
ROXANNE M. DIAZ

February 7, 1996

RICHARD RICHARDS
(1916-1988)

THIRTY-EIGHTH FLOOR
333 SOUTH HOPE STREET
LOS ANGELES, CALIFORNIA 90071-1469
(213) 626-8484
FACSIMILE (213) 626-0078

OF COUNSEL
WILLIAM K. KRAMER

1731211
OUR FILE NUMBER

M5446-00001

South San Joaquin Irrigation District
11011 East Highway 20
Manteca, California 95336

City of Manteca
1001 West Center Street
Manteca, California 95337

Ladies and Gentlemen:

We are acting as special counsel to the City of Manteca (the "City") and we have received the Water Supply Development Agreement, dated October 1, 1995 (the "Agreement"), between the South San Joaquin Irrigation District (the "District") and the City. We have examined and are familiar with: (i) documents relating to the existence, organization and operation of the City provided to us by the City, (ii) certifications by officers of the City, and (iii) documentation of the City relating to the authorization, execution and delivery of the Agreement.

Based upon the foregoing and the examination of law and such other information, papers and documents as we deem necessary or advisable to enable us to render this opinion, including the Constitution and laws of the State of California, together with the resolutions, ordinances and public proceedings of the City, we are of the opinion that:

1. The City is a general law city, duly created, organized and existing under the laws of the State of California and duly qualified to furnish water service within its boundaries.

2. The City has legal authority to enter into the Agreement and to carry out and consummate all transactions reasonably contemplated thereby.

3. Based upon the documents provided to us, the Agreement appears to be duly authorized, executed and delivered by the City, is in full force and effect as to the City in accordance with its terms and, subject to the qualifications set forth in the second to the last paragraph hereof, and assuming that the District has all requisite power and authority, and has taken all necessary action, to authorize, execute and deliver such Agreement, the Agreement constitutes a valid obligation of the City.

4. The City is authorized to obligate itself to make payments under the Agreement from the revenues of its water system as provided in Section 12 of the Agreement.

5. No approval, consent or authorization of any governmental or public agency, authority or person (other than the City itself) is required for the execution and delivery by the City of the Agreement.

Additionally, we have been informed by the City Clerk that based upon her search of the City records, no other instrument or agreement of the City addresses the subject matter of the Agreement. Therefore, based on this information, it appears that the authorization, execution and delivery of the Agreement and compliance with the provisions thereof will not conflict with or constitute a breach of, or default under, any instrument relating to the organization, existence or operation of the City, any commitment, agreement or other instrument to which the City is a party or by which it or its property is bound or affected, or any ruling, regulation, ordinance, judgment, order or decree to which the City (or any of its officers in their respective capacities as such) is subject. We further do not believe that the Agreement will conflict with any provision of the laws of the State of California relating to the City and its affairs.

We have also been informed by the City Clerk that based upon a search of her records, there is no action, suit, proceeding, inquiry or investigation at law or in equity or before any court, public board or body, pending or, to her knowledge, threatened against or affecting the City or any entity affiliated with the City or any of its officers in their respective capacities as such, which questions the powers of the City referred to in paragraph 2 above or the validity of the proceedings taken by the City in connection with the authorization, execution or delivery of the Agreement, or wherein any unfavorable decision, ruling or finding would materially adversely affect the transactions contemplated by the Agreement,

or which would adversely affect the validity or enforceability of the Agreement.

The opinion expressed in paragraph 3 above is qualified to the extent the enforceability of the Agreement may be limited by any applicable bankruptcy, insolvency, reorganization, arrangement, moratorium, or other laws affecting creditors' rights, to the application of equitable principles and to the exercise of judicial discretion in appropriate cases and to he limitations on legal remedies against public agencies in the State of California and provided that no opinion is expressed with respect to any indemnification or contribution provisions contained therein.

This opinion is rendered only with respect to the laws of the State of California and the United States of America and is addressed only to the South San Joaquin Irrigation District and the City. No other person is entitled to rely on this opinion, nor may the opinion be relied upon in connection with any transactions other than those described herein.

Very truly yours,

Laurence S. Wiener

LSW:gg
1731211

EXHIBIT "C"

STUART L. SOMACH
ADMITTED IN CALIFORNIA AND
IN THE DISTRICT OF COLUMBIA

DE CUIR & SOMACH
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
400 CAPITOL MALL
SUITE 1900
SACRAMENTO, CA 95814-4407
TELEPHONE (916) 446-7979
FACSIMILE (916) 446-8199

November 27, 1995

South San Joaquin Irrigation District
11011 East Highway 20
Manteca, California 95336

City of Manteca
1001 West Center Street
Manteca, California 95337

Ladies and Gentlemen:

We are acting as City Attorney to the City of Manteca (the "City") under the Water Supply Development Agreement, dated as of October 1, 1995 (the "Agreement"), between the South San Joaquin Irrigation District (the "District") and the City, and have acted as City Attorney to the City in connection with the matters referred to herein. As such counsel we have examined and are familiar with (i) documents relating to the existence, organization and operation of the City provided to us by the City, (ii) certifications by officers of the City, (iii) all necessary documentation of the City relating to the authorization, execution and delivery of the Agreement, and (iv) an executed counterpart of the Agreement. Terms used herein and not otherwise defined have the respective meanings set forth in the Agreement.

Based upon the foregoing and such examination of law and such other information, papers and documents as we deem necessary or advisable to enable us to render this opinion, including the Constitution and laws of the State of California, together with the resolutions, ordinances and public proceedings of the City, we are of the opinion that:

1. The City is a general law city, duly created, organized and existing under the laws of the State of California and duly qualified to furnish water service within its boundaries.

2. The City has legal right, power and authority to enter into the Agreement and to carry out and consummate all transactions reasonably

contemplated thereby, and the City has complied with the provisions of applicable law relating to such transactions.

3. The Agreement has been duly authorized, executed and delivered by the City, is in full force and effect as to the City in accordance with its terms and, subject to the qualifications set forth in the second to the last paragraph hereof, and assuming that the District has all requisite power and authority, and has taken all necessary action, to authorize, execute and deliver such Agreement, the Agreement constitutes the valid and binding obligation of the City.

4. The obligations of the City to make payments under the Agreement from the Revenues of its City Water System or other lawfully available funds as provided in Section 12 of the Agreement is a valid, legal and binding obligation of the City enforceable in accordance with its terms.

5. No approval, consent or authorization of any governmental or public agency, authority or person is required for the execution and delivery by the City of the Agreement.

6. The authorization, execution and delivery of the Agreement and compliance with the provisions thereof will not conflict with or constitute a breach of, or default under, any instrument relating to the organization, existence or operation of the City, any commitment, agreement or other instrument to which the City is a party or by which it or its property is bound or affected, or any ruling, regulation, ordinance, judgment, order or decree to which the City (or any of its officers in their respective capacities as such) is subject or any provision of the laws of the State of California relating to the City and its affairs.

7. There is no action, suit, proceeding, inquiry or investigation at law or in equity or before any court, public board or body, pending or, to our knowledge, threatened against or affecting the City or any entity affiliated with the City or any of its officers in their respective capacities as such, which questions the powers of the City referred to in paragraph 2 above or the validity of the proceedings taken by the City in connection with the authorization, execution or delivery of the Agreement, or wherein any unfavorable decision, ruling or finding would materially adversely affect the transactions contemplated by the Agreement, or which would adversely affect the validity or enforceability of the Agreement.

The opinion expressed in paragraph 3 above is qualified to the extent that the enforceability of the Agreement may be limited by any applicable bankruptcy, insolvency, reorganization, arrangement, moratorium, or other laws affecting creditors' rights, to the application of equitable principles and to the exercise of judicial discretion in appropriate cases and to the limitations on legal remedies against public agencies in the State of California and provided that no opinion is expressed with respect to any indemnification or contribution provisions contained therein.

This opinion is rendered only with respect to the laws of the State of California and the United States of America and is addressed only to the South San Joaquin Irrigation District and the City. No other person is entitled to rely on this opinion, nor may you rely on it in connection with any transactions other than those described herein

Very truly yours,

Stuart L. Somach
Attorney

SLS/lgs

EXHIBIT D

LIST OF NOTES, BONDS OR OTHER OBLIGATIONS OF THE CITY AS OF DATE OF EXECUTION TO WHICH CITY WATER SYSTEM REVENUES ARE PLEDGED

DESCRIPTION	MAXIMUM ANNUAL DEBT SERVICE

AMENDMENT NO. 1
TO THE WATER SUPPLY DEVELOPMENT AGREEMENT
BETWEEN THE CITY OF MANTECA
AND THE SOUTH SAN JOAQUIN IRRIGATION DISTRICT

This Amendment No. 1 ("Amendment") to the Water Supply Development Agreement is made and entered into between the City of Manteca, a municipal corporation ("City"), and the South San Joaquin Irrigation District ("SSJID").

RECITALS

A. The City and SSJID entered into a Water Supply /Development Agreement ("WSDA Agreement") dated as of October 1, 1995.

B. The parties desire to make certain changes to the WSDA Agreement which are set forth below.

NOW THEREFORE, THE PARTIES MUTUALLY AGREE AS FOLLOWS:

1. Incorporation By Reference. This amendment hereby incorporates by reference all terms and conditions set forth in the WSDA Agreement, unless specifically modified by this Amendment. All terms and conditions set forth in the WSDA Agreement which are not specifically modified by this Amendment shall remain in full force and effect.

2. Terms of Amendment.

A. The definition of "Fixed Project Costs" in Section 1 is amended to read as follows:

"Fixed Project Costs" means capital costs incurred by District related to design, right of way, acquisition, CEQA compliance, construction management and construction of the Project and including Debt Service and Reserves for the payment of the Debt Service of the Project in accordance with Sections 13 and 14.

B. Section 3(d) , is amended to read as follows:

"(d) Obligation to Pay Fixed Project Costs. The City and the District acknowledge that the City is obligated to pay Fixed Project Costs in advance of the delivery of treated water and prior to commencement of actual construction of the Project. Fixed Project Costs may be paid by the City by cash payments or the City may cause such Fixed Project Costs to be financed through the issuance of District Bonds as provided in Sections 3 and 4 hereof. The City and the District further acknowledge that if the City pays Fixed Project Costs to the District in cash, such Fixed Project Costs shall not thereafter be allocated to the City in the determination of rates and charges as set forth in Section 12 hereof or for the annual budget as provided in Section 13 hereof. In the event

City has paid all Fixed Project Costs allocable thereto prior to the notice of termination as set forth in Section 3(c) in cash, the City and the District acknowledge that no further monies shall be due from City for Fixed Project Costs."

C. Section 12(a), Rates and Charges, subparagraph (i) is amended to read as follows:

(i) Fixed Project Costs unless the City has satisfied its Fixed Project Costs as provided for in Section 3.

D. Section 12(c), Rates and Charges, is amended to read as follows:

"(c) Source of Payments. The obligation of the City to make payments under this Agreement is not a general obligation of the City and the City shall make payments under this Agreement solely from City Water System Revenues, including but not limited to, Development Mitigation Fees collected pursuant to Government Code sections 66000 (AB1600), connection fees, and/or capacity charges. The City shall make such payments prior to any payment therefrom, other than City Prior Debt, and on a parity with other City Operation and Maintenance Expenses. Nothing herein shall be construed as prohibiting (i) the City from using any other funds and revenues, for purposes of satisfying any provisions of this Agreement or (ii) from incurring obligations payable on a parity with the obligations under this Agreement so long as City complies with subsection (a) of Section 19(a) hereof."

E. Section 14(a), "Allocation of Costs and Expenses" is amended to read as follows:

"(a) Method of Computation of Fixed Project Costs. The Fixed Project Costs shall be sufficient to return to the District those capital costs of the District necessary to treat and deliver water to the City, less payments made by City. The total amount of Fixed Project Costs, including each Reach utilized by City, shall be allocated to the City based upon the City's proportionate share of the total capacity of the Treatment Plant and the Reaches, except that those Fixed Project Costs not related to capacity shall be allocated based the City's proportionate share of the total Project allotment. The City and the District acknowledge that if the City has not elected to have all facilities which are a part of the Project sized to enable the City to take treated water, the City shall not be liable for any Fixed Project Costs for such unconstructed facilities."

F. Section 19(a) is amended to read as follows:

(a) Amount of Rates and Charges. The City will fix, prescribe and collect rates and charges for the City Water System which will be at least sufficient to yield during each City Fiscal Year City Net Water System Revenues (excluding Contract Payments) equal to one hundred twenty-five percent (125%) of the Contract Payments for such City Fiscal Year. The City may make adjustments from time to time in such rates and charges and

may make such classification thereof as it deems necessary, but shall not reduce the rates and charges then in effect unless the City Net Water System Revenues from such reduced rates and charges will at all times be sufficient to meet the requirements of this section; provided however that to the extent all or a portion of Fixed Project Costs are paid by the City in advance from City reserves, such portion of Fixed Project Costs shall not be included in Contract Payments for purposes of this Section 19(a).

G. Exhibit A of the WSDA Agreement is deleted and is replaced by Exhibit 1 attached hereto, which is hereby appended to the WSDA Agreement as Exhibit E and is incorporated herein by this reference.

3. Payment of Fixed Project Costs. City has paid to District Fixed Project Costs in the following amounts: $743,408.42 as of March 28, 2000. The parties anticipate that at least two more payments of Fixed Project Costs will be required, prior to final design and prior to construction, and additional payments may be required for other purposes before completion of the Project.

4. Estimated Project Budget and Cost Allocation. A copy of the allocation among the Cities of Fixed Project Costs for Phase 1 is attached hereto as Exhibit 2 and is hereby appended to the WSDA Agreement as Exhibit F. The allocation is based upon the latest estimated Project budget in Table 1 which is attached to Exhibit 2. The Operating Committee has recommended the proposed budget to the District for its approval. The District has the discretion to approve the budget and any changes to the budget, as provided in the WSDA Agreement.

5. Consent of Trustee Not Required. The consent of Trustee to this Amendment No. 1 is not required under Section 23 of the WSDA Agreement as there are no outstanding District Bonds at the time of execution of this Amendment No. 1.

6. Modifications. This Amendment may not be modified orally or in any manner other than by an agreement in writing signed by both parties, in accordance with the requirements of the WSDA Agreement.

7. Severability. In the event any term of this Amendment is held invalid by a court of competent jurisdiction, the Amendment shall be construed as not containing that term, and the remainder of this Amendment shall remain in full force and effect.

8. Signatures. The individuals executing this Amendment represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this Amendment on behalf of the respective legal entities. This Amendment shall inure to the benefit of and be binding upon the parties thereto and their respective successors and assigns.

IN WITNESS WHEREOF the parties do hereby agree to the full performance of the terms set forth herein.

CITY OF MANTECA

By: _____
Carlon Perry
Title: Mayor
Date: 4-17-00

Attest:

By: _____
Joann Tilton
Title: City Clerk
Date: 4-17-00

Approved as to form

By: _____
Kelley M. Taber
DeCuir & Somach
Date: 4/20/00

SOUTH SAN JOAQUIN IRRIGATION DISTRICT

By: _____

Title: President of the SSJID Board
Date: 5-18-2000

Attest:

By: _____

Title: Secretary of the SSJID Board
Date: 5-18-2000

Approved as to form

By: _____
Steven P. Emrick
Title: General Counsel
Date: 5-18-00

EXHIBIT 1

APPENDED AS EXHIBIT E TO WATER SUPPLY DEVELOPMENT AGREEMENT AND IN REPLACEMENT OF EXHIBIT A

SCHEDULE OF PROJECT ALLOTMENTS

PHASE I - UP TO YEAR 2010

City	Project Allotment
1. City of Escalon	2,015
2. City of Manteca	11,500
3. City of Lathrop	8,007
4. City of Tracy	10,000
	31,522

PHASE II - UP TO YEAR 2025

City	Project Allotment
1. City of Escalon	2,799
2. City of Manteca	18,500
3. City of Lathrop	11,791
4. City of Tracy	10,000
	43,090

EXHIBIT 2

APPENDED AS EXHIBIT F TO WATER SUPPLY DEVELOPMENT AGREEMENT

ESTIMATED PROJECT BUDGET AND COST ALLOCATIONS

Set forth below is the allocation of Fixed Project Costs among the Cities based upon the latest estimated Project budget in Table 1 attached hereto. Each party hereto acknowledges that the costs will change from time to time as project design and construction is undertaken and that no final costs allocation can be determined until completion of the Project.

City	Estimated Share	Percent of Total
Escalon	$2,203,450	1.83%
Manteca	$37,097,963	29.40%
Lathrop	$42,102,256	33.35%
Tracy	$44,698,751	35.42%

TABLE 1
South San Joaquin Irrigation District
South County Water Supply Project
Preliminary Cost Allocation Reflecting VE Savings
Based on Revised Water Allocation (3/12/99)

Description	Basis for Allocation	Total $	Escalon		Manteca		Lathrop		Tracy		Total $
			Factor	$	Factor	$	Factor	$	Factor	$	
Pipeline											
Segment 1-Main Canal to Escalon Turnout	Ph. II Peak Flow	$14,000,983	0.040	$557,364	0.385	$5,395,283	0.336	$4,704,152	0.239	$3,344,184	$14,000,983
Segment 2-Escalon to 1st Manteca Turnout	Ph. II Peak Flow	$23,187,075	0	$0	0.401	$9,305,592	0.350	$8,113,554	0.249	$5,767,929	$23,187,075
Segment 3-Manteca Turnout 1 to Manteca Turnout 2	Ph. II Peak Flow	$5,365,067	0	$0	0.308	$1,654,743	0.404	$2,168,638	0.287	$1,541,686	$5,365,067
Segment 4-Manteca Turnout 2 to Lathrop Turnout 1	Ph. II Peak Flow	$2,194,772	0	$0	0.181	$398,145	0.478	$1,050,106	0.340	$746,521	$2,194,772
Segment 5-Lathrop Turnout 1 to Manteca Turnout 3	Ph. II Peak Flow	$3,227,744	0	$0	0.219	$705,518	0.372	$1,199,380	0.410	$1,322,846	$3,227,744
Segment 6-Manteca Turnout 3 to Lathrop Turnout 2	Ph. II Peak Flow	$6,549,999	0	$0	0	$0	0.476	$3,114,685	0.524	$3,435,314	$6,549,999
Segment 7-Lathrop Turnout 2 to Tracy Turnout	Ph. II Peak Flow	$11,936,536	0	$0	0	$0	0	$0	1.000	$11,936,536	$11,936,536
	Pipeline subtotal	$66,462,176		$557,364		$17,459,281		$20,350,515		$28,095,016	
Tracy PS	100% Tracy	$1,512,097		$0		$0		$0		$1,512,097	$1,512,097
Turnouts, PS, & Terminal Reservoir	100 % ea. City	$7,378,787		$0		$2,966,043		$4,082,251		$330,493	$7,378,787
WTP											
Process[1]	Ph. I Peak Flow[2]	$15,997,297	0.000	$0	0.273	$4,362,899	0.359	$5,738,588	0.369	$5,895,810	$15,997,297
	Ph. II Peak Flow[3]	$4,958,514	0.044	$217,861	0.322	$1,594,742	0.371	$1,838,746	0.264	$1,307,165	$4,958,514
Auxiliary[4]	Ph. II Contract Allocation[5]	$6,218,702	0.065	$403,949	0.429	$2,669,900	0.274	$1,701,664	0.232	$1,443,189	$6,218,702
	Ph. II Peak Flow[6]	$13,148,202	0.044	$577,689	0.322	$4,228,683	0.371	$4,875,695	0.264	$3,466,134	$13,148,202
	WTP subtotal	$40,322,715		$1,199,499		$12,856,224		$14,154,694		$12,112,298	$40,322,715
Raw Water Pipeline[7]	Ph. II Peak Flow[8]	$3,526,647	0.044	$154,949	0.322	$1,134,229	0.371	$1,307,772	0.264	$929,696	$3,526,647
Raw Water Intake	Ph. II Peak Flow[8]	$3,000,000	0.044	$131,810	0.322	$964,851	0.371	$1,112,478	0.264	$790,861	$3,000,000
Woodward Mitigation	Ph. II Contract Allocation	$2,000,000	0.065	$129,914	0.429	$858,668	0.274	$547,273	0.232	$464,145	$2,000,000
Legal/Administration	Ph. II Contract Allocation	$2,000,000	0.065	$129,914	0.429	$858,668	0.274	$547,273	0.232	$464,145	$2,000,000
TOTAL		$126,202,421		$2,303,450		$37,097,963		$42,102,256		$44,698,751	$126,202,421

Notes

1) Process refers to water treatment process components of WTP.
2) Phase I Peak Flows applied to costs for water treatment components including Flash/Rapid Mix, Flocculation, Sedimentation, Ozone Contact Basins, Filters, Stabilization, and Treated Water Pumping and Storage.
3) Phase II Peak Flows applied to costs for structural components of Treated Water Pumping and Storage.
4) Auxiliary refers to support facilities of WTP.
5) Phase II Contract Allocation applied to costs for Administration and Chemical Buildings.
6) Phase II Peak Flows applied to costs for sitework, yard piping, Ozone Generation Bldg, Treated Water Flowmeter Vault, Wash Water Recovery, Wash Water Treatment, Filter to Waste, and substation.
7) Raw Water refers to components constructed to convey raw water to the WTP
8) Phase II Peak Flow applied to costs for Raw Water Pipeline, Raw Water Connection, and Raw Water Plant Rate Control Vault

ATTACHMENT 3

SOUTH COUNTY SURFACE WATER SUPPLY PROJECT
CAPITAL OUTLAY AND PERMIT SUMMARIES

WATER SUPPLY PROGRAM
SOUTH COUNTY

A Cooperative Effort of the
South San Joaquin Irrigation District
and the Cities of
Manteca, Escalon, Lathrop and Tracy

March 2004

RECEIVED
MAR - 4 2003
CITY OF MANTECA
PW-ENGINEERING

South County Water Supply Program
Permit Status Summary

Permit Responsible Agency (Contact Person)	Affected Project Features	Status or Estimated Approval Date	Key Team Member(s)	Comments
Nationwide 404 Permit Corps of Engineers – Kathy Norton (916-557-5260) Fish & Wildlife Service – Jennifer Bain (916-414-6724)	Water Quality Control Structure at Woodward Reservoir, San Joaquin River Bridge, and Paradise Cut crossing.	**Permit Received**	Erich Fischer (ESA) (916-564-4500)	Received May 30, 2003. FWS has added 1.25 ac. of GGS mitigation.
Operations & Maintenance Agreement San Joaquin County – Tom Gau (209-468-3000)	All pipeline in County roads	**Permit Received.**	Grant Kreinberg (209-249-4612)	No further action required.
Agreement for use of County Roads Stanislaus County – David Piper (209-525-6768)	All facilities in County Rights-of-Way	**Permit Received**	Grant Kreinberg (209-249-4612)	No further action required
Encroachment Permit Reclamation Dist. 17 – Dan Nomellini (209-465-5883)	East bank of San Joaquin River	**Permit Received**	George Otte (Nolte) (408-392-7219) Steve Emrick and Grant Kreinberg	No further action required.

ent by: SS JOAQUIN IRR DIST. 209 823 8406; 03/04/04 5:35PM; Jetfax #134; Page 1/5
o: MIKE BRINTON At: 239-8495

Permit Responsible Agency (Contact Person)	Affected Project Features	Status or Estimated Approval Date	Key Team Member(s)	Comments
Encroachment Permit Reclamation Dist. 2107 – A I Hoslett	West bank of San Joaquin River and east bank of Paradise Cut	**Permit Received**	George Otte (Nolte) (408-392-7219) Steve Emrick and Grant Kreinberg	No further action required.
Encroachment Permit Reclamation Dist. 2058 – Richard Pelegri (209-835-2293)	West bank of Paradise Cut and Tom Paine Slough	**Permit Received**	George Otte (Nolte) (408-392-7219)	No further action required.
Section 401 – Water Quality Certification (excluding SJ River Bridge) Regional Water Quality Control Board	WTP, Pipeline, etc.	**Permit Received**	Erich Fischer (ESA) (916-564-4500)	No further action required. See below.
Section 401 – Water Quality Certification (for SJ River Bridge) Regional Water Quality Control Board	San Joaquin River Bridge	**Permit Received**	Johanna Evans (ESA) (510-740-1711)	No further action required
Streambed Alteration Agreement (excluding SJ River Bridge) State Dept of Fish and Game	All project components except SJ River Bridge	**Permit Received**	Erich Fischer (ESA) (916-564-4500)	No further action required.

ent by: SS JOAQUIN IRR DIST. 209 823 8406; 03/04/04 5:37PM; JetFax #134; Page 2/5

Permit Responsible Agency (Contact Person)	Affected Project Features	Status or Estimated Approval Date	Key Team Member(s)	Comments
Streambed Alteration Agreement (for SJ River Bridge) State Department of Fish and Game	San Joaquin River Bridge	**Permit Received**	Johanna Evans (ESA) (510-740-1711)	No further action required.
Encroachment Permit State Reclamation Board – Paul Riley (916-653-6491)	San Joaquin River, Paradise Cut, Lone Tree Creek	Permits received for San Joaquin River and Lone Tree Creek. Permit for Paradise Cut expected in March, 2004	George Otte (Nolte) (408-392-7219)	Manthey Road considered Federal levee. We believe we have resolved technical issues regarding longitudinal encroachment.
Caltrans Standard Encroachment Permits	I-205 & Highway 99 crossings	**Permit Received**	George Otte (Nolte) (408-392-7219)	No further action required.
Caltrans Longitudinal Encroachment Permit Caltrans – Jackie Wait, Archaeologist (209-942-6141), Betty Tamae, Permits (209-948-7945)	I-5 & Highway 120 crossings	Archeological work successfully completed and report submitted to Caltrans. Construction permit expected in March 2004	Barry Scott (ESA) (916-564-4500) George Otte (Nolte) (408-392-7219)	Contractor prohibited from working in area until 2004.
UPRR Encroachment Agreements (except Howland Road)	All UPRR crossings	**Permits Received**	George Otte (Nolte) (408-392-7219)	No further action required.

nt by: SS JOAQUIN IRR DIST. 209 823 8406; 03/04/04 5:37PM; Jetfax #134; Page 3/5

Permit Responsible Agency (Contact Person)	Affected Project Features	Status or Estimated Approval Date	Key Team Member(s)	Comments
UPRR Agreement (on Howland Road) Roseville – Jim Smith (916-789-6352 Omaha – Jon Devish (402-997-3563)	Longitudinal Encroachment in Howland Road	**Permit Received**	George Otte (Nolte) (408-392-7219), Grant Kreinberg and Steve Emrick	No further action required
BNSF Encroachment Agreement BNSF – Cathy Benson (817-230-2600)	Dodds Road at BNSF	**Permit Received**	George Otte (Nolte) (408-392-7219), Grant Kreinberg and Steve Emrick	No further action required.
OSHA Permit	Tunnel locations along entire Project	**Permit Received**	Jim Bradford (B&V) (925-246-8001)	No further action required.
FERC Approval (of Raw Water tie-in at Power Plant)	Raw Water Tie-in at Woodward Power Plant	**Approval Received**	Jim Bradford (B&V) (925-246-8001)	No further action required.
Dam Alteration Approval Division of Safety of Dams – Russ Bowlus (916-227-1852)	Pipeline through Woodward Dam	**Permit Received**	Jim Bradford (B&V) (925-246-8001)	No further action required.
California Environmental Quality Act (CEQA) Mitigated Negative Declaration	San Joaquin River Bridge	**Certification June 3, 2003**	Crystal Stech (ESA) (916-669-4703)	No further action required.
US Coast Guard Approval	San Joaquin River Bridge	March 1, 2004	Johanna Evans (ESA) (510-740-1711)	Permit out for 30-day public review.

ent by: SS JOAQUIN IRR DIST. 209 823 8406; 03/04/04 5:38PM; Jetfax #134; Page 4/5

Permit Responsible Agency (Contact Person)	Affected Project Features	Status or Estimated Approval Date	Key Team Member(s)	Comments
Environmental Mitigation	Pipeline, WTP, Reservoir, San Joaquin River Bridge	Activity completed.	Johanna Evans (ESA) (510-740-1711)	No further action anticipated.

ent by: SS JOAQUIN IRR DIST. 209 823 8406; 03/04/04 5:38PM; JETFAX #134; Page 5/5

SOUTH SAN JOAQUIN IRRIGATION DISTRICT

September 3, 2004

Robert Adams, City Manager
City of Manteca
1001 West Center Street
Manteca, CA 95337

Greg Greeson, City Manager
City of Escalon
P.O. Box 248
Escalon, CA 95320-0248

Pam Carder, City Manager
City of Lathrop
16775 Howland Road, Suite 1
Lathrop, CA 95330-9792

Fred Diaz, City Manager
City of Tracy
325 East 10th Street
Tracy, CA 95376

Subject: Water Treatment Plant Funds: Pershing

	Escalon	Lathrop	Manteca	Tracy	Total
Pershing 07/31/04	$ 612,307.43	14,860,343.20	13,056,293.05	16,940,839.70	$ 45,469,783.38
Disbursements	22,891.36	741,477.01	721,691.22	1,072,878.73	$ 2,558,938.32
Income	125.88	3,015.43	2,634.36	3,388.99	$ 9,164.66
Pershing 08/31/04	$ 589,541.95	14,121,881.62	12,337,236.19	15,871,349.96	$ 42,920,009.72

Sincerely,

John Stein
Assistant Manager

cc: Stevan Stroud
Steve Emrick
Mike Gilton

domestic.wpd

P.O. Box 747, Ripon, CA 95366-0747 • Phone 209/823-3101 • FAX 209/823-8406

SSJID - Water Supply Project - Program Summary Report — Contract No. 134345

WBS/Contract No.	Project Title	Project Description	Design Engineers
134345	SSJID Water Supply Program Black & Veatch	Design, Construction, Startup and Commissioning of 40 MGD Submerged Membrane Water Treatment Plant for South San Joaquin Irrigation District.	Black & Veatch

Project Synopsis

	CONTRACT AMOUNT	
Original Contract Amount*	$ 120,839,085	
Approved Changes	$ 2,928,398	
Current Contract Amount	$ 123,767,483	
Pending Changes	$ 639,776	
Current Forecast (EAC) incl contingency	$ 130,790,620	
Previous Quarterly EAC	$ 130,790,620	

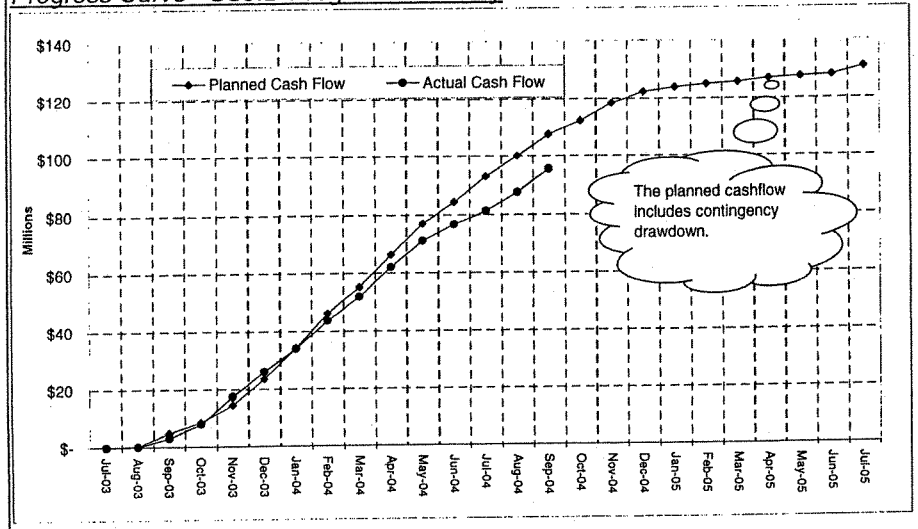
	EXPENDITURES TO DATE $	%
Planned	$ 100,105,204	80.9%
Actual	$ 95,782,710	77.4%
Variance	$ (4,322,493)	-3.5%

Cost Growth offset by Contingency at this point

See Variance Analysis if variance exceeds 5% +/-

* Does not include Contingency

Progress Curve - SSJID Program Summary



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Program Summary	Contract / Baseline	Forecast	Actual
Watershed Protection	8/31/2004	9/1/2004	
Raw Water Intake - Segment 1	7/30/2004	9/30/2004	
Raw Water Intake - Segment 2	7/29/2004	3/15/2004	3/19/2004
Water Treatment Plant	5/31/2005	5/31/2005	
Start-up and Commissioning	3/11/2005	3/11/2005	
Transmission Line - Section 1	3/1/2005	12/1/2004	
Transmission Line - Section 2	3/1/2005	3/1/2005	
Transmission Line - Section 3	2/4/2005	2/4/2005	
Transmission Line - Section 4	3/1/2005	9/15/2004	
Transmission Line - Section 5	3/1/2005	9/10/2004	
Turnouts & Pump Stations	3/1/2005	9/26/2004	
Substantial Completion	4/30/2005	4/30/2005	
Final Completion	5/30/2005	5/30/2005	

Change Management

Period Ending
31-Aug-2004

Approved Changes	Anticipated Changes	*Comments:*
$2,928,398	$639,776	

Remarks / Issues

All progress is as of the last Friday of the month.

The project is about 77% complete overall as of 8/31/04

SSJID - Water Supply Project - Program Summary Report — Contract No. 1.0

WBS/Contract No.	Project Title	Project Description	Design Engineers
1.0	Watershed Protection Conlin Fencing	Demolish and replace existing fence, and install new fence for watershed protection at Woodward Reservoir. Further, this contract involves the installation of gravity and solar watering stations along the water body.	Black & Veatch

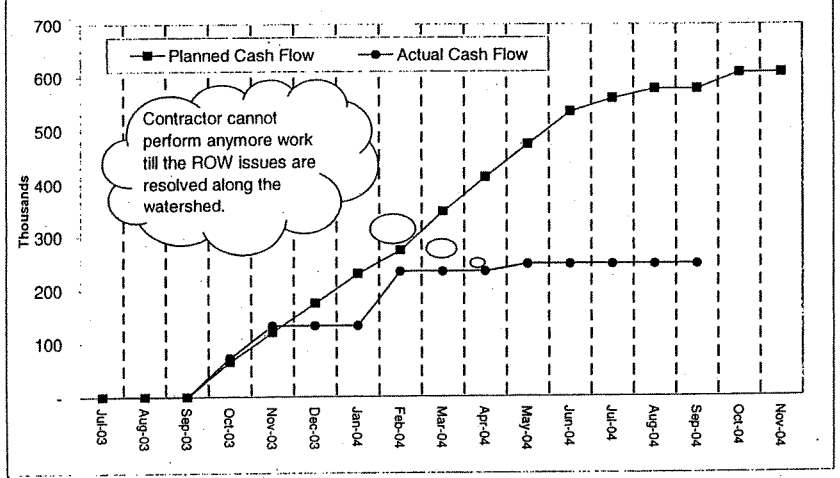
Project Synopsis

	CONTRACT AMOUNT	
Original Contract Amount	$	608,200
Approved Changes	$	62,335
Current Contract Amount	$	670,535
Pending Changes	$	-
Current Forecast (EAC)	$	670,535
Previous Quarterly EAC	$	671,655

	EXPENDITURES TO DATE $	%
Planned	$ 559,544	83.4%
Actual	$ 247,259	36.9%
Variance	$ (312,285)	-46.6%

See Variance Analysis if variance exceeds 5% +/-

Progress Curve - Watershed Protection



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Watershed Protection	Contract / Baseline	Forecast	Actual
Mobilization	10/20/2003	10/20/2003	10/31/2003
Fencing -New Fence	3/9/2004	3/9/2004	
Gates- 12-foot opening, single leaf	3/19/2004	3/19/2004	
Gates- 3-foot opening, single leaf	3/8/2004	3/8/2004	
Watering Station (Gravity)	1/9/2004	1/9/2004	2/21/2004
Watering Station (Solar)	12/15/2003	12/15/2003	1/9/2004
Fence Demolition	10/24/2003	11/11/2003	11/20/2003
Water Gaps	2/4/2004	2/4/2004	
Substantial Completion	5/14/2004	5/14/2004	
Final Completion	5/28/2004	5/28/2004	

Change Management

Period Ending
31-Aug-04

Approved Changes	Anticipated Changes	*Comments:*
$62,335	$0	

Remarks / Issues

All progress is as of the last Friday of the month.

Conlin fencing's work was hampered by ROW issues on 3 major properties along the watershed which encompasses around 50% of the work in Contract 1. Conlin Fencing has started submitting storing costs for payment at $ 850 per month.
ROW Issues are not resolved yet as of 8/31/04.

SSJID - Water Supply Project - Program Summary Report — Contract No. 2.0 — Aug-04

WBS/Contract No.	Project Title	Project Description	Design Engineers
2.0	Raw Water Facilities Mitchell Engineering	Construction, commissioning and Startup of Raw Water Intake Facility to feed the Water Treatment Plant	Black & Veatch and Nolte

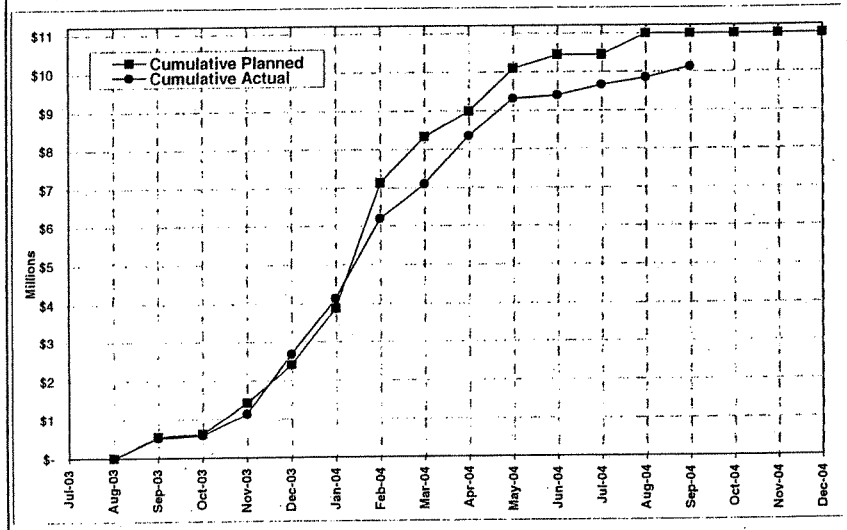
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 10,992,263
Approved Changes	$ 69,069
Current Contract Amount	$ 11,061,332
Pending Changes	$ -
Current Forecast (EAC)	$ 11,061,332
Previous Quarterly EAC	$ 11,013,148

	EXPENDITURES TO DATE $	%
Planned	$ 10,992,263	99.4%
Actual	$ 10,116,528	91.5%
Variance	$ (875,735)	-7.9%

See Variance Analysis if variance exceeds 5% +/-

Progress Curve - Raw Water Intake



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Raw Water Facilities

	Contract / Baseline	Forecast	Actual
Mobilization	9/10/2003	9/10/2003	9/10/2003
Intake Screens Air Backwash Structure Complete	12/18/2003	1/26/2004	1/26/2004
Raw Water Pipeline - Dodds Road	7/19/2004	8/30/2004	
Raw Water Pipeline - 26 Mile Road	6/9/2004	7/9/2004	
Sluice Gates	2/11/2004	2/11/2004	3/8/2004
Log Boom Construction Complete	1/29/2004	5/20/2004	5/27/2004
Dam Crossing Complete	2/12/2004	4/15/2004	4/29/2004
Raw Water Intake - Segment 1	7/13/2004	8/30/2004	8/3/2004
Raw Water Intake Segment 2	6/22/2004	3/15/2004	3/10/2004
Project Substantial Completion	7/15/2004	8/30/2004	
Project final Completion	7/24/2004	8/30/2004	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	*Comments:*
$69,069	$0	

Remarks / Issues

All progress is as of the last Friday of the month.

Raw Water Segment 2 work is 100 %

Mitchell Engineering is expected to finish pipe installation along Dodds Road by September 15, 2004

SSJID - Water Supply Project - Program Summary Report — Contract No. 3.0

Aug-04

WBS/Contract No.	Project Title	Project Description	Design Engineers
3.0	Water Treatment Plant Overaa Constructions	Construction, commissioning and Startup of 40 MGD Submerged Membrane Water Treatment Plant for serving the immediate and future needs in the cities of Escalon, Manteca, Lathrop and Tracy.	Black & Veatch

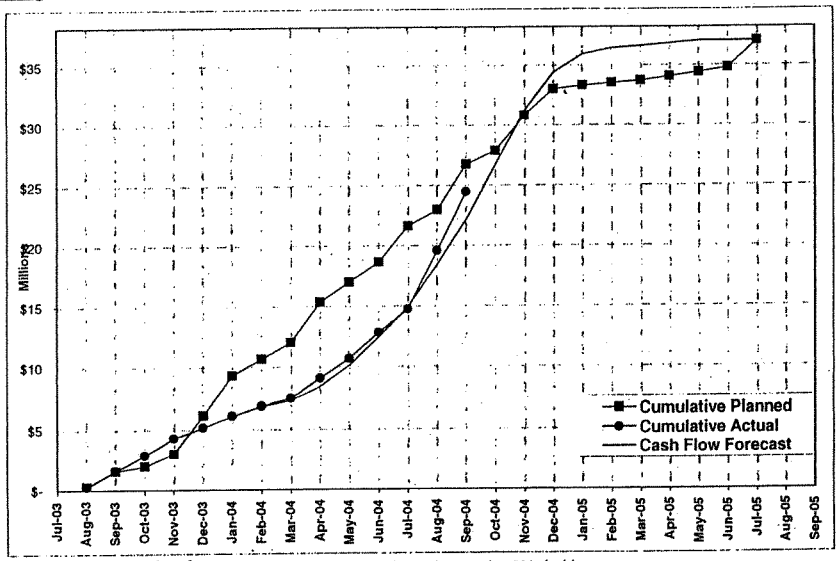
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 37,060,431
Approved Changes	$ 102,448
Current Contract Amount	$ 37,162,879
Pending Changes	$ 86,132
Current Forecast (EAC)	$ 37,249,011
Previous Quarterly EAC	$ 37,162,879

	EXPENDITURES TO DATE $	%
Planned	$ 23,014,528	61.9%
Actual	$ 24,467,688	65.8%
Variance	$ 1,453,160	3.9%

See Variance Analysis
If variance exceeds 5% +/-

Progress Curve - Water Treatment Plant



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Water Treatment Plant	Contract / Baseline	Forecast	Actual
Mobilization	6/27/2003	7/15/2003	7/15/2003
Residual Drying Beds	4/8/2004	8/20/2004	
O & M Building	11/24/2004	11/24/2004	
Chemical Feed Building	10/4/2004	10/4/2004	
Stabilization Basin 1	7/16/2004	10/22/2004	
Stabilization Basin 2	7/16/2004	10/22/2004	
DAF	10/5/2004	10/5/2004	
Yard Piping	11/8/2004	11/8/2004	
Rate of Flow Control	8/18/2004	11/15/2004	
Treated Water Storage Reservoir	3/28/2004	9/25/2004	
Plant Recycle Pump Station	3/17/2004	8/26/2004	
Membrane Filtration System	4/30/2005	2/22/2005	
Startup and Testing Requirements	4/30/2005	4/30/2005	
Project Substantial Completion	4/30/2005	5/30/2005	
Project final Completion	5/30/2005	6/30/2005	

Note: The Milestone Summary will be finalized prior to the next reporting cycle.

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	Comments:
$102,448	$86,132	

Remarks / Issues

All progress is as of the last Friday of the month.

Overaa Construction has revised their baseline and is planning to achieve substantial completion ahead of May 2005. The major items of work that were completed in August 04 were: continuation of work in the Membrane Building, placement of the membrane permeate pumps, and erection and painting of the two reservoir storage tanks.

Overall, the WTP is approximately 63% complete as of August 04.

SSJID Water Supply Project - Program Summary Report — Contract No. 4.1 — Aug-04

WBS/Contract No.	Project Title	Project Description	Design Engineers
4.1	Water Transmission Line Section 1 Ranger Pipelines	Construction of Section 1 of Water Transmission Line	Black & Veatch and Nolte

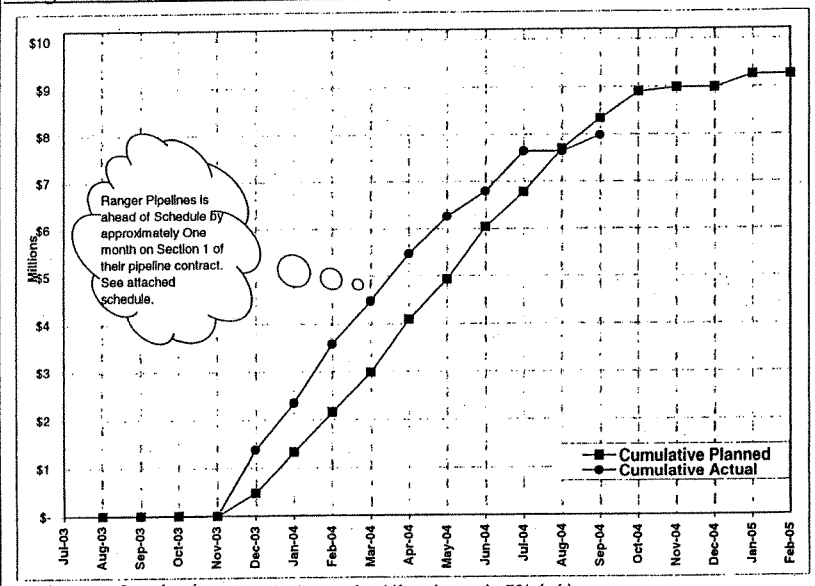
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 9,251,422
Approved Changes	$ 1,020,206
Current Contract Amount	$ 10,271,628
Pending Changes	$ 216,955
Current Forecast (EAC)	$ 10,488,584
Previous Quarterly EAC	$ 10,423,455

	EXPENDITURES TO DATE $	%
Planned	$ 7,704,754	75.0%
Actual	$ 7,982,097	77.7%
Variance	$ 277,343	2.7%

See Variance Analysis if variance exceeds 5% +/-

Progress Curve - Transmission Pipeline Section 1



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Water Transmission Line - Section 1

	Contract / Baseline	Forecast	Actual
Mobilization	11/3/2003	11/3/2003	11/3/2003
Segment 1 - Stn 1205+06.02 to Stn 1120	1/16/2004	1/16/2004	1/20/2004
Segment 2 - Stn 1120+00 to Stn 1024+00	3/5/2004	3/5/2004	3/2/2004
Segment 3 - Near Jefferson School	6/2/2004	3/5/2004	3/5/2004
Segment 4 - Stn 1020+00 to Stn 1051+00	3/31/2004	3/31/2004	1/30/2004
Segment 5 - Stn 1478+08 to Stn 1365+31	5/14/2004	6/15/2004	6/11/2004
Segment 6 - Stn 1365+31 to Stn 1265+31	6/29/2004	6/29/2004	6/18/2004
Segment 7 - Stn 1265+31 to Stn 1205+06.02	7/28/2004	1/26/2004	1/26/2004
Bore & Jack - UPRR Banta/Linne Road	12/19/2003	12/19/2003	2/18/2004
Bore & Jack - BCID Linne Road	12/31/2003	12/31/2003	2/9/2004
Bore & Jack - UPRR Linne Rd - Stn 979	1/23/2004	1/23/2004	1/28/2004
Bore & Jack - UPRR Linne Rd - Stn 975	2/13/2004	2/13/2004	2/18/2004
Bore & Jack - I-205	3/12/2004	6/17/2004	6/2/2004
Bore & Jack - Tom Paine Slough, Sta 1371+00	4/6/2004	4/6/2004	7/27/2004
Bore & Jack - 11th St, Sta 1325+50	4/21/2004	4/27/2004	4/30/2004
Bore & Jack - Grant Line Rd, Sta 1304	5/6/2004	4/23/2004	4/30/2004
Bore & Jack - S. Bird Rd, Sta 1205+00	5/20/2004	4/13/2004	4/13/2004
Microtunnelling - Paradise Cut	10/29/2004	10/29/2004	
Tie-in to Section 2			
Project Completion	11/30/2004	11/30/2004	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	*Comments:*
$1,020,206	$216,955	Incl. $ 950K CO for changing from Dir. Drill to Microtunneling

Remarks / Issues

All progress is as of the last Friday of the month.

Ranger Pipelines has started work on the GGS areas. This contractor is expected to achieve Substantial Completion in October 2004 with the completion of Paradise Cut area. The method of installation of pipe through the majority of Paradise Cut is changed from directional drill to microtunneling. A CO in the magnitude of $ 950K has been approved for this change in installation methodology. Anticipated completion date - Oct 04.

SSJID Water Supply Project - Program Summary Report — Contract No. 4.2

WBS/Contract No.	Project Title	Project Description	Design Engineers
4.2	Water Transmission Line Section 2 Mountain Cascade	Construction of Section 2 of Water Transmission Line	Black & Veatch and Nolte

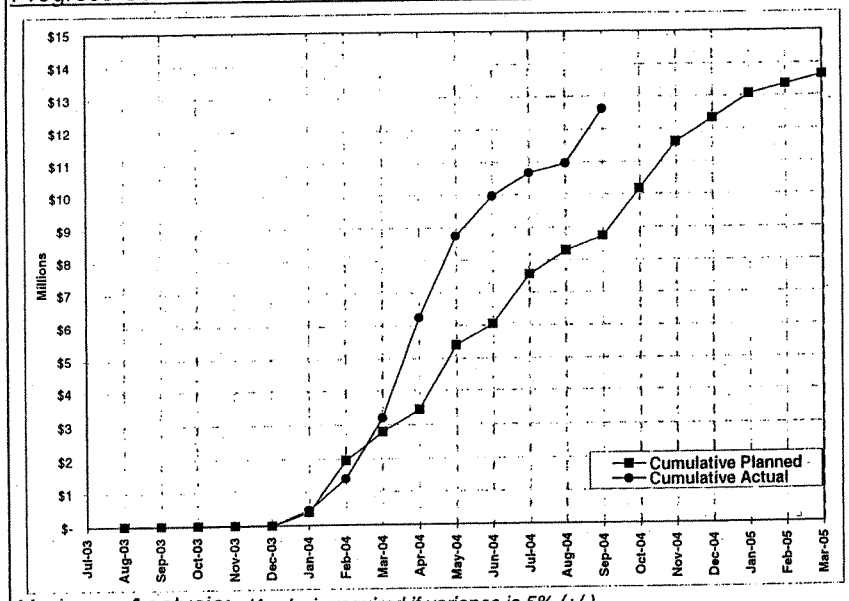
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 14,444,000
Approved Changes	$ 321,748
Current Contract Amount	$ 14,765,748
Pending Changes	$ 44,642
Current Forecast (EAC)	$ 14,810,389
Previous Quarterly EAC	$ 14,719,551

	EXPENDITURES TO DATE $	%
Planned	$ 8,283,634	56.1%
Actual	$ 12,619,255	85.5%
Variance	$ 4,335,621	29.4%

See Variance Analysis
If variance exceeds 5% +/-

Progress Curve - Transmission Pipeline Section 2



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Water Transmission Line - Section 2

	Contract / Baseline	Forecast	Actual
Mobilization	10/1/2003	12/15/2003	12/15/2003
Vierra - Yosemite	4/14/2004	4/14/2004	3/31/2004
Airport Way	9/8/2004	5/7/2004	4/16/2004
Howland Road	10/20/2004	7/5/2004	5/26/2004
I-5	11/5/2004	6/30/2004	5/24/2004
Manthey Road	1/18/2005	10/18/2004	
Lathrop Road	11/16/2004	5/21/2004	4/28/2004
Bore & Jack #1 - UPRR Sta 1627+00	12/9/2004	12/9/2004	1/21/2004
Bore & Jack #2 - RCP - Irrigation Sta 1634+00	12/14/2004	12/14/2004	2/5/2004
Bore & Jack #3 - Irrigation Box Culvert 1677+50	7/26/2004	7/26/2004	3/4/2004
Bore & Jack #4 - UPRR/SSJID Drain Sta 1731+00	12/28/2004	12/28/2004	4/1/2004
Bore & Jack #5 - Irrigation Culvert Sta 1792+50	1/3/2005	1/3/2005	3/3/2004
Bore & Jack #6 - RTE 99 Sta 1872+00	1/6/2005	1/6/2005	4/5/2004
Bore & Jack #7 - UPRR Sta 1580+00	1/11/2005	1/11/2005	4/21/2004
Bore & Jack #8 - UPRR Sta 1541+00	1/14/2005	6/3/2004	5/26/2004
Bore & Jack #9 - UPRR/State RTE 120 Sta 1515+50	1/19/2005	6/16/2004	6/21/2004
Bike Bridge	10/6/2004	12/10/2004	
Project Substantial Completion	2/1/2005	2/1/2005	
Testing & Chlorination	3/1/2005	3/1/2005	
Project Completion	3/1/2005	3/1/2005	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	*Comments:*
$321,748	$44,642	

Remarks / Issues

All progress is as of the last Friday of the month.

Mountian cascade is finished with the majority of pipe laying operations. MC's major areas of work remaining to go are the pipe installation on Manthey, and bridge work across San Joaquin river crossing. Moutain Cascade has started their bridge work by installing the piers on the banks of the river. Mountain Cascade is expected to achieve substantial completion by December 04.

SSJID - Water Supply Project - Program Summary Report - Contract No. 4.3

WBS/Contract No.	Project Title	Project Description	Design Engineers
4.3	Water Transmission Line Section 3 C.R. Fedrick	Construction of Section 3 of Water Transmission Line	Black & Veatch and Nolte

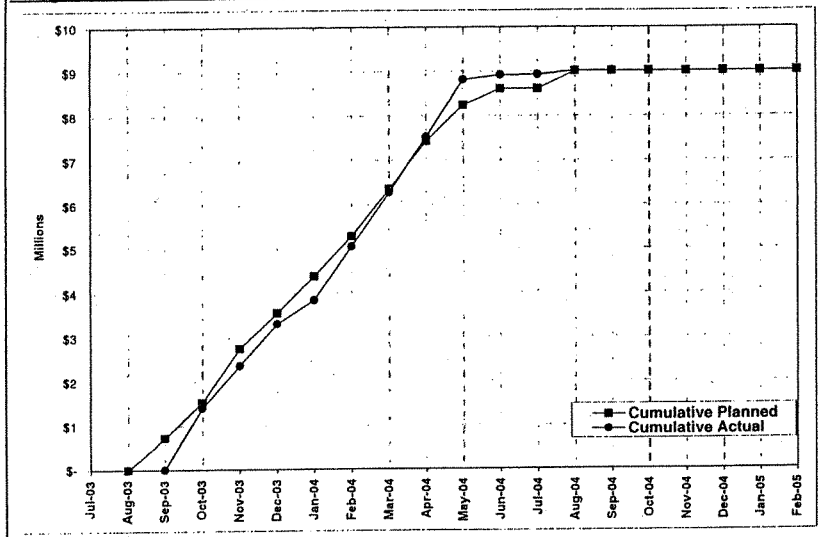
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 9,015,340
Approved Changes	$ 441,066
Current Contract Amount	$ 9,456,406
Pending Changes	$ 48,070
Current Forecast (EAC)	$ 9,504,476
Previous Quarterly EAC	$ 9,427,356

	EXPENDITURES TO DATE $	%
Planned	$ 9,015,340	95.3%
Actual	$ 9,016,855	95.4%
Variance	$ 1,515	0.0%

See Variance Analysis if variance exceeds 5% +/-

Progress Curve - Transmission Pipeline Section 3



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Water Transmission Line - Section 3

	Contract / Baseline	Forecast	Actual
Mobilization	8/27/2003	8/27/2003	8/27/2003
Install Bore & Jack 2086+96 to 2089+25	10/10/2003	11/6/2003	11/3/2003
Install Bore & Jack 1927+66 to 1928+06	10/27/2003	11/20/2003	11/20/2003
Install Bore & Jack 2223+94 to 2224+91	11/17/2003	1/2/2004	1/30/2004
Install 48" Pipe Stn 2086 to 1976+00	6/9/2004	2/19/2004	1/30/2004
Install 48" Pipe Stn 1976 to 1924+50	12/5/2003	12/23/2003	12/19/2003
Install 48" Pipe Stn 1924 to 1880+00	1/23/2004	2/5/2004	2/6/2004
Install 48" Pipe Stn 2069 to 2167+00	3/4/2004	3/17/2004	2/9/2004
Install 48" Pipe Stn 2167 to 2193+00	3/24/2004	4/6/2004	4/5/2004
Install 48" Pipe Stn 2193 tp 2247+50	5/12/2004	5/25/2004	6/17/2004
Testing & Chlorinate	6/9/2004	8/31/2004	
Project Completion	7/9/2004	9/10/2004	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	*Comments:*
$441,066	$48,070	

Remarks / Issues

All progress is as of the last Friday of the month.

C.R. Fedrick is on track to complete the contract well ahead of their contract date.

C.R. Fedrick continued pipeline disinfection procedures on the 48" waterline in preparation for final tie-in to Sections 2 and 4.

SSJID Water Supply Project - Program Summary Report — Contract No. 4.4

Aug-04

WBS/Contract No.	Project Title	Project Description	Design Engineers
4.4	Water Transmission Line Section 4 Ranger Pipelines	Construction of Section 4 of Water Transmission Line	Black & Veatch and Nolte

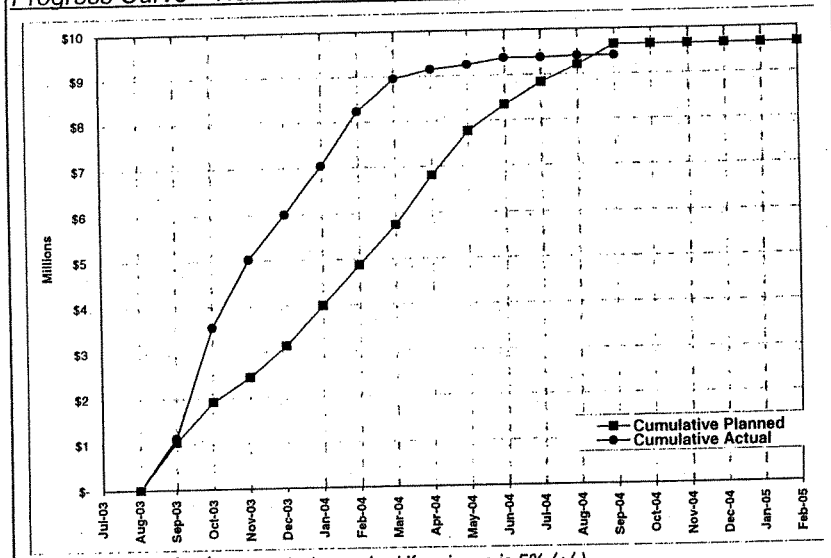
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 9,659,662
Approved Changes	$ 119,926
Current Contract Amount	$ 9,779,588
Pending Changes	$ 56,700
Current Forecast (EAC)	$ 9,836,288
Previous Quarterly EAC	$ 8,922,670

	EXPENDITURES TO DATE $	%
Planned	$ 9,215,317	94.2%
Actual	$ 9,406,831	96.2%
Variance	$ 191,513	2.0%

See Variance Analysis
If variance exceeds 5% +/-

Progress Curve - Transmission Pipeline Section 4



Variance Analysis: (Analysis required if variance is 5% (+/-)

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Water Transmission Line - Section 4

	Contract / Baseline	Forecast	Actual
Mobilization	8/11/2003	8/12/2003	8/13/2003
Jack & Bore - Irrigational Canal	10/15/2003	9/11/2003	9/11/2003
Jack & Bore - BNSF Railroad	10/23/2003	10/6/2003	10/6/2003
Jack & Bore - Mariposa Road	11/12/2003	3/8/2004	2/21/2004
Segment 1 Sta 2247+50 to Sta 2299+58	11/6/2003	10/9/2003	10/9/2003
Segment 2 Sta 2299+58 to Sta 2352+00	12/9/2003	12/8/2003	11/6/2003
Segment 3 Sta 2352+01 to Sta 2405+00	1/9/2004	12/8/2003	11/7/2003
Segment 4 Sta 2405+01 to Sta 2457+50	2/6/2004	12/8/2003	11/26/2003
Segment 5 Sta 2457+51 to Sta 2489+76.5	2/24/2004	1/5/2004	1/13/2004
Segment 6 Sta 2493+81 to Sta 2555+25	3/23/2004	2/13/2004	2/5/2004
Segment 7 Sta 2555+26 to Sta 2616+50	4/20/2004	3/15/2004	3/29/2004
Testing & Chlorination	6/9/2004	8/31/2004	
Substantial Completion	6/9/2004	8/31/2004	
Project Completion	6/26/2004	9/15/2004	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	Comments:
$119,926	$56,700	

Remarks / Issues

All progress is as of the last Friday of the month.

Ranger is approaching completion on this segment of work
Ranger has completed chlorination and dechlorination of all 48" waterline up to Avena Road. Shoulder restoration and clean-up activities are ongoing.

SSJID - Water Supply Project - Program Summary Report — Contract No. 4.5

WBS/Contract No.	Project Title	Project Description	Design Engineers
4.5	Water Transmission Line Section 5 Ranger Pipelines	Construction of Section 5 of Water Transmission Line	Black & Veatch and Nolte

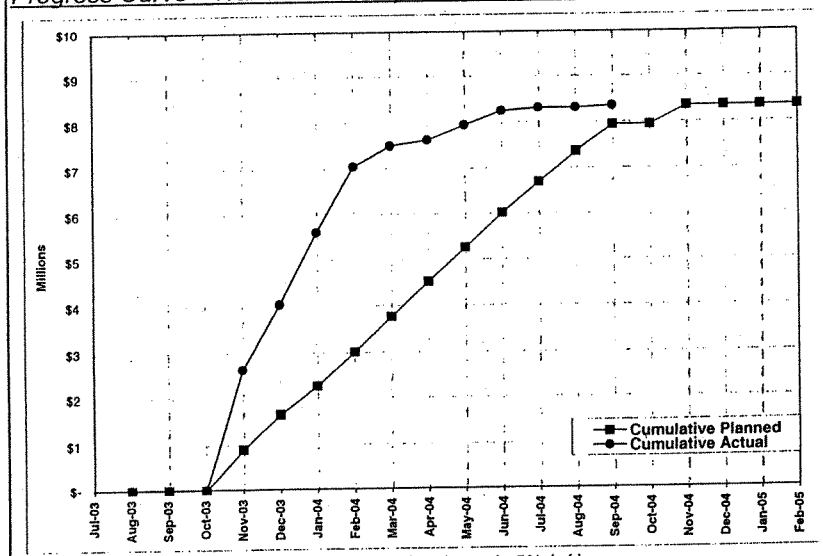
Project Synopsis

	CONTRACT AMOUNT
Original Contract Amount	$ 7,750,300
Approved Changes	$ 257,429
Current Contract Amount	$ 8,007,729
Pending Changes	$ 114,069
Current Forecast (EAC)	$ 8,121,798
Previous Quarterly EAC	$ 7,889,163

	EXPENDITURES TO DATE $	%
Planned	$ 7,354,442	91.8%
Actual	$ 8,357,000	104.4%
Variance	$ 1,002,558	12.5%

See Variance Analysis if variance exceeds 5% +/-

Progress Curve - Transmission Pipeline Section 5



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Water Transmission Line - Section 5

	Contract / Baseline	Forecast	Actual
Mobilization	9/19/2003	9/19/2003	9/8/2003
Stn 2618+50 to Stn 2723+50	11/25/2003	11/25/2003	11/7/2003
Stn 2723+50 to Stn 2768+00	12/29/2003	12/17/2003	1/16/2004
Stn 2768+00 to Stn 2777+00	1/8/2004	12/24/2003	1/16/2004
Stn 2777+00 to Stn 2924+51	3/25/2004	3/10/2004	2/10/2004
Bore & Jack # 1 - @ Water Treatment Plant	3/3/2004	3/3/2004	2/20/2004
Tie-in Section 4- Section 5	3/24/2004	4/15/2004	4/9/2004
Testing	4/23/2004	8/31/2004	
Project Completion	5/7/2004	9/15/2004	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	Comments:
$257,429	$114,069	

Remarks / Issues

All progress is as of the last Friday of the month.

Ranger Pipelines is 99% complete on this segment of work. Chlorination and dechlorination of th 54" waterline continues. Roadway shoulder restoration and clean-up activities are ongoing.

SSJID - Water Supply Project - Program Summary Report — Contract No. 5.0 — Aug-04

WBS/Contract No.	Project Title	Project Description	Design Engineers
5.0	Turnouts and Pump Station Auburn Constructors	Construction of Turnouts and Pump Station	Black & Veatch

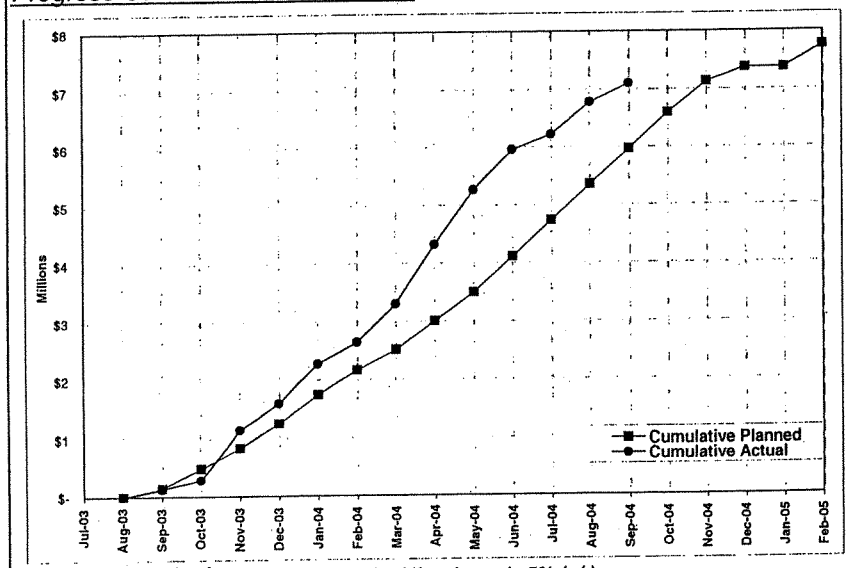
Project Synopsis

	CONTRACT AMOUNT	
Original Contract Amount	$	7,750,300
Approved Changes	$	138,863
Current Contract Amount	$	7,889,163
Pending Changes	$	73,208
Current Forecast (EAC)	$	7,962,371
Previous Quarterly EAC	$	7,856,404

	EXPENDITURES TO DATE $		%
Planned	$	5,347,707	67.8%
Actual	$	7,099,526	90.0%
Variance	$	1,751,819	22.2%

See Variance Analysis if variance exceeds 5% +/-

Progress Curve - Turnout Facilities



Variance Analysis: *(Analysis required if variance is 5% (+/-)*

Progress shown is the sum of the % of contract task value earned for each task.

Schedule Milestones

Turnouts and Pump Station

	Contract / Baseline	Forecast	Actual
Mobilization	8/13/2003	8/13/2003	8/13/2003
Lathrop L1 Station	9/3/2004	9/2/2004	
Manteca M2 Station	8/13/2004	8/12/2004	
Manteca M3 Station	8/27/2004	8/17/2004	
Tracy Booster Pump Station	9/17/2004	12/21/2004	
Project Substantial Completion	9/17/2004	12/21/2004	
Project Final Completion	10/1/2004	12/31/2004	

Change Management

Period Ending

31-Aug-04

Approved Changes	Anticipated Changes	*Comments:*
$138,863	$73,208	

Remarks / Issues

All progress is as of the last Friday of the month.

Contractor is on schedule to meet the Contract date at this point.
L1, M2, and M3 are structurally complete with some incidental work to be done. Functional testing sucessfully performed on M2 and M3.
Work remaining at TBPS includes final control systems, electrical cable, and small diameter piping. All the four sites are on schedule for demonstration and performance testing by May 2005.

APPENDIX G

CIRCULATION STUDY

COPY

CIRCULATION STUDY

RELATING TO

UNION RANCH PARTNERS PROJECT
Manteca, CA

Prepared For:

UNION RANCH PARTNERS, LLC
P.O. Box 1870
Manteca, CA 95336

Prepared By:

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3853 Taylor Road, Suite G
Loomis, California 95650
(916) 660-1555

Revised April 7, 2004

CIRCULATION STUDY RELATING TO
UNION RANCH PARTNERS PROJECT
Manteca, CA

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Revised April 7, 2004

KDA

CIRCULATION STUDY RELATING TO UNION RANCH PARTNERS PROJECT

Manteca, CA

INTRODUCTION

This report presents a circulation analysis for the proposed Union Ranch Partners Project located north of Lathrop Road in north Manteca. The project is generally bounded by Union Road to the east and Airport Way to the west. The project, a Pulte / Del Webb community, consists of a 1,425 unit active adult residential development. Figure 1 provides a vicinity map of the north Manteca area with the primary streets identified. Figure 2 presents the conceptual site plan for the project site. In addition, a 535 unit single-family subdivision by Union Ranch Partners, shown in the conceptual site plan on the east side of Union Road and east of the project site and is included as part of this analysis.

Access to the project site is proposed via several street connections. The main entrance to the Pulte / Del Webb site will be located along Union Road, about 2,000 feet north of Lathrop Road. This access will consist of a four-way intersection with the proposed Union Partners single-family site on the east side of Union Road. Secondary access will be provided at three locations, along Union Road about 2,400 feet north of the primary access, along Airport Way, about 2,100 feet north of Lathrop Road, and along Lathrop Road, about 1,600 feet west of Union Road. The Lathrop Road access will be right-in, right-out access only.

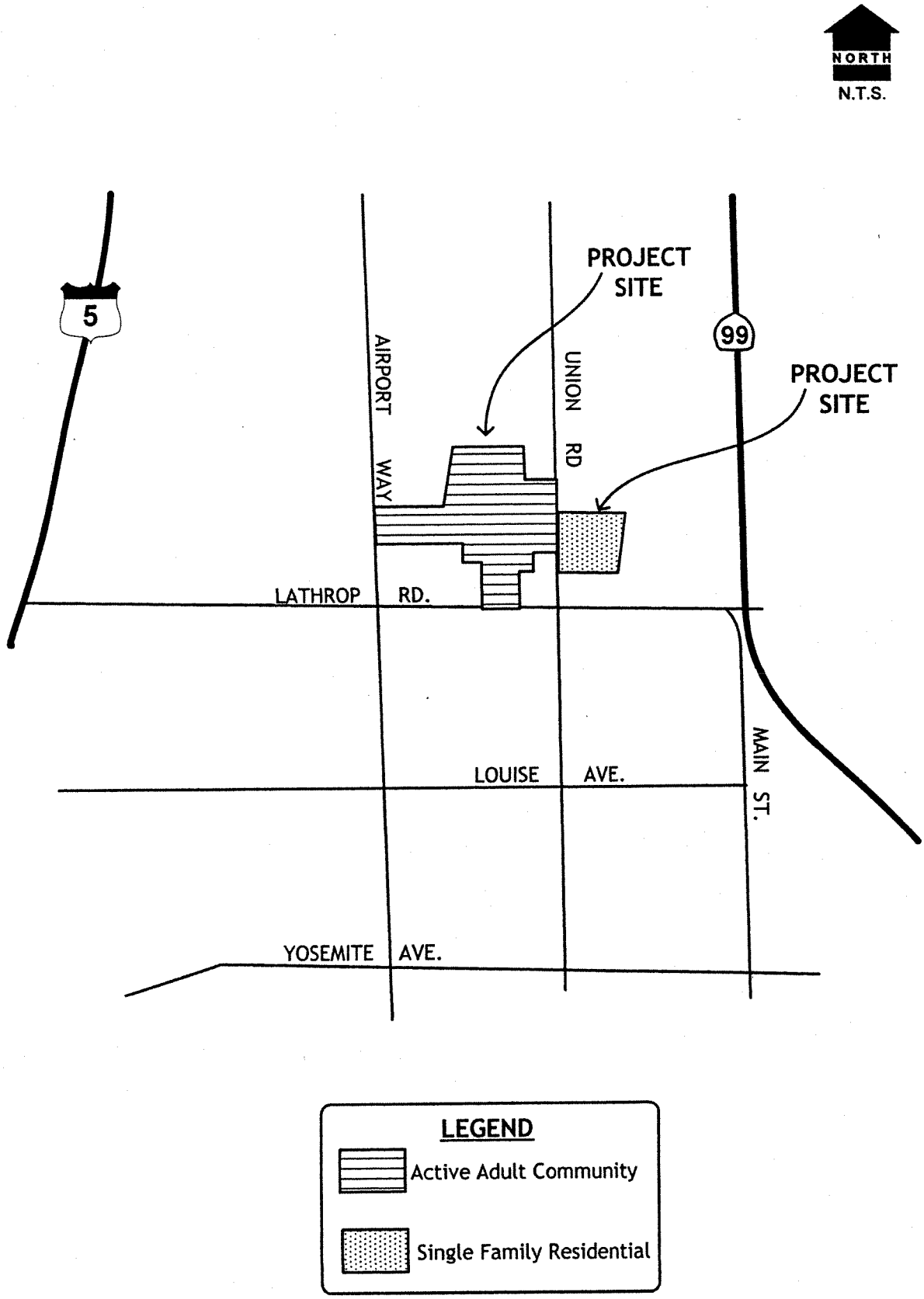
This analysis is intended to provide an assessment of the project's access and internal circulation requirements relative to existing and long-term conditions. Existing traffic conditions as well as traffic forecasts associated with a year 2025 planning horizon have been used as the basis for quantifying traffic impacts.

The scope of this study includes evaluation of the Airport Way / Lathrop Road and Union Road / Lathrop Road intersections. Traffic operations have been evaluated with respect to weekday a.m. and p.m. peak hour traffic conditions.

Project impacts under existing conditions have been quantified by superimposing project trips onto background traffic volumes. Probable project trip generation for the retirement community site was estimated using trip rates calculated from data collected at the Sun City Del Webb community in Lincoln.

The distribution of project trips was developed through review of current travel patterns in the area and on estimated least time travel paths between expected origins and destinations. Utilizing the expected distribution, project trips were assigned to the study area street system to determine resulting traffic operating conditions with development of the site. Lastly, recommended improvements have been identified to mitigate project specific and cumulative traffic impacts.

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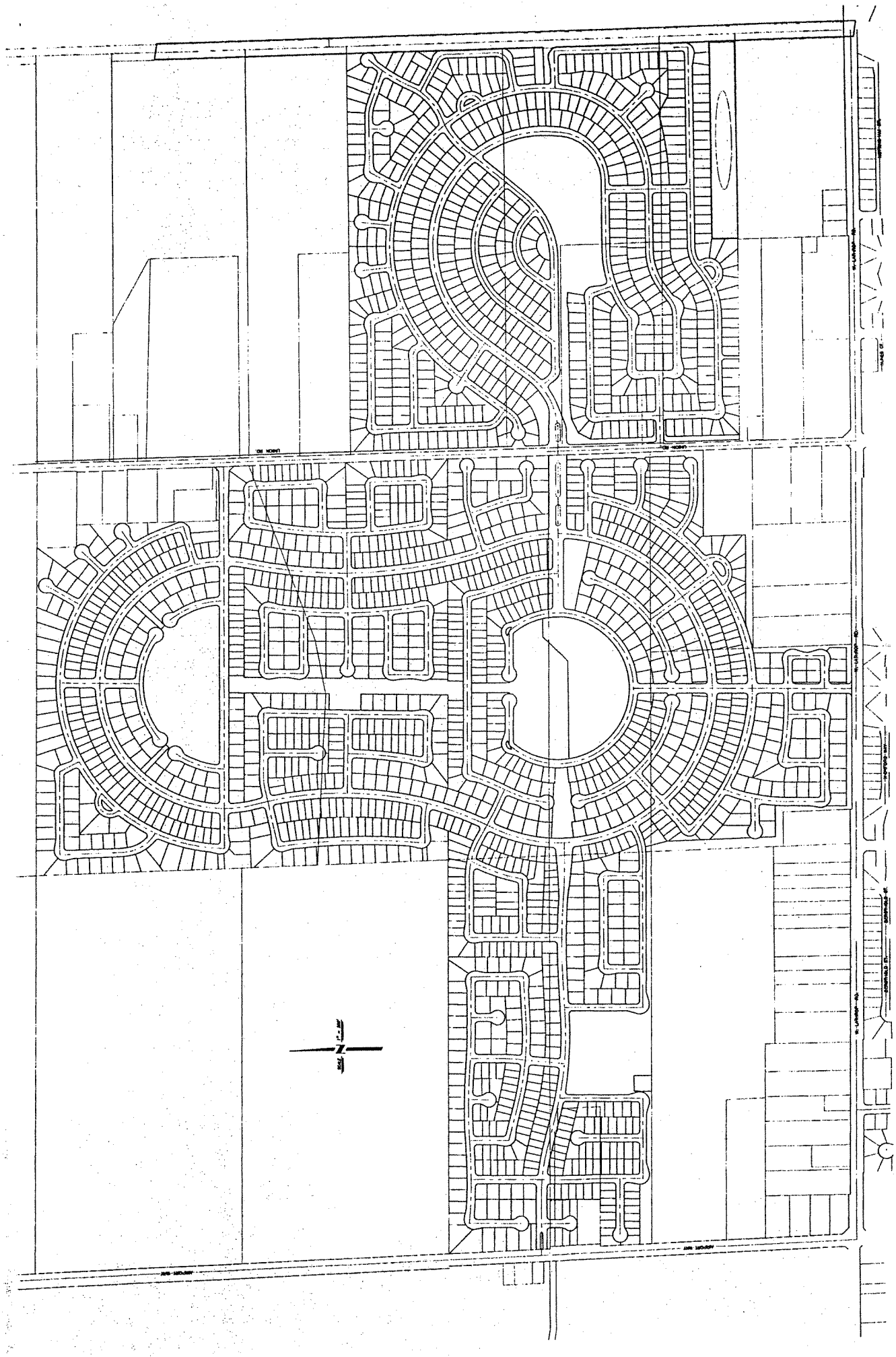


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VICINITY MAP

8140-01tb

figure 1



EXISTING SETTING

Existing Street System

Lathrop Road is an east-west roadway that extends through the City of Manteca and provides regional circulation between I-5 to the west and SR 99 to the east. Lathrop Road provides a primary east-west travel corridor across north Manteca. Adjacent to the project site, Lathrop Road is generally a 2-lane and 3-lane roadway. Near the Union Road intersection Lathrop Road consists of two eastbound lanes and a single westbound lane. Near the Airport Way intersection, Lathrop Road consists of single lanes east and westbound. Left turn lanes are provided at both signalized intersections.

Traffic counts performed by the consultant indicate approximately 930 vehicles per hour (vph) on Lathrop Road between Airport Way and Union Road in the p.m. peak traffic hour, with about 800 vph in the a.m. peak hour. Based upon this information and inbound directional counts provided by the City at select intersections, it is estimated that this segment of Lathrop Road currently carries about 11,300 daily vehicles. Using similar data about 10,200 daily vehicles are on Lathrop Road west of Airport Way while about 12,000 vehicles are on Lathrop Road east of Union Road.

Airport Way is a 2-lane north-south roadway that extends south of State Route 120 in the south and past Stockton Metropolitan Airport in the north. Access is provided to SR 120 via the Airport Way interchange. The current westerly city limit is approximately the east side of Airport Way. In the vicinity of Lathrop Road, Airport Way provides two travel lanes. Left turn lanes are provided at the Lathrop Road intersection and a separate right turn lane is also provided for the southbound approach. A 110-foot street right of way is ultimately planned for Airport Way at Lathrop Road. This will accommodate a 6-lane divided arterial street section.

Traffic counts indicate approximately 615 vph and 535 vph on Airport Way north and south of Lathrop Road in the p.m. peak traffic hour, respectively. During the a.m. peak hour these figures are 515 vph and 424 vph.

Union Road is a primary north-south roadway through Manteca and provides access to SR 120 in the south. In the vicinity of Lathrop Road, Union Road provides four travel lanes with a center turn lane south of Lathrop Road; a two-lane section exists north of the intersection. An 84-foot street right of way is ultimately planned for Union Road at Lathrop Road. This will accommodate a 4-lane divided arterial street section.

Traffic counts indicate approximately 450 vph and 790 vph on Union Road north and south of Lathrop Road in the p.m. peak traffic hour, respectively and 410 vph and 800 vph in the 4 a.m. peak hour.

Background Traffic Volumes

Existing Conditions. Peak hour traffic counts were performed at each of the study intersections during the morning and afternoon weekday peak traffic periods. Counts were conducted in

September 2003, for two-hour periods to isolate the peak traffic hours at each of the study intersections. Figure 3 displays existing peak hour intersection volumes used for this analysis.

Evaluation Methodology

To assess the quality of existing and future traffic conditions, "Levels of Service" were calculated for study area intersections. "Level of Service" (LOS) is a qualitative measure of traffic operating conditions whereby a letter grade, "A" through "F", corresponding to progressively worsening traffic operating conditions, is assigned to an intersection or roadway segment. In general terms, Level of Service is calculated for an hour long traffic condition at a signalized intersection, unsignalized intersection or roadway segment.

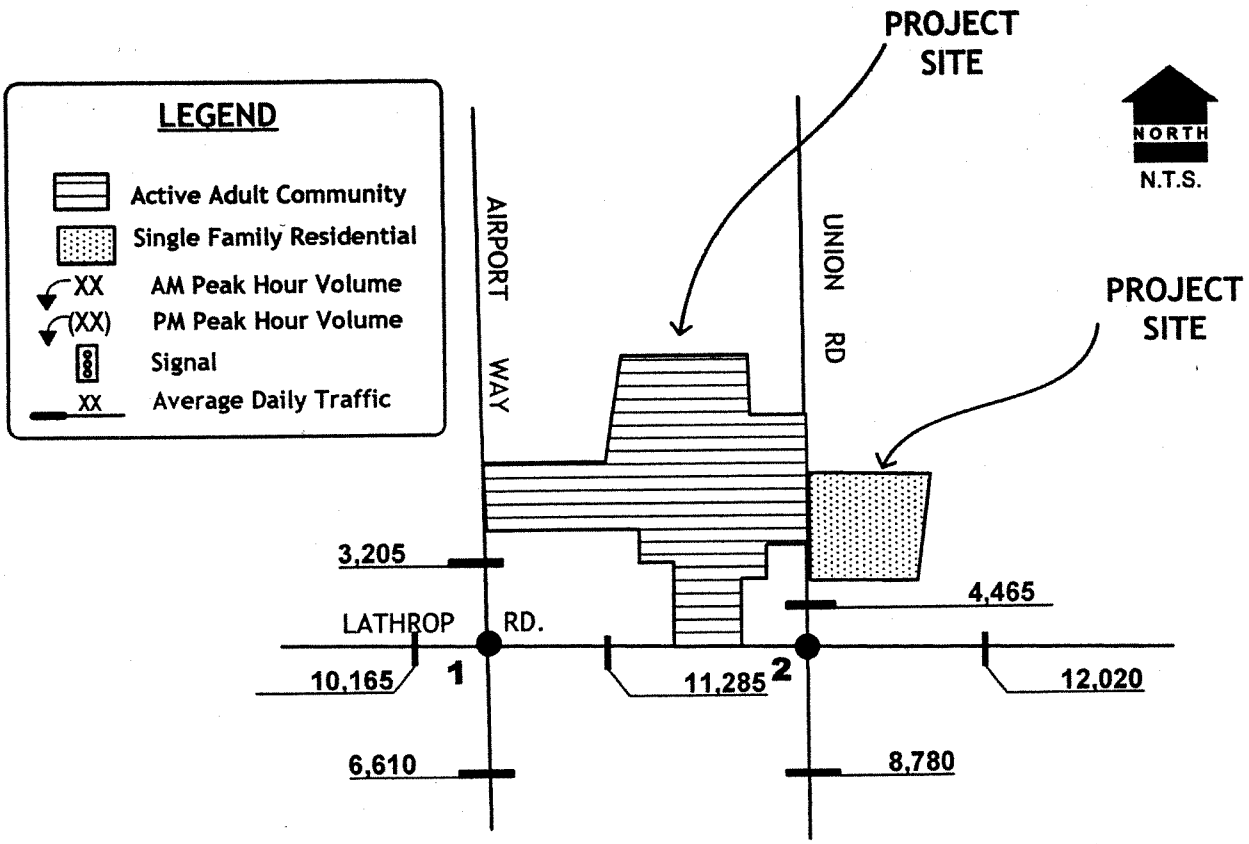
Levels of Service at the study intersections have been quantified using methodologies presented in the latest edition of the Highway Capacity Manual (HCS 2000). Table 1 summarizes performance measures associated with each of the Level of Service grades for intersections.

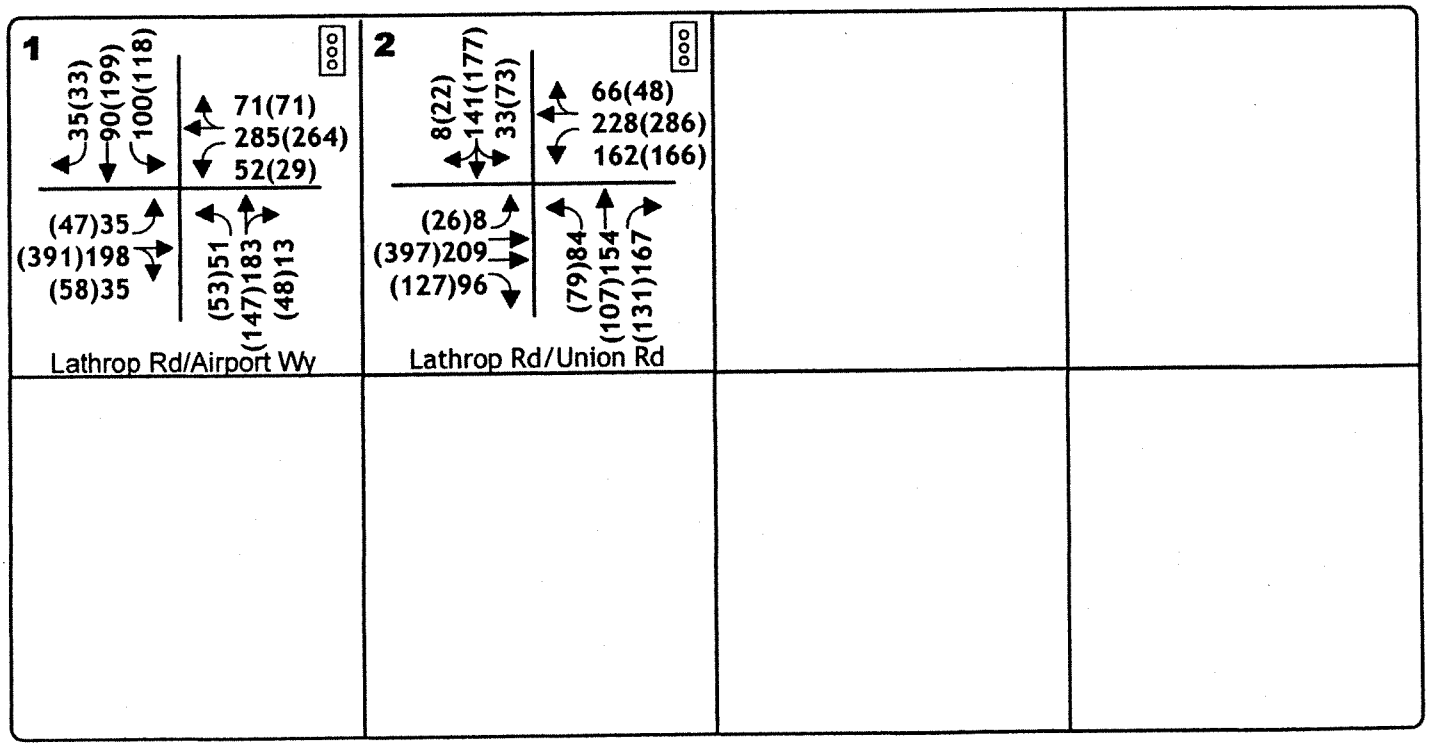
TABLE 1
LEVEL OF SERVICE DEFINITIONS - INTERSECTIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 2000 Highway Capacity Manual, Transportation Research Board (TRB) Special Report 209.

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EXISTING TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

8140-01tb

figure 3

According to the City's General Plan Transportation Analysis the City of Manteca utilizes a two-tier approach in assessing level of service. First, every intersection must meet LOS D as a minimum. Second, one-half of the study area intersections must operate at LOS C or better.

Existing Traffic Operations

Existing intersection operations are summarized in Table 2 and discussed below. Figure 3 displays existing traffic volumes and lane geometrics used in calculating current intersection operations.

Lathrop Road / Airport Way. This intersection is controlled by a traffic signal. Satisfactory Level of Service "C" operations are currently experienced at this location during both and p.m. peak traffic hours.

Lathrop Road / Union Road. This intersection is controlled by a traffic signal that utilizes a split phase along the northbound and southbound approaches. While individual lanes are available for left, through and right turn movements for the northbound approach only a single lane is present for the southbound approach. While adding more delay to the intersection satisfactory Level of Service "C" operations are still experienced at this location during both and p.m. peak traffic hours.

TABLE 2
EXISTING INTERSECTION LEVELS OF SERVICE

Location	Control	Existing Conditions			
		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Lathrop Road / Airport Way	Signal	C	28.5	C	27.5
Lathrop Road / Union Road	Signal	C	33.9	C	33.6

LOS = Level of Service

CUMULATIVE TRAFFIC CONDITIONS

Background Information

Year 2025 Traffic Forecasts. Traffic projections were obtained from the most recent General Plan Transportation Analysis (GPTA) (May 2003) for the 2025 horizon year. Daily volume information was available from the GPTA for Lathrop Road east of Airport Way, and Airport Way and Union Road south of Lathrop Road. The proposed project is located north of Lathrop Road. The model accounted for growth in this area; however, only p.m. peak hour traffic data is provided for the Airport Way / Lathrop Road intersection.

Significant growth is expected in this area of Manteca. Based upon the Traffic Analysis Zones (TAZ) and accompanying data in the GPTA it is projected that over 6,000 housing units will be constructed north of Lathrop Road between Airport Way to the west and Main Street to the east. In addition, this TAZ also includes 1,300 employees within retail, service and other industries. Traffic Analysis Zone 492, west of Airport Way, is identified to include over 11,000 employees. Based on these projections, in addition to expected movement between these two TAZ's there will be significant traffic along Airport Way into the business area west of the Union Ranch site.

Future volumes along these roadways (i.e. Airport Way and Union Road north of Lathrop Road and Lathrop Road west of Airport Way) were developed based on the existing daily traffic volumes and the projected volumes contained in the traffic model. P.M. peak hour traffic volumes for the Airport Way / Lathrop Road intersection were available from the GPTA and were used for this study. Daily volumes at the Union Road / Lathrop Road intersection were developed based on the net difference between existing and future traffic volumes south of the intersection. This difference was added to the existing traffic north of the intersection. A review of the Traffic Analysis Zones along Union Road indicated that the new development to the south of Lathrop Road will be generally infill projects. The large increase in traffic in the future was therefore determined to be from the new development to the north of Lathrop Road. Figure 4 illustrates the projected daily volumes in the project vicinity.

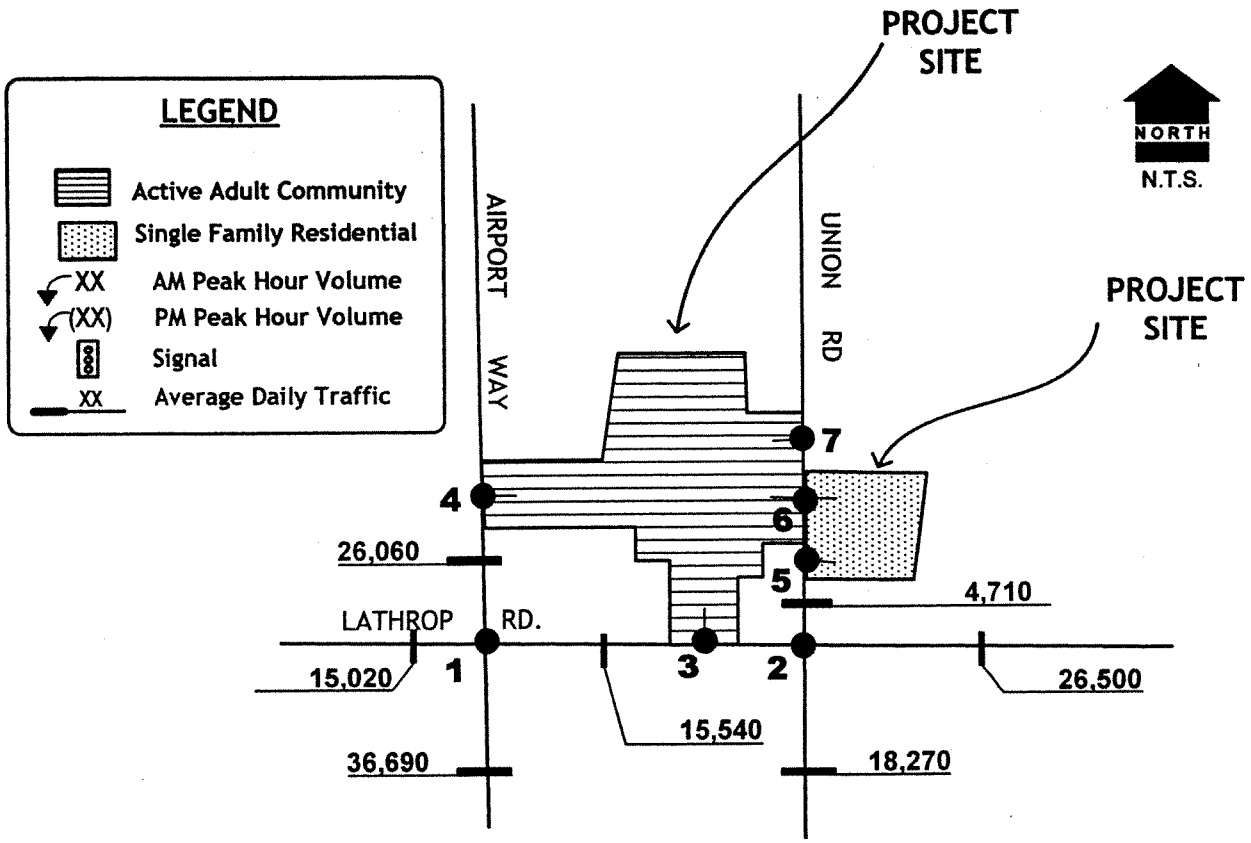
Development of peak hour conditions at the Lathrop Road / Union Road intersection considered the daily and peak hour volumes shown in the GPTA for the Lathrop Road / Airport Way intersection. A 10% peak hour was assumed along Union Road adjacent to the east side of the project. Current peak hour rates along Lathrop Road range to about 9%. Turning traffic at the intersection was determined based on the daily volumes shown in the GPTA (i.e. the percentage of daily traffic along each roadway). The calculated volumes assumed that development of both project sites using single family trip rates were included. To determine a cumulative base level (i.e., peak hour trips without development of either the active adult site or the residential site east of Union Road) the traffic volumes expected to be generated from both project sites were removed from the surrounding intersections; the base peak hour volumes are shown in Figure 4.

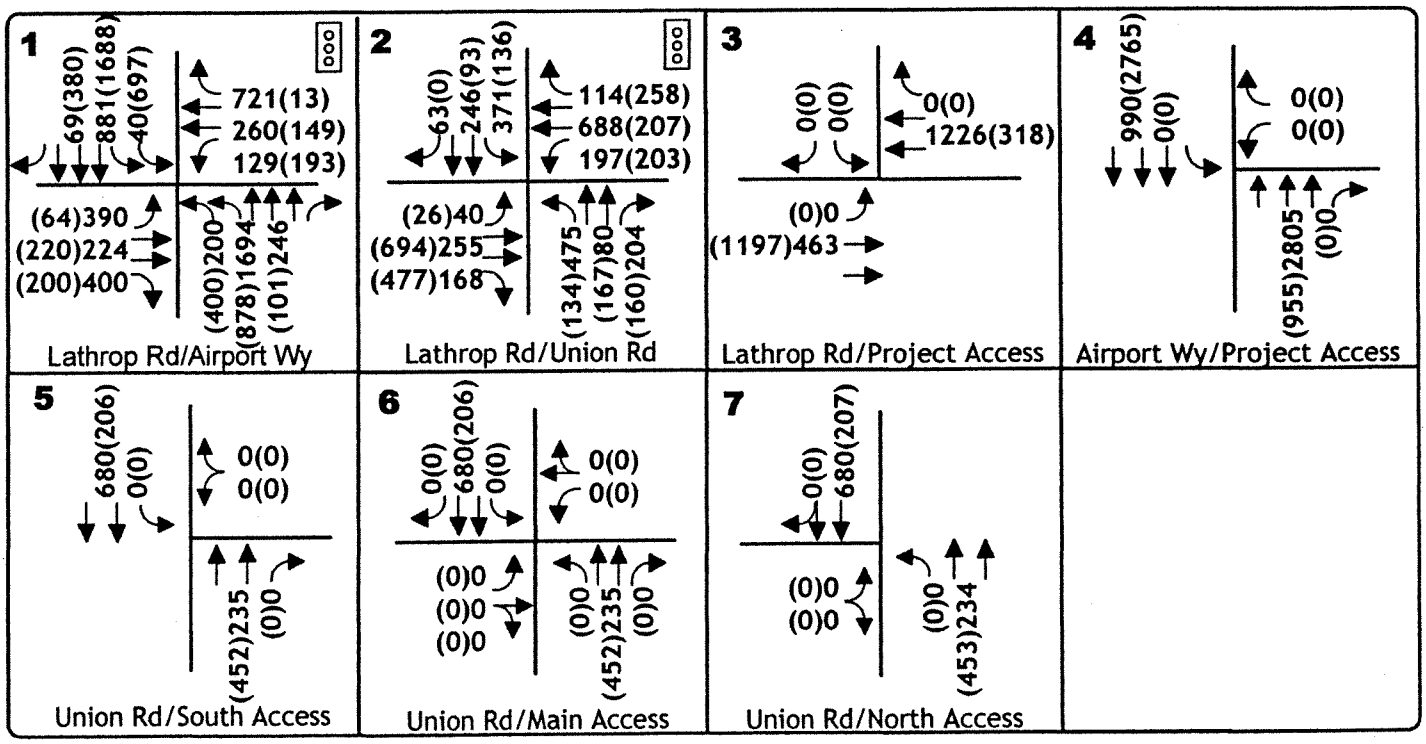
Year 2025 Lane Configurations. Lane configurations along Lathrop Road, Airport Way and Union Road were based on those identified in the GPTA. Roadways north of Lathrop Road were assumed to mimic the lane configurations to the south.

Lathrop Road is projected to be a four-lane divided roadway with left turn lanes available at intersections. Right turn lanes will be provided at the Airport Way intersection and are assumed to be provided at the Union Road intersection.

Airport Way is expected to be a six-lane roadway with dual left turn lanes at Lathrop Road. In addition, an exclusive right turn lane will be provided for northbound and southbound traffic.

Union Road is anticipated to be a four-lane roadway north and south of Lathrop Road. Right and left turn lanes are assumed for northbound and southbound traffic.





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BASE CUMULATIVE VOLUMES
(NO PROJECT ON EITHER SITE)

8140-01tb

figure 4

Table 3 summarizes the forecast intersection operations without development of the project site under long-term base traffic conditions. The local intersections are all expected to operate at LOS D or better, with over half of the study intersections at LOS C or better.

TABLE 3
CUMULATIVE INTERSECTION LEVELS OF SERVICE
(WITHOUT DEVELOPMENT OF SITE)

Location	Control	Cumulative Base			
		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Lathrop Rd / Airport Way	Signal	D	43.5	C	30.6
Lathrop Road / Union Road	Signal	C	33.8	C	27.7

LOS = Level of Service

PROJECT CHARACTERISTICS

Traffic impacts associated with development of both sites have been evaluated by estimating the quantity and directional orientation of traffic generated by the project. Utilizing the expected distribution, project trips were assigned to the study area street system to quantify resulting roadway and intersection operations with development of the site.

In considering circulation requirements of this active adult project, the residential development proposed on the east side of Union Road was also incorporated into the analysis. This residential site will consist of approximately 535 single-family residences.

Trip Generation

The number of automobile trips that will be generated by the project has been estimated using applicable trip generation rates. The rates used were obtained from two sources. Single-family residential trip generation rates for the Union Ranch Partners site were obtained from the Institute of Transportation Engineers (ITE) publication, Trip Generation (Sixth Edition). Trip generation rates for active adult communities (i.e. Pulte / Del Webb site) were derived from a study conducted in July 2001 at the Del Webb Sun City Lincoln Hills community. The study determined the trip generation rates for adult communities are about 50% lower than rates for single family homes. Peak hour rates are about 25% of single family homes.

Tables 4 and 5 present the trip generation rates used for this analysis together with the resulting number of trips estimated to be generated with buildout of both projects. As shown in Table 5, the projects are expected to generate a total of 12,389 daily trips, with 719 a.m. peak hour trips and 974 p.m. peak traffic hours.

TABLE 4
TRIP GENERATION RATES

Land Use	Units	Daily Rate	Peak Hour Rates					
			AM			PM		
			% In	% Out	Rate	% In	% Out	Rate
Adult Community	dwelling unit	3.71	24%	76%	0.75	65%	35%	1.01
Single Family Home	dwelling unit	9.55	24%	76%	0.19	65%	35%	0.26

TABLE 5
TRIPS GENERATED

Land Use	Quantity	Daily Trips	Peak Hour Trips					
			AM			PM		
			In	Out	Total	In	Out	Total
Adult Community	1,425 du's	6,612	65	206	271	241	130	371
Single Family Home	535 du's	5,120	96	305	401	351	189	540
Total		11,732	161	511	672	592	319	911

Trip Distribution

Having determined the number of trips anticipated by development of the sites, it is necessary to identify the directional distribution of project traffic. Existing and future traffic patterns, the location of work and shopping opportunities and available access to regional travel corridors (I-5 and SR 99) were used to estimate the directional distribution of project generated traffic.

Table 6 summarizes the estimated directional distribution of project generated traffic. For the active adult community travel to the north along Union Road and Airport Way is estimated to account for about 15% of the project trips. Travel to the west along Lathrop Road provides access to I-5 and accounts for 25% of the estimated traffic generation. Twenty-five percent of the traffic is estimated to head east along Lathrop Road. This provides access to SR 99 and Main Street. Main Street is the major north-south roadway in east Manteca and provides direct access to downtown. The remaining trips, 35% are expected to travel south along Union Road and Airport Way towards downtown Manteca. For the single-family project east of Union Road the trip distribution is expected to be slightly different with more traffic oriented to the future employee centers along Airport Way.

TABLE 6
DIRECTIONAL TRIP DISTRIBUTION

Direction	Active Adult Community (%)	Single Family (%)
North via Airport Way	10%	20%
North via Union Road	5%	5%
West on Lathrop Road	25%	20%
South on Airport Way	15%	20%
South on Union Road	20%	15%
East on Lathrop Road	25%	20%
	100%	100%

PROJECT IMPACTS / LEVEL OF SERVICE

Cumulative plus project intersection operations are summarized in Table 7 and discussed below. Figure 5 displays the project traffic while Figure 6 illustrates the cumulative plus project traffic volumes and lane geometrics used in calculating future intersection operations.

Projected Levels of Service

Project impacts at each of the study locations are discussed below.

Airport Way / Lathrop Road. Level of Service 'D' intersection operations is forecast at this location during both peak hours. The worst delay will occur in the a.m. peak hour with a delay of 49.2 seconds delay.

Lathrop Road / Union Road. Level of Service 'D' and 'C' intersection operations are forecast at this location during the a.m. and p.m. peak hours, respectively, with the projects in place. The worst delay will occur in the a.m. peak hour with a projected delay of 40.6 seconds.

Airport Way / Project Access. Without signalization, this intersection is projected to operate at LOS F in the a.m. peak hour assuming full access is provided across the six-lane roadway. Left and right turn lanes are assumed on project access. To mitigate this failing service level the intersection should be signalized. After signalization the intersection will operate at LOS C in the a.m. peak hour (29.5 seconds delay) and LOS B in the p.m. peak hour (19.3 seconds delay).

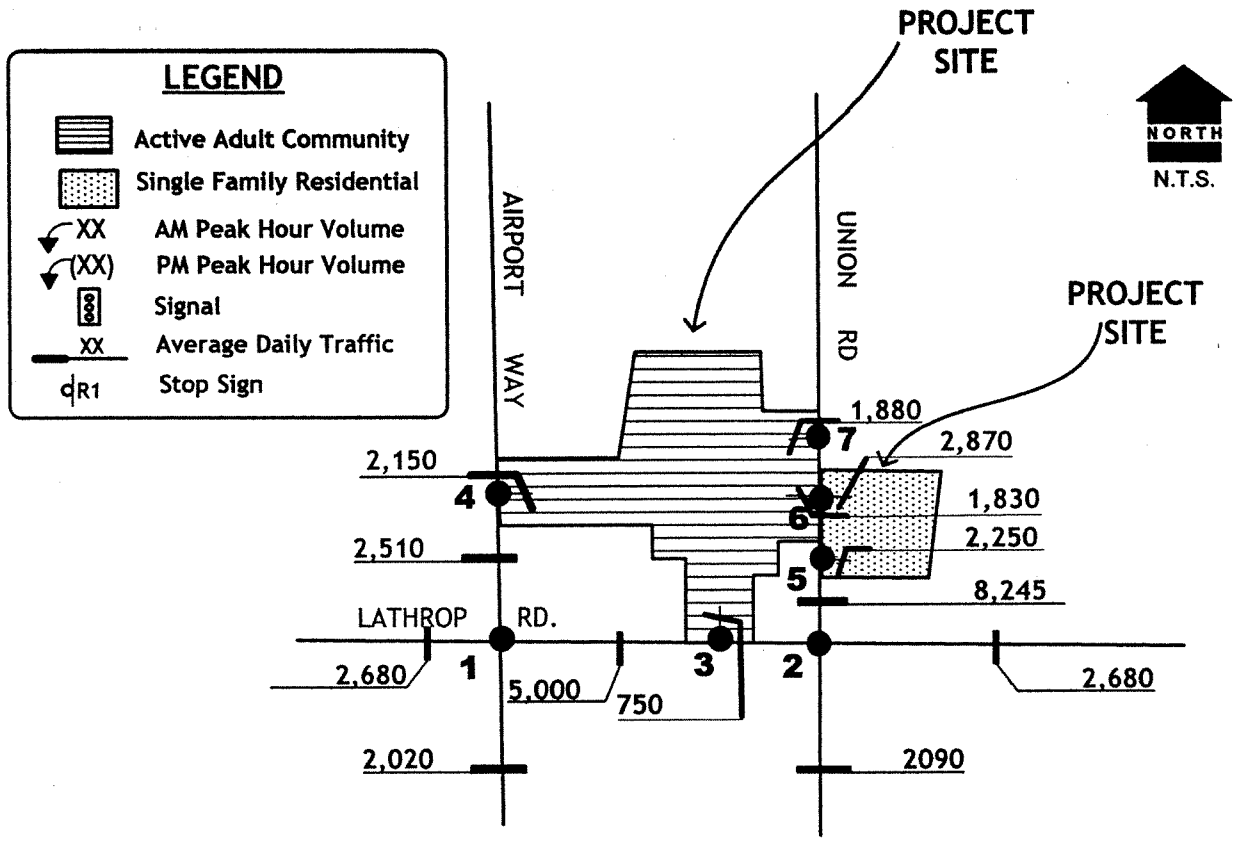
Union Road / South Access. This access will provide entry into the residential subdivision proposed along the east side of Union Road. A left turn lane for southbound traffic is assumed to be provided while northbound right turning traffic will utilize the outside through lane in a through-right configuration. A single outbound lane is assumed for the subdivision. With these

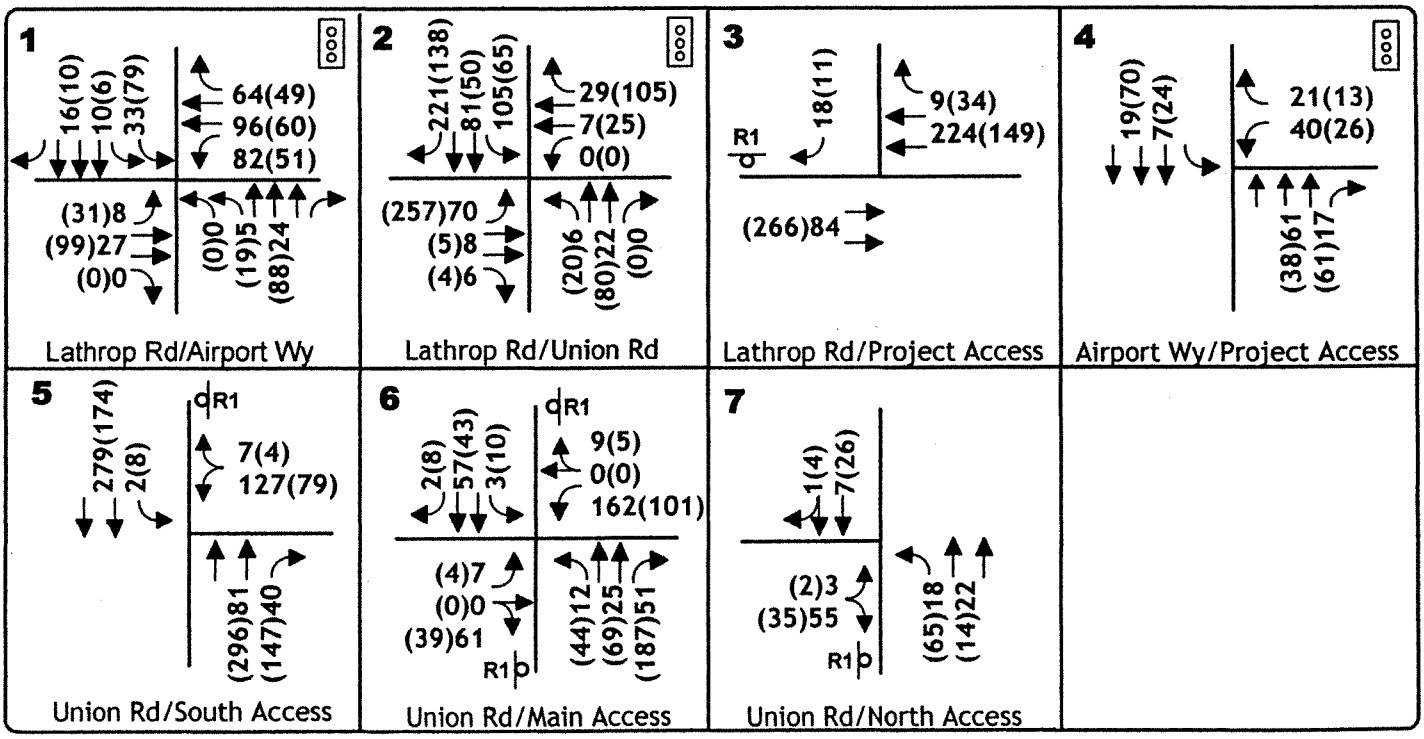
improvements, satisfactory LOS 'C' operations are projected at this location in both the a.m. (15.8 seconds delay) and p.m. (18.9 seconds delay) peak hours after completion of both projects.

Union Road / Main Access. This intersection will provide joint access to the Pulte / Del Webb active adult project community to the west and the Union Ranch Partners residential subdivision to the east. This intersection will be the main entrance into both sites. The proposed lane configuration for northbound and southbound Union Road should consist of two through lanes, a right turn lane and a left turn lane. Eastbound and westbound traffic should consist of a left turn lane and a combination through-right lane. Without a traffic signal the intersection will operate at LOS C in both a.m. (16.3 seconds delay) and p.m. (15.5 seconds delay) peak periods. However, while this intersection will operate at acceptable levels of service in the peak periods the intersection should be considered for signalization as it will be the major entrance for both projects. If signalized, the intersection would operate at LOS C in both a.m. (18.2 seconds delay) and p.m. (15.9 seconds delay) peak periods.

Union Road / North Access. This intersection will provide an access to the Pulte / Del Webb active adult community in the northeast corner of the site. The proposed lane configuration for northbound Union Road should consist of a left turn lane and two though lanes. Southbound lanes should consist of a through lane and a combination right-through lane. The eastbound approach can consist of a single lane. With a stop sign on the access exit, the intersection will operate at satisfactory levels, at LOS B in the a.m. peak hour (11.2 seconds delay) and LOS A in the p.m. (8.4 seconds delay).

Lathrop Road / Project Access. This intersection will have right-in, right-out access only as it is located in close proximity to the existing signalized intersection at Lathrop Road and London Avenue. This intersection is projected to operate at LOS C (16.7 seconds delay) in the a.m. peak hour and LOS B (10.1 seconds delay) in the p.m. peak hour. A single southbound lane is assumed. Due to the projected high traffic volumes along Lathrop Road a right turn lane into the active adult community site would be beneficial.



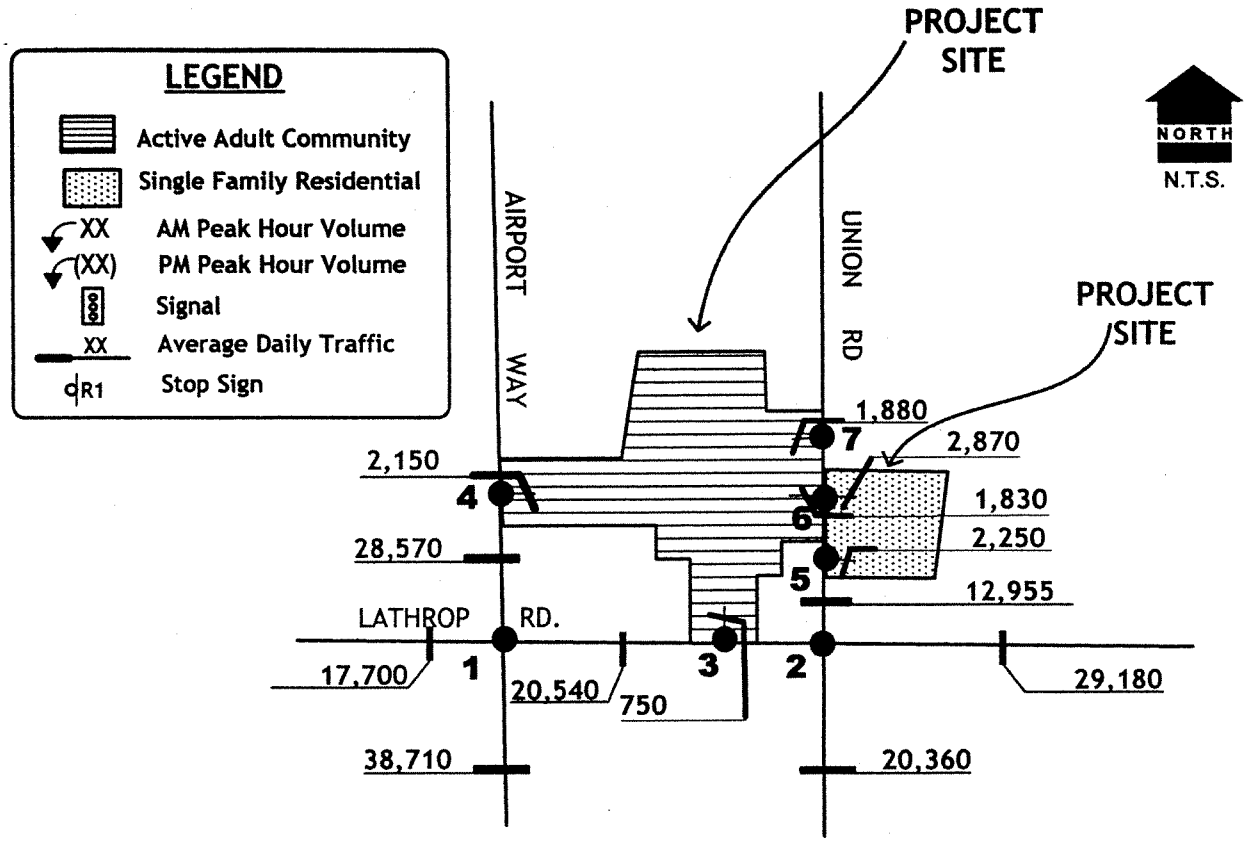


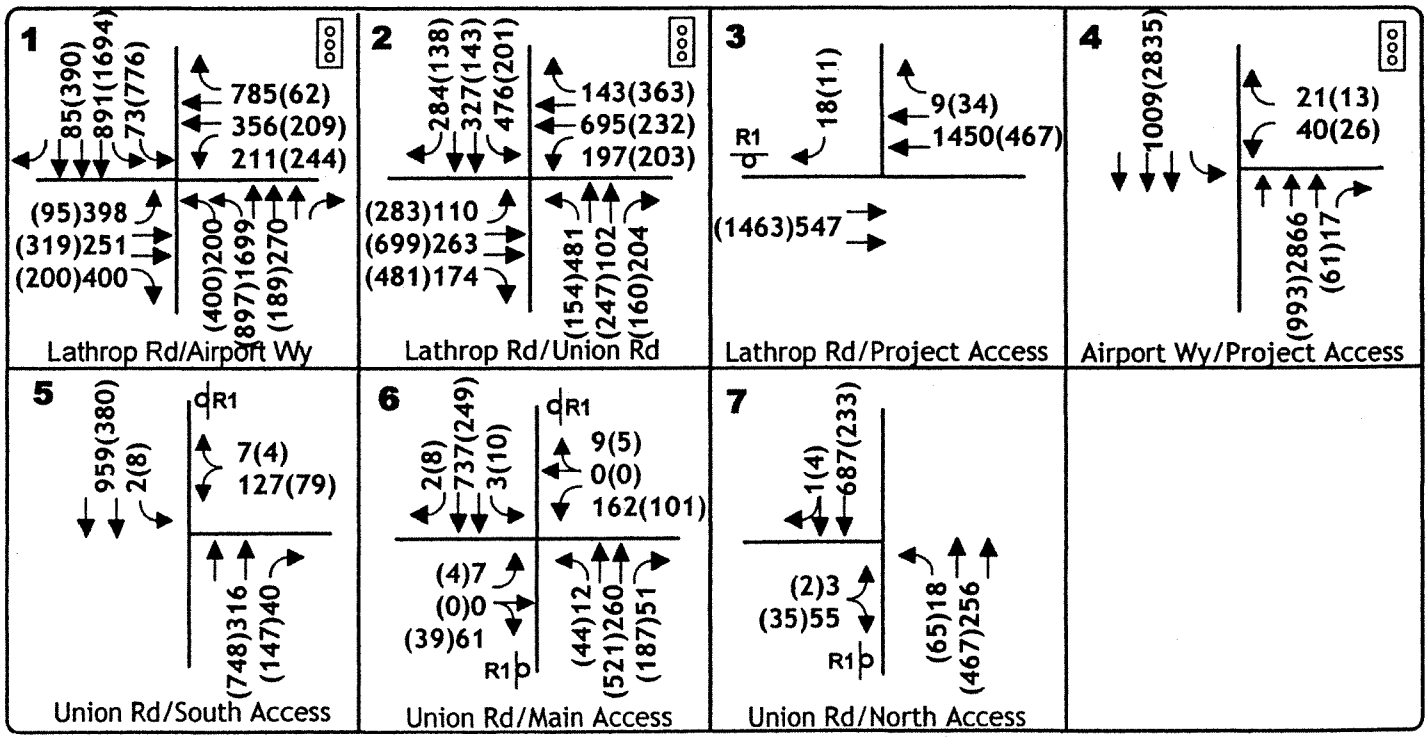
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PROJECT TRAFFIC
AND LANE CONFIGURATIONS

8140-01tb rev 4/1/04

figure 5





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CUMULATIVE PLUS
PROJECT TRAFFIC

8140-01tb rev 4/1/04

figure 6

TABLE 7
CUMULATIVE PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Location	Control	AM Peak		AM + Project		PM Peak		PM + Project	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Lathrop Rd / Airport Way	Signal	D	43.5	D	49.2	C	30.6	D	35.0
Lathrop Rd / Union Rd	Signal	C	33.8	D	40.6	C	27.7	C	31.1
Airport Way / Project Entrance									
Overall	WB Stop	N/A	---	F	>999	N/A	---	D	34.4
SB Left					47.0				11.4
WB Approach					>999				48.5
	Signal			**C**	**29.5**			**B**	**19.3**
Union Rd / South Entrance									
Overall	WB Stop	N/A	---	C	15.8	N/A	---	C	18.9
WB Approach					8.1				10.3
SB Left					15.9				19.7
Union Rd / Main Entrance									
Overall	EB/WB	N/A	---	C	16.3	N/A	---	C	15.5
NB Left	Stop				9.6				7.9
SB Left					8.0				9.4
EB Approach					12.3				9.6
WB Approach					18.5				21.7
	Signal			**B**	**18.2**			**B**	**15.9**
Union Rd / North Entrance									
Overall	EB Stop	N/A	---	B	11.2	N/A	---	A	8.4
NB Left					9.4				7.9
EB Approach					11.7				9.4
Lathrop Road / Project Entrance									
Overall	SB Stop	N/A	---	C	16.7	N/A	---	B	10.1
SB Approach					16.7				10.1

Note: Bold indicates mitigated condition (signalization of intersection)

KSA

INTERNAL CIRCULATION

Traffic Forecasts

Entrance Volumes. The development of the various subdivisions through Union Ranch will require creation of a network of internal streets. The amount of additional traffic on any particular section of the street network is dependent upon the trips generated by the project and the trip distribution and assignment, specifically, what routes this traffic will take entering and exiting the site.

The regional distribution of project traffic was defined earlier. Within the Union Ranch site traffic will be split among the four access intersections. As the Lathrop Road access will provide right-in, right-out access only this access is expected to accommodate about 12% of the total traffic. The remaining driveways are expected to carry 28% to 32% of the total traffic. Table 8 summarizes the projected daily volumes at each of the project entrances.

TABLE 8
INTERNAL STREET VOLUMES

Roadway	Location	Standard	
		Projected Daily Volume	Environmental Threshold
Airport Way Entrance (Pulte / Del Webb Union Ranch)	Inside Entrance	2,150	2,500
Lathrop Road Entrance (Pulte / Del Webb Union Ranch)	Inside Entrance	750	2,500
Union Road Main Entrance (Pulte / Del Webb Union Ranch)	Inside Entrance	1,830	2,500
Union Road North Entrance (Pulte / Del Webb Union Ranch)	Inside Entrance	1,880	2,500
Union Road Main Entrance (Union Partners Single Family Subdivision)	Inside Entrance	2,870	2,500
Union Road South Entrance (Union Partners Single Family Subdivision)	Inside Entrance	2,250	2,500

"Environmental" Threshold. Many communities have determined that persons living along residential streets complain of traffic problems at volumes that are far below the applicable Level of Service standard. Impacts to pedestrians, noise, air pollution and difficulty with driveway access are common complaints. As an example of this environmental threshold Sacramento County uses a planning threshold for local residential streets having direct frontage at 2,500 vehicles per day, and local residential streets are assumed to be generally a 40'± wide street, including two 12' through lanes and two 8' parking lanes.

As noted in Table 8 since highest volumes are expected at the site access this environmental threshold is not likely to be exceeded on streets within the Pulte / Del Webb Union Ranch project. The environmental threshold could be exceeded along the main entrance to the Union Ranch Partners subdivision to the east. This is likely to occur only between the main access intersection at Union Road and the first intersection inside the project site. At this location the daily volumes will be distributed to the various approaches at each intersection, resulting in volumes under 2,500 daily trips on each of the three legs. While the environmental threshold is exceeded by up to about 370 vehicles per day the possible impact has been mitigated since houses do not front the street.

Design Recommendation

Based on the projected trips and the resulting distribution the street system inside the projects could consist of two-lane residential roadways, i.e. 40' streets. The Pulte / Del Web Union Ranch site contains generally five major roadway segments. These are the connections from Union Road, Airport Way and Lathrop Road into the site. The terminus of each of these roads is an internal circulatory roadway around the site. Internal traffic controls should consist of stop controls along the minor intersecting streets. At locations where these 'major' roadways intersect all way stop controls should be installed. The locations of all-way stop intersections are spaced between 1,300' and 2,200'. Intermediate all-way stops may be advisable at midway intersections to control speeds. As an alternative, the project could install traffic calming measures such as median islands or curb extensions along the roadways at select mid-block locations and/or intersections. These would serve to narrow the roadway for pedestrians as well as provide traffic calming features, to slow, but not stop traffic.

The use of striping along the 'major' roads should be discouraged in that striping can have a tendency to increase speeds as motorists have their individual lanes to drive along.

APPENDICES

Level of Service Calculations

KDA

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec):	100	Critical Vol./Cap. (X):	0.516
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	28.5
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	51	183	13	100	90	35	35	198	35	52	285	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	183	13	100	90	35	35	198	35	52	285	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.90	0.90	0.90	0.75	0.75	0.75	0.85	0.85	0.85
PHF Volume:	64	229	16	111	100	39	47	264	47	61	335	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	229	16	111	100	39	47	264	47	61	335	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	64	229	16	111	100	39	47	264	47	61	335	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.97	0.97	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.95	0.95
Lanes:	1.00	0.93	0.07	1.00	1.00	1.00	1.00	0.85	0.15	1.00	0.80	0.20
Final Sat.:	1769	1721	122	1769	1862	1583	1769	1547	274	1769	1446	360
Capacity Analysis Module:												
Vol/Sat:	0.04	0.13	0.13	0.06	0.05	0.02	0.03	0.17	0.17	0.03	0.23	0.23
Crit Moves:		****		****			****				****	
Green/Cycle:	0.15	0.26	0.26	0.12	0.23	0.23	0.05	0.42	0.42	0.08	0.45	0.45
Volume/Cap:	0.24	0.52	0.52	0.52	0.24	0.11	0.52	0.41	0.41	0.41	0.52	0.52
Uniform Del:	37.3	31.8	31.8	41.2	31.6	30.6	46.2	20.5	20.5	43.4	19.7	19.7
IncremntDel:	0.5	1.0	1.0	2.2	0.3	0.1	5.1	0.4	0.4	1.8	0.6	0.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.7	32.8	32.8	43.3	31.9	30.8	51.3	20.9	20.9	45.2	20.3	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.7	32.8	32.8	43.3	31.9	30.8	51.3	20.9	20.9	45.2	20.3	20.3
DesignQueue:	3	10	1	6	4	2	2	9	2	3	11	3

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec): 100 Critical Vol./Cap. (X): 0.570
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 33.9
Optimal Cycle: 46 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	0	1	0 0 1!	0	0	1 0 2	0	1	1 0 0	1	0
Volume Module:												
Base Vol:	84	154	167	33	141	8	8	209	96	162	228	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	154	167	33	141	8	8	209	96	162	228	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.65	0.65	0.65	0.70	0.70	0.70	0.80	0.80	0.80	0.85	0.85	0.85
PHF Volume:	129	237	257	47	201	11	10	261	120	191	268	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	237	257	47	201	11	10	261	120	191	268	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	129	237	257	47	201	11	10	261	120	191	268	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.97	0.97	0.97	0.93	0.93	0.83	0.93	0.95	0.95
Lanes:	1.00	1.00	1.00	0.18	0.78	0.04	1.00	2.00	1.00	1.00	0.78	0.22
Final Sat.:	1769	1862	1583	333	1421	81	1769	3538	1583	1769	1395	404
Capacity Analysis Module:												
Vol/Sat:	0.07	0.13	0.16	0.14	0.14	0.14	0.01	0.07	0.08	0.11	0.19	0.19
Crit Moves:			****			****	****				****	
Green/Cycle:	0.28	0.28	0.28	0.25	0.25	0.25	0.01	0.14	0.14	0.20	0.34	0.34
Volume/Cap:	0.26	0.45	0.57	0.57	0.57	0.57	0.57	0.52	0.53	0.53	0.57	0.57
Uniform Del:	27.6	29.3	30.6	32.9	32.9	32.9	49.3	39.6	39.7	35.5	27.2	27.2
IncremntDel:	0.3	0.6	1.8	1.7	1.7	1.7	37.9	0.9	2.3	1.5	1.3	1.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	27.9	29.9	32.3	34.6	34.6	34.6	87.2	40.5	42.1	37.0	28.5	28.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.9	29.9	32.3	34.6	34.6	34.6	87.2	40.5	42.1	37.0	28.5	28.5
DesignQueue:	5	10	11	2	9	0	1	13	6	9	10	3

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.553
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 27.5
Optimal Cycle: 44 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	53	147	48	118	199	33	47	391	58	29	264	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	147	48	118	199	33	47	391	58	29	264	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	59	163	53	131	221	37	52	434	64	32	293	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	163	53	131	221	37	52	434	64	32	293	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	163	53	131	221	37	52	434	64	32	293	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.94	0.94	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.95	0.95
Lanes:	1.00	0.75	0.25	1.00	1.00	1.00	1.00	0.87	0.13	1.00	0.79	0.21
Final Sat.:	1769	1352	441	1769	1862	1583	1769	1591	236	1769	1420	382
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.12	0.07	0.12	0.02	0.03	0.27	0.27	0.02	0.21	0.21
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.22	0.22	0.13	0.28	0.28	0.07	0.49	0.49	0.03	0.46	0.46
Volume/Cap:	0.43	0.55	0.55	0.55	0.43	0.08	0.45	0.55	0.55	0.55	0.45	0.45
Uniform Del:	44.0	34.7	34.7	40.5	29.8	26.9	45.0	17.6	17.6	47.6	18.3	18.3
IncremntDel:	2.2	1.7	1.7	2.8	0.6	0.1	2.7	0.7	0.7	11.0	0.4	0.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.2	36.4	36.4	43.3	30.4	26.9	47.7	18.3	18.3	58.6	18.7	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	36.4	36.4	43.3	30.4	26.9	47.7	18.3	18.3	58.6	18.7	18.7
DesignQueue:	3	7	2	6	9	1	3	13	2	2	9	2

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100					Critical Vol./Cap. (X):				0.554							
Loss Time (sec):	12 (Y+R = 4 sec)					Average Delay (sec/veh):				33.6							
Optimal Cycle:	44					Level Of Service:				C							
Approach:	North Bound					South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	0	0	1!	0	0	1	0	2	0	1	1	0	0	1	0
Volume Module:																				
Base Vol:	79	107	131			73	177	22			26	397	127			166	286	48		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	79	107	131			73	177	22			26	397	127			166	286	48		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	88	119	146			81	197	24			29	441	141			184	318	53		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	88	119	146			81	197	24			29	441	141			184	318	53		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Final Vol.:	88	119	146			81	197	24			29	441	141			184	318	53		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.93	0.98	0.83			0.96	0.96	0.96			0.93	0.93	0.83			0.93	0.96	0.96		
Lanes:	1.00	1.00	1.00			0.27	0.65	0.08			1.00	2.00	1.00			1.00	0.86	0.14		
Final Sat.:	1769	1862	1583			488	1183	147			1769	3538	1583			1769	1559	262		
Capacity Analysis Module:																				
Vol/Sat:	0.05	0.06	0.09			0.17	0.17	0.17			0.02	0.12	0.09			0.10	0.20	0.20		
Crit Moves:			****					****				****				****				
Green/Cycle:	0.17	0.17	0.17			0.30	0.30	0.30			0.03	0.23	0.23			0.19	0.38	0.38		
Volume/Cap:	0.30	0.38	0.55			0.55	0.55	0.55			0.53	0.55	0.40			0.55	0.53	0.53		
Uniform Del:	36.6	37.1	38.3			29.4	29.4	29.4			47.8	34.3	33.0			36.8	23.9	23.9		
IncremntDel:	0.6	0.8	2.6			1.2	1.2	1.2			9.8	0.9	0.7			2.0	0.8	0.8		
Delay Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Delay/Veh:	37.2	37.9	40.9			30.6	30.6	30.6			57.6	35.1	33.7			38.8	24.7	24.7		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	37.2	37.9	40.9			30.6	30.6	30.6			57.6	35.1	33.7			38.8	24.7	24.7		
DesignQueue:	4	6	7			3	8	1			2	20	6			9	11	2		

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec):	100	Critical Vol./Cap. (X):	0.956
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	43.5
Optimal Cycle:	143	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 3	0	1	2 0 3	0	1	1 0 2	0	1	1 0 2	0	1
Volume Module:												
Base Vol:	200	1694	246	40	881	69	390	224	400	129	260	721
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	1694	246	40	881	69	390	224	400	129	260	721
User Adj:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	167	1412	205	33	734	58	325	187	333	108	217	601
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	1412	205	33	734	58	325	187	333	108	217	601
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	167	1412	205	33	734	58	325	187	333	108	217	601
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.13	0.01	0.14	0.04	0.18	0.05	0.21	0.06	0.06	0.38
Crit Moves:		****		****			****					****
Green/Cycle:	0.08	0.29	0.45	0.01	0.23	0.42	0.19	0.42	0.50	0.16	0.39	0.40
Volume/Cap:	0.64	0.96	0.29	0.96	0.64	0.09	0.96	0.13	0.42	0.38	0.16	0.96
Uniform Del:	44.9	34.8	17.5	49.5	35.1	17.6	40.0	17.7	16.0	37.7	20.0	29.3
IncremntDel:	5.4	14.3	0.2	134.0	1.2	0.1	37.1	0.0	0.4	0.9	0.1	25.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.3	49.1	17.7	183.5	36.3	17.7	77.1	17.7	16.4	38.6	20.1	54.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.3	49.1	17.7	183.5	36.3	17.7	77.1	17.7	16.4	38.6	20.1	54.6
DesignQueue:	9	60	6	2	33	2	15	6	10	5	7	22

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100	Critical Vol./Cap. (X):	0.774
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	33.8
Optimal Cycle:	71	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	475	80	204	371	246	63	40	255	168	197	688	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	80	204	371	246	63	40	255	168	197	688	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	528	89	227	412	273	70	44	283	187	219	764	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	528	89	227	412	273	70	44	283	187	219	764	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	528	89	227	412	273	70	44	283	187	219	764	127
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.83	0.83	0.93	0.90	0.90	0.93	0.88	0.88	0.93	0.91	0.91
Lanes:	1.00	1.00	1.00	1.00	1.59	0.41	1.00	1.21	0.79	1.00	1.72	0.28
Final Sat.:	1769	1578	1578	1769	2729	699	1769	2005	1321	1769	2971	492
Capacity Analysis Module:												
Vol/Sat:	0.30	0.06	0.14	0.23	0.10	0.10	0.03	0.14	0.14	0.12	0.26	0.26
Crit Moves:	****				****		****				****	
Green/Cycle:	0.39	0.10	0.27	0.41	0.13	0.16	0.03	0.19	0.58	0.17	0.33	0.75
Volume/Cap:	0.77	0.56	0.53	0.56	0.77	0.62	0.77	0.73	0.24	0.73	0.77	0.34
Uniform Del:	26.9	42.9	31.1	22.3	42.1	39.0	48.0	37.8	10.3	39.3	30.0	4.3
IncremntDel:	5.5	1.3	0.9	1.0	8.3	2.1	47.1	4.1	0.1	8.5	3.3	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.4	44.2	32.0	23.3	50.4	41.2	95.1	41.9	10.3	47.8	33.3	4.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.4	44.2	32.0	23.3	50.4	41.2	95.1	41.9	10.3	47.8	33.3	4.4
DesignQueue:	19	4	9	14	14	3	2	13	5	10	30	2

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.783
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 30.6
Optimal Cycle: 73 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	400	878	101	697	1688	380	64	220	200	193	149	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	400	878	101	697	1688	380	64	220	200	193	149	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	444	976	112	774	1876	422	71	244	222	214	166	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	444	976	112	774	1876	422	71	244	222	214	166	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	444	976	112	774	1876	422	71	244	222	214	166	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.19	0.07	0.23	0.37	0.27	0.04	0.07	0.14	0.12	0.05	0.01
Crit Moves:	****				****			****		****		
Green/Cycle:	0.17	0.29	0.45	0.34	0.47	0.58	0.11	0.09	0.25	0.15	0.13	0.47
Volume/Cap:	0.78	0.66	0.16	0.66	0.78	0.46	0.36	0.78	0.55	0.78	0.36	0.02
Uniform Del:	40.0	31.0	16.4	27.8	22.1	11.8	41.0	44.6	32.4	40.6	39.6	13.9
IncremntDel:	7.0	1.1	0.1	1.4	1.7	0.4	1.1	12.1	1.7	13.6	0.5	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.0	32.0	16.5	29.1	23.9	12.2	42.2	56.8	34.1	54.3	40.1	13.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	32.0	16.5	29.1	23.9	12.2	42.2	56.8	34.1	54.3	40.1	13.9
DesignQueue:	21	40	3	30	60	10	4	13	10	10	8	0

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec): 100 Critical Vol./Cap. (X): 0.813
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 27.7
Optimal Cycle: 80 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:			Ovl						Ovl						Ovl						Ovl			
Min. Green:	0	0		0			0	0		0			0	0		0			0	0		0		
Lanes:	1	0	1	1	0		1	0	1	1	0		1	0	1	1	0		1	0	1	1	0	
Volume Module:																								
Base Vol:	134		167		160		136		93		0		26		694		477		203		207		258	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	134		167		160		136		93		0		26		694		477		203		207		258	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	149		186		178		151		103		0		29		771		530		226		230		287	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Reduced Vol:	149		186		178		151		103		0		29		771		530		226		230		287	
PCE Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Final Vol.:	149		186		178		151		103		0		29		771		530		226		230		287	
Saturation Flow Module:																								
Sat/Lane:	1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900	
Adjustment:	0.93		0.86		0.86		0.93		0.93		0.95		0.93		0.87		0.87		0.93		0.85		0.85	
Lanes:	1.00		1.02		0.98		1.00		2.00		0.00		1.00		1.19		0.81		1.00		1.00		1.00	
Final Sat.:	1769		1675		1605		1769		3538		0		1769		1969		1353		1769		1622		1622	
Capacity Analysis Module:																								
Vol/Sat:	0.08		0.11		0.11		0.09		0.03		0.00		0.02		0.39		0.39		0.13		0.14		0.18	
Crit Moves:			****				****								****				****					
Green/Cycle:	0.18		0.14		0.29		0.11		0.06		0.00		0.07		0.48		0.66		0.16		0.57		0.68	
Volume/Cap:	0.47		0.81		0.38		0.81		0.47		0.00		0.25		0.81		0.59		0.81		0.25		0.26	
Uniform Del:	36.8		41.9		28.1		43.8		45.3		0.0		44.3		22.1		9.4		40.7		10.6		6.3	
IncremntDel:	1.1		10.9		0.3		23.1		1.6		0.0		1.1		3.3		0.4		16.5		0.1		0.1	
Delay Adj:	1.00		1.00		1.00		1.00		1.00		0.00		1.00		1.00		1.00		1.00		1.00		1.00	
Delay/Veh:	37.9		52.8		28.3		66.9		46.9		0.0		45.5		25.4		9.9		57.3		10.7		6.4	
User DelAdj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
AdjDel/Veh:	37.9		52.8		28.3		66.9		46.9		0.0		45.5		25.4		9.9		57.3		10.7		6.4	
DesignQueue:	7		9		7		8		5		0		2		24		11		11		6		5	

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec):	100	Critical Vol./Cap. (X):	0.999
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	49.2
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:			Ovl					Ovl					Ovl					Ovl		
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	2	0	3	0	1	2	0	3	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	200	1694		246		40	881		69		390	224		400		129	260		721	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	200	1694		246		40	881		69		390	224		400		129	260		721	
Added Vol:	0	5		24		33	10		16		8	27		0		82	96		64	
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0		0	
Initial Fut:	200	1699		270		73	891		85		398	251		400		211	356		785	
User Adj:	0.75	0.75		0.75		0.75	0.75		0.75		0.75	0.75		0.75		0.75	0.75		0.75	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	167	1416		225		61	743		71		332	209		333		176	297		654	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	167	1416		225		61	743		71		332	209		333		176	297		654	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	167	1416		225		61	743		71		332	209		333		176	297		654	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.90	0.89		0.83		0.90	0.89		0.83		0.93	0.93		0.83		0.93	0.93		0.83	
Lanes:	2.00	3.00		1.00		2.00	3.00		1.00		1.00	2.00		1.00		1.00	2.00		1.00	
Final Sat.:	3432	5083		1583		3432	5083		1583		1769	3538		1583		1769	3538		1583	
Capacity Analysis Module:																				
Vol/Sat:	0.05	0.28		0.14		0.02	0.15		0.04		0.19	0.06		0.21		0.10	0.08		0.41	
Crit Moves:		****				****					****								****	
Green/Cycle:	0.07	0.28		0.50		0.02	0.22		0.41		0.19	0.36		0.44		0.22	0.40		0.41	
Volume/Cap:	0.66	1.00		0.28		1.00	0.66		0.11		1.00	0.16		0.48		0.45	0.21		1.00	
Uniform Del:	45.1	36.1		14.5		49.1	35.4		18.2		40.6	21.7		20.2		33.6	19.9		29.3	
IncremntDel:	6.1	23.7		0.2		115.1	1.4		0.1		49.2	0.1		0.5		0.8	0.1		35.0	
Delay Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Delay/Veh:	51.2	59.8		14.7		164.2	36.8		18.3		89.8	21.7		20.7		34.4	20.0		64.3	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	51.2	59.8		14.7		164.2	36.8		18.3		89.8	21.7		20.7		34.4	20.0		64.3	
HCM2kAvg:	4	21		4		3	8		1		16	2		8		5	3		27	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Lathrop / Main Entrance

Average Delay (sec/veh): 16.7 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	0 0	1	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	463	0	0	1226	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	463	0	0	1226	0
Added Vol:	0	0	0	0	0	18	0	84	0	0	224	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	18	0	547	0	0	1450	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	20	0	608	0	0	1611	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	20	0	608	0	0	1611	10
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	811	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	327	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	327	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	16.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	C	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			16.7			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100	Critical Vol./Cap. (X):	0.904
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	40.6
Optimal Cycle:	112	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1	1 0	2	0 1
Volume Module:												
Base Vol:	475	80	204	371	246	63	40	255	168	197	688	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	80	204	371	246	63	40	255	168	197	688	114
Added Vol:	6	22	0	105	81	221	70	8	6	0	7	29
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	481	102	204	476	327	284	110	263	174	197	695	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	534	113	227	529	363	316	122	292	193	219	772	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	534	113	227	529	363	316	122	292	193	219	772	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	534	113	227	529	363	316	122	292	193	219	772	159
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.84	0.84	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	1.00	1.00	1.00	1.07	0.93	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	1592	1592	1769	1761	1529	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.30	0.07	0.14	0.30	0.21	0.21	0.07	0.08	0.12	0.12	0.22	0.10
Crit Moves:	****				****		****				****	
Green/Cycle:	0.33	0.11	0.30	0.45	0.23	0.30	0.08	0.13	0.46	0.19	0.24	0.70
Volume/Cap:	0.90	0.66	0.48	0.66	0.90	0.68	0.90	0.65	0.26	0.65	0.90	0.14
Uniform Del:	31.8	42.8	28.7	21.3	37.5	30.5	45.8	41.5	16.5	37.4	36.8	5.2
IncremntDel:	17.4	3.1	0.5	2.0	14.4	1.9	49.6	3.3	0.2	4.4	13.0	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.2	45.9	29.2	23.3	51.9	32.3	95.4	44.8	16.7	41.8	49.8	5.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.2	45.9	29.2	23.3	51.9	32.3	95.4	44.8	16.7	41.8	49.8	5.2
HCM2kAvg:	20	5	6	14	14	10	7	5	4	8	15	2

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Union / Major Entrance

Average Delay (sec/veh): 16.3 Level Of Service: C

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	0	1	0	1	0	0	1	0
Volume Module:																				
Base Vol:	0	235		0		0	680		0		0		0		0	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	235		0		0	680		0		0		0		0	0		0		0
Added Vol:	12	25		51		3	57		2		7		0		61	162		0		9
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	12	260		51		3	737		2		7		0		61	162		0		9
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90		0.90	0.90		0.90		0.90
PHF Volume:	13	289		57		3	819		2		8		0		68	180		0		10
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
Final Vol.:	13	289		57		3	819		2		8		0		68	180		0		10
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			7.5	xxxx		6.9		7.5	xxxx		6.9	
FollowUpTim:	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5	xxxx		3.3		3.5	xxxx		3.3	
Capacity Module:																				
Cnflict Vol:	821	xxxx	xxxxx			346	xxxx	xxxxx			998	xxxx		411		760	xxxx		173	
Potent Cap.:	804	xxxx	xxxxx			1210	xxxx	xxxxx			201	xxxx		596		299	xxxx		847	
Move Cap.:	804	xxxx	xxxxx			1210	xxxx	xxxxx			196	xxxx		596		261	xxxx		847	
Total Cap:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			313		0	xxxxx		434		0	xxxxx	
Volume/Cap:	0.02	xxxx	xxxx			0.00	xxxx	xxxx			0.02	xxxx		0.11		0.41	xxxx		0.01	
Level Of Service Module:																				
Queue:	0.1	xxxx	xxxxx			0.0	xxxx	xxxxx			0.1	xxxx	xxxxx			2.0	xxxx	xxxxx		
Stopped Del:	9.6	xxxx	xxxxx			8.0	xxxx	xxxxx			16.8	xxxx	xxxxx			19.0	xxxx	xxxxx		
LOS by Move:	A	*		*		A	*		*		C	*		*		C	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx		596		xxxx	xxxx		847	
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx		0.4		xxxxx	xxxx		0.0	
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx		11.8		xxxxx	xxxx		9.3	
Shared LOS:	*	*		*		*	*		*		*	*		B		*	*		A	
ApproachDel:	xxxxxx					xxxxxx					12.3					18.5				
ApproachLOS:	*					*					B					C				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Union / Minor Entrance 1

Average Delay (sec/veh): 11.2 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	2	0	0		0	0	1	1	0		0	0	1!	0	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	0	234	0				0	680	0				0	0	0				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	234	0				0	680	0				0	0	0				0	0	0			
Added Vol:	18	22	0				0	7	1				3	0	55				0	0	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	18	256	0				0	687	1				3	0	55				0	0	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	20	284	0				0	763	1				3	0	61				0	0	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	20	284	0				0	763	1				3	0	61				0	0	0			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx							6.8	xxxx		6.9	xxxxx	xxxx	xxxxx					
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx							3.5	xxxx		3.3	xxxxx	xxxx	xxxxx					
Capacity Module:																								
Cnflict Vol:	764	xxxx	xxxxx	xxxx	xxxx	xxxxx							946	xxxx		382	xxxx	xxxx	xxxxx					
Potent Cap.:	844	xxxx	xxxxx	xxxx	xxxx	xxxxx							263	xxxx		622	xxxx	xxxx	xxxxx					
Move Cap.:	844	xxxx	xxxxx	xxxx	xxxx	xxxxx							259	xxxx		622	xxxx	xxxx	xxxxx					
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							353		0	xxxxx	0		0	xxxxx				
Volume/Cap:	0.02	xxxx	xxxx	xxxx	xxxx	xxxx							0.01	xxxx		0.10	xxxx	xxxx	xxxx					
Level Of Service Module:																								
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Stopped Del:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*												
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	598	xxxxx	xxxx	xxxx	xxxxx												
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx												
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.7	xxxxx	xxxxx	xxxx	xxxxx												
Shared LOS:	*	*	*	*	*	*	*	B	*	*	*	*												
ApproachDel:	xxxxxx			xxxxxx			11.7			xxxxxx														
ApproachLOS:	*			*			B			*														

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Airport / Minor Entrance 1

Average Delay (sec/veh): >999 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	1 0		1 0 2	0 0		0 0 0	0 0		0 0 1!	0 0	
Volume Module:												
Base Vol:	0	2805	0	0	990	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2805	0	0	990	0	0	0	0	0	0	0
Added Vol:	0	61	17	7	19	0	0	0	0	40	0	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2866	17	7	1009	0	0	0	0	40	0	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	3184	19	8	1121	0	0	0	0	44	0	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	3184	19	8	1121	0	0	0	0	44	0	23
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	3203	xxxx	xxxxx	xxxx	xxxx	xxxxx	3770	xxxx	1602
Potent Cap.:	xxxx	xxxx	xxxxx	93	xxxx	xxxxx	xxxx	xxxx	xxxxx	3	xxxx	97
Move Cap.:	xxxx	xxxx	xxxxx	93	xxxx	xxxxx	xxxx	xxxx	xxxxx	3	xxxx	97
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0	0	xxxxx	17	0	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	2.57	xxxx	0.24
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	47.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	E	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	24	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.5	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1159	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			1159.1		
ApproachLOS:	*			*			*			F		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Union / SFD Entrance 2

Average Delay (sec/veh): 15.8 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	1 0	0	1 0 2	0 0		0 0 0	0 0	0	0 0 1!	0 0	
Volume Module:												
Base Vol:	0 235	0		0 680	0		0 0	0		0 0	0	
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Initial Bse:	0 235	0		0 680	0		0 0	0		0 0	0	
Added Vol:	0 81	40		2 279	0		0 0	0		127 0	7	
PasserByVol:	0 0	0		0 0	0		0 0	0		0 0	0	
Initial Fut:	0 316	40		2 959	0		0 0	0		127 0	7	
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	0.90 0.90	0.90		0.90 0.90	0.90		0.90 0.90	0.90		0.90 0.90	0.90	
PHF Volume:	0 351	44		2 1066	0		0 0	0		141 0	8	
Reduct Vol:	0 0	0		0 0	0		0 0	0		0 0	0	
Final Vol.:	0 351	44		2 1066	0		0 0	0		141 0	8	
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		4.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		6.8 xxxx	6.9	
FollowUpTim:	xxxxx xxxx	xxxxx		2.2 xxxx	xxxxx		xxxxx xxxx	xxxxx		3.5 xxxx	3.3	
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx		396 xxxx	xxxxx		xxxx xxxx	xxxxx		911 xxxx	198	
Potent Cap.:	xxxx xxxx	xxxxx		1160 xxxx	xxxxx		xxxx xxxx	xxxxx		278 xxxx	816	
Move Cap.:	xxxx xxxx	xxxxx		1160 xxxx	xxxxx		xxxx xxxx	xxxxx		277 xxxx	816	
Total Cap:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		0 0	xxxxx		467 0	xxxxx	
Volume/Cap:	xxxx xxxx	xxxx		0.00 xxxx	xxxx		xxxx xxxx	xxxx		0.30 xxxx	0.01	
Level Of Service Module:												
Queue:	xxxxx xxxx	xxxxx		0.0 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Stopped Del:	xxxxx xxxx	xxxxx		8.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
LOS by Move:	* *	*		A *	*		* *	*		* *	*	
Movement:	LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT	
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx 478	xxxxx	
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx 1.3	xxxxx	
Shrd StpDel:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx 15.9	xxxxx	
Shared LOS:	* *	*		* *	*		* *	*		* C	*	
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.9		
ApproachLOS:	*			*			*			C		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.856
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 35.0
Optimal Cycle: 92 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	400	878	101	697	1688	380	64	220	200	193	149	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	400	878	101	697	1688	380	64	220	200	193	149	13
Added Vol:	0	19	88	79	6	10	31	99	0	51	60	49
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	400	897	189	776	1694	390	95	319	200	244	209	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	444	997	210	862	1882	433	106	354	222	271	232	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	444	997	210	862	1882	433	106	354	222	271	232	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	444	997	210	862	1882	433	106	354	222	271	232	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.20	0.13	0.25	0.37	0.27	0.06	0.10	0.14	0.15	0.07	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.15	0.26	0.43	0.33	0.43	0.57	0.14	0.12	0.27	0.18	0.16	0.48
Volume/Cap:	0.86	0.77	0.31	0.77	0.86	0.48	0.42	0.86	0.52	0.86	0.42	0.09
Uniform Del:	41.4	34.4	18.4	30.2	25.6	12.5	39.2	43.3	31.1	39.8	38.2	14.0
IncremntDel:	13.2	2.8	0.3	3.2	3.5	0.4	1.2	16.0	1.2	19.9	0.5	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	54.5	37.2	18.7	33.4	29.1	12.9	40.4	59.3	32.3	59.7	38.7	14.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	37.2	18.7	33.4	29.1	12.9	40.4	59.3	32.3	59.7	38.7	14.0
HCM2kAvg:	10	11	4	14	20	8	4	8	6	11	4	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Lathrop / Main Entrance

Average Delay (sec/veh): 10.1 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		0 0 0	0 1		1 0	2 0 0		0 0	1 1 0	
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	1197	0	0	318	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1197	0	0	318	0
Added Vol:	0	0	0	0	0	11	0	266	0	0	149	34
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	11	0	1463	0	0	467	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	12	0	1626	0	0	519	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	12	0	1626	0	0	519	38
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	278	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	725	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	725	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			10.1			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100	Critical Vol./Cap. (X):	0.717
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	31.1
Optimal Cycle:	62	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1	1 0	2	0 1
Volume Module:												
Base Vol:	134	167	160	136	93	0	26	694	477	203	207	258
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	134	167	160	136	93	0	26	694	477	203	207	258
Added Vol:	20	80	0	65	50	138	257	5	4	0	25	105
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	154	247	160	201	143	138	283	699	481	203	232	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	171	274	178	223	159	153	314	777	534	226	258	403
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	274	178	223	159	153	314	777	534	226	258	403
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	171	274	178	223	159	153	314	777	534	226	258	403
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.88	0.88	0.93	0.86	0.86	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	1.00	1.21	0.79	1.00	1.02	0.98	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	2020	1309	1769	1667	1609	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.14	0.14	0.13	0.10	0.10	0.18	0.22	0.34	0.13	0.07	0.25
Crit Moves:		****		****					****	****		
Green/Cycle:	0.18	0.19	0.37	0.18	0.18	0.48	0.30	0.34	0.52	0.18	0.22	0.39
Volume/Cap:	0.53	0.72	0.37	0.72	0.53	0.20	0.60	0.65	0.65	0.72	0.34	0.65
Uniform Del:	36.8	38.0	23.1	38.8	37.0	14.9	29.9	28.2	17.4	38.7	33.2	24.8
IncremntDel:	1.6	3.9	0.2	7.8	0.9	0.1	1.9	1.3	1.8	7.7	0.3	2.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	41.9	23.3	46.6	37.9	15.0	31.8	29.5	19.2	46.4	33.4	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	41.9	23.3	46.6	37.9	15.0	31.8	29.5	19.2	46.4	33.4	27.2
HCM2kAvg:	6	8	5	8	5	3	9	11	13	8	4	11

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 Union / Major Entrance

****

Average Delay (sec/veh): 15.5 Level Of Service: C

****

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R		L	- T	- R	
Control:	Uncontrolled			Uncontrolled			Stop Sign				Stop Sign			
Rights:	Include			Include			Include				Include			
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0		1	0 0	1 0	
Volume Module:														
Base Vol:	0	452	0	0	206	0	0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	452	0	0	206	0	0	0	0		0	0	0	
Added Vol:	44	69	187	10	43	8	4	0	39		101	0	5	
PasserByVol:	0	0	0	0	0	0	0	0	0		0	0	0	
Initial Fut:	44	521	187	10	249	8	4	0	39		101	0	5	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	49	579	208	11	277	9	4	0	43		112	0	6	
Reduct Vol:	0	0	0	0	0	0	0	0	0		0	0	0	
Final Vol.:	49	579	208	11	277	9	4	0	43		112	0	6	
Critical Gap Module:														
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	xxxx	6.9		7.5	xxxx	6.9	
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3		3.5	xxxx	3.3	
Capacity Module:														
Cnflict Vol:	286	xxxx	xxxxx	787	xxxx	xxxxx	691	xxxx	143		941	xxxx	393	
Potent Cap.:	1274	xxxx	xxxxx	828	xxxx	xxxxx	335	xxxx	885		221	xxxx	611	
Move Cap.:	1274	xxxx	xxxxx	828	xxxx	xxxxx	319	xxxx	885		202	xxxx	611	
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	489	0	xxxxx		320	0	xxxxx	
Volume/Cap:	0.04	xxxx	xxxx	0.01	xxxx	xxxx	0.01	xxxx	0.05		0.35	xxxx	0.01	
Level Of Service Module:														
Queue:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx		1.5	xxxx	xxxxx	
Stopped Del:	7.9	xxxx	xxxxx	9.4	xxxx	xxxxx	12.4	xxxx	xxxxx		22.2	xxxx	xxxxx	
LOS by Move:	A	*	*	A	*	*	B	*	*		C	*	*	
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	885		xxxx	xxxx	611	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.2		xxxxx	xxxx	0.0	
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.3		xxxxx	xxxx	10.9	
Shared LOS:	*	*	*	*	*	*	*	*	A		*	*	B	
ApproachDel:	xxxxxx			xxxxxx			9.6				21.7			
ApproachLOS:	*			*			A				C			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Union / Minor Entrance 1

Average Delay (sec/veh): 8.4 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2	0	0	0 0 1	1	0	0 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	453	0	0	207	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	453	0	0	207	0	0	0	0	0	0	0
Added Vol:	65	14	0	0	26	4	2	0	35	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	467	0	0	233	4	2	0	35	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	72	519	0	0	259	4	2	0	39	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	72	519	0	0	259	4	2	0	39	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	263	xxxx	xxxxx	xxxx	xxxx	xxxxx	665	xxxx	132	xxxx	xxxx	xxxxx
Potent Cap.:	1298	xxxx	xxxxx	xxxx	xxxx	xxxxx	398	xxxx	900	xxxx	xxxx	xxxxx
Move Cap.:	1298	xxxx	xxxxx	xxxx	xxxx	xxxxx	381	xxxx	900	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	480	0	xxxxx	0	0	xxxxx
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	0.04	xxxx	xxxx	xxxx

Level Of Service Module:												
Queue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	859	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.4	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.4			xxxxxx		
ApproachLOS:	*			*			A			*		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Airport / Minor Entrance 1

Average Delay (sec/veh): 34.4 Level Of Service: D

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	955	0			0	2765	0			0	0	0			0	0	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	955	0			0	2765	0			0	0	0			0	0	0		
Added Vol:	0	38	61			24	70	0			0	0	0			26	0	13		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	993	61			24	2835	0			0	0	0			26	0	13		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	0	1103	68			27	3150	0			0	0	0			29	0	14		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Final Vol.:	0	1103	68			27	3150	0			0	0	0			29	0	14		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx			xxxxx	xxxx	xxxxx			6.8	xxxx	6.9		
FollowUpTim:	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx			xxxxx	xxxx	xxxxx			3.5	xxxx	3.3		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			1171	xxxx	xxxxx			xxxx	xxxx	xxxxx			2766	xxxx	586		
Potent Cap.:	xxxx	xxxx	xxxxx			592	xxxx	xxxxx			xxxx	xxxx	xxxxx			16	xxxx	459		
Move Cap.:	xxxx	xxxx	xxxxx			592	xxxx	xxxxx			xxxx	xxxx	xxxxx			15	xxxx	459		
Total Cap:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			0	0	xxxxx			91	0	xxxxx		
Volume/Cap:	xxxx	xxxx	xxxx			0.05	xxxx	xxxx			xxxx	xxxx	xxxx			0.32	xxxx	0.03		
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx			0.1	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Stopped Del:	xxxxx	xxxx	xxxxx			11.4	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
LOS by Move:	*	*	*			B	*	*			*	*	*			*	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	125	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	1.4	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	48.5	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	E	*		
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					48.5				
ApproachLOS:	*					*					*					E				

KDA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Union / SFD Entrance 2

Average Delay (sec/veh): 18.9 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	1 0		1 0 2	0 0		0 0 0	0 0		0 0 1!	0 0	
Volume Module:												
Base Vol:	0	452	0	0	206	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	452	0	0	206	0	0	0	0	0	0	0
Added Vol:	0	296	147	8	174	0	0	0	0	79	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	748	147	8	380	0	0	0	0	79	0	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	831	163	9	422	0	0	0	0	88	0	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	831	163	9	422	0	0	0	0	88	0	4
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	994	xxxx	xxxxx	xxxx	xxxx	xxxxx	1142	xxxx	497
Potent Cap.:	xxxx	xxxx	xxxxx	691	xxxx	xxxxx	xxxx	xxxx	xxxxx	197	xxxx	524
Move Cap.:	xxxx	xxxx	xxxxx	691	xxxx	xxxxx	xxxx	xxxx	xxxxx	195	xxxx	524
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0	0	xxxxx	330	0	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.27	xxxx	0.01
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	336	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	19.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			19.7		
ApproachLOS:	*			*			*			C		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Airport / Minor Entrance 1

Cycle (sec):	100	Critical Vol./Cap. (X):	1.043
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	29.5
Optimal Cycle:	180	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1 1	0	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	2805	0	0	990	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2805	0	0	990	0	0	0	0	0	0	0
Added Vol:	0	61	17	7	19	0	0	0	0	40	0	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2866	17	7	1009	0	0	0	0	40	0	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	3184	19	8	1121	0	0	0	0	44	0	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3184	19	8	1121	0	0	0	0	44	0	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3184	19	8	1121	0	0	0	0	44	0	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.92	1.00	0.92
Lanes:	0.00	1.99	0.01	1.00	2.00	0.00	0.00	0.00	0.00	0.66	0.00	0.34
Final Sat.:	0	3513	21	1769	3538	0	0	0	0	1151	0	604
Capacity Analysis Module:												
Vol/Sat:	0.00	0.91	0.91	0.00	0.32	0.00	0.00	0.00	0.00	0.04	0.00	0.04
Crit Moves:		****		****								****
Green/Cycle:	0.00	0.87	0.87	0.00	0.87	0.00	0.00	0.00	0.00	0.04	0.00	0.04
Volume/Cap:	0.00	1.04	1.04	1.04	0.36	0.00	0.00	0.00	0.00	1.04	0.00	1.04
Uniform Del:	0.0	6.6	6.6	49.8	1.2	0.0	0.0	0.0	0.0	48.1	0.0	48.1
IncremntDel:	0.0	29.0	29.0	346.6	0.1	0.0	0.0	0.0	0.0	124.2	0.0	124.2
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	35.5	35.5	396.4	1.3	0.0	0.0	0.0	0.0	172.4	0.0	172.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	35.5	35.5	396.4	1.3	0.0	0.0	0.0	0.0	172.4	0.0	172.4
HCM2kAvg:	0	63	73	1	3	0	0	0	0	5	0	5

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Union / Major Entrance

Cycle (sec): 100 Critical Vol./Cap. (X): 0.433
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 37 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	0	235	0	0	680	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	235	0	0	680	0	0	0	0	0	0	0
Added Vol:	12	25	51	3	57	2	7	0	61	162	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	260	51	3	737	2	7	0	61	162	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	13	289	57	3	819	2	8	0	68	180	0	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	289	57	3	819	2	8	0	68	180	0	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	13	289	57	3	819	2	8	0	68	180	0	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.91	0.91	0.93	0.93	0.93	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.67	0.33	1.00	1.99	0.01	1.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1769	2884	566	1769	3528	10	1805	0	1615	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.01	0.10	0.10	0.00	0.23	0.23	0.00	0.00	0.04	0.10	0.00	0.01
Crit Moves:	****				****				****	****		
Green/Cycle:	0.02	0.54	0.54	0.01	0.54	0.54	0.13	0.00	0.10	0.23	0.00	0.19
Volume/Cap:	0.43	0.18	0.18	0.18	0.43	0.43	0.03	0.00	0.43	0.43	0.00	0.03
Uniform Del:	48.6	11.6	11.6	49.1	14.0	14.0	37.6	0.0	42.6	32.9	0.0	32.8
IncremntDel:	9.5	0.0	0.0	4.9	0.2	0.2	0.1	0.0	1.9	0.7	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	58.1	11.7	11.7	54.0	14.2	14.2	37.7	0.0	44.5	33.6	0.0	32.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.1	11.7	11.7	54.0	14.2	14.2	37.7	0.0	44.5	33.6	0.0	32.8
HCM2kAvg:	1	3	3	0	8	4	0	0	2	5	0	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Airport / Minor Entrance 1

Cycle (sec):	100	Critical Vol./Cap. (X):	1.006
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	19.3
Optimal Cycle:	180	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1 1	0	1 0	2 0	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	955	0	0	2765	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	955	0	0	2765	0	0	0	0	0	0	0
Added Vol:	0	38	61	24	70	0	0	0	0	26	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	993	61	24	2835	0	0	0	0	26	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	1103	68	27	3150	0	0	0	0	29	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1103	68	27	3150	0	0	0	0	29	0	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1103	68	27	3150	0	0	0	0	29	0	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.92	0.92	0.93	0.93	1.00	1.00	1.00	1.00	0.92	1.00	0.92
Lanes:	0.00	1.88	0.12	1.00	2.00	0.00	0.00	0.00	0.00	0.67	0.00	0.33
Final Sat.:	0	3303	203	1769	3538	0	0	0	0	1171	0	585
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.33	0.02	0.89	0.00	0.00	0.00	0.00	0.02	0.00	0.02
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.85	0.85	0.04	0.89	0.00	0.00	0.00	0.00	0.02	0.00	0.02
Volume/Cap:	0.00	0.39	0.39	0.39	1.01	0.00	0.00	0.00	0.00	1.01	0.00	1.01
Uniform Del:	0.0	1.8	1.8	47.0	5.7	0.0	0.0	0.0	0.0	48.8	0.0	48.8
IncremntDel:	0.0	0.1	0.1	3.8	17.4	0.0	0.0	0.0	0.0	138.7	0.0	138.7
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	1.8	1.8	50.7	23.1	0.0	0.0	0.0	0.0	187.5	0.0	187.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.8	1.8	50.7	23.1	0.0	0.0	0.0	0.0	187.5	0.0	187.5
HCM2kAvg:	0	4	4	1	58	0	0	0	0	4	0	4

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Union / Major Entrance

Cycle (sec):	100	Critical Vol./Cap. (X):	0.371
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	15.9
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	0	452	0	0	206	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	452	0	0	206	0	0	0	0	0	0	0
Added Vol:	44	69	187	10	43	8	4	0	39	101	0	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	521	187	10	249	8	4	0	39	101	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	49	579	208	11	277	9	4	0	43	112	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	579	208	11	277	9	4	0	43	112	0	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	49	579	208	11	277	9	4	0	43	112	0	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.93	0.93	0.95	1.00	0.85	0.95	1.00	0.85
Lanes:	1.00	1.47	0.53	1.00	1.94	0.06	1.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1769	2499	897	1769	3411	110	1805	0	1615	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.01	0.08	0.08	0.00	0.00	0.03	0.06	0.00	0.00
Crit Moves:		****		****					****	****		
Green/Cycle:	0.16	0.62	0.62	0.02	0.48	0.48	0.10	0.00	0.07	0.17	0.00	0.14
Volume/Cap:	0.17	0.37	0.37	0.37	0.17	0.17	0.02	0.00	0.37	0.37	0.00	0.02
Uniform Del:	36.0	9.2	9.2	48.6	14.8	14.8	40.6	0.0	44.2	37.0	0.0	37.1
IncremntDel:	0.3	0.1	0.1	7.6	0.0	0.0	0.1	0.0	2.0	0.8	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	36.3	9.3	9.3	56.2	14.9	14.9	40.7	0.0	46.2	37.7	0.0	37.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.3	9.3	9.3	56.2	14.9	14.9	40.7	0.0	46.2	37.7	0.0	37.2
HCM2kAvg:	1	6	6	1	2	3	0	0	2	3	0	0

Traffix 7.6.0715 (c) 2003 Dowling Assoc. Licensed to kdANDERSON TRANSP.

APPENDIX H

TRAFFIC STUDY

TRAFFIC STUDY FOR THE

UNION RANCH SPECIFIC PLAN EIR

Manteca, California

Prepared For:

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December 20, 2004

2630-17

TRAFFIC STUDY FOR THE
UNION RANCH SPECIFIC PLAN EIR
Manteca, California

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December 21, 2004

TRAFFIC STUDY FOR THE
UNION RANCH SPECIFIC PLAN EIR
Manteca, California

INTRODUCTION

This report documents **kdANDERSON Transportation Engineers'** assessment of the traffic impacts associated with implementing the **Union Ranch Specific Plan.** The proposed project will develop approximately 550 acres north of Lathrop Road in the City of Manteca. The project includes 1,960 low-density residential units, 273 mixed-use high-density residential housing units and about 385,900 square feet of commercial uses. Figure 1 presents the project location within the City of Manteca (nos. 1- 9). Figure 2 presents the location of the project specific intersections. The project is located along a major thoroughfare between I-5 and SR 99, and as part of this study four intersections within the City of Lathrop (nos. 10-13) and one intersection within San Joaquin County (no. 14) were also studied. This report is intended to describe the impacts of developing the Specific Plan and to serve as a guideline for implementation of roadway infrastructure needed to support anticipated development over the foreseeable future.

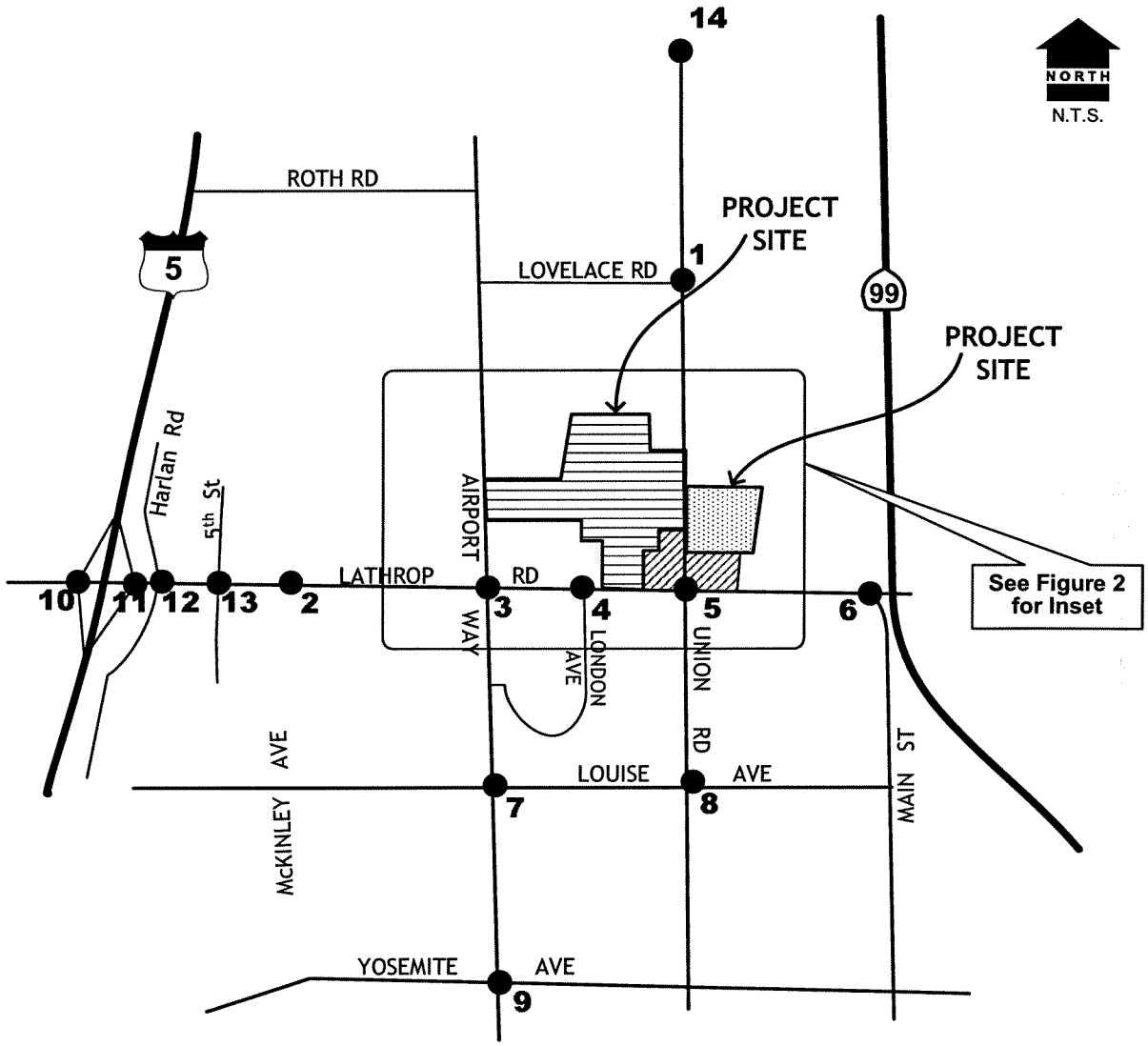
For this analysis, future traffic volume forecasts were developed utilizing the Circulation Element of the 2003 Manteca General Plan, the Transportation and Circulation element of the Central Lathrop Specific Plan DEIR and the current San Joaquin Council of Governments traffic model. Year 2025 forecasts were used for roadways within the City of Manteca, year 2020 forecasts within the City of Lathrop and year 2030 forecasts were used for the intersections under San Joaquin County jurisdiction. These volumes were used to identify future daily and peak hour traffic volumes on area streets. Roadways and other mitigations required to provide satisfactory traffic operating conditions were then identified.

EXISTING SETTING

The following report section describes current traffic conditions on the roads that will provide access to the Specific Plan area.

Existing Street System

The Specific Plan Area is located in northern Manteca north of Lathrop Road and bounded by Airport Way to the west and Union Road to the east. The project includes about 130 acres east of Union Road and about 420 acres between Airport Way and Union Road. Traffic conditions on roadways in the vicinity of the Specific Plan Area are influenced by commuter travel patterns. The regional circulation system in the area is comprised of north-south freeways (SR 99 and I-5) east and west of the project site and several north-south surface street facilities. East–west circulation to and from I-5 is constrained by traveling through the City of Lathrop.



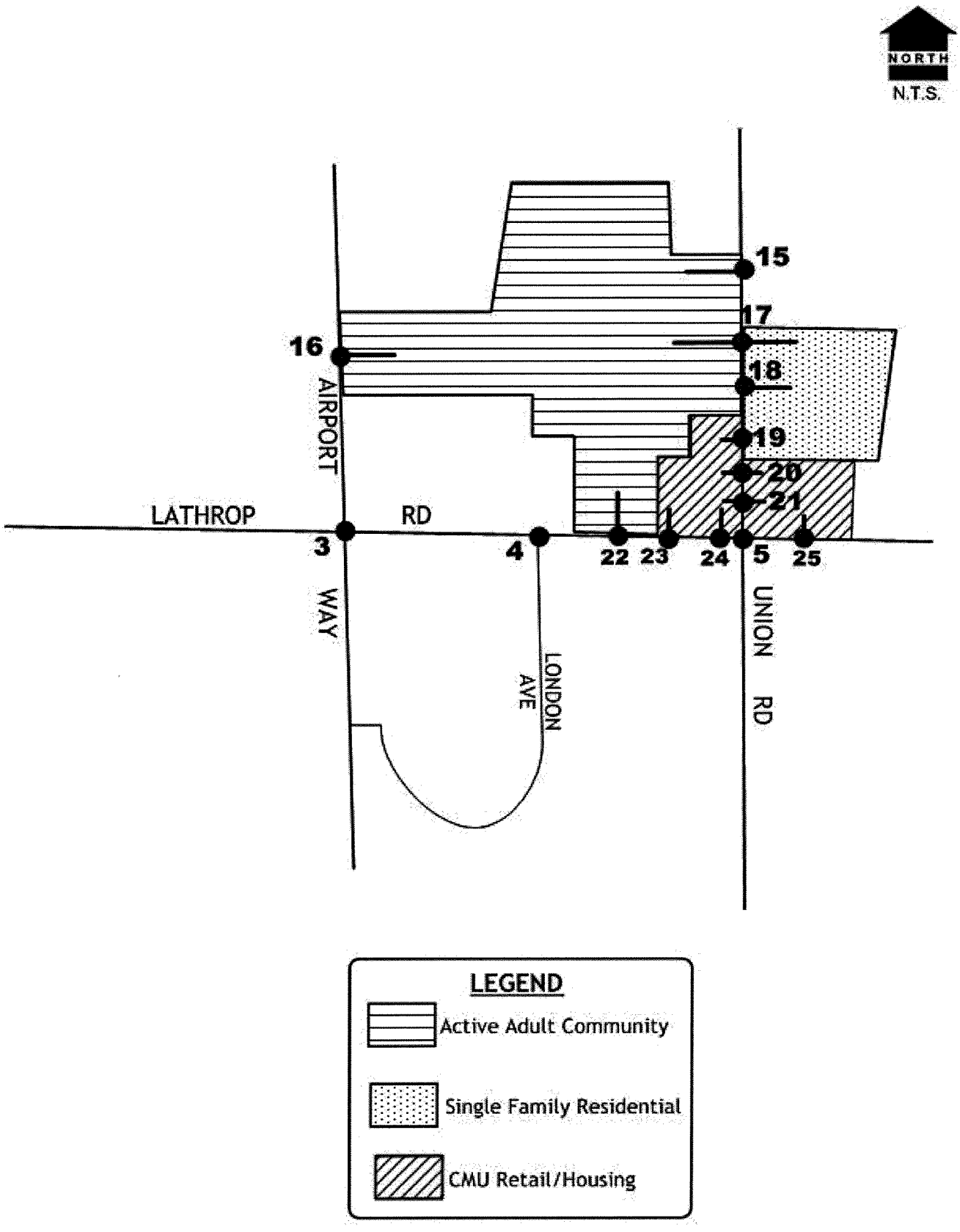
LEGEND

- Active Adult Community
- Single Family Residential
- CMU Retail/Housing

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VICINITY MAP
AND STUDY INTERSECTIONS

2630-17 11/17/04 figure 1



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VICINITY MAP INSET AND PROJECT SPECIFIC ACCESS INTERSECTIONS

2630-17tb 12/6/2004

figure 2

Study Area Intersections

After a preliminary investigation of the existing traffic circulation patterns and discussions with City of Manteca staff, it was determined that the traffic analysis should investigate the operational characteristics of the following intersections on the streets serving the proposed project. The City of Lathrop, in response to the City's Notice of Preparation/DEIR for the project, requested that major intersections in the City also be investigated. In addition, the major intersection to the north of the project, within San Joaquin County was also analyzed. Traffic controls at these locations range from traffic signals to all-way stop signs to side street stop signs.

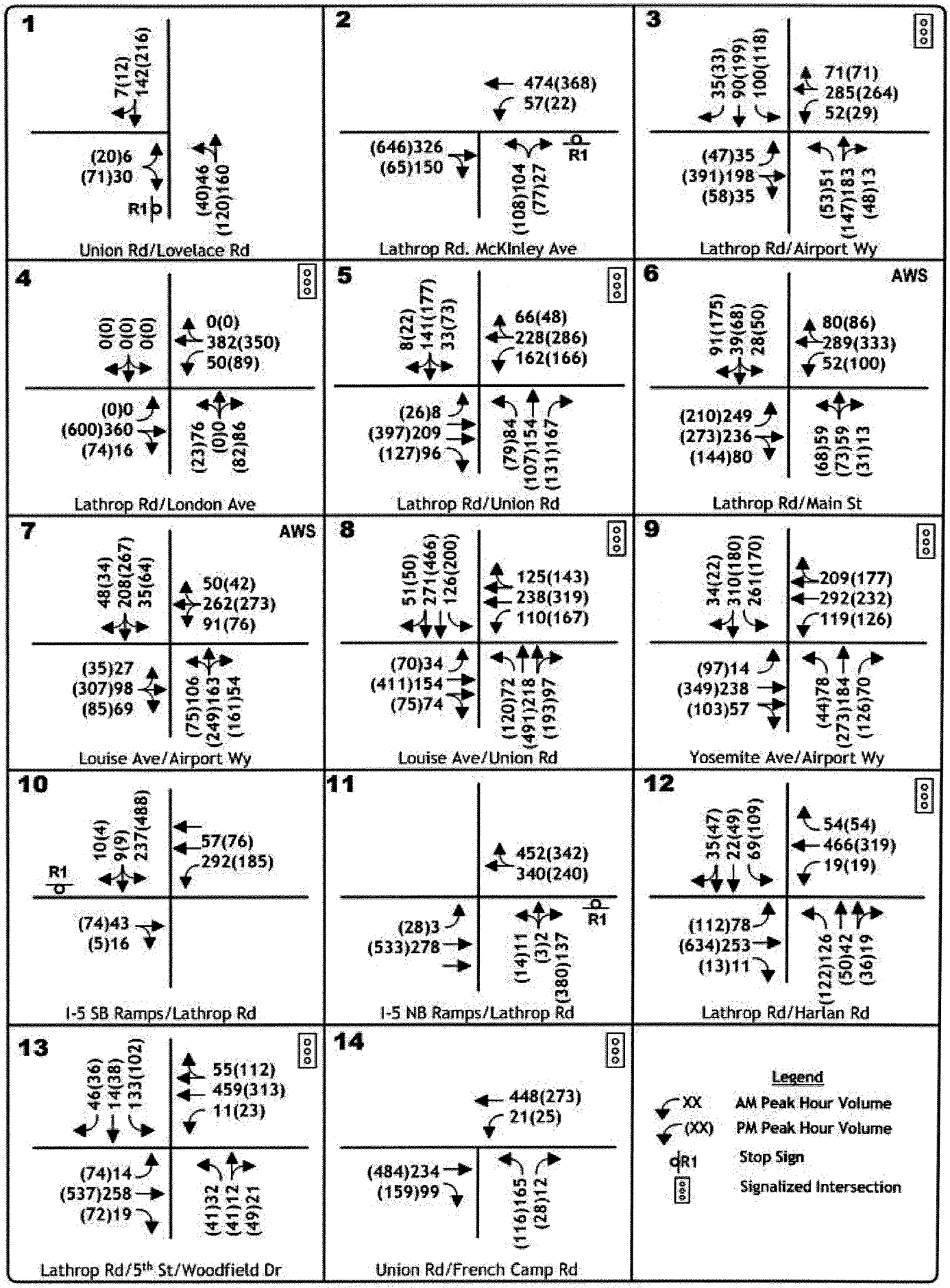
1.	Union Road / Lovelace Road	EB Stop
2.	Lathrop Road / McKinley Avenue	NB Stop
3.	Lathrop Road / Airport Way	Signal
4	Lathrop Road / London Avenue	Signal
5.	Lathrop Road / Union Road	Signal
6.	Lathrop Road / Main Street	All-way Stop
7.	Louise Avenue / Airport Way	All-way Stop
8.	Louise Avenue / Union Road	Signal
9.	Airport Way / Yosemite Avenue	Signal
10.	I-5 SB Ramps / Lathrop Road	SB Stop
11.	I-5 NB Ramps / Lathrop Road	NB Stop
12.	Lathrop Road / Harlan Road	Signal
13.	Lathrop Road / 5th Street –Woodfield Drive	Signal
14.	Union Road / French Camp Road	Signal

The locations of these intersections along with the existing road network are shown on Figure 1. Figure 2 presents the study area intersections local to the project, i.e., the project access intersections (no.'s 15-25)

Pedestrian / Bicycle Facilities. Dedicated non-automotive transportation facilities are generally lacking in the rural area of Manteca; however, sidewalks are being constructed along new roadways, and bicycle facilities are being added consistent with the City's Bicycle Master Plan. The Bicycle Master Plan identifies that in all new development projects bicycle facilities should be included to facilitate on-site circulation for bicycle travel and connections to the proposed bikeway system. The bicycle system includes Class 1 Bike Paths that provide off-street facilities for the exclusive use of bicycles and pedestrians.

Existing Traffic Volumes

Peak hour traffic counts were conducted in September and October 2004 and were used to quantify the traffic volumes at the subject intersections in the study area. Figures 3A and 3B present the existing a.m. and p.m. peak hour traffic volume and existing roadway geometrics at the study intersections and the proposed project access intersections.

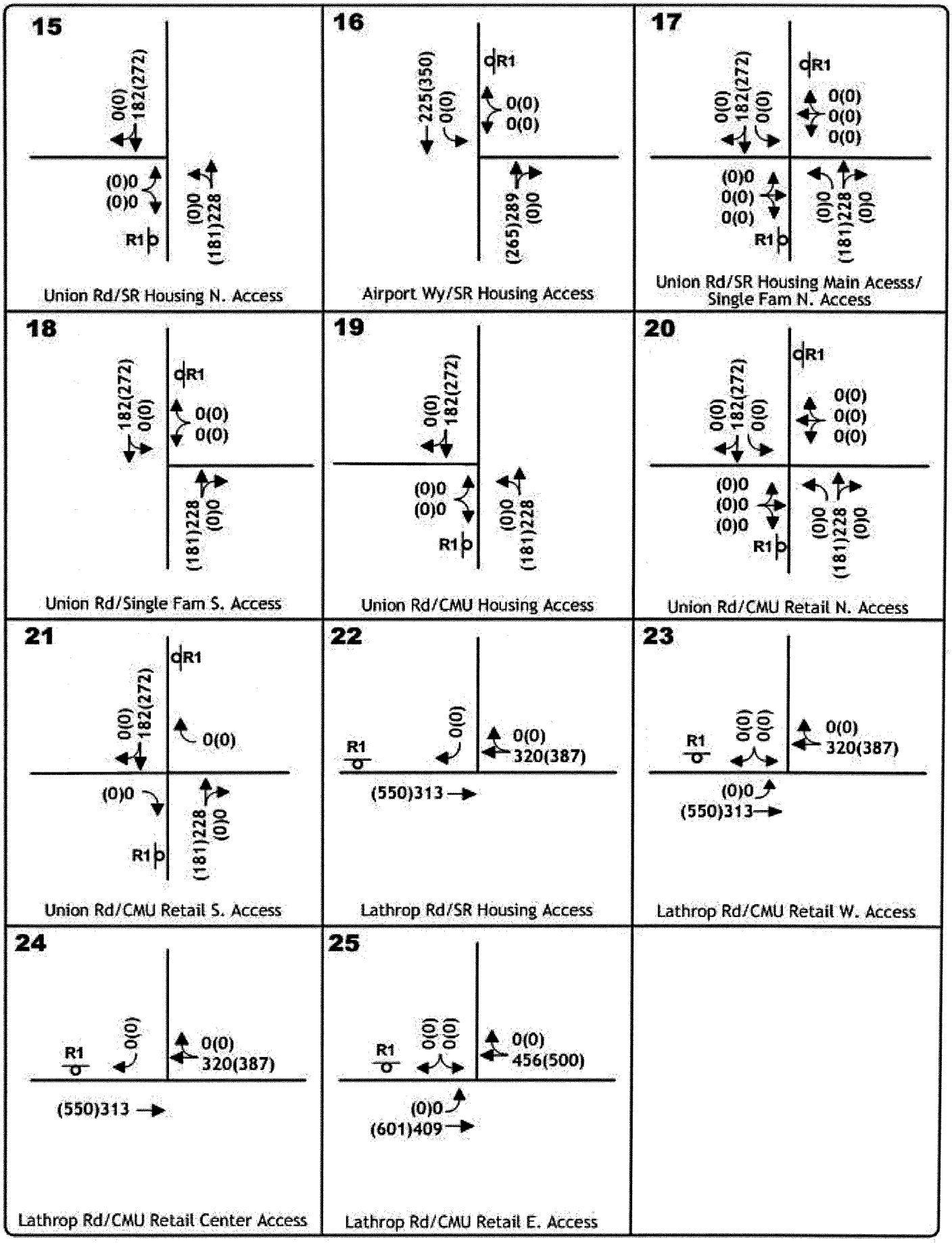


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EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS STUDY AREA INTERSECTIONS

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figure 3a



EXISTING TRAFFIC VOLUMES
AND LANE CONFIGURATIONS
PROPOSED PROJECT ACCESS INTERSECTIONS

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figure 3b

Level of Service Methodology

To assess the quality of existing and future traffic conditions, "Levels of Service" were calculated for study area intersections. "Level of Service" (LOS) is a qualitative measure of traffic operating conditions whereby a letter grade, "A" through "F", corresponding to progressively worsening traffic operating conditions, is assigned to an intersection or roadway segment. In general terms, Level of Service is calculated for an hour-long traffic condition at a signalized intersection, unsignalized intersection or roadway segment.

A traffic impact is considered significant if it renders an unacceptable Level of Service at a study intersection, or if it worsens an already unacceptable condition.

Levels of Service at the study intersections have been quantified using methodologies presented in the latest edition of the Highway Capacity Manual (2000 HCM). Unsignalized intersections were analyzed using the method documented in the 2000 HCM. This method calculates the weighted average total delay for each controlled movement and for the intersection as a whole. The analysis considers gap acceptance and average delay of motorists on minor streets and in turn lanes to establish service levels. Intersection levels of service presented in this analysis are based on the weighted average total delay per vehicle for the intersection as a whole based.

At unsignalized intersections, a traffic impact is considered "adverse but not significant" if the agency LOS standard is exceeded but the projected traffic does not satisfy traffic signal warrants. Under these conditions, the only means to completely alleviate delays to stop controlled vehicles would be to install a traffic signal. However, the unmet signal warrants would imply that the reduction in delay for the stop-controlled vehicles may not justify the new delays that would be incurred by the major street traffic (which is not currently not stopped). Under these circumstances, installation of a signal would not be recommended and the substandard LOS for stop-controlled vehicles would be considered an "adverse but not significant" impact.

Table 1 summarizes performance measures associated with each of the Level of Service grades for intersections. According to the City of Manteca's General Plan Transportation Analysis the City of Manteca utilizes a two-tier approach in assessing level of service. First, every intersection must meet LOS D as a minimum. Second, one-half of the study area intersections must operate at LOS C or better.

The City of Lathrop uses LOS 'D' as the threshold level of service at signalized and all-way stop intersections to determine whether an impact is considered significant. At intersections with side street stop control an impact is considered insignificant if the level of service is LOS E or better. Along San Joaquin County roadways an impact is considered significant if the project causes the intersection to change from LOS D to LOS E on minor arterial, or higher classified roadways and from LOS C to LOS D on other roadways in rural locations.

TABLE 1
LEVEL OF SERVICE DEFINITIONS - INTERSECTIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 2000 Highway Capacity Manual, Transportation Research Board (TRB) Special Report 209.

Existing Levels of Service

Levels of Service were calculated for key intersections in the study area. Figure 2 presents the intersection locations for each of the study intersections. Figure 3A and 3B presents the existing volumes for each of the study intersections. Table 2 summarizes the current Levels of Service at the 14 area intersections during the a.m. and p.m. peak hours. As shown, the overall levels of service in the peak hours are at acceptable levels at all but three intersections. These include the Lathrop Road / I-5 Southbound Ramps intersection, the Airport Way / Louise Avenue intersection and the Lathrop Road / Main Street intersection. These intersections operate at LOS F, LOS F and LOS E, respectively, in the p.m. peak hour. All three intersections meet Caltrans peak hour traffic signal warrants.

While currently warranted, installation of a traffic signal at the Lathrop Road / Main Street intersection will be completed once the SR 99 / Lathrop Road – Main Street interchange is modified. This project is identified in the 2004 SJCOG RTP Tier 2 Project List and includes widening SR 99 to four lanes with two-lane ramps; tier 2 projects are currently unfounded.

TABLE 2
EXISTING INTERSECTION LEVELS OF SERVICE

Location	Control	AM Peak Hour		PM Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
1. Union Rd / Lovelace Rd						
overall	EB Stop	**8.5**	**A**	**9.9**	**A**	No
NB left		7.6		7.8		
EB		9.7		10.8		
2. Lathrop Rd / McKinley Ave						
overall	NB Stop	**14.4**	**B**	**21.6**	**C**	No
NB		16.9		23.0		
WB left		8.7		9.5		
3.Lathrop Rd / Airport Way	Signal	**28.1**	**C**	**27.5**	**C**	N/A
4. Lathrop Rd / London Ave	Signal	**15.5**	**B**	**13.1**	**B**	N/A
5. Lathrop Rd / Union Rd	Signal	**32.1**	**C**	**33.6**	**C**	N/A
6. Lathrop Rd / Main St						
overall	All way	**17.6**	**C**	**40.8**	**E**	Yes
NB	Stop	12.6		17.6		
SB		12.5		24.5		
EB		17.0		44.1		
WB		22.0		53.7		
7. Airport Way / Louise Ave						
overall	All way	**24.8**	**C**	**135.0**	**F**	Yes
NB	Stop	23.4		196.9		
SB		20.6		84.1		
EB		15.2		135.9		
WB		33.5		104.7		
8. Union Rd / Louise Ave	Signal	**29.9**	**C**	**34.0**	**C**	N/A
9. Airport Way / Yosemite Ave	Signal	**30.6**	**C**	**32.6**	**C**	N/A
10. Lathrop Rd / I-5 SB Ramps						
overall	SB Stop	**34.9**	**D**	**133.3**	**F**	Yes
SB		65.6		179.7		
WB left		8.0		7.8		
11. Lathrop Rd / I-5 NB Ramps						
overall	NB Stop	**11.3**	**B**	**19.4**	**C**	Yes
NB		11.3		20.1		
EB left		9.7		9.0		
12. Lathrop Rd / Harlan Rd	Signal	**21.3**	**C**	**21.8**	**C**	N/A
13 Lathrop Rd/5th St -Woodfield Dr	Signal	**18.4**	**B**	**20.0**	**C**	N/A
14. French Camp Rd / Union Rd	Signal	**12.7**	**B**	**10.1**	**B**	N/A

* Meets Warrant 10 – Peak Hour Warrant, and/or Warrant 11 – Peak Hour Volume Warrant

SPECIFIC PLAN TRAFFIC IMPACTS

Project Description

Land Use. The Specific Plan area covers about 550 acres adjacent to, and north of the corporate limits of the City of Manteca. When completed, the project will consist of a mixed-use development offering single-family residential housing, active adult single-family residential housing, commercial development within a commercial mixed use (CMU) zone and high density residential within the same CMU zone. Table 3 summarizes the land use inventory assumed for the analysis. The single-family residential housing consists of 535 units located east of Union Road. The active adult community consists of 1,425 single-family residential units located between Airport Way and Union Road. The CMU area is located in the northwest and northeast quadrants of the Lathrop Road / Union Road intersection and consists of about 385,900 square feet of commercial uses and about 273 high-density residential units.

TABLE 3
LAND USE – UNION RANCH SPECIFIC PLAN

Land Use (Land Use Zone)	Acreage	Trip Generation Parameters	
		Unit	Quantity
Low Density Residential - east of Union Road	128	Dwelling	535
Active Adult Low Density Residential - between Airport Way and Union Road	307	Dwelling	1,425
Commercial (CMU Zone)	25.3*	Square Footage	385,900**
High Density Residential - (CMU Zone)	13.6	Dwelling	273†

* 65% of overall CMU zone
** square footage based on 0.35 floor to area ratio (FAR)
† 20 units per acre density

PROJECT CHARACTERISTICS

Traffic impacts associated with development of both sites have been evaluated by estimating the quantity and directional orientation of traffic generated by the project. Utilizing the expected distribution, project trips were assigned to the study area street system to quantify resulting roadway and intersection operations with development of the site.

Access

The Specific Plan circulation plan will provide convenient access to the regional circulation network by providing access to Airport Way, Lathrop Road and Union Road. The active adult community will include 1,425 residential units with access provided by one full access intersection along Airport Way, a right-in, right-out access intersection along Lathrop Road and two full access

intersections along Union Road. The main entrance to the project will be the southerly access intersection along Union Road. The plan for the single family residential development east of Union Road indicates that two full access intersections will be provided, one across from the main access to the active adult community and the second access between this access and Lathrop Road.

Access to the CMU site is projected to include five access intersections into the commercial element of the site. Three intersections will be located along Lathrop Road and two along Union Road. The southerly access intersection on Union Road and the easterly access west of the Union Road intersection along Lathrop Road were assumed to be right-in, right out only. The remaining intersections were assumed to be full access intersections. The housing element of the CMU site will have one access intersection, north of the CMU commercial driveways and south of all single family residential access intersections. It was assumed that an internal access, between the high density housing and the commercial portion of the CMU site is available.

No interior motor vehicle access between the CMU site and the active adult community is assumed for the project.

Trip Generation

The number of automobile trips that will be generated by the project has been estimated using applicable trip generation rates. The rates used were obtained from two sources. Single-family residential trip generation rates for the single family subdivision and the commercial mixed uses were obtained from the Institute of Transportation Engineers (ITE) publication, Trip Generation (Seventh Edition). Trip generation rates for active adult communities were derived from a study conducted in July 2001 at the Del Webb Sun City Lincoln Hills active adult community. The study determined the trip generation rates for adult communities are about 50% lower than rates for single family homes. Peak hour rates are about 25% of single family homes.

Table 4 presents the trip generation rates identified for each of the land use categories contained in the Specific Plan area. These rates were applied to the Specific Plan area's land use inventory to develop the trip generation forecasts presented in Table 5.

As shown in Table 5, the land uses proposed in the Specific Plan area could generate about 30,138 daily trips, 1,208 a.m. peak hour trips and 2,528 p.m. peak hour trips at buildout (2011). The extent to which these trips leave the site and impact the regional street system is generally dependent on the interaction between trip "productions" (i.e., residences) and trip "attractions (i.e., non-residential uses). Of the total trips, a percentage of the residential trips have been assumed to be internal residential-to-residential trips or residential-to-CMU commercial trips within the Specific Plan. The remaining trips will be external trips accessing Airport Way, Lathrop Road or Union Road. The internal residential to CMU commercial trips are accounted for in the trips generated by the commercial site; they have been deducted from the residential trip generation to avoid double counting of trips. After considering the internal reduction and pass-by trips for the commercial site the project is expected to generate about 986 new a.m. peak hour trips and 1,920 new p.m. peak hour trips.

TABLE 4
TRIP GENERATION RATES – UNION RANCH SPECIFIC PLAN

Land Use	Trip Generation Parameters								
	Unit	Trip Generation Rates Per Unit							
		Daily	AM Peak Hour			PM Peak Hour			
			Inbound %	Outbound %	Rate	Inbound %	Outbound %	Rate
Low Density Residential	Dwelling	9.57	24%	76%	0.75	65%	35%	1.01
Low Density Residential - Active Adult Community	Dwelling	3.71	24%	76%	0.16	65%	35%	0.21
CMU - Commercial	square feet	42.94	61%	39%	1.03	48%	52%	3.75
CMU – High Density Housing	Dwelling	6.72	20%	80%	0.51	65%	35%	0.62

TABLE 5
TRIP GENERATION FORECAST

Land Use	Trip Generation Parameters							
	Quantity	Trip Generation						
		Daily	AM Peak Hour			PM Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Low Density Single Family Residential	535 units	5,120	96	305	401	351	189	540
Low Density Residential - Active Adult Community	1,425 units	6,612	65	206	271	241	130	371
CMU – Commercial	385.9 ksf[1]	16,571	242	155	397	695	753	1,447
CMU – High Density Housing	273 units	1,835	28	111	139	110	59	169
Total (All Trips)		30,138	431	777	1,208	1,397	1,131	2,528
Internal Trips: Single Family Residential*		<410>	<7>	<25>	<32>	<28>	<15>	<43>
Internal Trips: Active Adult Residential*		<992>	<10>	<31>	<41>	<36>	<20>	<56>
Internal Trips: CMU Residential*		<183>	<3>	<11>	<14>	<11>	<6>	<17>
Pass-By Trips - Shopping Center[2]		<5,634>	<82>	<53>	<135>	<236>	<256>	<492>
Total External Trips		22,919	329	657	986	1,086	834	1,920

Notes: [1]ksf = thousand square feet

* Internal Trip Reduction - Active Adult Community – 15%; Single Family Residential – 8%; CMU Residential – 10%

[2] Pass-by rates from Trip Generation Handbook, October, 1998, ITE
shopping center (assumed) - 34%

Trip Distribution

The distribution of trips within the Specific Plan area and onto the regional circulation system was based upon existing traffic conditions, and projected future development in north and central Manteca. The distribution of project trips is presented in Table 6.

TABLE 6
PROJECT TRIP DISTRIBUTION

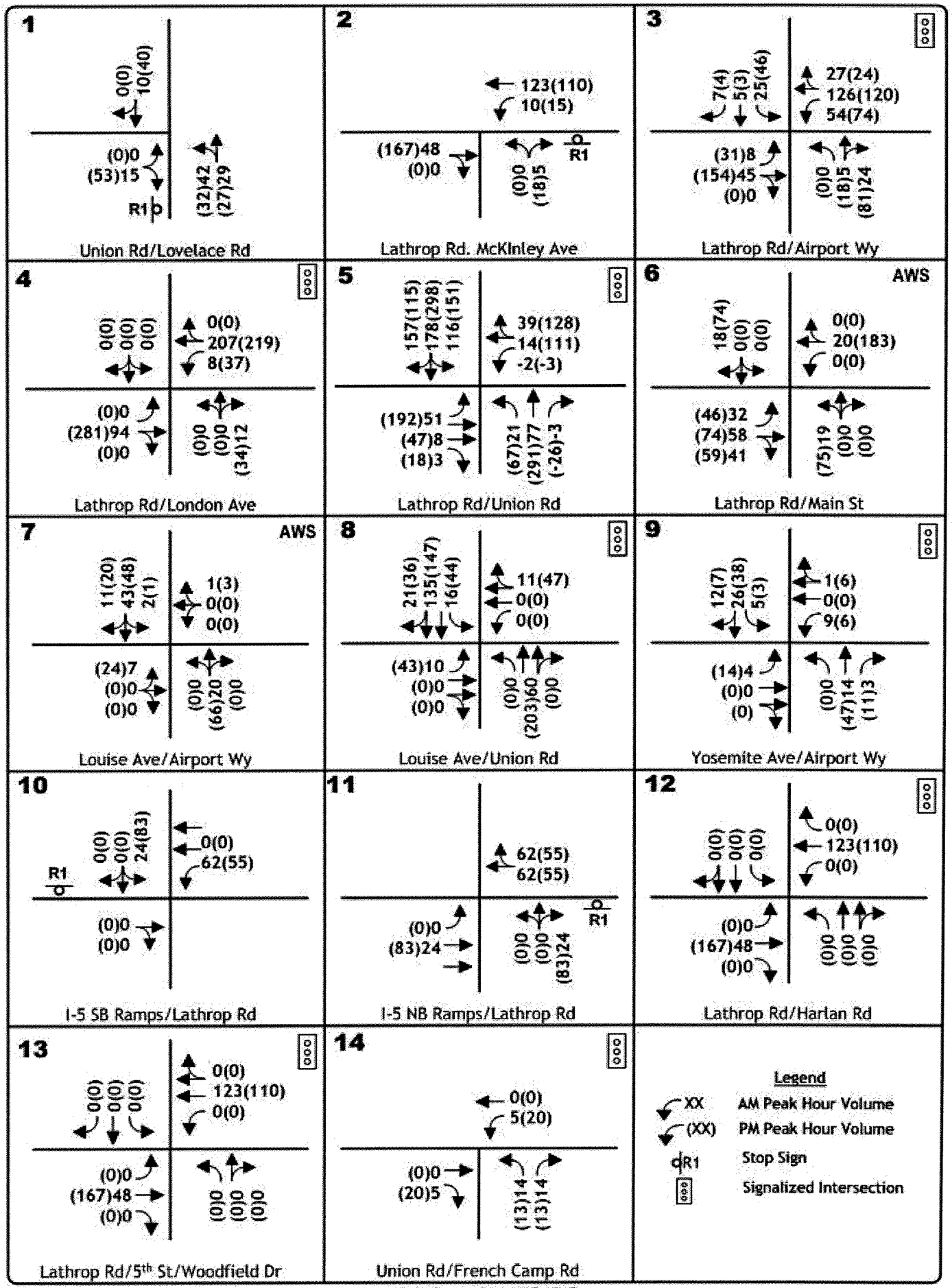
Route – Direction	Percentage of Traffic (Residential-to-Non-Residential Trips & External Trips)	
	Existing	Future
North via Airport Way	10%	13%
North via Union Road	4%	3%
West to I-5	15%	17%
South via Airport Way	6%	6%
South via Union Rd	20%	16%
South via Main St	11%	11%
East via Lathrop Rd	11%	12%
Local traffic	10%	11%
Internal Traffic	13%	11%
Total Trips	**100%**	**100%**

Existing Plus Project Traffic Conditions

Trips generated by development of the Union Ranch project at buildout (2011) are shown in Figures 4A and 4B while Existing plus Project traffic volumes are presented in Figures 5A and 5B. Resulting traffic conditions at key area intersections are presented in Tables 7 and 8.

Impacts to Study Area Intersections. Levels of Service were calculated for key intersections in the study area. As shown in Tables 7 and 8, unsatisfactory Levels of Service will occur at five intersections. These include:

- Lathrop Road / I-5 Southbound Ramps
- Lathrop Road / Union Road
- Airport Way / Louise Avenue
- Lathrop Road / McKinley Avenue
- Lathrop Road / Main Street

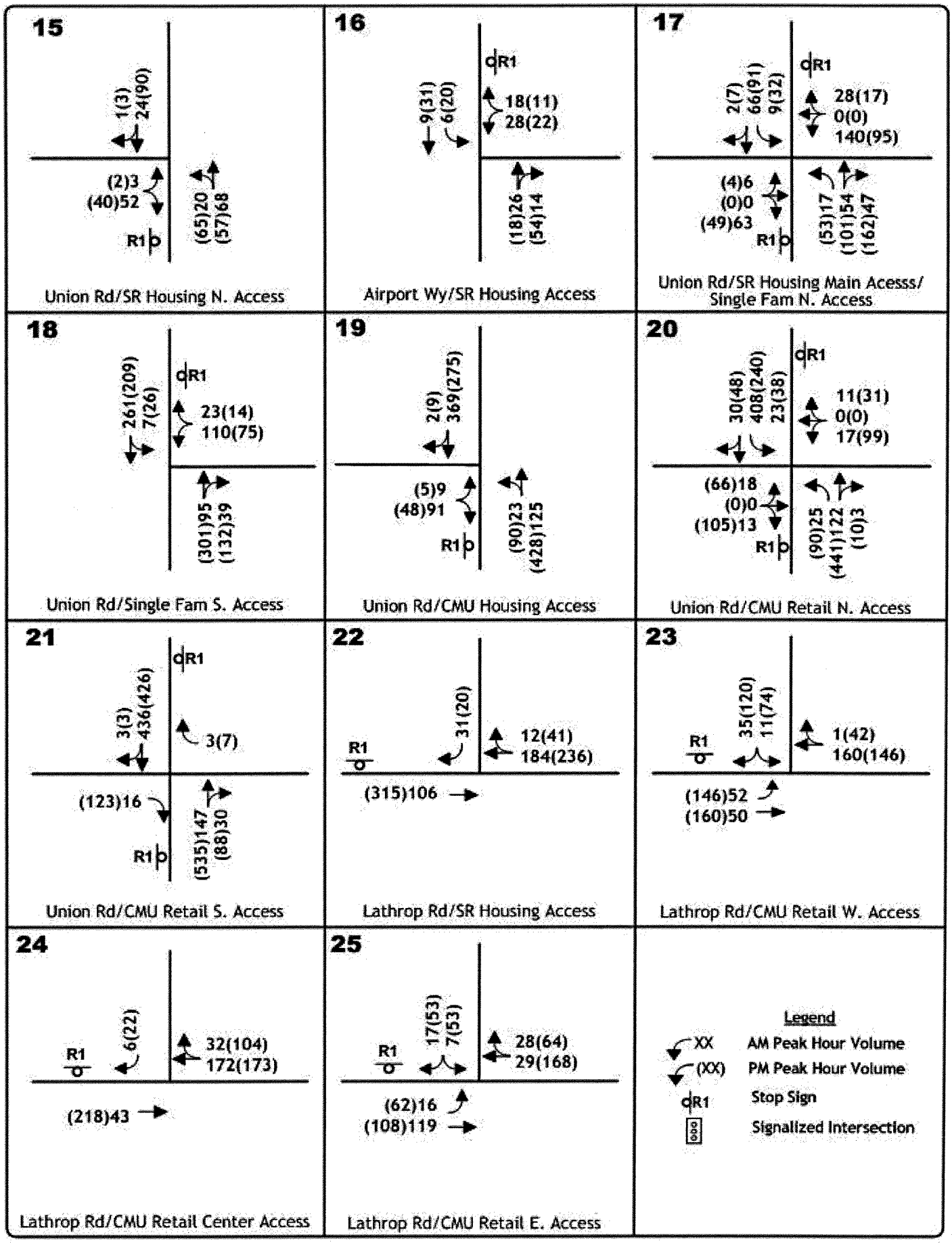


PROJECT TRIPS
AND LANE CONFIGURATIONS
STUDY AREA INTERSECTIONS

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figure 4a

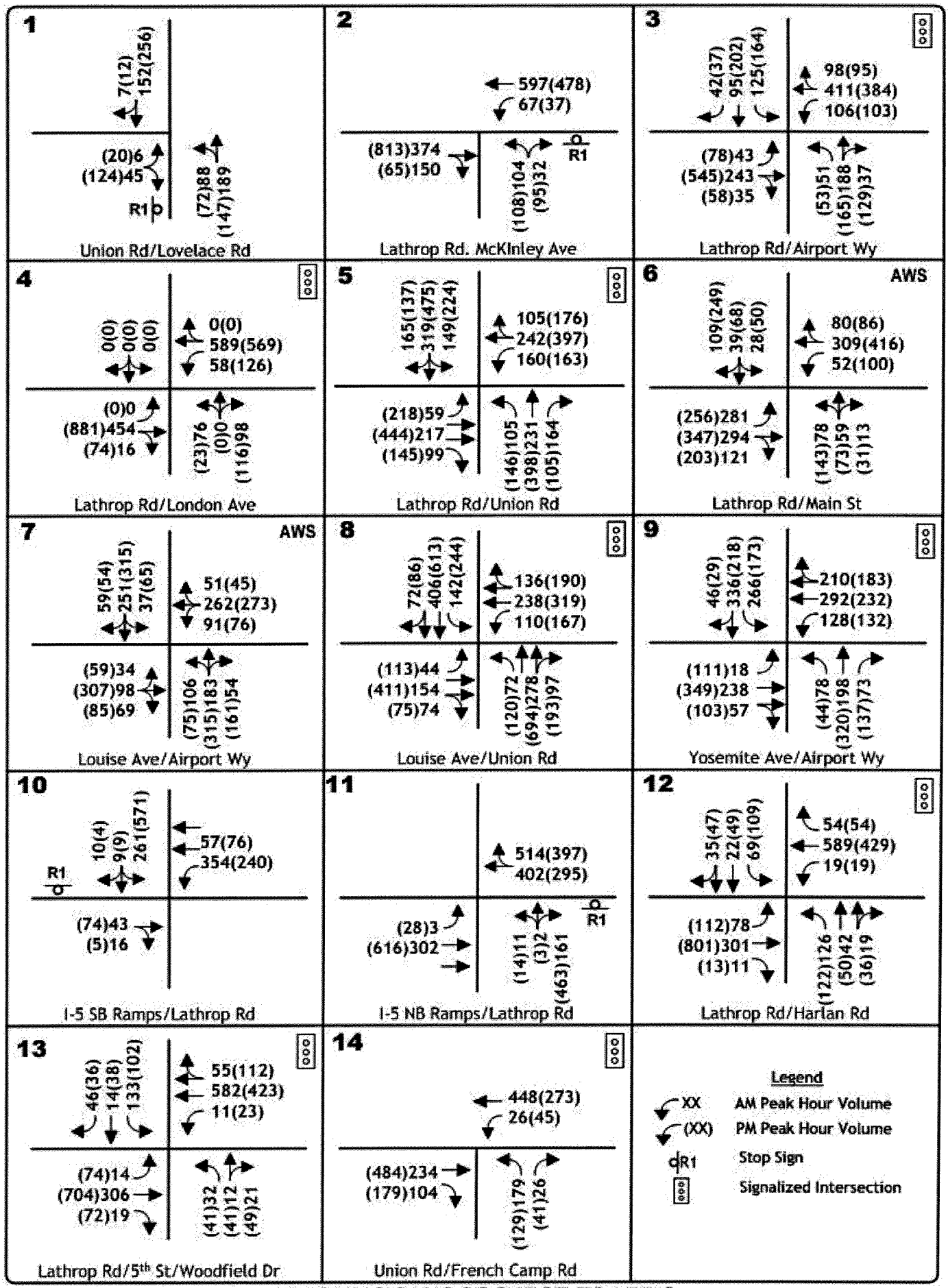


PROJECT TRIPS
AND LANE CONFIGURATIONS
PROPOSED PROJECT ACCESS INTERSECTIONS

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2630-17tb 12/6/2004

figure 4b

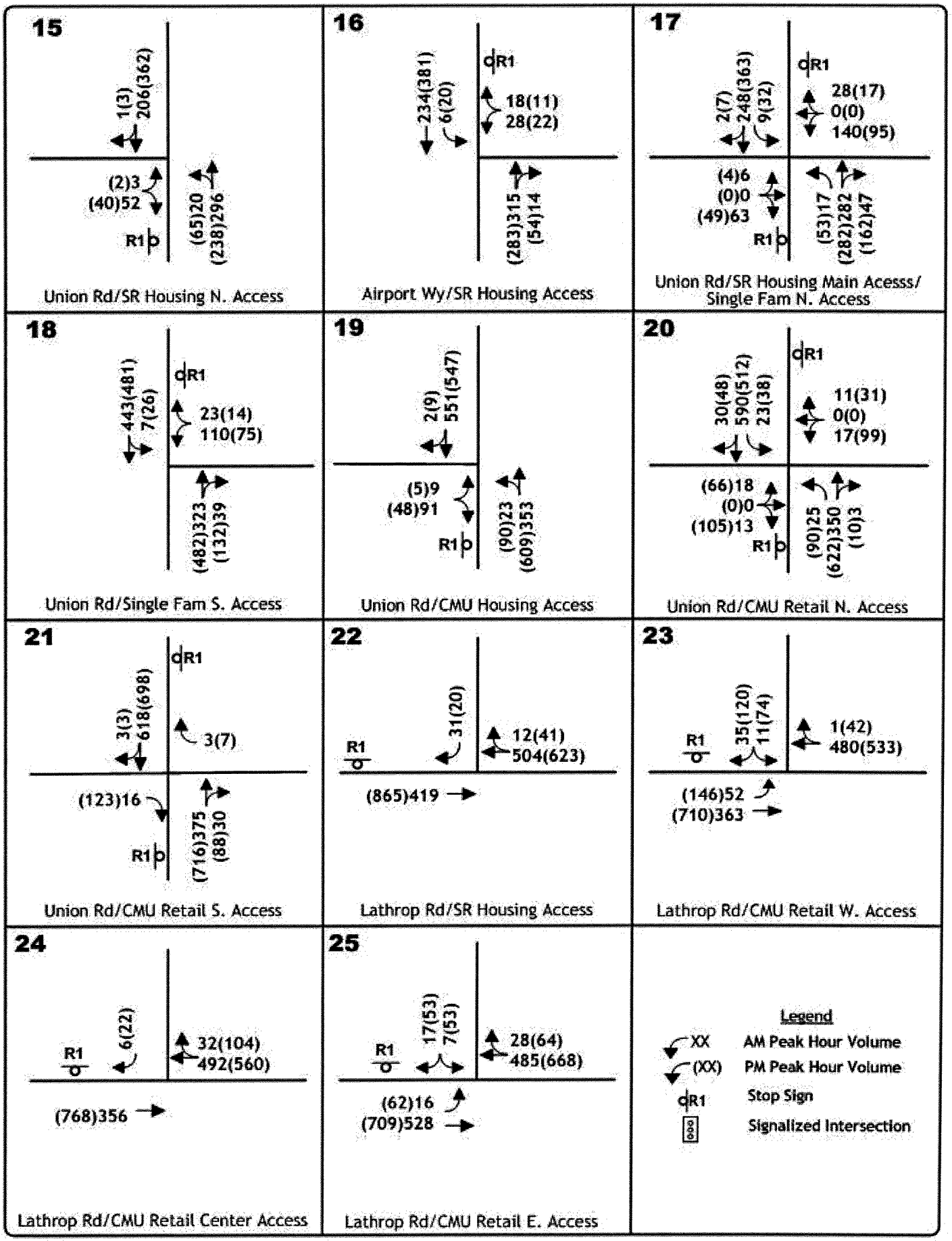


EXISTING PLUS PROJECT TRAFFIC
VOLUMES AND LANE CONFIGURATIONS
STUDY AREA INTERSECTIONS

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figure 5a



EXISTING PLUS PROJECT TRAFFIC
VOLUMES AND LANE CONFIGURATIONS
PROPOSED PROJECT ACCESS INTERSECTIONS

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figure 5b

TABLE 7
EXISTING PLUS UNION RANCH SPECIFIC PLAN PROJECT
A.M. INTERSECTION LEVEL OF SERVICE

Location	Control	AM Existing Peak Hour		AM Existing Plus Project Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
1. Union Rd / Lovelace Rd						
overall	EB Stop	**8.5**	**A**	**8.6**	**A**	No
NB left		7.6		7.8		
EB		9.7		9.9		
2. Lathrop Rd / McKinley Ave						
overall	NB Stop	**14.4**	**B**	**16.5**	**C**	No
NB		16.9		20.2		
WB left		8.7		8.9		
3. Lathrop Rd / Airport Way	Signal	**28.1**	**C**	**30.3**	**C**	N/A
4. Lathrop Rd / London Ave	Signal	**15.5**	**B**	**14.4**	**B**	N/A
5. Lathrop Rd / Union Rd	Signal	**32.1**	**C**	**49.5**	**D**	N/A
6. Lathrop Rd / Main St						
overall	All way Stop	**17.6**	**C**	**25.3**	**D**	No
NB		12.6		14.2		
SB		12.5		14.1		
EB		17.0		27.4		
WB		22.0		30.4		
7. Airport Way / Louise Ave						
overall	All way Stop	**24.8**	**C**	**33.7**	**D**	No
NB		23.4		31.7		
SB		20.6		31.9		
EB		15.2		17.8		
WB		33.5		45.0		
8. Union Rd / Louise Ave	Signal	**29.9**	**C**	**29.5**	**C**	N/A
9. Airport Way / Yosemite Ave	Signal	**30.6**	**C**	**31.0**	**C**	N/A
10. Lathrop Rd / I-5 SB Ramps						
overall	SB Stop	**34.9**	**D**	**83.1**	**F**	Yes
SB		65.6		177.9		
WB left		8.0		8.1		
11. Lathrop Rd / I-5 NB Ramps						
overall	NB Stop	**11.3**	**B**	**11.9**	**B**	Yes
NB		11.3		11.9		
EB left		9.7		10.3		
12. Lathrop Rd / Harlan Rd	Signal	**21.3**	**C**	**19.9****	**B**	N/A
13 Lathrop Rd / 5th St -Woodfield Dr	Signal	**18.4**	**B**	**16.7**	**B**	N/A
14. French Camp Rd / Union Rd	Signal	**12.7**	**B**	**13.8**	**B**	N/A

* Meets Warrant 10 – Peak Hour Warrant, and/or Warrant 11 – Peak Hour Volume Warrant

** LOS reduction due to additional green time added to east-west through movements

TABLE 8
EXISTING PLUS UNION RANCH SPECIFIC PLAN PROJECT
P.M. INTERSECTION LEVEL OF SERVICE

Location	Control	PM Existing Peak Hour		PM Existing Plus Project Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
1. Union Rd / Lovelace Rd						
overall	EB Stop	**9.9**	**A**	**10.6**	**B**	No
NB left		7.8		8.0		
EB		10.8		11.9		
2. Lathrop Rd / McKinley Ave						
overall	NB Stop	**21.6**	**C**	**35.6**	**E**	Yes
NB		23.0		40.2		
WB left		9.5		10.4		
3. Lathrop Rd / Airport Way	Signal	**27.5**	**C**	**37.9**	**D**	N/A
4. Lathrop Rd / London Ave	Signal	**13.1**	**B**	**19.3**	**B**	N/A
5. Lathrop Rd / Union Rd	Signal	**33.6**	**C**	**166.8**	**F**	N/A
6. Lathrop Rd / Main St						
overall	All way Stop	**40.8**	**E**	**123.3**	**E**	Yes
NB		17.6		29.1		
SB		24.5		51.3		
EB		44.1		161.0		
WB		53.7		155.2		
7. Airport Way / Louise Ave						
overall	All way Stop	**135.0**	**F**	**181.0**	**F**	Yes
NB		196.9		275.1		
SB		84.1		148.2		
EB		135.9		162.1		
WB		104.7		107.2		
8. Union Rd / Louise Ave	Signal	**34.0**	**C**	**37.1**	**D**	N/A
9. Airport Way / Yosemite Ave	Signal	**32.6**	**C**	**33.2**	**C**	N/A
10. Lathrop Rd / I-5 SB Ramps						
overall	SB Stop	**133.3**	**F**	**301.0**	**F**	Yes
SB		179.7		421.4		
WB left		7.8		7.9		
11. Lathrop Rd / I-5 NB Ramps						
overall	NB Stop	**19.4**	**C**	**33.7**	**D**	Yes
NB		20.1		35.1		
EB left		9.0		9.4		
12. Lathrop Rd / Harlan Rd	Signal	**21.8**	**C**	**21.3**	**C**	N/A
13. Lathrop Rd / 5th St -Woodfield Dr	Signal	**20.0**	**C**	**18.6****	**B**	N/A
14. French Camp Rd / Union Rd	Signal	**10.1**	**B**	**12.1**	**B**	N/A

* Meets Warrant 10 – Peak Hour Warrant, and/or Warrant 11 – Peak Hour Volume Warrant

** LOS reduction due to additional green time added to east-west through movements

CUMULATIVE TRAFFIC CONDITIONS

Background Information

Year 2025 Traffic Forecasts. Traffic projections were obtained from the most recent City of Manteca General Plan Transportation Analysis (GPTA) (May 2003) for the 2025 horizon year for roadways within the City of Manteca. Projections for Lathrop and San Joaquin County were obtained from the Central Lathrop Specific Plan EIR (EDAW 2004) and from the San Joaquin Council of Governments 2004 traffic model.

Daily volume information was available from the GPTA for Lathrop Road east of Airport Way, and Airport Way and Union Road south of Lathrop Road. The proposed project is located north of Lathrop Road. The GPTA Circulation Element model accounted for growth in this area; however, only p.m. peak hour traffic data is provided for the Airport Way / Lathrop Road intersection.

Significant growth is expected in this area of Manteca. Based upon the Traffic Analysis Zones (TAZ) and accompanying data in the GPTA it is projected that over 6,000 housing units will be constructed north of Lathrop Road between Airport Way to the west and Main Street to the east (TAZ 488). In addition, this TAZ also includes 1,300 employees within retail, service and other industries. Traffic Analysis Zone 492, west of Airport Way, is identified to include over 11,000 employees. Based on these projections, in addition to expected movement between these two TAZ's, there will be significant traffic along Airport Way into the business area west of the Union Ranch site.

Future volumes along these roadways (i.e. Airport Way and Union Road north of Lathrop Road and Lathrop Road west of Airport Way) were developed based on the existing daily traffic volumes and the projected volumes contained in the GPTA traffic model. P.M. peak hour traffic volumes for the Airport Way / Lathrop Road intersection were available from the GPTA and were used for this study. Daily volumes at the Union Road / Lathrop Road intersection were developed based on the net difference between existing and future traffic volumes south of the intersection. This difference was added to the existing traffic north of the intersection. A review of the Traffic Analysis Zones along Union Road indicated that the new development to the south of Lathrop Road will be generally infill projects. The large increase in future traffic was determined to be from the new development to the north of Lathrop Road.

Development of peak hour conditions at the Lathrop Road / Union Road intersection considered the daily and peak hour volumes shown in the GPTA for the Lathrop Road / Airport Way intersection. A 10% peak hour was assumed along Union Road adjacent to the east side of the project. Current peak hour rates along Lathrop Road range to about 9%. Turning traffic at the intersection was determined based on the daily volumes shown in the GPTA (i.e. the percentage of daily traffic along each roadway). The calculated volumes assumed that development of both project sites using single family trip rates were included. To determine a cumulative base level for the year 2025 traffic scenario (i.e., peak hour trips without development of either the active adult site or the residential site east of Union Road) the traffic volumes expected to be generated from both project

sites were removed from the surrounding intersections; the resulting base peak hour 2025 volumes are shown in Figures 6A and 6B.

Future traffic volumes within the City of Lathrop were taken directly from the Central Lathrop Specific Plan EIR while peak hour turning movements at the French Camp Road / Union Road intersection (San Joaquin County) were based on the percent daily volume increase to the 2030 model. This percentage was applied to the existing turning movements to develop future peak hour movements.

Year 2025 Lane Configurations. Lane configurations along Lathrop Road, Airport Way and Union Road were based on those identified in the GPTA. Roadways north of Lathrop Road were assumed to mimic the lane configurations to the south. The following lane configurations are assumed within the City of Manteca:

Lathrop Road is projected to be a four-lane divided roadway with left turn lanes available at intersections. Right turn lanes will be provided at the Airport Way intersection and are assumed at the Union Road intersection. Future signals were assumed at the Lathrop Road / Main Street intersection.

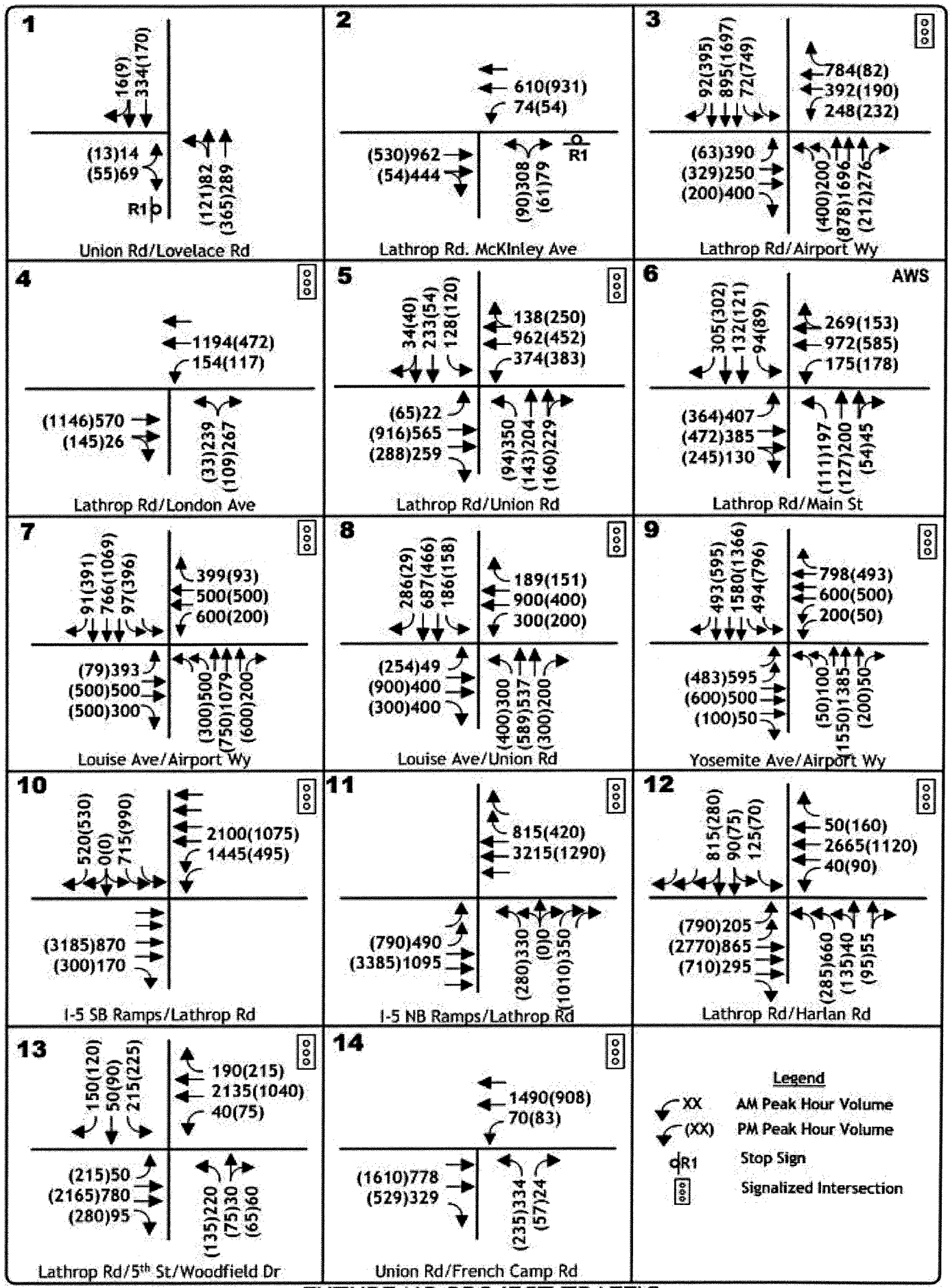
Airport Way is expected to be a six-lane roadway with dual left turn lanes at Lathrop Road. In addition, an exclusive right turn lane will be provided for northbound and southbound traffic. Future signals were assumed at the Louise Avenue / Airport Way intersection.

Union Road is anticipated to be a four-lane roadway north and south of Lathrop Road. Right and left turn lanes are assumed for northbound and southbound traffic.

Within the City of Lathrop, significant changes in the lane configurations along Lathrop Road are expected. This includes up to 8 through lanes (4 in each direction) at the I-5 interchange with dual and triple turn lanes at the ramp intersections. At the Harlan Road intersection, Lathrop Road is projected to include 3 through lanes in each direction, with dedicated left and right turn lanes. At the 5th Street intersection, Lathrop Road will include two through lanes, a left turn lane and a right turn lane in both directions.

Figures 6A and 6B present the projected year 2025 conditions in the project vicinity without the proposed project.

Cumulative Base Levels of Service. Intersection Levels of Service under the Cumulative No Project scenario are presented in Table 9. Two intersections will operate below the level of service thresholds. These include the Lathrop Road / McKinley Avenue intersection and the Yosemite Avenue / Airport Way intersection. The Lathrop Road / McKinley Avenue intersection can be improved through signalization; however, the Yosemite Avenue / Airport Way intersection will operate at LOS F in the a.m. peak hour with completion of the General Plan Circulation Element.

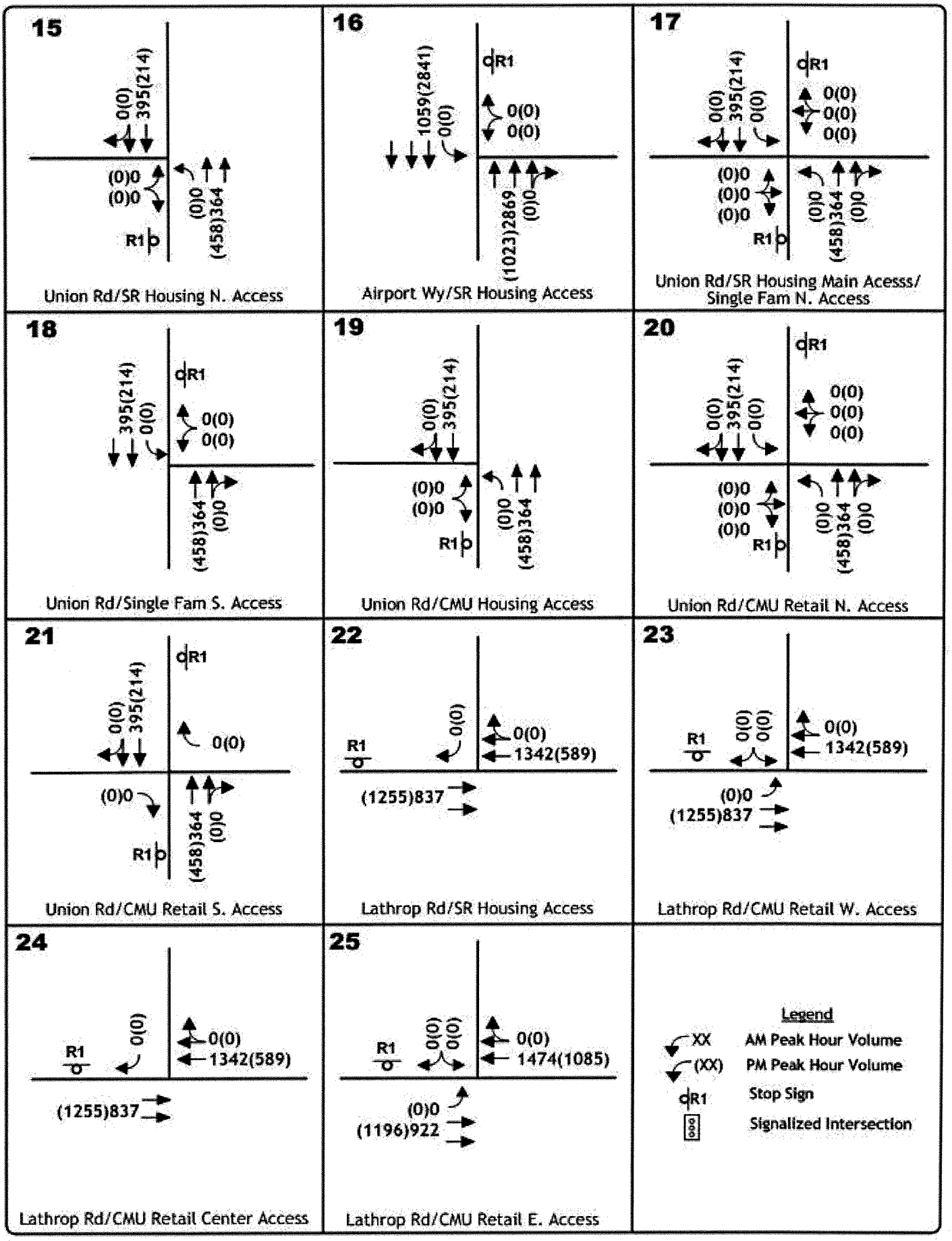


FUTURE NO PROJECT TRAFFIC
VOLUMES AND LANE CONFIGURATIONS
STUDY AREA INTERSECTIONS

KD Anderson
Transportation Engineers

2630-17tb 12/7/2004

figure 6a



FUTURE NO PROJECT TRAFFIC
VOLUMES AND LANE CONFIGURATIONS
PROPOSED PROJECT ACCESS INTERSECTIONS

KD Anderson
Transportation Engineers

2630-17tb 12/7/2004

figure 6b

TABLE 9
CUMULATIVE BASE CONDITION
INTERSECTION LEVEL OF SERVICE

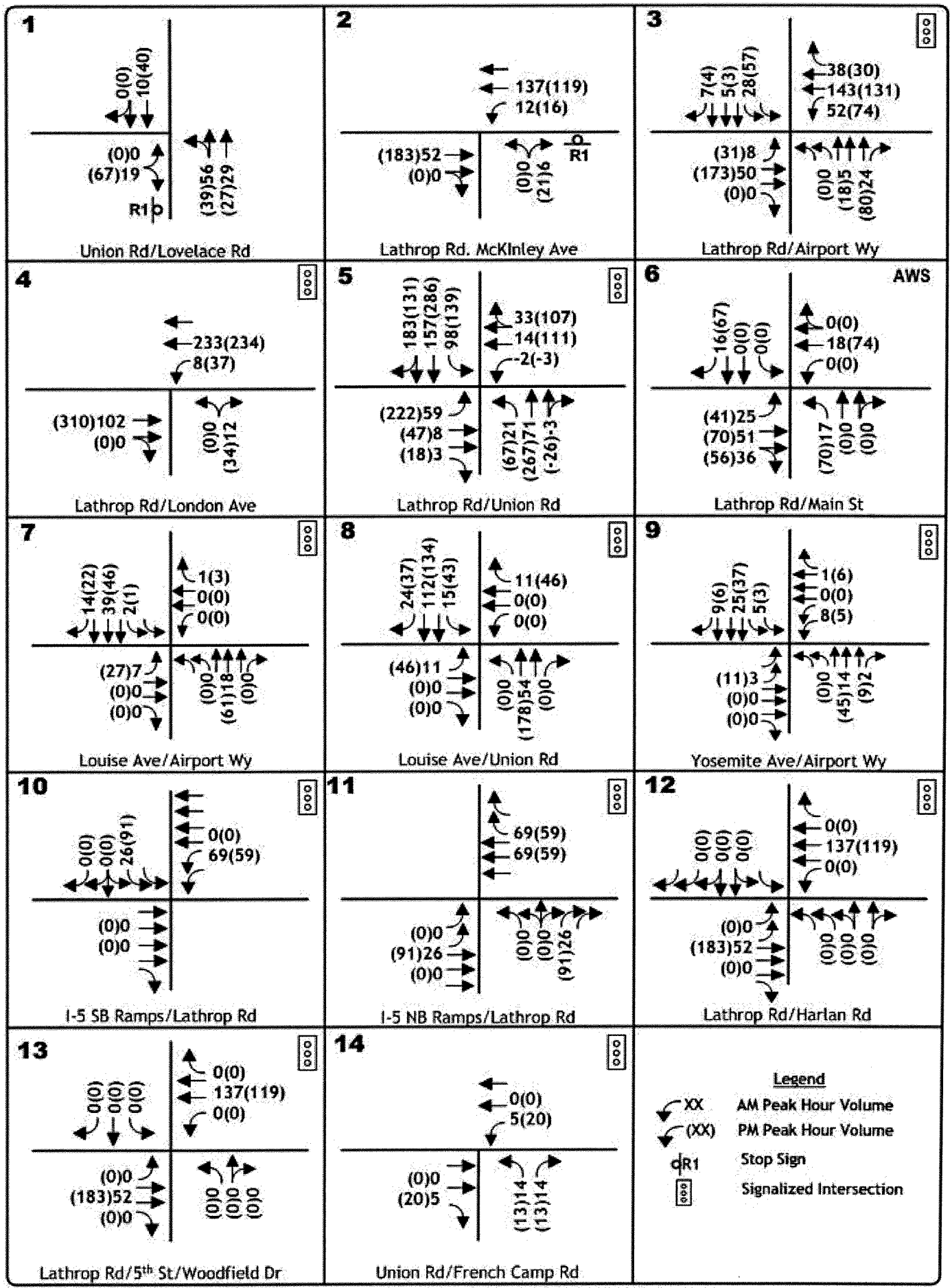
Location	Control	AM Peak Hour		PM Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
1. Union Rd / Lovelace Rd						
overall	EB Stop	**9.8**	**A**	**8.8**	**A**	No
NB left		8.3		7.9		
EB		11.3		10.5		
2. Lathrop Rd / McKinley Ave						
overall	NB Stop	**>999**	**F**	**42.5**	**E**	Yes
NB		>999		54.5		
WB left		15.7		9.1		
3. Lathrop Rd / Airport Way	Signal	**48.0**	**D**	**34.3**	**C**	N/A
4. Lathrop Rd / London Ave	Signal	**27.2**	**C**	**13.9**	**B**	N/A
5. Lathrop Rd / Union Rd	Signal	**33.3**	**C**	**29.1**	**C**	N/A
6. Lathrop Rd / Main St	Signal	**42.7**	**D**	**29.5**	**C**	N/A
7. Airport Way / Louise Ave	Signal	**29.5**	**C**	**35.8**	**D**	N/A
8. Union Rd / Louise Ave	Signal	**49.7**	**D**	**44.3**	**D**	N/A
9. Airport Way / Yosemite Ave	Signal	**86.3**	**F**	**41.2**	**D**	N/A
10. Lathrop Rd / I-5 SB Ramps	Signal	**24.8**	**C**	**29.4**	**C**	N/A
11. Lathrop Rd / I-5 NB Ramps	Signal	**27.7**	**C**	**35.2**	**D**	N/A
12. Lathrop Rd / Harlan Rd	Signal	**37.9**	**D**	**21.8**	**C**	N/A
13. Lathrop Rd / 5th St -Woodfield Dr	Signal	**28.8**	**C**	**32.0**	**C**	N/A
14. French Camp Rd / Union Rd	Signal	**17.7**	**B**	**15.2**	**B**	N/A

* Meets Warrant 10 – Peak Hour Warrant, and/or Warrant 11 – Peak Hour Volume Warrant

Cumulative Plus Union Ranch Specific Plan Buildout

This scenario assumes buildout of the Union Ranch Specific Plan plus the development previously assumed elsewhere in the City and in the General Plan under the base condition. Figures 7A and 7B present the project-only traffic based on the trip distribution shown in Table 6. Resulting cumulative plus project peak hour traffic volumes are presented in Figures 8A and 8B.

Impacts to Study Area Intersections. Levels of Service were calculated for key intersections in the study area. As shown in Tables 10 and 11, two intersections will continue to operate at unsatisfactory Levels of Service. The Lathrop Road / McKinley Avenue intersection can be improved through signalization. As noted in the Cumulative No Project section, the Yosemite Avenue / Airport Way intersection will continue to operate at LOS F unless additional lanes beyond the scope identified in the Circulation Element of the General Plan are added.

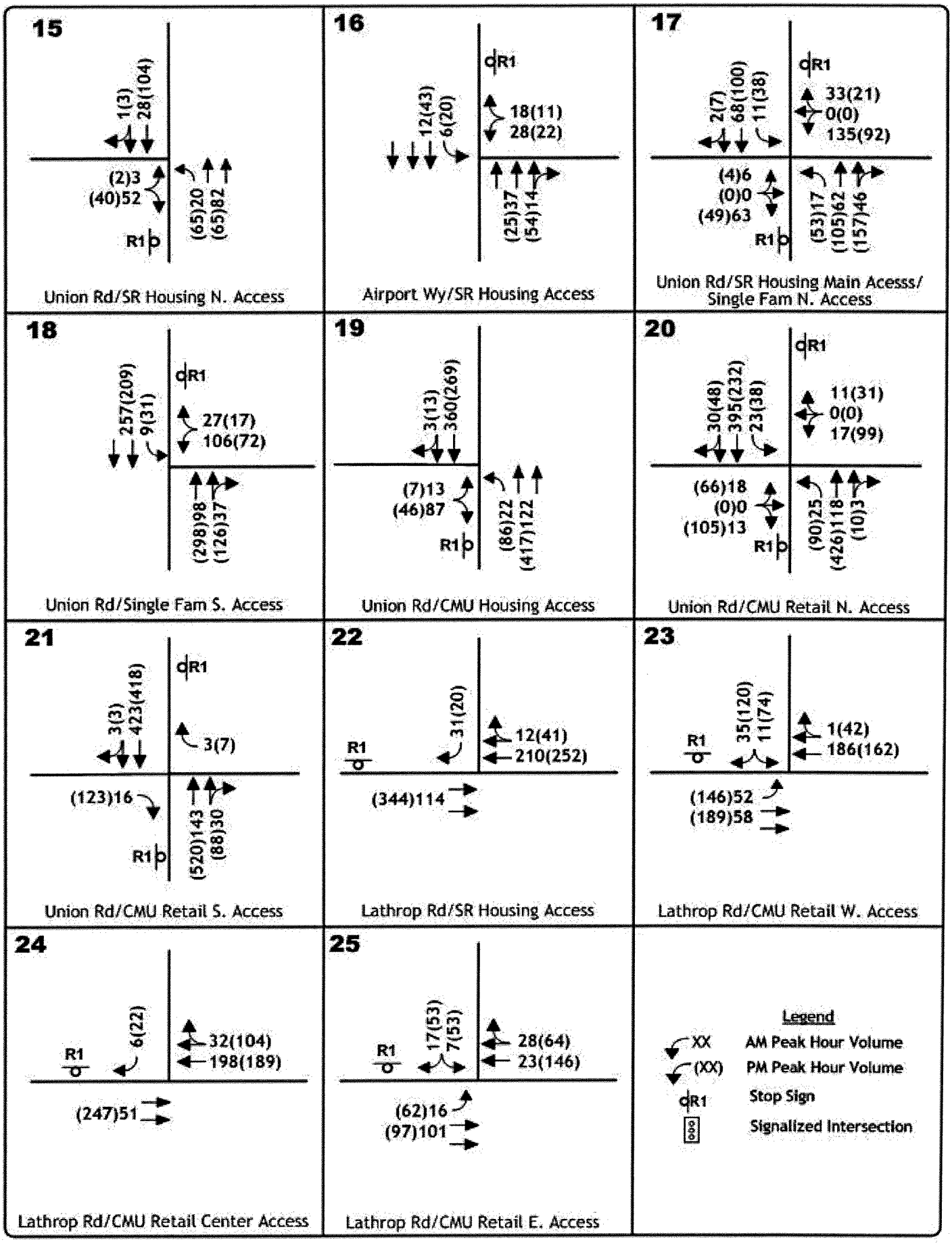


FUTURE PROJECT ONLY TRAFFIC
VOLUMES AND LANE CONFIGURATIONS
STUDY AREA INTERSECTIONS

KD Anderson
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2630-17tb 12/7/2004

figure 7a

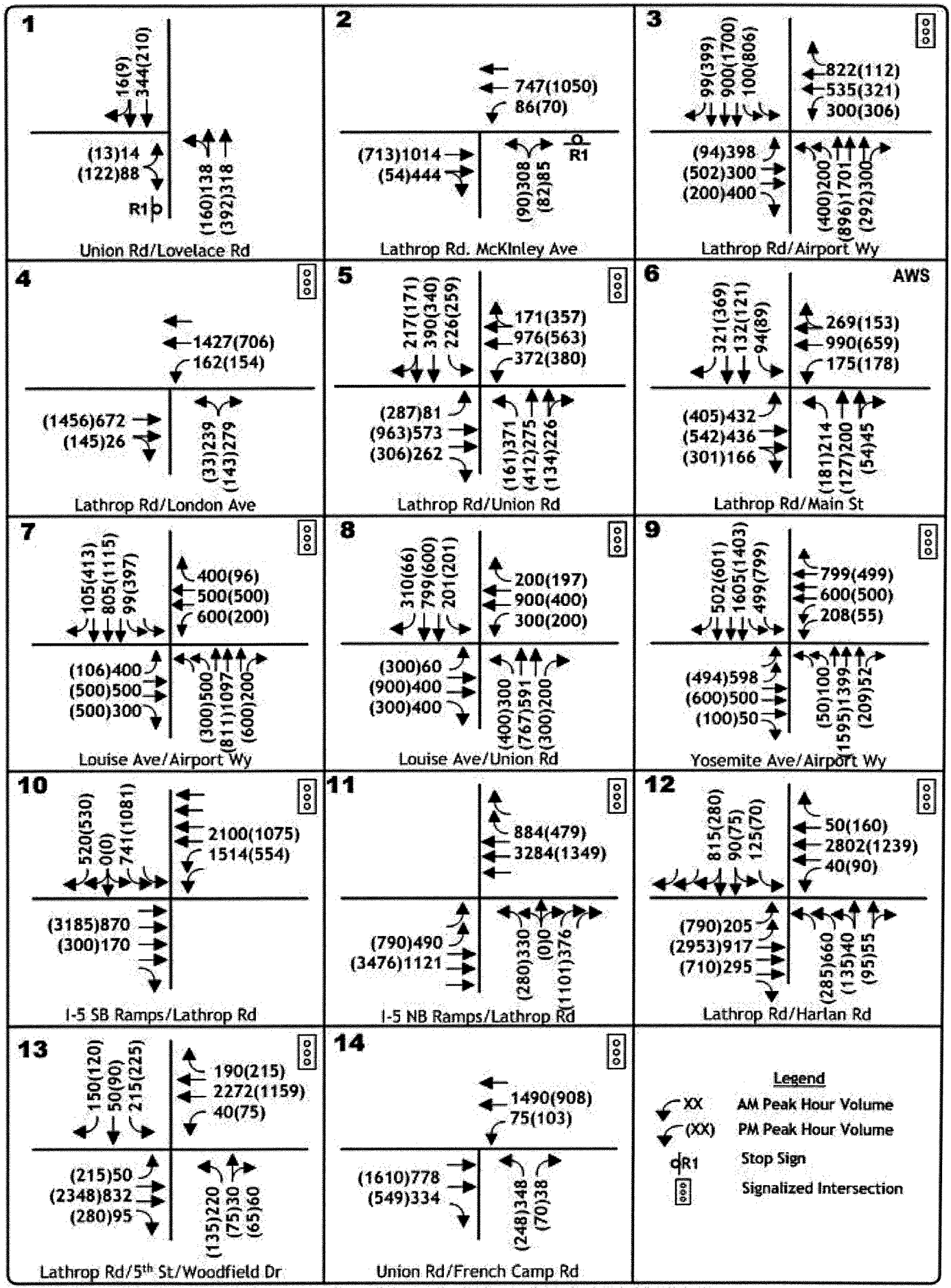


FUTURE PROJECT ONLY TRAFFIC
VOLUMES AND LANE CONFIGURATIONS
PROPOSED PROJECT ACCESS INTERSECTIONS

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figure 7b

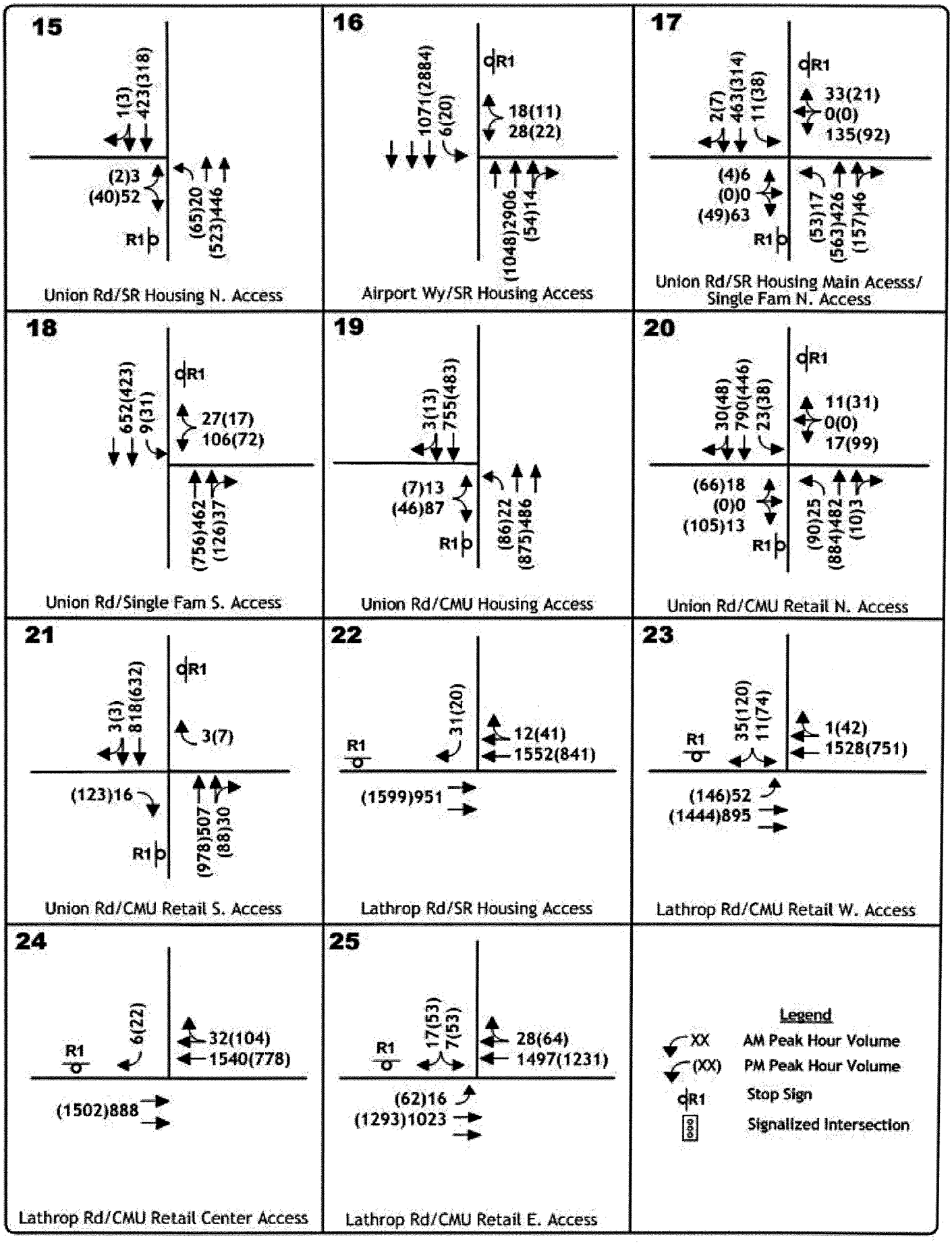


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FUTURE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS STUDY AREA INTERSECTIONS

2630-17tb 12/6/2004

figure 8a



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FUTURE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS PROPOSED PROJECT ACCESS INTERSECTIONS

2630-17tb 12/6/2004

figure 8b

TABLE 10
A.M. INTERSECTION LEVELS OF SERVICE
CUMULATIVE PLUS UNION RANCH SPECIFIC PLAN PROJECT

Location	Control	AM Cumulative Peak Hour		AM Cumulative Plus Project Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
1. Union Rd / Lovelace Rd						
overall	EB Stop	**9.8**	**A**	**10.1**	**B**	No
NB left		8.3		8.6		
EB		11.3		12.0		
2. Lathrop Rd / McKinley Ave						
overall	NB Stop	**>999**	**F**	**>999**	**F**	Yes
NB		>999		>999		
WB left		15.7		16.9		
3. Lathrop Rd / Airport Way	Signal	**48.0**	**D**	**51.3**	**D**	N/A
4. Lathrop Rd / London Ave	Signal	**27.2**	**C**	**29.3**	**C**	N/A
5. Lathrop Rd / Union Rd	Signal	**33.3**	**C**	**51.6**	**D**	N/A
6. Lathrop Rd / Main St	Signal	**42.7**	**D**	**45.9**	**D**	N/A
7. Airport Way / Louise Ave	Signal	**49.5**	**D**	**50.9**	**D**	N/A
8. Union Rd / Louise Ave	Signal	**49.7**	**D**	**54.0**	**D**	N/A
9. Airport Way / Yosemite Ave	Signal	**86.3**	**F**	**87.8**	**F**	N/A
10. Lathrop Rd / I-5 SB Ramps	Signal	**24.8**	**C**	**25.4**	**C**	N/A
11. Lathrop Rd / I-5 NB Ramps	Signal	**27.7**	**C**	**29.8**	**C**	N/A
12. Lathrop Rd / Harlan Rd	Signal	**37.9**	**D**	**42.0**	**D**	N/A
13. Lathrop Rd / 5th St -Woodfield Dr	Signal	**28.8**	**C**	**32.7**	**C**	N/A
14. French Camp Rd / Union Rd	Signal	**17.7**	**B**	**18.5**	**B**	N/A

* Meets Warrant 10 – Peak Hour Warrant, and/or Warrant 11 – Peak Hour Volume Warrant

TABLE 11
P.M. INTERSECTION LEVELS OF SERVICE
CUMULATIVE PLUS UNION RANCH SPECIFIC PLAN PROJECT

Location	Control	PM Cumulative Peak Hour		PM Cumulative Plus Project Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
1. Union Rd / Lovelace Rd						
overall	EB Stop	**8.8**	**A**	**9.5**	**A**	No
NB left		7.9		8.2		
EB		10.5		11.0		
2. Lathrop Rd / McKinley Ave						
overall	NB Stop	**42.5**	**E**	**136.3**	**E**	Yes
NB		54.5		187.6		
WB left		9.1		10.1		
3. Lathrop Rd / Airport Way	Signal	**34.3**	**C**	**45.6**	**D**	N/A
4. Lathrop Rd / London Ave	Signal	**13.9**	**B**	**17.6**	**B**	N/A
5. Lathrop Rd / Union Rd	Signal	**29.1**	**C**	**54.2**	**D**	N/A
6. Lathrop Rd / Main St	Signal	**29.5**	**C**	**31.9**	**C**	N/A
7. Airport Way / Louise Ave	Signal	**35.8**	**D**	**36.0**	**D**	N/A
8. Union Rd / Louise Ave	Signal	**44.3**	**D**	**50.1**	**D**	N/A
9. Airport Way / Yosemite Ave	Signal	**41.2**	**D**	**43.5**	**D**	N/A
10. Lathrop Rd / I-5 SB Ramps	Signal	**29.4**	**C**	**33.3**	**C**	N/A
11. Lathrop Rd / I-5 NB Ramps	Signal	**35.2**	**D**	**43.4**	**D**	N/A
12. Lathrop Rd / Harlan Rd	Signal	**21.8**	**C**	**22.4**	**C**	N/A
13. Lathrop Rd / 5th St -Woodfield Dr	Signal	**32.0**	**D**	**39.1**	**D**	N/A
14. French Camp Rd / Union Rd	Signal	**15.2**	**B**	**16.8**	**B**	N/A

* Meets Warrant 10 – Peak Hour Warrant, and/or Warrant 11 – Peak Hour Volume Warrant

INTERNAL ACCESS

The quality of traffic flow and the adequacy of traffic controls providing access to the Union Ranch Specific Plan site have also been evaluated based on a.m. and p.m. peak hour traffic conditions at major intersections with the project built out. Eleven access intersections are assumed for the project, identified in Table 12 on the following page.

Figures 3B and 6B present the existing and cumulative through traffic along Airport Way, Lathrop Road and Union Road. Figures 4B and 7B present the project volumes assigned to project access intersections in the existing and future conditions. Figures 5B and 8B present the 'Plus Project' conditions at these intersections.

Existing Plus Project Condition. The Existing plus Project levels of service at the proposed project access intersections are presented in Table 13. Three intersections are projected to operate below the City level of service threshold. These include the following entrances to the CMU Commercial sites:

- the west access along Lathrop Road west of Union Road
- the east access along Lathrop Road east of Union Road
- the north access along Union Road

All of the intersections are projected to operate at LOS F with side street stop control.

Cumulative Plus Project. The Cumulative plus Project levels of service at the proposed access intersections are presented in Table 14. Four intersections will operate below the City LOS These include the three entrances to the CMU Commercial sites and one entrance to the Active Adult Community site:

- the west access along Lathrop Road west of Union Road
- the east access along Lathrop Road east of Union Road
- the north access along Union Road
- Airport Way at Active Adult Community intersection

TABLE 12
PROJECT ACCESS INTERSECTION LOCATIONS

Location	Access	Land Use
Airport Way	Full Access	Active Adult Community
Lathrop Road	Right-in, Right-out	Active Adult Community
Lathrop Road (west)	Full Access	CMU Commercial
Lathrop Road (center)*	Right-in, Right-out	CMU Commercial
Lathrop Road (east)**	Full Access	CMU Commercial
Union Road (south)	Right-in, Right-out	CMU Commercial
Union Road (north)	Full Access	CMU Commercial
Union Road	Full Access	CMU Residential
Union Road	Full Access	Residential Subdivision
Union Road	Full Access	Residential Subdivision, Active Adult Community
Union Road	Full Access	Active Adult Community

* west of Union Road

** east of Union Road

TABLE 13
EXISTING PLUS PROJECT LEVELS OF SERVICE AT ACCESS INTERSECTIONS

Location	Control	AM Existing Plus Project Peak Hour		PM Existing Plus Project Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
15. Union Rd / AAC North Access						
overall	EB Stop	**9.4**	**A**	**9.4**	**A**	No
NB Left		7.7		8.3		
EB		10.0		11.2		
16. Airport Way / AAC Access						
overall	WB Stop	**12.2**	**B**	**12.1**	**B**	No
SB Left		8.0		8.1		
WB		12.7		14.5		
17. Union Rd / AAC Main Access – SFR North Access						
overall	EB / WB Stop	**20.8**	**C**	**25.9**	**D**	No
NB Left		7.8		8.3		
SB Left		8.0		8.5		
EB		10.9		12.3		
WB		26.9		45.7		
18. Union Rd / SFR* South Access						
overall	WB Stop	**22.2**	**C**	**28.1**	**D**	No
SB Left		8.1		8.1		
WB		22.9		33.7		
19. Union Rd / CMUR* Access						
overall	EB Stop	**14.3**	**B**	**11.7**	**B**	No
NB Left		8.8		9.2		
EB		15.5		15.9		
20. Union Rd / CMUC* North Access						
overall	EB / WB Stop	**17.1**	**C**	**274.2**	**F**	Yes
NB Left		9.1		9.2		
SB Left		8.2		9.2		
EB		24.3		215.9		
WB		23.5		611.9		
21. Union Rd / CMUC South Access						
overall	EB / WB Stop	**12.9**	**B**	**18.4**	**C**	No
EB Right		13.3		18.6		
WB Right		10.8		15.0		
22. Lathrop Rd / AAC Access						
overall	SB Stop	**12.3**	**B**	**13.7**	**B**	No
SB Right		12.3		13.7		
23. Lathrop Rd / CMUC West Access						
overall	SB Stop	**11.5**	**B**	**116.7**	**F**	Yes
SB		14.7		197.3		
EB Left		8.7		9.6		
24. Lathrop Rd / CMUC Center Access						
overall	SB Stop	**11.9**	**B**	**13.4**	**B**	No
SB		11.9		13.4		
25. Lathrop Rd / CMUC East Access						
overall	SB Stop	**13.0**	**B**	**53.9**	**F**	Yes
SB		15.8		79.7		
EB Left		8.7		9.8		

*AAC – active adult community site
CMUC – commercial mixed use commercial site
CMUR – commercial mixed use residential site
SFR – single family residential site

TABLE 14
CUMULATIVE PLUS PROJECT LEVELS OF SERVICE AT ACCESS INTERSECTIONS

Location	Control	AM Cumulative Plus Project Peak Hour		PM Cumulative Plus Project Peak Hour		Meets Signal Warrants*?
		Average Delay	Level of Service	Average Delay	Level of Service	
15. Union Rd / AAC North Access						
overall	EB Stop	**9.8**	**A**	**8.8**	**A**	No
NB Left		8.4		8.2		
EB		10.3		9.8		
16. Airport Way / AAC Access						
overall	WB Stop	**698.0**	**F**	**23.1**	**C**	Yes
SB Left		48.2		11.6		
WB		782.7		30.0		
17. Union Rd / AAC Main Access – SFR North Access						
overall	EB / WB Stop	**15.3**	**C**	**15.6**	**C**	No
NB Left		8.5		8.2		
SB Left		8.5		9.6		
EB		10.8		10.0		
WB		18.3		23.6		
18. Union Rd / SFR* South Access						
overall	WB Stop	**14.7**	**B**	**17.0**	**C**	No
SB Left		8.6		10.4		
WB		15.1		19.3		
19. Union Rd / CMUR* Access						
overall	EB Stop	**14.3**	**B**	**10.5**	**B**	No
NB Left		9.7		8.9		
EB		15.3		13.2		
20. Union Rd / CMUC* North Access						
overall	EB / WB Stop	**18.8**	**C**	**193.3**	**F**	Yes
NB Left		10.0		8.9		
SB Left		8.6		10.5		
EB		30.0		84.0		
WB		22.8		518.1		
21. Union Rd / CMUC South Access						
overall	EB / WB Stop	**11.4**	**B**	**12.1**	**B**	No
EB Right		11.7		12.0		
WB Right		10.1		13.1		
22. Lathrop Rd / AAC Access						
overall	SB Stop	**18.6**	**C**	**12.1**	**B**	No
SB Right		18.6		12.1		
23. Lathrop Rd / CMUC West Access						
overall	SB Stop	**47.7**	**E**	**325.6**	**F**	Yes
SB		83.0		562.4		
EB Left		16.5		11.0		
24. Lathrop Rd / CMUC Center Access						
overall	SB Stop	**17.4**	**C**	**12.1**	**B**	No
SB		17.4		12.1		
25. Lathrop Rd / CMUC East Access						
overall	SB Stop	**42.7**	**E**	**400.5**	**F**	Yes
SB		61.0		626.6		
EB Left		15.2		14.0		

*AAC – active adult community site
CMUC – commercial mixed use commercial site
CMUR – commercial mixed use residential site
SFR – single family residential site

Queuing. A queuing analysis was completed for each of the new intersections proposed with this project. Standard queuing theory was used to calculate the number of vehicles that would be queued. A 95% confidence level was assumed, meaning that the forecast queue length should be exceeded only 5% of the time. Table 15 provides the projected queues for each approach at intersections that will operate at acceptable levels of service in Existing plus Project and Cumulative plus Project scenarios without improvements. In all locations, the projected queue will not exceed a single vehicle along the main road, either Union Road or Lathrop Road. At the Union Road / AAC Main Access – Single Family Residential North Access, the westbound approach fro the single family road is projected to be up to four vehicles. This could be reduced to three vehicles maximum by providing a dedicated left turn lane for the approach. Similarly, at the Union Road / Single Family Residential South Access, the westbound approach will reach three vehicles. Providing a dedicated westbound left turn lane will reduce the queue to a maximum of two vehicles.

TABLE 15
PROJECTED AM AND PM QUEUES

Location	Existing Plus Project AM	Existing Plus Project PM	Cumulative AM Plus Project	Cumulative PM Plus Project
15. Union Rd / AAC North Access				
NB Left	<1	1	<1	1
EB	1	1	1	1
17. Union Rd / AAC Main Access – SFR North Access				
NB Left	<1	<1	<1	<1
SB Left	<1	<1	<1	<1
EB	1	1	1	1
WB	4	4	3	2
18. Union Rd / SFR South Access				
SB Left	<1	<1	<1	<1
WB	3	3	2	2
19. Union Rd / CMUR Access				
NB Left	<1	1	<1	1
EB	1	1	1	1
21. Union Rd / CMUC South Access				
EB Right	<1	<1	<1	1
WB Right	2	<1	<1	<1
22. Lathrop Rd / AAC Access				
SB Right	1	<1	1	<1
24. Lathrop Rd / CMUC Center Access				
SB	<1	<1	<1	<1

BICYCLE NETWORK

The City of Manteca Bicycle Master Plan was completed in 2003 and identifies the existing bicycle system and future needs for completing a city-wide network. One goal of the master plan is to include bicycle facilities in all new development projects in the City. In addition, a "city-loop" bike path is identified that links major roadways in the city; this includes links to the Tidewater bike path. The City's bike path system serves as a multi-use facility, providing a facility for pedestrians as well. The City's General Plan also identifies that the bicycle path along the Tidewater Southern Pacific Railroad right-of-way should be extended, along with any branch or connecting link. The existing bicycle route system in the project vicinity is limited and includes Class 2 bike lanes on Airport Way north of Lathrop Road and along London Avenue.

During development of the Bicycle Master Plan, several roadways were identified or perceived as problem areas mainly due to high speeds and/or narrow widths. Airport Way and Union Road are two of the roadways identified as such.

The City's proposed bicycle route system includes development of Class 2 bike lanes along Lathrop Road from about McKinley Avenue to east of SR 99. The plan identifies a suggested regional bike route west of McKinley Avenue. In addition, bike lanes are proposed along Airport Way south of Lathrop Road. A bike path north of Lathrop Road and traversing an east-west direction is also identified from the Union Pacific Railroad (UPRR) west of the City to the Tidewater Bikeway extension at the San Joaquin Delta College Farm Laboratory east of Union Road.

The proposed Specific Plan project should use the City's Bicycle Master Plan as the basis for establishing the bicycle system along the north side of the project. It is logical to create the off-street bike path network in an east-west direction that connects to the Tidewater Bikeway and the bike path along the UPRR right-of-way in the west; however, the proposed active adult community is expected to be patterned after other communities such as the Del Webb Sun City communities. These are normally gated communities that could present an issue with regard to defining a community bike path through the site.

The proposed project includes a Class 1 bike path parallel and north of Lathrop Road, adjacent to the active adult community (AAC). The facility follows the southerly property line of the AAC between Airport Way and Union Road. The proposed bike path provides a pathway between the AAC and the commercial mixed-use (CMU) development in the northwest quadrant of the Union Road / Lathrop Road intersection. This pathway may provide a direct connection between the AAC and the CMU.

At Union Road the bike facility parallels the west side of Union Road to the main entrance of the AAC. This is also the northerly entrance to the proposed residential subdivision on the east side of Union Road. The bike facility crosses Union Road and continues east, through open space areas of the subdivision, through the development where it connects to the Tidewater Bikeway. The westerly leg of the bike path is located between the AAC and the properties abutting Lathrop Road; the crossing of Airport Way will need to be considered when finalizing the connection to the west, across Airport Way.

In addition, a connection to the London Avenue bike facilities should also be made. This may require a short bike path segment along the north side of Lathrop Road to connect to the active adult right-in, right-out access east of London Avenue.

The City's Master Plan also includes Class 2 bike lanes along Lathrop Road. The westbound bike lane along the north side of Lathrop Road should be constructed as the project is developed. The bike lanes on Lathrop Road not a part of this project (i.e. the eastbound bike lane and westbound bike lanes in areas to be developed in the future) should be completed as part of the implementation plan in the Master Plan.

As noted earlier, bike lanes are present along Airport Way north of Lathrop Road. With development of the active adult community site, Airport Way will be widened along the east side of the roadway to its ultimate width. During this construction, a new bike lane should also be added.

Finally, one item that should be considered is the construction of either Class 2 bike lanes or a Class 1 bike path(s) along Union Road, between the north limit of the project and the Lathrop Road intersection. While no bicycle facilities are shown on Union Road south of Lathrop Road, the facility(ies) will provide direct access to the Lathrop Road bike lanes and the CMU commercial area for the project subdivision east of Union Road. This route will be the easiest connection to the east-west route along Lathrop Road without requiring backtracking.

LOW SPEED VEHICLES

Low speed vehicles (LSV) are commonly present in active adult communities. They are often electric vehicles and provide alternatives to gas-powered automobiles. Low speed vehicles are defined as "a motor vehicle, other than a motor truck, having four wheels on the ground and an unladen weight of 1,800 pounds or less, that is capable of propelling itself at a minimum speed of 20 miles per hour and a maximum speed of 25 miles per hour, on a paved level surface."

LSV's may be used by residents of the active adult community to access the commercial / retail uses identified in this document. Access to these areas would be via Union Road as an internal connection between the active adult community and the commercial site west of Union Road is not identified in the project's circulation network. The California Vehicle Code (CVC) limits travel by LSV's to street of 35 mph or less. This would require the City to limit the speed along Union Road to 35 mph or lower. If Union Road has a posted speed of 30 or 35 mph the driver of an LSV shall ride as far right as practicable to the right hand curb or edge of road. Left turns off of Union Road would be made following the rules and regulations of the CVC. Local agencies can further restrict or prohibit the use of low-speed vehicles by ordinance or resolution.

A common misperception is that low speed vehicles are golf carts. Golf carts can include low speed vehicles but golf carts are not low speed vehicles as defined by the CVC. Golf carts are only allowed along public streets when a street is located adjacent to, or provides access to a golf course.

RECOMMENDATIONS AND MITIGATION MEASURES

The text that follows Table 16 describes those mitigation measures that should be installed to ensure that adequate traffic conditions are maintained as the Union Ranch Specific Plan Project is built out. As noted in the preceding analysis, certain improvements, referred to as "Recommendations", are needed without the project in order to improve roadway conditions that already exceed Level of Service thresholds. Other improvements will be needed to provide adequate capacity as traffic volumes increase due to development of the project. Mitigation responsibilities for this project should also be coordinated with improvements planned by the City of Lathrop, San Joaquin County, and Caltrans. The information that follows associates mitigation measures with specific plan impacts, and also suggests a schedule for implementation.

Table 16 presents the levels of service at the study intersections before and after recommended improvements are added.

TABLE 16
PEAK HOUR INTERSECTION LEVELS OF SERVICE
WITH RECOMMENDATIONS AND MITIGATIONS

Location	Existing		Existing + Project		Cumulative		Cumulative Plus Project	
	AM	PM	AM	PM	AM	PM	AM	PM
1. Union Rd / Lovelace Rd	8.5 / A	9.9 / A	8.6 / A	10.6 / B	9.8 / A	8.8 / A	10.1 / B	9.5 / A
2. Lathrop Rd / McKinley Ave	14.4 / B	21.6 / C	16.5 / C	35.6 / E* **16.3 / B**	>999 / F* **23.6 / C**	42.5 / E **11.9 / B♦**	>999 / F **24.8 / C♦**	136.3 / F **12.7 / B♦**
3.Lathrop Rd / Airport Way	28.1 / C	27.5 / C	30.3 / C	37.9 / D	48.0 / D	34.3 / C	51.3 / D	45.6 / D
4. Lathrop Rd / London Ave	15.5 / B	13.1 / B	14.4 / B	19.3 / B	27.2 / C	13.9 / B	29.3 / C	17.6 / B
5. Lathrop Rd / Union Rd	32.1 / C	33.6 / C	46.3 / D	166.8 / F** **42.5 / D**	33.3 / C	29.1 / C	51.6 / D	54.2 / D
6. Lathrop Rd / Main St	17.6 / C	40.8 / E* **28.9 / C**	25.3 / D	123.3 / F **38.8 / D♦**	42.7 / D	29.5 / C	45.9 / D	31.9 / C
7. Airport Way / Louise Ave	24.8 / C	135.0 / F* **21.9 / C**	33.7 / D	181.0 / F **24.1 / C♦**	29.5 / D	35.8 / D	50.9 / D	36.0 / D
8. Union Rd / Louise Ave	29.9 / C	34.0 / C	29.5 / C	37.1 / D	49.7 / D	44.3 / D	54.0 / D	50.1 / D
9. Airport Way / Yosemite Ave	30.6 / C	32.6 / C	31.0 / C	33.2 / C	86.3 / F	41.2 / D	87.8 / F	43.5 / D
10. Lathrop Rd / I-5 SB Ramps	34.9 / D	133.3 / F* **21.5 / C**	83.1 F **29.6 / C♦**	301.0 / F **23.3 / C♦**	24.8 / C	29.4 / C	25.4 / C	33.3 / C
11. Lathrop Rd / I-5 NB Ramps	11.3 / B	19.4 / C	11.9 / B	33.7 / D	27.7 / C	35.2 / D	29.8 / C	43.4 / D
12. Lathrop Rd / Harlan Rd	21.3 /C	21.8 / C	19.9 / B	21.3 / C	37.9 / D	21.8 / C	42.0 / D	22.4 / C
13 Lathrop Rd / 5th St -Woodfield Dr	18.4 / B	20.0 / C	16.7 / B	18.6 / B	28.8 / C	32.0 / C	32.7 / C	39.1 / D
14. French Camp Rd / Union Rd	12.7 / B	10.1 / B	13.8 / B	12.1 / B	17.7 / B	15.2 / B	18.5 / B	16.8 / B

TABLE 16 CONT'D
PEAK HOUR INTERSECTION LEVELS OF SERVICE
WITH RECOMMENDATIONS AND MITIGATIONS

Location	Existing		Existing + Project		Cumulative		Cumulative Plus Project	
	AM	PM	AM	PM	AM	PM	AM	PM
15. Union Rd / AAC North Access	N/A	N/A	9.4 / A	9.4 / A	N/A	N/A	9.8 / A	8.8 / A
16. Airport Way / AAC Access	N/A	N/A	12.2 / B	12.1 / B	N/A	N/A	698.0 / F* **3.8 / A**	23.1 / C
17. Union Rd / AAC Main Access – SFR North Access	N/A	N/A	20.8 / C	25.9 / D	N/A	N/A	15.3 / C	15.6 / C
18. Union Rd / SFR South Access	N/A	N/A	22.2 / C	28.1 / D	N/A	N/A	14.7 / B	17.0 / C
19. Union Rd / CMUR Access	N/A	N/A	14.3 / B	11.7 / B	N/A	N/A	14.3 / B	10.5 / B
20. Union Rd / CMUC North Access	N/A	N/A	17.1 / C	274.2 / F* **25.7 / C**	N/A	N/A	18.8 / C	193.3 / F* **18.5 / B**
21. Union Rd / CMUC South Access	N/A	N/A	12.9 / B	18.4 / C	N/A	N/A	11.4 / B	12.1 / B
22. Lathrop Rd / AAC Access	N/A	N/A	12.3 / B	13.7 / B	N/A	N/A	18.6 / C	12.1 / B
23. Lathrop Rd / CMUC West Access	N/A	N/A	11.5 / A	116.7 / F* **14.4 / B**	N/A	N/A	47.7 / E* **5.2 / A**	325.6 / F **14.5 / B♦**
24. Lathrop Rd / CMUC Center Access	N/A	N/A	11.9 / B	13.4 / B	N/A	N/A	17.4 / C	12.1 / B
25. Lathrop Rd / CMUC East Access	N/A	N/A	13.0 / B	53.9 / F* **7.3 / A**	N/A	N/A	42.7 / E* **2.6 / A**	400.5 / F **7.9 / A♦**

Bold denotes mitigated LOS
N/A - not applicable
* add Signal
** add SB left turn lane, SB right turn lane, WB right turn lane
♦ LOS as a result of previous mitigation

Recommendations Needed for "Existing – No Project" Conditions

All but three intersections currently operate within acceptable level of service thresholds.

Impact: The Lathrop Road / I-5 southbound ramp intersection currently operates at LOS F in the p.m. peak hour.

Recommendation: Signalization of this intersection will result in the intersection operating at LOS C (21.5 seconds) in the p.m. peak hour.

Impact: The Lathrop Road / Main Street intersection currently operates at LOS E in the p.m. peak hour.

Recommendation: Signalization of this intersection will result in the intersection operating at LOS C (28.9 seconds) in the p.m. peak hour.

Impact: The Airport Way / Louise Avenue intersection currently operates at LOS F in the p.m. peak hour.

Recommendation: Signalization of this intersection will result in the intersection operating at LOS C (21.9 seconds) in the p.m. peak hour.

Mitigation Measures Needed for "Existing Plus Project" Conditions

The Union Ranch Specific Plan project should contribute its fair share to the cost of roadway improvements through the existing City of Manteca Traffic Impact Mitigation fee. In addition, the following mitigations are required:

Impact: Development of the Union Ranch Specific Plan site will result in a decrease of the Level of Service at the Lathrop Road / I-5 southbound ramp intersection.

Mitigation Measure: Although the Lathrop Road / I-5 southbound ramp intersection requires a signal without the project, the project will add traffic to the intersection. After signalization the intersection will operate at LOS C in both a.m. and p.m. peak hours. The project should pay its fair share of the improvements. Caltrans methodology was used in determining fair share costs. This is the project traffic divided by the difference between the cumulative traffic and the existing plus approved projects. The project fair share for this intersection is 2.2%.

Impact: Development of the Union Ranch Specific Plan site will result in a decrease of the Level of Service at the Lathrop Road / Main Street intersection.

Mitigation Measure: Although the Lathrop Road / Main Street intersection requires a signal without the project, the project will add traffic to the intersection. After signalization the intersection will operate at LOS D in both a.m. and p.m. peak hours. The project should pay its fair share of the improvements. The project fair share for this intersection is 15.8%.

Impact: Development of the Union Ranch Specific Plan site will result in a decrease of the Level of Service at the Airport Way / Louise Avenue intersection.

Mitigation Measure: Although the Airport Way / Louise Avenue intersection requires a signal without the project, the project will add traffic to the intersection. After signalization the intersection will operate at LOS C in the p.m. peak hour. The project should pay its fair share of the improvements. The project fair share for this intersection is 3.0%.

Impact: Development of the Union Ranch Specific Plan site will result in a decrease of the Level of Service at the Lathrop Road / McKinley Avenue intersection.

Mitigation Measure: Installation of a traffic signal will improve the level of service at this intersection to LOS B (16.3 seconds). This intersection will require signalization in the future without development of this project; therefore, the project should construct this improvement, but pay its fair share. The fair share for this intersection is 28.6%. The project applicant and the City of Manteca should establish a mechanism that will reimburse the applicant for the cost not attributable to the project.

Impact: Development of the Union Ranch Specific Plan site will result in a decrease of the Level of Service at the Lathrop Road / Union Road intersection.

Mitigation Measure: To improve the level of service southbound left turn and right turn lanes should be constructed along Union Road. In addition, a right turn lane should be constructed for westbound Lathrop Road. Addition of these lanes will result in the intersection operating at LOS D in the p.m. peak hour (42.5 seconds). These lanes should be installed at the time the Union Ranch development is constructed. The Union Ranch Specific Plan project should pay its fair share of these improvements as both Union Road and Lathrop Road will be widened to four lane roadways in the future. The project fair share for this intersection is 35.6%. The project applicant shall enter into a reimbursement agreement with the City for the remaining percentage.

Impact: Development of the Union Ranch Specific Plan site will result in a LOS F (274.2 seconds) at the Union Road / CMU Commercial North Access.

Mitigation Measure: The project should provide left turn lanes along Union Road to provide access to the proposed commercial site. The northbound left turn lane should provide 225 feet of storage while the southbound left turn lane should provide 125 feet of storage. In addition, the

intersection should be signalized. These improvements will result in the intersection operating at LOS C (25.7 seconds) in the p.m. peak hour. The intersection will continue to operate above the LOS threshold in the future plus project condition. This signal should be placed no closer than 1,200 feet from the existing traffic signal at the Lathrop Road / Union Road intersection.

Impact: Development of the Union Ranch Specific Plan site will result in a LOS F (116.7 seconds) at the Lathrop Road / CMU Commercial West Access.

Mitigation Measure: The project should provide an eastbound left turn lane along Lathrop Road to provide access to the proposed commercial site. The left turn lane should provide 275 feet of storage. In addition, the intersection should be signalized. These improvements will result in the intersection operating at LOS B (14.4 seconds) in the p.m. peak hour. The intersection will continue to operate above the LOS threshold in the future plus project condition. This signal should be placed no closer than 1,200 feet from either the existing traffic signals at the Lathrop Road / Union Road intersection or the Lathrop Road / London Avenue intersection.

Impact: Development of the Union Ranch Specific Plan site will result in a LOS F (53.9 seconds) at the Lathrop Road / CMU Commercial East Access.

Mitigation Measure: The project should provide an eastbound left turn lane along Lathrop Road to provide access to the proposed commercial site. The left turn lane should provide 175 feet of storage. In addition, the intersection should be signalized. These improvements will result in the intersection operating at LOS A (7.3 seconds) in the p.m. peak hour. The intersection will continue to operate above the LOS threshold in the future plus project condition. This signal should be placed no closer than 1,200 feet from the existing traffic signal at the Lathrop Road / Union Road intersection.

Recommendations Needed for 'No Project' Cumulative Conditions

The Yosemite Avenue / Airport Way intersection will operate at LOS F (86.3 seconds) in the a.m. peak hour. This assumes completion of the roadway network identified in the General Plan Circulation Element. To improve the intersection level of service to an acceptable level, additional lanes would need to be added in the intersection. This is unlikely as right-of-way is likely not available. The City's General Plan identifies both Airport Way and Yosemite Avenue as six-lane facilities; therefore, this intersection will operate **with a significant and unavoidable impact** unless the City overrides the General Plan.

No additional recommendations are needed.

Mitigation Measures Needed for "Cumulative Plus Project" Conditions

The Yosemite Avenue / Airport Way intersection will continue to operate at LOS F (87.8 seconds) in the a.m. peak hour. This assumes completion of the roadway network identified in the General Plan Circulation Element. To improve the intersection level of service to an acceptable level

additional lanes would need to be added in the intersection. This intersection will continue to operate **with a significant and unavoidable impact.**

Impact: Development of the Union Ranch Specific Plan site will result in a LOS F (698.0 seconds) at the Lathrop Road / Active Adult Community Access.

Mitigation Measure: The project should signalize this intersection. This improvement will result in the intersection operating at LOS A (3.8 seconds) in the a.m. peak hour. This signal should be placed no closer than 1,200 feet from the existing traffic signal at the Lathrop Road / Union Road intersection.

No additional mitigation measures are needed.

REFERENCES

1. Transportation Research Board, Special Report 209, *Highway Capacity Manual*, 2000
2. Caltrans *Highway Design Manual*, 1996
3. Telephone Conversation and e-mails regarding SJCOG traffic model, Kim Cloeb, San Joaquin Council of Governments, October, 2004
4. *Central Lathrop Specific Plan EIR*, EDAW, 2004
5. *Bicycle Master Plan*, Fehr & Peers, September, 2003
6. *City of Manteca General Plan Transportation Analysis*, Fehr & Peers, July 2003
7. ITE *Trip Generation Manual*, 7th Edition, 2003
8. *Sun City, Lincoln Trip Generation Review*, Fehr & Peers, July 2001
9. *Trip Generation Handbook*, October, 1998, ITE

APPENDIX 1
FAIR SHARE PERCENTAGES & COSTS

$$\frac{\text{(Future + Project Volumes) - Future}}{\text{(Future + Project) - Exist}}$$

LATHROP ROAD / I-5 SOUTHBOUND RAMPS

A.M.	P.M.
$\frac{5{,}915 - 5{,}820}{5{,}915 - 664}$	$\frac{6{,}725 - 6{,}575}{6{,}725 - 841}$
= 1.8%	**= 2.5%**

AVERAGE PERCENTAGE: 2.2%

LATHROP ROAD / MAIN STREET

A.M.	P.M.
$\frac{3{,}474 - 3{,}311}{3{,}474 - 1{,}275}$	$\frac{3{,}179 - 2{,}801}{3{,}179 - 1{,}611}$
= 7.4%	**= 24.1%**

AVERAGE PERCENTAGE: 15.8%

AIRPORT WAY / LOUISE AVENUE

A.M.	P.M.
$\frac{5{,}506 - 5{,}425}{5{,}506 - 1{,}211}$	$\frac{5{,}538 - 5{,}378}{5{,}538 - 1{,}668}$
= 1.9%	**= 4.1%**

AVERAGE PERCENTAGE: 3.0%

LATHROP ROAD / MCKINLEY AVENUE

A.M.	P.M.
2,684 – 2,477 / 2,684 –1,138	2,059 – 1,720 / 2,059 – 1,286
= 13.4%	**= 43.9%**

AVERAGE PERCENTAGE: 28.6%

LATHROP ROAD / UNION ROAD

A.M.	P.M.
4,107 – 3,498 / 4,107 –1,356	4,241 – 2,965 / 4,241 – 1,639
= 22.1%	**= 49.0%**

AVERAGE PERCENTAGE: 35.6%

APPENDIX 2
TRAFFIX PRINTOUTS

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.479
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 28.1
Optimal Cycle: 39 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1 0	1	1	0	0 1	0	1 0	0 1
Volume Module:												
Base Vol:	51	183	13	100	90	35	35	198	35	52	285	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	183	13	100	90	35	35	198	35	52	285	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.81	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	57	203	14	111	100	43	39	220	39	58	317	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	203	14	111	100	43	39	220	39	58	317	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	203	14	111	100	43	39	220	39	58	317	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.97	0.97	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.95	0.95
Lanes:	1.00	0.93	0.07	1.00	1.00	1.00	1.00	0.85	0.15	1.00	0.80	0.20
Final Sat.:	1769	1721	122	1769	1862	1583	1769	1547	274	1769	1446	360
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.12	0.06	0.05	0.03	0.02	0.14	0.14	0.03	0.22	0.22
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.25	0.25	0.13	0.24	0.24	0.05	0.41	0.41	0.09	0.46	0.46
Volume/Cap:	0.23	0.48	0.48	0.48	0.23	0.12	0.48	0.35	0.35	0.35	0.48	0.48
Uniform Del:	38.1	32.2	32.2	40.3	30.8	30.0	46.5	20.4	20.4	42.4	18.9	18.9
IncremntDel:	0.5	0.8	0.8	1.6	0.3	0.1	4.4	0.3	0.3	1.3	0.4	0.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.6	33.0	33.0	41.9	31.1	30.1	51.0	20.7	20.7	43.7	19.3	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.6	33.0	33.0	41.9	31.1	30.1	51.0	20.7	20.7	43.7	19.3	19.3
HCM2kAvg:	2	6	6	4	3	1	2	5	5	2	9	9

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec): 100 Critical Vol./Cap. (X): 0.471
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 32.1
Optimal Cycle: 39 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0	1	0	1! 0	0	1	0 2	0	1 0	0 1
Volume Module:												
Base Vol:	84	154	167	33	141	8	8	209	96	162	228	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	154	167	33	141	8	8	209	96	162	228	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	93	171	186	37	157	9	9	232	107	180	253	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	171	186	37	157	9	9	232	107	180	253	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	93	171	186	37	157	9	9	232	107	180	253	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.97	0.97	0.97	0.93	0.93	0.83	0.93	0.95	0.95
Lanes:	1.00	1.00	1.00	0.18	0.78	0.04	1.00	2.00	1.00	1.00	0.78	0.22
Final Sat.:	1769	1862	1583	333	1421	81	1769	3538	1583	1769	1395	404
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.12	0.11	0.11	0.11	0.01	0.07	0.07	0.10	0.18	0.18
Crit Moves:			****	****			****				****	
Green/Cycle:	0.25	0.25	0.25	0.23	0.23	0.23	0.01	0.16	0.16	0.24	0.39	0.39
Volume/Cap:	0.21	0.37	0.47	0.47	0.47	0.47	0.47	0.42	0.43	0.43	0.47	0.47
Uniform Del:	29.8	31.0	31.9	32.9	32.9	32.9	49.2	37.9	38.0	32.3	23.0	23.0
IncremntDel:	0.2	0.5	0.9	0.8	0.8	0.8	17.4	0.5	1.2	0.7	0.5	0.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.0	31.5	32.8	33.8	33.8	33.8	66.6	38.4	39.2	33.0	23.5	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.0	31.5	32.8	33.8	33.8	33.8	66.6	38.4	39.2	33.0	23.5	23.5
HCM2kAvg:	2	5	5	6	6	6	1	4	3	5	8	8

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #12 Union / Lovelace

Average Delay (sec/veh): 8.5 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	46	160		0	0	142		7	6		0	30	0		0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	46	160		0	0	142		7	6		0	30	0		0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	51	178		0	0	158		8	7		0	33	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	51	178		0	0	158		8	7		0	33	0		0	0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.4	xxxx		6.2	xxxxx	xxxx	xxxxx	
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	166	xxxx	xxxxx	xxxx	xxxx	xxxxx			442	xxxx		162	xxxx	xxxx	xxxxx	
Potent Cap.:	1413	xxxx	xxxxx	xxxx	xxxx	xxxxx			577	xxxx		888	xxxx	xxxx	xxxxx	
Move Cap.:	1413	xxxx	xxxxx	xxxx	xxxx	xxxxx			561	xxxx		888	xxxx	xxxx	xxxxx	
Volume/Cap:	0.04	xxxx	xxxx	xxxx	xxxx	xxxx			0.01	xxxx		0.04	xxxx	xxxx	xxxx	
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	810	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.7	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx				9.7			xxxxxx					
ApproachLOS:	*			*				A			*					

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.735
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0		0	0	0		0	0	0		0	0	0		0	0
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	59	59		13	28	39		91	249	236		80	52	289		80
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	59	59		13	28	39		91	249	236		80	52	289		80
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	66	66		14	31	43		101	277	262		89	58	321		89
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	66	66		14	31	43		101	277	262		89	58	321		89
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	66	66		14	31	43		101	277	262		89	58	321		89
Saturation Flow Module:																
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	0.45	0.45		0.10	0.18	0.25		0.57	1.00	0.75		0.25	1.00	0.78		0.22
Final Sat.:	214	214		47	90	125		292	521	433		147	503	437		121
Capacity Analysis Module:																
Vol/Sat:	0.31	0.31		0.31	0.35	0.35		0.35	0.53	0.61		0.61	0.11	0.73		0.73
Crit Moves:	****					****				****				****		
Delay/Veh:	12.6	12.6		12.6	12.5	12.5		12.5	16.6	17.3		17.3	10.6	23.6		23.6
Delay Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	12.6	12.6		12.6	12.5	12.5		12.5	16.6	17.3		17.3	10.6	23.6		23.6
LOS by Move:	B	B		B	B	B		B	C	C		C	B	C		C
ApproachDel:		12.6				12.5				17.0				22.0		
Delay Adj:		1.00				1.00				1.00				1.00		
ApprAdjDel:		12.6				12.5				17.0				22.0		
LOS by Appr:		B				B				C				C		

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Lathrop / London

Cycle (sec):	100	Critical Vol./Cap. (X):	0.397
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	15.5
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	76	0	86	0	0	0	0	360	16	50	382	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	0	86	0	0	0	0	360	16	50	382	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	84	0	96	0	0	0	0	400	18	56	424	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	0	96	0	0	0	0	400	18	56	424	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	84	0	96	0	0	0	0	400	18	56	424	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.97	0.93	0.98	1.00
Lanes:	0.47	0.00	0.53	0.00	1.00	0.00	1.00	0.96	0.04	1.00	1.00	0.00
Final Sat.:	808	0	914	0	1900	0	1900	1772	79	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.23	0.23	0.03	0.23	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.26	0.00	0.26	0.00	0.00	0.00	0.00	0.57	0.57	0.08	0.65	0.00
Volume/Cap:	0.40	0.00	0.40	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.35	0.00
Uniform Del:	30.3	0.0	30.3	0.0	0.0	0.0	0.0	12.1	12.1	43.8	8.1	0.0
IncremntDel:	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.2	1.9	0.2	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	30.9	0.0	30.9	0.0	0.0	0.0	0.0	12.3	12.3	45.6	8.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.9	0.0	30.9	0.0	0.0	0.0	0.0	12.3	12.3	45.6	8.2	0.0
HCM2kAvg:	5	0	5	0	0	0	0	7	7	2	6	0

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #16 Lathrop / McKinley

Average Delay (sec/veh): 14.4 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	0	0		0	0	0	1	0		1	0	1	0	0	
Volume Module:																								
Base Vol:	104		0		27		0		0		0		0		326		150		57		474		0	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	104		0		27		0		0		0		0		326		150		57		474		0	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	116		0		30		0		0		0		0		362		167		63		527		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Final Vol.:	116		0		30		0		0		0		0		362		167		63		527		0	
Critical Gap Module:																								
Critical Gp:	6.4	xxxx		6.2	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx		3.3	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									2.2	xxxx	xxxxx			
Capacity Module:																								
Cnflict Vol:	1099	xxxx		446	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									529	xxxx	xxxxx			
Potent Cap.:	237	xxxx		617	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									1038	xxxx	xxxxx			
Move Cap.:	226	xxxx		617	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx									1038	xxxx	xxxxx			
Total Cap:	417		0	xxxxx	0		0	xxxxx	xxxx	xxxx	xxxxx								xxxx	xxxx	xxxxx			
Volume/Cap:	0.28	xxxx		0.05	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx									0.06	xxxx	xxxx			
Level Of Service Module:																								
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										0.2	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										8.7	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*										A	*	*			
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx		446	xxxxx			xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx		1.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx		16.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	*		C	*	*	*	*	*	*				*	*	*				*	*	*			
ApproachDel:			16.9				xxxxxx						xxxxxx						xxxxxx					
ApproachLOS:			C				*						*						*					

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec):	100	Critical Vol./Cap. (X):	0.849
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	24.8
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0
Volume Module:												
Base Vol:	106	163	54	35	208	48	27	98	69	91	262	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	163	54	35	208	48	27	98	69	91	262	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	118	181	60	39	231	53	30	109	77	101	291	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	181	60	39	231	53	30	109	77	101	291	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	118	181	60	39	231	53	30	109	77	101	291	56
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.50	0.17	0.12	0.72	0.16	0.14	0.50	0.36	0.23	0.65	0.12
Final Sat.:	162	250	83	58	345	80	62	223	157	119	343	65
Capacity Analysis Module:												
Vol/Sat:	0.73	0.73	0.73	0.67	0.67	0.67	0.49	0.49	0.49	0.85	0.85	0.85
Crit Moves:		****			****		****			****		
Delay/Veh:	23.4	23.4	23.4	20.6	20.6	20.6	15.2	15.2	15.2	33.5	33.5	33.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.4	23.4	23.4	20.6	20.6	20.6	15.2	15.2	15.2	33.5	33.5	33.5
LOS by Move:	C	C	C	C	C	C	C	C	C	D	D	D
ApproachDel:		23.4			20.6			15.2			33.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		23.4			20.6			15.2			33.5	
LOS by Appr:		C			C			C			D	

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Airport / Yosemite

Cycle (sec):	100	Critical Vol./Cap. (X):	0.512
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	30.6
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	78	184	70	261	310	34	14	238	57	119	292	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	184	70	261	310	34	14	238	57	119	292	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	87	204	78	290	344	38	16	264	63	132	324	232
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	204	78	290	344	38	16	264	63	132	324	232
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	87	204	78	290	344	38	16	264	63	132	324	232
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.97	0.97	0.93	0.90	0.90	0.93	0.87	0.87
Lanes:	1.00	1.00	1.00	1.00	0.90	0.10	1.00	1.61	0.39	1.00	1.17	0.83
Final Sat.:	1769	1862	1583	1769	1653	181	1769	2771	664	1769	1932	1383
Capacity Analysis Module:												
Vol/Sat:	0.05	0.11	0.05	0.16	0.21	0.21	0.01	0.10	0.10	0.07	0.17	0.17
Crit Moves:		****		****			****				****	
Green/Cycle:	0.10	0.21	0.21	0.32	0.43	0.43	0.02	0.19	0.19	0.15	0.33	0.33
Volume/Cap:	0.48	0.51	0.23	0.51	0.48	0.48	0.51	0.49	0.49	0.49	0.51	0.51
Uniform Del:	42.4	34.7	32.4	27.6	20.3	20.3	48.7	35.9	35.9	38.9	27.1	27.1
IncremntDel:	2.0	1.1	0.3	0.8	0.5	0.5	14.0	0.6	0.6	1.4	0.4	0.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	44.4	35.8	32.8	28.4	20.8	20.8	62.7	36.5	36.5	40.3	27.5	27.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.4	35.8	32.8	28.4	20.8	20.8	62.7	36.5	36.5	40.3	27.5	27.5
HCM2kAvg:	3	6	2	8	9	9	1	5	5	4	7	7

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 Union / Louise

Cycle (sec):	100	Critical Vol./Cap. (X):	0.369
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	29.9
Optimal Cycle:	34	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	72	218	97	126	271	51	34	154	74	110	238	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	218	97	126	271	51	34	154	74	110	238	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	80	242	108	140	301	57	38	171	82	122	264	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	242	108	140	301	57	38	171	82	122	264	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	80	242	108	140	301	57	38	171	82	122	264	139
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.91	0.91	0.95	0.90	0.90	0.95	0.90	0.90
Lanes:	1.00	1.38	0.62	1.00	1.68	0.32	1.00	1.35	0.65	1.00	1.31	0.69
Final Sat.:	1769	2336	1039	1769	2906	547	1805	2319	1114	1805	2244	1178
Capacity Analysis Module:												
Vol/Sat:	0.05	0.10	0.10	0.08	0.10	0.10	0.02	0.07	0.07	0.07	0.12	0.12
Crit Moves:		****		****				****		****		
Green/Cycle:	0.15	0.28	0.28	0.21	0.35	0.35	0.06	0.20	0.20	0.18	0.33	0.33
Volume/Cap:	0.30	0.37	0.37	0.37	0.30	0.30	0.36	0.37	0.37	0.37	0.36	0.36
Uniform Del:	37.8	28.8	28.8	33.5	23.9	23.9	45.3	34.5	34.5	35.7	25.7	25.7
IncremntDel:	0.6	0.2	0.2	0.6	0.1	0.1	2.1	0.3	0.3	0.7	0.2	0.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	29.1	29.1	34.1	24.0	24.0	47.5	34.9	34.9	36.4	25.9	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	29.1	29.1	34.1	24.0	24.0	47.5	34.9	34.9	36.4	25.9	25.9
HCM2kAvg:	3	4	4	4	4	4	2	4	4	4	5	5

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #37 Lathrop Rd / 5th St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.303
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	18.4
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	32	12	21	133	14	46	14	258	19	11	459	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	12	21	133	14	46	14	258	19	11	459	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	36	13	23	148	16	51	16	287	21	12	510	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	13	23	148	16	51	16	287	21	12	510	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	36	13	23	148	16	51	16	287	21	12	510	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	1.00	0.85	0.93	0.98	0.83	0.93	0.92	0.92
Lanes:	1.00	0.36	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.79	0.21
Final Sat.:	1805	625	1094	1805	1900	1615	1769	1862	1583	1769	3109	373
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.08	0.01	0.03	0.01	0.15	0.01	0.01	0.16	0.16
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.07	0.07	0.27	0.21	0.21	0.03	0.55	0.55	0.02	0.54	0.54
Volume/Cap:	0.15	0.30	0.30	0.30	0.04	0.15	0.30	0.28	0.02	0.28	0.30	0.30
Uniform Del:	38.6	44.2	44.2	29.0	31.5	32.3	47.6	12.2	10.5	47.9	12.6	12.6
IncremntDel:	0.3	1.4	1.4	0.4	0.0	0.2	3.3	0.2	0.0	3.6	0.1	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.9	45.6	45.6	29.4	31.5	32.5	50.9	12.4	10.5	51.5	12.7	12.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.9	45.6	45.6	29.4	31.5	32.5	50.9	12.4	10.5	51.5	12.7	12.7
HCM2kAvg:	1	1	1	4	0	1	1	5	0	1	5	5

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #38 Lathrop Rd / Harlan Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.471
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 33 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	0 1	1	0 1	0 1
Volume Module:												
Base Vol:	126	42	19	69	22	35	78	253	11	19	466	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	126	42	19	69	22	35	78	253	11	19	466	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	140	47	21	77	24	39	87	281	12	21	518	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	47	21	77	24	39	87	281	12	21	518	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	140	47	21	77	24	39	87	281	12	21	518	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.86	0.86	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.38	0.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2369	1072	1805	1639	1639	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.02	0.02	0.04	0.01	0.02	0.05	0.15	0.01	0.01	0.28	0.04
Crit Moves:	****					****	****				****	
Green/Cycle:	0.16	0.07	0.07	0.15	0.05	0.05	0.10	0.64	0.64	0.05	0.59	0.59
Volume/Cap:	0.47	0.29	0.29	0.29	0.30	0.47	0.47	0.23	0.01	0.23	0.47	0.06
Uniform Del:	37.8	44.3	44.3	38.0	45.8	46.2	42.2	7.5	6.4	45.6	11.6	8.7
IncremntDel:	1.2	0.7	0.7	0.6	0.8	2.6	1.9	0.1	0.0	1.3	0.3	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.0	45.0	45.0	38.6	46.5	48.8	44.1	7.6	6.4	46.9	11.9	8.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	45.0	45.0	38.6	46.5	48.8	44.1	7.6	6.4	46.9	11.9	8.7
HCM2kAvg:	5	1	1	2	1	2	3	4	0	1	9	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #39 I-5 NB / Lathrop Rd

Average Delay (sec/veh): 11.3 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	0	0		1	0	2	0	0		0	0	0	1	0	
Volume Module:																								
Base Vol:	11		2		137		0		0		0		3		278		0		0		340		452	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	11		2		137		0		0		0		3		278		0		0		340		452	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	12		2		152		0		0		0		3		309		0		0		378		502	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Final Vol.:	12		2		152		0		0		0		3		309		0		0		378		502	
Critical Gap Module:																								
Critical Gp:	6.4		6.5		6.2	xxxxx	xxxx	xxxxx					4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
FollowUpTim:	3.5		4.0		3.3	xxxxx	xxxx	xxxxx					2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Capacity Module:																								
Cnflict Vol:	944		1196		154	xxxx	xxxx	xxxxx					880	xxxx	xxxxx	xxxx	xxxx	xxxxx						
Potent Cap.:	291		186		891	xxxx	xxxx	xxxxx					768	xxxx	xxxxx	xxxx	xxxx	xxxxx						
Move Cap.:	290		185		891	xxxx	xxxx	xxxxx					768	xxxx	xxxxx	xxxx	xxxx	xxxxx						
Volume/Cap:	0.04		0.01		0.17	xxxx	xxxx	xxxx					0.00	xxxx	xxxx	xxxx	xxxx	xxxx						
Level Of Service Module:																								
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	*		*		*		*		*		*		A		*		*		*		*		*	
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx		741	xxxxx			xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx		0.9	xxxxx			xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx		11.3	xxxxx			xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	*		B		*		*		*		*		*		*		*		*		*		*	
ApproachDel:			11.3						xxxxxx						xxxxxx						xxxxxx			
ApproachLOS:			B						*						*						*			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Average Delay (sec/veh): 34.9 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			0 0 0 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	0	0	0	237	9	10	0	43	16	292	57	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	237	9	10	0	43	16	292	57	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	263	10	11	0	48	18	324	63	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	263	10	11	0	48	18	324	63	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	769	778	32	xxxx	xxxx	xxxxx	66	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	369	328	1042	xxxx	xxxx	xxxxx	1536	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	309	258	1042	xxxx	xxxx	xxxxx	1536	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.85	0.04	0.01	xxxx	xxxx	xxxx	0.21	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	316	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	8.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	65.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			65.6			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #43 French Camp Rd / Union Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.395
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 23 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	0 1	0	0 0	0 0	0	0 1	0 1	1	0 1	0 0
Volume Module:												
Base Vol:	165	0	12	0	0	0	0	234	99	21	448	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	0	12	0	0	0	0	234	99	21	448	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	183	0	13	0	0	0	0	260	110	23	498	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	183	0	13	0	0	0	0	260	110	23	498	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	183	0	13	0	0	0	0	260	110	23	498	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.01	0.00	0.00	0.00	0.00	0.14	0.07	0.01	0.27	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.26	0.00	0.26	0.00	0.00	0.00	0.00	0.62	0.62	0.06	0.68	0.00
Volume/Cap:	0.39	0.00	0.03	0.00	0.00	0.00	0.00	0.23	0.11	0.23	0.39	0.00
Uniform Del:	30.3	0.0	27.4	0.0	0.0	0.0	0.0	8.4	7.8	44.9	7.1	0.0
IncremntDel:	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.1	0.2	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	30.9	0.0	27.4	0.0	0.0	0.0	0.0	8.5	7.9	46.0	7.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.9	0.0	27.4	0.0	0.0	0.0	0.0	8.5	7.9	46.0	7.3	0.0
HCM2kAvg:	5	0	0	0	0	0	0	3	1	1	7	0

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec):	100	Critical Vol./Cap. (X):	0.553
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	27.5
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1 0 1		1	0	0 1	0	1 0	0 1 0
Volume Module:												
Base Vol:	53	147	48	118	199	33	47	391	58	29	264	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	147	48	118	199	33	47	391	58	29	264	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	59	163	53	131	221	37	52	434	64	32	293	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	163	53	131	221	37	52	434	64	32	293	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	163	53	131	221	37	52	434	64	32	293	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.94	0.94	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.95	0.95
Lanes:	1.00	0.75	0.25	1.00	1.00	1.00	1.00	0.87	0.13	1.00	0.79	0.21
Final Sat.:	1769	1352	441	1769	1862	1583	1769	1591	236	1769	1420	382
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.12	0.07	0.12	0.02	0.03	0.27	0.27	0.02	0.21	0.21
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.22	0.22	0.13	0.28	0.28	0.07	0.49	0.49	0.03	0.46	0.46
Volume/Cap:	0.43	0.55	0.55	0.55	0.43	0.08	0.45	0.55	0.55	0.55	0.45	0.45
Uniform Del:	44.0	34.7	34.7	40.5	29.8	26.9	45.0	17.6	17.6	47.6	18.3	18.3
IncremntDel:	2.2	1.7	1.7	2.8	0.6	0.1	2.7	0.7	0.7	11.0	0.4	0.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.2	36.4	36.4	43.3	30.4	26.9	47.7	18.3	18.3	58.6	18.7	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	36.4	36.4	43.3	30.4	26.9	47.7	18.3	18.3	58.6	18.7	18.7
HCM2kAvg:	2	7	7	5	6	1	2	11	11	2	8	8

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100	Critical Vol./Cap. (X):	0.554
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	33.6
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	0	0 1! 0	0	1	0	2 0 1	1	0	0 1 0
Volume Module:												
Base Vol:	79	107	131	73	177	22	26	397	127	166	286	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	107	131	73	177	22	26	397	127	166	286	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	88	119	146	81	197	24	29	441	141	184	318	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	119	146	81	197	24	29	441	141	184	318	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	88	119	146	81	197	24	29	441	141	184	318	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.96	0.96	0.96	0.93	0.93	0.83	0.93	0.96	0.96
Lanes:	1.00	1.00	1.00	0.27	0.65	0.08	1.00	2.00	1.00	1.00	0.86	0.14
Final Sat.:	1769	1862	1583	488	1183	147	1769	3538	1583	1769	1559	262
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.09	0.17	0.17	0.17	0.02	0.12	0.09	0.10	0.20	0.20
Crit Moves:			****			****		****		****		
Green/Cycle:	0.17	0.17	0.17	0.30	0.30	0.30	0.03	0.23	0.23	0.19	0.38	0.38
Volume/Cap:	0.30	0.38	0.55	0.55	0.55	0.55	0.53	0.55	0.40	0.55	0.53	0.53
Uniform Del:	36.6	37.1	38.3	29.4	29.4	29.4	47.8	34.3	33.0	36.8	23.9	23.9
IncremntDel:	0.6	0.8	2.6	1.2	1.2	1.2	9.8	0.9	0.7	2.0	0.8	0.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.2	37.9	40.9	30.6	30.6	30.6	57.6	35.1	33.7	38.8	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	37.9	40.9	30.6	30.6	30.6	57.6	35.1	33.7	38.8	24.7	24.7
HCM2kAvg:	3	4	5	8	8	8	2	7	4	6	9	9

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #12 Union / Lovelace

Average Delay (sec/veh): 9.9 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0 0	0	1 0	0 0	1!	0 0	0 0	0	0 0
Volume Module:												
Base Vol:	40	120	0	0	216	12	20	0	71	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	120	0	0	216	12	20	0	71	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	44	133	0	0	240	13	22	0	79	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	44	133	0	0	240	13	22	0	79	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	253	xxxx	xxxxx	xxxx	xxxx	xxxxx	469	xxxx	247	xxxx	xxxx	xxxxx
Potent Cap.:	1312	xxxx	xxxxx	xxxx	xxxx	xxxxx	556	xxxx	797	xxxx	xxxx	xxxxx
Move Cap.:	1312	xxxx	xxxxx	xxxx	xxxx	xxxxx	542	xxxx	797	xxxx	xxxx	xxxxx
Volume/Cap:	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	0.10	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	722	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.8	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			10.8			xxxxxx		
ApproachLOS:	*			*			B			*		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.979
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 40.8
Optimal Cycle: 0 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1	0	0 1	0	1	0 0 1	0
Volume Module:												
Base Vol:	68	73	31	50	68	175	210	273	144	100	333	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	73	31	50	68	175	210	273	144	100	333	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	76	81	34	56	76	194	233	303	160	111	370	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	81	34	56	76	194	233	303	160	111	370	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	76	81	34	56	76	194	233	303	160	111	370	96
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.40	0.42	0.18	0.17	0.23	0.60	1.00	0.65	0.35	1.00	0.79	0.21
Final Sat.:	165	177	75	81	110	282	440	318	168	436	378	98
Capacity Analysis Module:												
Vol/Sat:	0.46	0.46	0.46	0.69	0.69	0.69	0.53	0.95	0.95	0.25	0.98	0.98
Crit Moves:		****		****				****			****	
Delay/Veh:	17.6	17.6	17.6	24.5	24.5	24.5	19.5	56.4	56.4	13.7	63.2	63.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.6	17.6	17.6	24.5	24.5	24.5	19.5	56.4	56.4	13.7	63.2	63.2
LOS by Move:	C	C	C	C	C	C	C	F	F	B	F	F
ApproachDel:	17.6			24.5			44.1			53.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	17.6			24.5			44.1			53.7		
LOS by Appr:	C			C			E			F		

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Lathrop / London

Cycle (sec): 100 Critical Vol./Cap. (X): 0.587
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 13.1
Optimal Cycle: 40 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	23	0	82		0	0	0		0	600	74		89	350	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	23	0	82		0	0	0		0	600	74		89	350	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	26	0	91		0	0	0		0	667	82		99	389	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	26	0	91		0	0	0		0	667	82		99	389	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	26	0	91		0	0	0		0	667	82		99	389	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.89	1.00	0.89		1.00	1.00	1.00		1.00	0.96	0.96		0.93	0.98	1.00	
Lanes:	0.22	0.00	0.78		0.00	1.00	0.00		1.00	0.89	0.11		1.00	1.00	0.00	
Final Sat.:	368	0	1313		0	1900	0		1900	1631	201		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.00	0.07		0.00	0.00	0.00		0.00	0.41	0.41		0.06	0.21	0.00	
Crit Moves:	****									****			****			
Green/Cycle:	0.12	0.00	0.12		0.00	0.00	0.00		0.00	0.70	0.70		0.10	0.79	0.00	
Volume/Cap:	0.59	0.00	0.59		0.00	0.00	0.00		0.00	0.59	0.59		0.59	0.26	0.00	
Uniform Del:	41.8	0.0	41.8		0.0	0.0	0.0		0.0	7.8	7.8		43.4	2.7	0.0	
IncremntDel:	4.5	0.0	4.5		0.0	0.0	0.0		0.0	0.7	0.7		5.3	0.1	0.0	
Delay Adj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Delay/Veh:	46.3	0.0	46.3		0.0	0.0	0.0		0.0	8.5	8.5		48.6	2.8	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	46.3	0.0	46.3		0.0	0.0	0.0		0.0	8.5	8.5		48.6	2.8	0.0	
HCM2kAvg:	4	0	4		0	0	0		0	12	12		4	3	0	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #16 Lathrop / McKinley

Average Delay (sec/veh): 21.6 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	1	0	1	0 0
Volume Module:																
Base Vol:	108	0	77		0	0	0		0	646	65		22	368	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	108	0	77		0	0	0		0	646	65		22	368	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	120	0	86		0	0	0		0	718	72		24	409	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	120	0	86		0	0	0		0	718	72		24	409	0	
Critical Gap Module:																
Critical Gp:	6.4	xxxx	6.2		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1212	xxxx	754		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		790	xxxx	xxxxx	
Potent Cap.:	203	xxxx	412		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		830	xxxx	xxxxx	
Move Cap.:	199	xxxx	412		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		830	xxxx	xxxxx	
Total Cap:	394	0	xxxxx		0	0	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	0.30	xxxx	0.21		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		0.03	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		9.5	xxxx	xxxxx	
LOS by Move:	*		*		*		*		*		*		A		*	
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx		401	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx		2.8	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx		23.0	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*		C	*	*		*	*		*		*	*		*	*
ApproachDel:	23.0				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	C				*				*				*			

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 1.346
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 135.0
Optimal Cycle: 0 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0
Volume Module:												
Base Vol:	75	249	161	64	267	34	35	307	85	76	273	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	249	161	64	267	34	35	307	85	76	273	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	83	277	179	71	297	38	39	341	94	84	303	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	277	179	71	297	38	39	341	94	84	303	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	83	277	179	71	297	38	39	341	94	84	303	47
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.15	0.52	0.33	0.18	0.73	0.09	0.08	0.72	0.20	0.19	0.70	0.11
Final Sat.:	62	206	133	69	288	37	33	287	79	77	276	43
Capacity Analysis Module:												
Vol/Sat:	1.35	1.35	1.35	1.03	1.03	1.03	1.19	1.19	1.19	1.10	1.10	1.10
Crit Moves:		****		****					****		****	
Delay/Veh:	196.9	197	196.9	84.1	84.1	84.1	135.9	136	135.9	104.7	105	104.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	196.9	197	196.9	84.1	84.1	84.1	135.9	136	135.9	104.7	105	104.7
LOS by Move:	F	F	F	F	F	F	F	F	F	F	F	F
ApproachDel:	196.9			84.1			135.9			104.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	196.9			84.1			135.9			104.7		
LOS by Appr:	F			F			F			F		

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Airport / Yosemite

Cycle (sec): 100 Critical Vol./Cap. (X): 0.563
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 32.6
Optimal Cycle: 45 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	44	273	126	170	180	22	97	349	103	126	232	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	273	126	170	180	22	97	349	103	126	232	177
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	49	303	140	189	200	24	108	388	114	140	258	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	303	140	189	200	24	108	388	114	140	258	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	49	303	140	189	200	24	108	388	114	140	258	197
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.90	0.90	0.93	0.87	0.87
Lanes:	1.00	1.00	1.00	1.00	0.89	0.11	1.00	1.54	0.46	1.00	1.13	0.87
Final Sat.:	1769	1862	1583	1769	1633	200	1769	2639	779	1769	1876	1432
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.09	0.11	0.12	0.12	0.06	0.15	0.15	0.08	0.14	0.14
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.29	0.29	0.19	0.39	0.39	0.12	0.26	0.26	0.14	0.28	0.28
Volume/Cap:	0.31	0.56	0.31	0.56	0.31	0.31	0.49	0.56	0.56	0.56	0.49	0.49
Uniform Del:	42.8	30.2	27.7	36.8	21.2	21.2	40.9	32.0	32.0	40.1	30.2	30.2
IncremntDel:	1.2	1.4	0.4	2.2	0.3	0.3	1.8	0.8	0.8	3.0	0.4	0.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	43.9	31.6	28.1	39.0	21.4	21.4	42.7	32.9	32.9	43.1	30.6	30.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.9	31.6	28.1	39.0	21.4	21.4	42.7	32.9	32.9	43.1	30.6	30.6
HCM2kAvg:	2	8	3	6	5	5	4	7	7	5	6	6

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 Union / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.688
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 34.0
Optimal Cycle: 58 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	120	491	193	200	466	50	70	411	75	167	319	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	491	193	200	466	50	70	411	75	167	319	143
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	133	546	214	222	518	56	78	457	83	186	354	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	546	214	222	518	56	78	457	83	186	354	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	133	546	214	222	518	56	78	457	83	186	354	159
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.92	0.92	0.95	0.93	0.93	0.95	0.91	0.91
Lanes:	1.00	1.44	0.56	1.00	1.81	0.19	1.00	1.69	0.31	1.00	1.38	0.62
Final Sat.:	1769	2433	956	1769	3147	338	1805	2983	544	1805	2378	1066
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.22	0.13	0.16	0.16	0.04	0.15	0.15	0.10	0.15	0.15
Crit Moves:		****			****			****			****	
Green/Cycle:	0.16	0.33	0.33	0.18	0.35	0.35	0.08	0.22	0.22	0.15	0.29	0.29
Volume/Cap:	0.47	0.69	0.69	0.69	0.47	0.47	0.52	0.69	0.69	0.69	0.52	0.52
Uniform Del:	38.2	29.3	29.3	38.2	25.4	25.4	43.9	35.7	35.7	40.3	29.8	29.8
IncremntDel:	1.2	1.9	1.9	6.2	0.3	0.3	3.1	2.6	2.6	7.3	0.5	0.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.4	31.2	31.2	44.4	25.7	25.7	47.0	38.3	38.3	47.6	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.4	31.2	31.2	44.4	25.7	25.7	47.0	38.3	38.3	47.6	30.2	30.2
HCM2kAvg:	4	11	11	8	7	7	3	9	9	7	7	7

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #37 Lathrop Rd / 5th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.500
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 34 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	41	41	49	102	38	36	74	537	72	23	313	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	41	49	102	38	36	74	537	72	23	313	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	46	46	54	113	42	40	82	597	80	26	348	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	46	54	113	42	40	82	597	80	26	348	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	46	46	54	113	42	40	82	597	80	26	348	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.92	0.92	0.95	1.00	0.85	0.93	0.98	0.83	0.93	0.89	0.89
Lanes:	1.00	0.46	0.54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.47	0.53
Final Sat.:	1805	795	950	1805	1900	1615	1769	1862	1583	1769	2501	895
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.06	0.06	0.02	0.02	0.05	0.32	0.05	0.01	0.14	0.14
Crit Moves:		****		****				****			****	
Green/Cycle:	0.12	0.11	0.11	0.13	0.12	0.12	0.17	0.64	0.64	0.03	0.50	0.50
Volume/Cap:	0.21	0.50	0.50	0.50	0.19	0.21	0.28	0.50	0.08	0.50	0.28	0.28
Uniform Del:	39.6	41.6	41.6	40.8	39.7	39.8	36.3	9.5	6.8	47.8	14.4	14.4
IncremntDel:	0.5	2.0	2.0	1.7	0.4	0.5	0.5	0.3	0.0	7.5	0.1	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.1	43.5	43.5	42.5	40.1	40.3	36.8	9.8	6.8	55.3	14.5	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.1	43.5	43.5	42.5	40.1	40.3	36.8	9.8	6.8	55.3	14.5	14.5
HCM2kAvg:	1	4	4	4	1	1	2	10	1	2	4	4

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #38 Lathrop Rd / Harlan Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.546
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 37 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	0 1	1	0 1	0 1
Volume Module:												
Base Vol:	122	50	36	109	49	47	112	634	13	19	319	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	50	36	109	49	47	112	634	13	19	319	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	136	56	40	121	54	52	124	704	14	21	354	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	56	40	121	54	52	124	704	14	21	354	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	136	56	40	121	54	52	124	704	14	21	354	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.89	0.89	0.95	0.88	0.88	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.16	0.84	1.00	1.02	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	1967	1416	1805	1708	1638	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.03	0.07	0.03	0.03	0.07	0.38	0.01	0.01	0.19	0.04
Crit Moves:	****				****			****			****	
Green/Cycle:	0.14	0.06	0.06	0.14	0.06	0.06	0.19	0.69	0.69	0.02	0.52	0.52
Volume/Cap:	0.55	0.49	0.49	0.49	0.55	0.55	0.37	0.55	0.01	0.55	0.37	0.07
Uniform Del:	40.2	45.7	45.7	39.8	45.8	45.8	35.0	7.6	4.8	48.4	14.1	11.9
IncremntDel:	2.5	1.9	1.9	1.5	3.2	3.2	0.7	0.5	0.0	15.4	0.2	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.8	47.6	47.6	41.3	49.0	49.0	35.7	8.1	4.8	63.8	14.4	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	47.6	47.6	41.3	49.0	49.0	35.7	8.1	4.8	63.8	14.4	11.9
HCM2kAvg:	5	2	2	4	2	2	4	11	0	1	6	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #39 I-5 NB / Lathrop Rd

Average Delay (sec/veh): 19.4 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	T	R				L	T	R				L	T	R				L	T	R			
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	0	0		1	0	2	0	0		0	0	0	1	0	
Volume Module:																								
Base Vol:	14	3	380				0	0	0				28	533	0				0	240	342			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	14	3	380				0	0	0				28	533	0				0	240	342			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	16	3	422				0	0	0				31	592	0				0	267	380			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	16	3	422				0	0	0				31	592	0				0	267	380			
Critical Gap Module:																								
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx							4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx							2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Capacity Module:																								
Cnflict Vol:	1111	1301	296	xxxx	xxxx	xxxxx							647	xxxx	xxxxx	xxxx	xxxx	xxxxx						
Potent Cap.:	231	161	743	xxxx	xxxx	xxxxx							939	xxxx	xxxxx	xxxx	xxxx	xxxxx						
Move Cap.:	225	156	743	xxxx	xxxx	xxxxx							939	xxxx	xxxxx	xxxx	xxxx	xxxxx						
Volume/Cap:	0.07	0.02	0.57	xxxx	xxxx	xxxx							0.03	xxxx	xxxx	xxxx	xxxx	xxxx						
Level Of Service Module:																								
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*	*	*	*							A	*	*	*	*	*						
Movement:	LT	LTR	RT	LT	LTR	RT							LT	LTR	RT	LT	LTR	RT						
Shared Cap.:	xxxx	670	xxxxx	xxxx	xxxx	xxxxx							xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx						
SharedQueue:	xxxxx	4.9	xxxxx	xxxxx	xxxx	xxxxx							xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shrd StpDel:	xxxxx	20.1	xxxxx	xxxxx	xxxx	xxxxx							xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shared LOS:	*	C	*	*	*	*							*	*	*	*	*	*						
ApproachDel:	20.1			xxxxxx									xxxxxx			xxxxxx								
ApproachLOS:	C			*									*			*								

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Average Delay (sec/veh): 133.3 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	0 0	0 0	1!	0 0	0 0	0	1 0	1 0	2	0 0
Volume Module:												
Base Vol:	0	0	0	488	9	4	0	74	5	185	76	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	488	9	4	0	74	5	185	76	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	542	10	4	0	82	6	206	84	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	542	10	4	0	82	6	206	84	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	581	583	42	xxxx	xxxx	xxxxx	88	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	476	424	1028	xxxx	xxxx	xxxxx	1508	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	426	366	1028	xxxx	xxxx	xxxxx	1508	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	1.27	0.03	0.00	xxxx	xxxx	xxxx	0.14	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	427	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	24.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	180	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			179.7			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #43 French Camp Rd / Union Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.401
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 23 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	116	0	28	0	0	0	0	484	159	25	273	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	0	28	0	0	0	0	484	159	25	273	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	129	0	31	0	0	0	0	538	177	28	303	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	0	31	0	0	0	0	538	177	28	303	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	129	0	31	0	0	0	0	538	177	28	303	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.00	0.02	0.00	0.00	0.00	0.00	0.29	0.11	0.02	0.16	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.72	0.72	0.04	0.76	0.00
Volume/Cap:	0.40	0.00	0.11	0.00	0.00	0.00	0.00	0.40	0.16	0.40	0.21	0.00
Uniform Del:	36.1	0.0	34.2	0.0	0.0	0.0	0.0	5.5	4.4	46.9	3.5	0.0
IncremntDel:	0.8	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.1	3.8	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	37.0	0.0	34.3	0.0	0.0	0.0	0.0	5.7	4.5	50.7	3.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.0	0.0	34.3	0.0	0.0	0.0	0.0	5.7	4.5	50.7	3.6	0.0
HCM2kAvg:	4	0	1	0	0	0	0	7	2	1	3	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.632
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 30.3
Optimal Cycle: 51 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 1	1	0	0 1	0	1	0 1
Volume Module:												
Base Vol:	51	183	13	100	90	35	35	198	35	52	285	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	183	13	100	90	35	35	198	35	52	285	71
Added Vol:	0	5	24	25	5	7	8	45	0	54	126	27
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	188	37	125	95	42	43	243	35	106	411	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.81	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	57	209	41	139	106	52	48	270	39	118	457	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	209	41	139	106	52	48	270	39	118	457	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	209	41	139	106	52	48	270	39	118	457	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.96	0.96	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.95	0.95
Lanes:	1.00	0.84	0.16	1.00	1.00	1.00	1.00	0.87	0.13	1.00	0.81	0.19
Final Sat.:	1769	1517	299	1769	1862	1583	1769	1597	230	1769	1460	348
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.14	0.08	0.06	0.03	0.03	0.17	0.17	0.07	0.31	0.31
Crit Moves:		****		****			****				****	
Green/Cycle:	0.12	0.22	0.22	0.12	0.22	0.22	0.04	0.39	0.39	0.15	0.50	0.50
Volume/Cap:	0.26	0.63	0.63	0.63	0.26	0.15	0.63	0.44	0.44	0.44	0.63	0.63
Uniform Del:	39.7	35.5	35.5	41.6	32.4	31.6	47.1	22.7	22.7	38.5	18.6	18.6
IncremntDel:	0.6	3.3	3.3	5.9	0.3	0.2	16.1	0.4	0.4	1.1	1.5	1.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.3	38.8	38.8	47.5	32.7	31.8	63.1	23.1	23.1	39.7	20.0	20.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	38.8	38.8	47.5	32.7	31.8	63.1	23.1	23.1	39.7	20.0	20.0
HCM2kAvg:	2	8	8	5	3	1	3	7	7	4	13	13

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Lathrop / Sr Housing

Average Delay (sec/veh): 12.3 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0 0	0	0	0 1	0	0	2 0	0	0	1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	313	0	0	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	313	0	0	320	0
Added Vol:	0	0	0	0	0	31	0	106	0	0	184	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	31	0	419	0	0	504	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	34	0	466	0	0	560	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	34	0	466	0	0	560	13
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	567	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	527	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	527	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			12.3			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec): 100 Critical Vol./Cap. (X): 0.895
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 46.3
Optimal Cycle: 108 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	0	0 1!	0 0	1	0 2	0 1	1	0 1	0
Volume Module:												
Base Vol:	84	154	167	33	141	8	8	209	96	162	228	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	154	167	33	141	8	8	209	96	162	228	66
Added Vol:	15	80	0	116	175	159	54	19	8	2	21	34
PasserByVol:	6	-3	-3	0	3	-2	-3	-11	-5	-4	-7	5
Initial Fut:	105	231	164	149	319	165	59	217	99	160	242	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	117	257	182	166	354	183	66	241	110	178	269	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	257	182	166	354	183	66	241	110	178	269	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	117	257	182	166	354	183	66	241	110	178	269	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.93	0.93	0.93	0.93	0.83	0.93	0.94	0.94
Lanes:	1.00	1.00	1.00	0.24	0.50	0.26	1.00	2.00	1.00	1.00	0.70	0.30
Final Sat.:	1769	1862	1583	418	895	463	1769	3538	1583	1769	1240	538
Capacity Analysis Module:												
Vol/Sat:	0.07	0.14	0.12	0.40	0.40	0.40	0.04	0.07	0.07	0.10	0.22	0.22
Crit Moves:		****		****			****				****	
Green/Cycle:	0.15	0.15	0.32	0.44	0.44	0.48	0.04	0.11	0.27	0.17	0.24	0.24
Volume/Cap:	0.43	0.90	0.36	0.90	0.90	0.82	0.90	0.59	0.26	0.59	0.90	0.90
Uniform Del:	38.3	41.5	25.9	25.7	25.7	22.1	47.7	42.1	28.7	38.4	36.7	36.7
IncremntDel:	1.1	28.0	0.4	12.8	12.8	6.2	70.3	2.4	0.3	3.2	20.7	20.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.4	69.5	26.3	38.6	38.6	28.3	118.0	44.5	29.1	41.6	57.4	57.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.4	69.5	26.3	38.6	38.6	28.3	118.0	44.5	29.1	41.6	57.4	57.4
HCM2kAvg:	4	11	4	24	24	21	4	4	3	6	15	15

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Average Delay (sec/veh): 20.8 Level Of Service: C

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	228		0		0	182		0		0	0		0		0	0		0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	0	228		0		0	182		0		0	0		0		0	0		0	
Added Vol:	17	54		47		9	66		2		6	0		63		140	0		28	
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0		0	
Initial Fut:	17	282		47		9	248		2		6	0		63		140	0		28	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	19	313		52		10	276		2		7	0		70		156	0		31	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Final Vol.:	19	313		52		10	276		2		7	0		70		156	0		31	
Critical Gap Module:																				
Critical Gp:	4.1	xxxx		xxxxx		4.1	xxxx		xxxxx		7.1	xxxx		6.2		7.1	xxxx		6.2	
FollowUpTim:	2.2	xxxx		xxxxx		2.2	xxxx		xxxxx		3.5	xxxx		3.3		3.5	xxxx		3.3	
Capacity Module:																				
Cnflict Vol:	278	xxxx		xxxxx		366	xxxx		xxxxx		689	xxxx		277		709	xxxx		339	
Potent Cap.:	1285	xxxx		xxxxx		1193	xxxx		xxxxx		362	xxxx		767		352	xxxx		707	
Move Cap.:	1285	xxxx		xxxxx		1193	xxxx		xxxxx		340	xxxx		767		314	xxxx		707	
Volume/Cap:	0.01	xxxx		xxxx		0.01	xxxx		xxxx		0.02	xxxx		0.09		0.50	xxxx		0.04	
Level Of Service Module:																				
Queue:	0.0	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Stopped Del:	7.8	xxxx		xxxxx		8.0	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
LOS by Move:	A	*		*		A	*		*		*	*		*		*	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	692		xxxxx		xxxx	346		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	0.4		xxxxx		xxxxx	3.0		xxxxx	
Shrd StpDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	10.9		xxxxx		xxxxx	26.9		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	B		*		*	D		*	
ApproachDel:	xxxxxx					xxxxxx					10.9					26.9				
ApproachLOS:	*					*					B					D				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Union / Sr Housing North Entr

Average Delay (sec/veh): 9.4 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	228		0	0	182		0	0	0		0	0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	228		0	0	182		0	0	0		0	0	0		0
Added Vol:	20	68		0	0	24		1	3	0		52	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	20	296		0	0	206		1	3	0		52	0	0		0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	22	329		0	0	229		1	3	0		58	0	0		0
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Final Vol.:	22	329		0	0	229		1	3	0		58	0	0		0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2	xxxxx	xxxx	xxxxx		
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	230	xxxx	xxxxx	xxxx	xxxx	xxxxx		603	xxxx		229	xxxx	xxxx	xxxxx		
Potent Cap.:	1338	xxxx	xxxxx	xxxx	xxxx	xxxxx		465	xxxx		815	xxxx	xxxx	xxxxx		
Move Cap.:	1338	xxxx	xxxxx	xxxx	xxxx	xxxxx		460	xxxx		815	xxxx	xxxx	xxxxx		
Volume/Cap:	0.02	xxxx	xxxx	xxxx	xxxx	xxxx		0.01	xxxx		0.07	xxxx	xxxx	xxxx		
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	782	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.0	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx				10.0			xxxxxx					
ApproachLOS:	*			*				A			*					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Airport / Sr Housing

Average Delay (sec/veh): 12.2 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	289		0	0	225		0	0	0		0	0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	289		0	0	225		0	0	0		0	0	0		0
Added Vol:	0	26		14	6	9		0	0	0		0	28	0		18
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	0	315		14	6	234		0	0	0		0	28	0		18
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	0	350		16	7	260		0	0	0		0	31	0		20
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Final Vol.:	0	350		16	7	260		0	0	0		0	31	0		20
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.4	xxxx		6.2
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx		3.3
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		366	xxxx	xxxxx	xxxx	xxxx	xxxxx			631	xxxx		358
Potent Cap.:	xxxx	xxxx	xxxxx		1193	xxxx	xxxxx	xxxx	xxxx	xxxxx			448	xxxx		691
Move Cap.:	xxxx	xxxx	xxxxx		1193	xxxx	xxxxx	xxxx	xxxx	xxxxx			446	xxxx		691
Volume/Cap:	xxxx	xxxx	xxxx		0.01	xxxx	xxxx	xxxx	xxxx	xxxx			0.07	xxxx		0.03
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx		8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	518	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx		8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	12.7	xxxxx			
Shared LOS:	*	*	*		A	*	*	*	*	*	*	B	*			
ApproachDel:	xxxxxx				xxxxxx				xxxxxx			12.7				
ApproachLOS:	*				*				*			B				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Union / Single Fam South

Average Delay (sec/veh): 22.2 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	1	0		0	1	0	0	0		0	0	0	0	0		0	0	1!	0	0	
Volume Module:																								
Base Vol:	0	228		0			0	182		0			0	0		0			0	0		0		
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Initial Bse:	0	228		0			0	182		0			0	0		0			0	0		0		
Added Vol:	0	95		39			7	261		0			0	0		0			110	0		23		
PasserByVol:	0	0		0			0	0		0			0	0		0			0	0		0		
Initial Fut:	0	323		39			7	443		0			0	0		0			110	0		23		
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
PHF Adj:	0.90	0.90		0.90			0.90	0.90		0.90			0.90	0.90		0.90			0.90	0.90		0.90		
PHF Volume:	0	359		43			8	492		0			0	0		0			122	0		26		
Reduct Vol:	0	0		0			0	0		0			0	0		0			0	0		0		
Final Vol.:	0	359		43			8	492		0			0	0		0			122	0		26		
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx		xxxxx			4.1	xxxx		xxxxx			xxxxx	xxxx		xxxxx			6.4	xxxx		6.2		
FollowUpTim:	xxxxx	xxxx		xxxxx			2.2	xxxx		xxxxx			xxxxx	xxxx		xxxxx			3.5	xxxx		3.3		
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx		xxxxx			402	xxxx		xxxxx			xxxx	xxxx		xxxxx			888	xxxx		381		
Potent Cap.:	xxxx	xxxx		xxxxx			1156	xxxx		xxxxx			xxxx	xxxx		xxxxx			317	xxxx		671		
Move Cap.:	xxxx	xxxx		xxxxx			1156	xxxx		xxxxx			xxxx	xxxx		xxxxx			315	xxxx		671		
Volume/Cap:	xxxx	xxxx		xxxx			0.01	xxxx		xxxx			xxxx	xxxx		xxxx			0.39	xxxx		0.04		
Level Of Service Module:																								
Queue:	xxxxx	xxxx		xxxxx			0.0	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx		
Stopped Del:	xxxxx	xxxx		xxxxx			8.1	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx		
LOS by Move:	*	*		*			A	*		*			*	*		*			*	*		*		
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	347		xxxxx		
SharedQueue:	xxxxx	xxxx		xxxxx			0.0	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	2.1		xxxxx		
Shrd StpDel:	xxxxx	xxxx		xxxxx			8.1	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	22.9		xxxxx		
Shared LOS:	*	*		*			A	*		*			*	*		*			*	C		*		
ApproachDel:	xxxxxx						xxxxxx						xxxxxx						22.9					
ApproachLOS:	*						*						*						C					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Union / Lovelace

Average Delay (sec/veh): 8.6 Level Of Service: A

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	1	0	0	0		0	0	0	1	0		0	0	1!	0	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	46	160		0			0	142		7			6	0		30			0	0		0		
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Initial Bse:	46	160		0			0	142		7			6	0		30			0	0		0		
Added Vol:	42	29		0			0	10		0			0	0		15			0	0		0		
PasserByVol:	0	0		0			0	0		0			0	0		0			0	0		0		
Initial Fut:	88	189		0			0	152		7			6	0		45			0	0		0		
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
PHF Adj:	0.90	0.90		0.90			0.90	0.90		0.90			0.90	0.90		0.90			0.90	0.90		0.90		
PHF Volume:	98	210		0			0	169		8			7	0		50			0	0		0		
Reduct Vol:	0	0		0			0	0		0			0	0		0			0	0		0		
Final Vol.:	98	210		0			0	169		8			7	0		50			0	0		0		
Critical Gap Module:																								
Critical Gp:	4.1	xxxx		xxxxx			xxxxx	xxxx		xxxxx			6.4	xxxx		6.2			xxxxx	xxxx		xxxxx		
FollowUpTim:	2.2	xxxx		xxxxx			xxxxx	xxxx		xxxxx			3.5	xxxx		3.3			xxxxx	xxxx		xxxxx		
Capacity Module:																								
Cnflict Vol:	177	xxxx		xxxxx			xxxx	xxxx		xxxxx			578	xxxx		173			xxxx	xxxx		xxxxx		
Potent Cap.:	1399	xxxx		xxxxx			xxxx	xxxx		xxxxx			481	xxxx		876			xxxx	xxxx		xxxxx		
Move Cap.:	1399	xxxx		xxxxx			xxxx	xxxx		xxxxx			454	xxxx		876			xxxx	xxxx		xxxxx		
Volume/Cap:	0.07	xxxx		xxxx			xxxx	xxxx		xxxx			0.01	xxxx		0.06			xxxx	xxxx		xxxx		
Level Of Service Module:																								
Queue:	0.2	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx		
Stopped Del:	7.8	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	xxxx		xxxxx		
LOS by Move:	A	*		*			*	*		*			*	*		*			*	*		*		
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx		xxxxx			xxxx	xxxx		xxxxx			xxxx	790		xxxxx			xxxx	xxxx		xxxxx		
SharedQueue:	0.2	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	0.2		xxxxx			xxxxx	xxxx		xxxxx		
Shrd StpDel:	7.8	xxxx		xxxxx			xxxxx	xxxx		xxxxx			xxxxx	9.9		xxxxx			xxxxx	xxxx		xxxxx		
Shared LOS:	A	*		*			*	*		*			*	A		*			*	*		*		
ApproachDel:	xxxxxx						xxxxxx						9.9						xxxxxx					
ApproachLOS:	*						*						A						*					

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.828
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	59	59	13	28	39	91	249	236	80	52	289	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	59	13	28	39	91	249	236	80	52	289	80
Added Vol:	19	0	0	0	0	18	32	58	41	0	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	59	13	28	39	109	281	294	121	52	309	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	87	66	14	31	43	121	312	327	134	58	343	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	66	14	31	43	121	312	327	134	58	343	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	87	66	14	31	43	121	312	327	134	58	343	89
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.52	0.39	0.09	0.16	0.22	0.62	1.00	0.71	0.29	1.00	0.79	0.21
Final Sat.:	235	178	39	77	107	300	502	395	162	474	415	108
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.40	0.40	0.40	0.62	0.83	0.83	0.12	0.83	0.83
Crit Moves:	****				****			****				****
Delay/Veh:	14.2	14.2	14.2	14.1	14.1	14.1	20.6	32.0	32.0	11.1	33.0	33.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.2	14.2	14.2	14.1	14.1	14.1	20.6	32.0	32.0	11.1	33.0	33.0
LOS by Move:	B	B	B	B	B	B	C	D	D	B	D	D
ApproachDel:	14.2			14.1			27.4			30.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.2			14.1			27.4			30.4		
LOS by Appr:	B			B			D			D		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Lathrop / London

Cycle (sec): 100 Critical Vol./Cap. (X): 0.510
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 35 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	76	0	86	0	0	0	0	360	16	50	382	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	0	86	0	0	0	0	360	16	50	382	0
Added Vol:	0	0	12	0	0	0	0	94	0	8	207	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	0	98	0	0	0	0	454	16	58	589	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	84	0	109	0	0	0	0	504	18	64	654	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	0	109	0	0	0	0	504	18	64	654	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	84	0	109	0	0	0	0	504	18	64	654	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.98	0.98	0.93	0.98	1.00
Lanes:	0.44	0.00	0.56	0.00	1.00	0.00	1.00	0.97	0.03	1.00	1.00	0.00
Final Sat.:	751	0	968	0	1900	0	1900	1790	63	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.28	0.28	0.04	0.35	0.00
Crit Moves:			****				****				****	
Green/Cycle:	0.22	0.00	0.22	0.00	0.00	0.00	0.00	0.61	0.61	0.08	0.69	0.00
Volume/Cap:	0.51	0.00	0.51	0.00	0.00	0.00	0.00	0.46	0.46	0.46	0.51	0.00
Uniform Del:	34.2	0.0	34.2	0.0	0.0	0.0	0.0	10.6	10.6	44.0	7.4	0.0
IncremntDel:	1.2	0.0	1.2	0.0	0.0	0.0	0.0	0.3	0.3	2.4	0.3	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	35.4	0.0	35.4	0.0	0.0	0.0	0.0	10.9	10.9	46.4	7.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.4	0.0	35.4	0.0	0.0	0.0	0.0	10.9	10.9	46.4	7.8	0.0
HCM2kAvg:	6	0	6	0	0	0	0	9	9	3	10	0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Average Delay (sec/veh): 16.5 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	104	0	27	0	0	0	0	326	150	57	474	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	0	27	0	0	0	0	326	150	57	474	0
Added Vol:	0	0	5	0	0	0	0	48	0	10	123	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	0	32	0	0	0	0	374	150	67	597	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	116	0	36	0	0	0	0	416	167	74	663	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	116	0	36	0	0	0	0	416	167	74	663	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1311	xxxx	499	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	582	xxxx	xxxxx
Potent Cap.:	177	xxxx	576	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	992	xxxx	xxxxx
Move Cap.:	167	xxxx	576	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	992	xxxx	xxxxx
Total Cap:	350	0	xxxxx	0	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.33	xxxx	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	386	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	20.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:		20.2		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		C		*			*			*		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.913
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 33.7
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	106	163	54	35	208	48	27	98	69	91	262	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	163	54	35	208	48	27	98	69	91	262	50
Added Vol:	0	20	0	2	43	11	7	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	183	54	37	251	59	34	98	69	91	262	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	118	203	60	41	279	66	38	109	77	101	291	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	203	60	41	279	66	38	109	77	101	291	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	118	203	60	41	279	66	38	109	77	101	291	57
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.31	0.53	0.16	0.11	0.72	0.17	0.17	0.49	0.34	0.22	0.65	0.13
Final Sat.:	144	249	73	50	340	80	70	200	141	111	319	62
Capacity Analysis Module:												
Vol/Sat:	0.82	0.82	0.82	0.82	0.82	0.82	0.54	0.54	0.54	0.91	0.91	0.91
Crit Moves:		****				****	****			****		
Delay/Veh:	31.7	31.7	31.7	31.9	31.9	31.9	17.8	17.8	17.8	45.0	45.0	45.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.7	31.7	31.7	31.9	31.9	31.9	17.8	17.8	17.8	45.0	45.0	45.0
LOS by Move:	D	D	D	D	D	D	C	C	C	E	E	E
ApproachDel:		31.7			31.9			17.8			45.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		31.7			31.9			17.8			45.0	
LOS by Appr:		D			D			C			E	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Airport / Yosemite

Cycle (sec):	100	Critical Vol./Cap. (X):	0.528
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	31.0
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	78	184	70	261	310	34	14	238	57	119	292	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	184	70	261	310	34	14	238	57	119	292	209
Added Vol:	0	14	3	5	26	12	4	0	0	9	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	198	73	266	336	46	18	238	57	128	292	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	87	220	81	296	373	51	20	264	63	142	324	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	220	81	296	373	51	20	264	63	142	324	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	87	220	81	296	373	51	20	264	63	142	324	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.90	0.90	0.93	0.87	0.87
Lanes:	1.00	1.00	1.00	1.00	0.88	0.12	1.00	1.61	0.39	1.00	1.16	0.84
Final Sat.:	1769	1862	1583	1769	1608	220	1769	2771	664	1769	1928	1387
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.05	0.17	0.23	0.23	0.01	0.10	0.10	0.08	0.17	0.17
Crit Moves:		****		****			****				****	
Green/Cycle:	0.09	0.22	0.22	0.32	0.45	0.45	0.02	0.18	0.18	0.16	0.32	0.32
Volume/Cap:	0.52	0.53	0.23	0.53	0.52	0.52	0.53	0.52	0.52	0.52	0.53	0.53
Uniform Del:	43.1	34.2	31.8	28.1	20.0	20.0	48.4	36.8	36.8	38.8	27.9	27.9
IncremntDel:	2.9	1.3	0.3	1.0	0.6	0.6	13.3	0.8	0.8	1.7	0.5	0.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.1	35.4	32.1	29.0	20.6	20.6	61.7	37.5	37.5	40.5	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.1	35.4	32.1	29.0	20.6	20.6	61.7	37.5	37.5	40.5	28.4	28.4
HCM2kAvg:	3	6	2	8	10	10	1	5	5	5	7	7

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Union / Louise

Cycle (sec):	100	Critical Vol./Cap. (X):	0.410
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	29.5
Optimal Cycle:	36	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	72	218	97	126	271	51	34	154	74	110	238	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	218	97	126	271	51	34	154	74	110	238	125
Added Vol:	0	60	0	16	135	21	10	0	0	0	0	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	278	97	142	406	72	44	154	74	110	238	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	80	309	108	158	451	80	49	171	82	122	264	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	309	108	158	451	80	49	171	82	122	264	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	80	309	108	158	451	80	49	171	82	122	264	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.91	0.91	0.95	0.90	0.90	0.95	0.90	0.90
Lanes:	1.00	1.48	0.52	1.00	1.70	0.30	1.00	1.35	0.65	1.00	1.27	0.73
Final Sat.:	1769	2520	879	1769	2936	521	1805	2319	1114	1805	2171	1241
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.12	0.09	0.15	0.15	0.03	0.07	0.07	0.07	0.12	0.12
Crit Moves:		****		****			****				****	
Green/Cycle:	0.12	0.30	0.30	0.22	0.40	0.40	0.07	0.19	0.19	0.17	0.30	0.30
Volume/Cap:	0.38	0.41	0.41	0.41	0.38	0.38	0.41	0.39	0.39	0.39	0.41	0.41
Uniform Del:	40.8	28.0	28.0	33.6	21.3	21.3	44.8	35.5	35.5	36.6	28.1	28.1
IncremntDel:	1.2	0.3	0.3	0.7	0.2	0.2	2.3	0.4	0.4	0.8	0.3	0.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.0	28.3	28.3	34.3	21.5	21.5	47.1	35.9	35.9	37.4	28.4	28.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	28.3	28.3	34.3	21.5	21.5	47.1	35.9	35.9	37.4	28.4	28.4
HCM2kAvg:	3	5	5	5	6	6	2	4	4	4	5	5

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Union / CMU Residential

Average Delay (sec/veh): 14.3 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	228		0	0	182		0	0	0		0	0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	228		0	0	182		0	0	0		0	0	0		0
Added Vol:	23	125		0	0	369		2	9	0		91	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	23	353		0	0	551		2	9	0		91	0	0		0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	26	392		0	0	612		2	10	0		101	0	0		0
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Final Vol.:	26	392		0	0	612		2	10	0		101	0	0		0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2	xxxxx	xxxx	xxxxx		
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	614	xxxx	xxxxx	xxxx	xxxx	xxxxx		1057	xxxx		613	xxxx	xxxx	xxxxx		
Potent Cap.:	965	xxxx	xxxxx	xxxx	xxxx	xxxxx		252	xxxx		496	xxxx	xxxx	xxxxx		
Move Cap.:	965	xxxx	xxxxx	xxxx	xxxx	xxxxx		246	xxxx		496	xxxx	xxxx	xxxxx		
Volume/Cap:	0.03	xxxx	xxxx	xxxx	xxxx	xxxx		0.04	xxxx		0.20	xxxx	xxxx	xxxx		
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	454	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.5	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx				15.5			xxxxxx					
ApproachLOS:	*			*				C			*					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Union / CMU Retail North Access

Average Delay (sec/veh): 17.1 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	228	0		0	182	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	228	0		0	182	0		0	0	0		0	0	0	
Added Vol:	22	122	1		20	415	26		17	0	10		15	0	10	
PasserByVol:	3	0	2		3	-7	4		1	0	3		2	0	1	
Initial Fut:	25	350	3		23	590	30		18	0	13		17	0	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	28	389	3		26	656	33		20	0	14		19	0	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	28	389	3		26	656	33		20	0	14		19	0	12	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	xxxx	6.2		7.1	xxxx	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	xxxx	3.3		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	689	xxxx	xxxxx		392	xxxx	xxxxx		1176	xxxx	672		1177	xxxx	391	
Potent Cap.:	905	xxxx	xxxxx		1166	xxxx	xxxxx		170	xxxx	459		170	xxxx	662	
Move Cap.:	905	xxxx	xxxxx		1166	xxxx	xxxxx		160	xxxx	459		158	xxxx	662	
Volume/Cap:	0.03	xxxx	xxxx		0.02	xxxx	xxxx		0.12	xxxx	0.03		0.12	xxxx	0.02	
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx		0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	9.1	xxxx	xxxxx		8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	220	xxxxx		xxxx	225	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	0.5	xxxxx		xxxxx	0.5	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	24.3	xxxxx		xxxxx	23.5	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	C	*		*	C	*	
ApproachDel:	xxxxxx				xxxxxx				24.3				23.5			
ApproachLOS:	*				*				C				C			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #34 Union CMU Retail South Access

Average Delay (sec/veh): 12.9 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 0	1 0	0	0 0	0 0	1	0 0	0 0	1
Volume Module:												
Base Vol:	0	228	0	0	182	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	228	0	0	182	0	0	0	0	0	0	0
Added Vol:	0	142	25	0	440	0	0	0	10	0	0	3
PasserByVol:	0	5	5	0	-4	3	0	0	6	0	0	0
Initial Fut:	0	375	30	0	618	3	0	0	16	0	0	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	417	33	0	687	3	0	0	18	0	0	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	417	33	0	687	3	0	0	18	0	0	3
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	688	xxxx	xxxx	433
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	450	xxxx	xxxx	627
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	450	xxxx	xxxx	627
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	xxxx	0.01
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.1	xxxxx	xxxx	0.0
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.3	xxxxx	xxxx	10.8
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.3			10.8		
ApproachLOS:	*			*			B			B		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Average Delay (sec/veh): 11.5 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	313	0	0	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	313	0	0	320	0
Added Vol:	0	0	0	6	0	18	28	74	0	0	175	1
PasserByVol:	0	0	0	5	0	17	24	-24	0	0	-15	0
Initial Fut:	0	0	0	11	0	35	52	363	0	0	480	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	12	0	39	58	403	0	0	533	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	12	0	39	58	403	0	0	533	1
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1053	xxxx	534	534	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	253	xxxx	550	1033	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	242	xxxx	550	1033	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	0.07	0.06	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	422	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	14.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			14.7			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #36 Lathrop / CMU Retail Center Access

Average Delay (sec/veh): 11.9 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	0 0	0 0	0	0 1	0 0	1	0 0	0 0	0	1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	313	0	0	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	313	0	0	320	0
Added Vol:	0	0	0	0	0	0	0	81	0	0	176	19
PasserByVol:	0	0	0	0	0	6	0	-38	0	0	-4	13
Initial Fut:	0	0	0	0	0	6	0	356	0	0	492	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	7	0	396	0	0	547	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	7	0	396	0	0	547	36
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	564	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	529	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	529	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.9			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 Lathrop Rd / 5th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.346
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 16.7
Optimal Cycle: 27 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	1 0	1 0	1	0 1	1 0	1	0 1	1 0	1	1 0
Volume Module:												
Base Vol:	32	12	21	133	14	46	14	258	19	11	459	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	12	21	133	14	46	14	258	19	11	459	55
Added Vol:	0	0	0	0	0	0	0	48	0	0	123	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	12	21	133	14	46	14	306	19	11	582	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	36	13	23	148	16	51	16	340	21	12	647	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	13	23	148	16	51	16	340	21	12	647	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	36	13	23	148	16	51	16	340	21	12	647	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	1.00	0.85	0.93	0.98	0.83	0.93	0.92	0.92
Lanes:	1.00	0.36	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.83	0.17
Final Sat.:	1805	625	1094	1805	1900	1615	1769	1862	1583	1769	3190	301
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.08	0.01	0.03	0.01	0.18	0.01	0.01	0.20	0.20
Crit Moves:		****		****			****				****	
Green/Cycle:	0.11	0.06	0.06	0.24	0.18	0.18	0.03	0.59	0.59	0.02	0.59	0.59
Volume/Cap:	0.17	0.35	0.35	0.35	0.04	0.17	0.35	0.31	0.02	0.31	0.35	0.35
Uniform Del:	40.0	45.0	45.0	31.7	33.6	34.4	47.9	10.3	8.5	48.1	10.7	10.7
IncremntDel:	0.4	2.0	2.0	0.5	0.1	0.3	4.6	0.2	0.0	4.4	0.1	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.4	46.9	46.9	32.2	33.6	34.7	52.5	10.5	8.6	52.6	10.8	10.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.4	46.9	46.9	32.2	33.6	34.7	52.5	10.5	8.6	52.6	10.8	10.8
HCM2kAvg:	1	1	1	4	0	1	1	5	0	1	6	6

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 Lathrop Rd / Harlan Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.551
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 37 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Volume Module:												
Base Vol:	126	42	19	69	22	35	78	253	11	19	466	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	126	42	19	69	22	35	78	253	11	19	466	54
Added Vol:	0	0	0	0	0	0	0	48	0	0	123	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	126	42	19	69	22	35	78	301	11	19	589	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	140	47	21	77	24	39	87	334	12	21	654	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	47	21	77	24	39	87	334	12	21	654	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	140	47	21	77	24	39	87	334	12	21	654	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.86	0.86	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.38	0.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	2369	1072	1805	1639	1639	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.02	0.02	0.04	0.01	0.02	0.05	0.18	0.01	0.01	0.35	0.04
Crit Moves:	****					****	****				****	
Green/Cycle:	0.14	0.06	0.06	0.13	0.04	0.04	0.09	0.68	0.68	0.05	0.64	0.64
Volume/Cap:	0.55	0.34	0.34	0.34	0.35	0.55	0.55	0.26	0.01	0.26	0.55	0.06
Uniform Del:	40.0	45.2	45.2	39.9	46.5	46.9	43.6	6.2	5.1	46.1	10.1	6.8
IncremntDel:	2.6	1.0	1.0	0.9	1.1	5.7	4.2	0.1	0.0	1.8	0.6	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.6	46.2	46.2	40.8	47.6	52.6	47.8	6.3	5.1	47.9	10.7	6.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	46.2	46.2	40.8	47.6	52.6	47.8	6.3	5.1	47.9	10.7	6.9
HCM2kAvg:	5	1	1	3	1	2	4	4	0	1	11	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #39 I-5 NB / Lathrop Rd

Average Delay (sec/veh): 11.9 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1!	0	0	0	0	0	0	1	0	2	0	0	0	1	0
Volume Module:												
Base Vol:	11	2	137	0	0	0	3	278	0	0	340	452
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	2	137	0	0	0	3	278	0	0	340	452
Added Vol:	0	0	24	0	0	0	0	24	0	0	62	62
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	2	161	0	0	0	3	302	0	0	402	514
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	12	2	179	0	0	0	3	336	0	0	447	571
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	12	2	179	0	0	0	3	336	0	0	447	571
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1074	1360	168	xxxx	xxxx	xxxxx	1018	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	243	148	876	xxxx	xxxx	xxxxx	682	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	242	148	876	xxxx	xxxx	xxxxx	682	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.05	0.02	0.20	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	717	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	11.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Average Delay (sec/veh): 83.1 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	237	9	10	0	43	16	292	57	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	237	9	10	0	43	16	292	57	0
Added Vol:	0	0	0	24	0	0	0	0	0	62	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	261	9	10	0	43	16	354	57	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	290	10	11	0	48	18	393	63	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	290	10	11	0	48	18	393	63	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	907	916	32	xxxx	xxxx	xxxxx	66	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	306	272	1042	xxxx	xxxx	xxxxx	1536	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	246	203	1042	xxxx	xxxx	xxxxx	1536	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	1.18	0.05	0.01	xxxx	xxxx	xxxx	0.26	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	251	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	15.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	178	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			177.9			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 French Camp Rd / Union Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.404
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 23 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	165	0	12	0	0	0	0	234	99	21	448	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	0	12	0	0	0	0	234	99	21	448	0
Added Vol:	14	0	14	0	0	0	0	0	5	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	179	0	26	0	0	0	0	234	104	26	448	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	199	0	29	0	0	0	0	260	116	29	498	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	0	29	0	0	0	0	260	116	29	498	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	199	0	29	0	0	0	0	260	116	29	498	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.02	0.00	0.00	0.00	0.00	0.14	0.07	0.02	0.27	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.28	0.00	0.28	0.00	0.00	0.00	0.00	0.59	0.59	0.07	0.66	0.00
Volume/Cap:	0.40	0.00	0.07	0.00	0.00	0.00	0.00	0.24	0.12	0.24	0.40	0.00
Uniform Del:	29.3	0.0	26.5	0.0	0.0	0.0	0.0	9.7	9.0	44.0	7.8	0.0
IncremntDel:	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	1.0	0.2	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	29.9	0.0	26.6	0.0	0.0	0.0	0.0	9.8	9.0	45.0	8.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.9	0.0	26.6	0.0	0.0	0.0	0.0	9.8	9.0	45.0	8.0	0.0
HCM2kAvg:	5	0	1	0	0	0	0	4	2	1	7	0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Average Delay (sec/veh): 13.0 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		0 0 1!	0 0		1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	409	0	0	456	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	409	0	0	456	0
Added Vol:	0	0	0	4	0	8	9	126	0	0	49	8
PasserByVol:	0	0	0	3	0	9	7	-7	0	0	-20	20
Initial Fut:	0	0	0	7	0	17	16	528	0	0	485	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	8	0	19	18	587	0	0	539	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	8	0	19	18	587	0	0	539	31
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1177	xxxx	554	570	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	213	xxxx	536	1002	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	210	xxxx	536	1002	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.04	xxxx	0.04	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	369	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	15.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				15.5		xxxxxx			xxxxxx		
ApproachLOS:	*				C		*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.819
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 37.9
Optimal Cycle: 82 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	1	0	1	0	1	0	0	1	0	1	0	1	0
Volume Module:												
Base Vol:	53	147	48	118	199	33	47	391	58	29	264	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	147	48	118	199	33	47	391	58	29	264	71
Added Vol:	0	18	81	46	3	4	31	154	0	74	120	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	165	129	164	202	37	78	545	58	103	384	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	59	183	143	182	224	41	87	606	64	114	427	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	183	143	182	224	41	87	606	64	114	427	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	183	143	182	224	41	87	606	64	114	427	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.98	0.83	0.93	0.97	0.97	0.93	0.95	0.95
Lanes:	1.00	0.56	0.44	1.00	1.00	1.00	1.00	0.90	0.10	1.00	0.80	0.20
Final Sat.:	1769	976	763	1769	1862	1583	1769	1659	177	1769	1448	358
Capacity Analysis Module:												
Vol/Sat:	0.03	0.19	0.19	0.10	0.12	0.03	0.05	0.36	0.36	0.06	0.29	0.29
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.23	0.23	0.13	0.28	0.28	0.07	0.45	0.45	0.08	0.45	0.45
Volume/Cap:	0.43	0.82	0.82	0.82	0.43	0.09	0.65	0.82	0.82	0.82	0.65	0.65
Uniform Del:	44.1	36.6	36.6	42.6	29.6	26.7	45.0	24.2	24.2	45.3	21.4	21.4
IncremntDel:	2.2	12.5	12.5	20.7	0.6	0.1	11.3	6.5	6.5	30.1	1.9	1.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.3	49.1	49.1	63.3	30.2	26.8	56.3	30.7	30.7	75.5	23.4	23.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.3	49.1	49.1	63.3	30.2	26.8	56.3	30.7	30.7	75.5	23.4	23.4
HCM2kAvg:	2	12	12	8	6	1	4	20	20	6	13	13

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Lathrop / Sr Housing

Average Delay (sec/veh): 13.7 Level Of Service: B

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0
Volume Module:																				
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	550	0	0	0	0	387	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	550	0	0	0	0	387	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	20	0	315	0	0	0	0	236	41	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	20	0	865	0	0	0	0	623	41	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	0	0	0	0	22	0	961	0	0	0	0	692	46	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	0	0	0	0	22	0	961	0	0	0	0	692	46	0	0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx					6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx					3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx					715	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx					434	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx					434	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx					0.05	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx					0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx					13.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx
LOS by Move:	*	*	*	*	*					B	*	*	*	*	*	*	*	*	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					13.7					xxxxxx					xxxxxx				
ApproachLOS:	*					B					*					*				

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100	Critical Vol./Cap. (X):	1.420
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	166.8
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R		L	- T	- R	
Control:	Split Phase			Split Phase			Protected				Protected			
Rights:	Ovl			Ovl			Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0		0	0	0	
Lanes:	1	0 1	0 1	0	0 1!	0 0	1	0 2	0 1		1	0 0	1 0	
Volume Module:														
Base Vol:	79	107	131	73	177	22	26	397	127		166	286	48	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	79	107	131	73	177	22	26	397	127		166	286	48	
Added Vol:	54	278	0	114	230	115	193	56	23		14	94	128	
PasserByVol:	13	13	-26	37	68	0	-1	-9	-5		-17	17	0	
Initial Fut:	146	398	105	224	475	137	218	444	145		163	397	176	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	162	442	117	249	528	152	242	493	161		181	441	196	
Reduct Vol:	0	0	0	0	0	0	0	0	0		0	0	0	
Reduced Vol:	162	442	117	249	528	152	242	493	161		181	441	196	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	162	442	117	249	528	152	242	493	161		181	441	196	
Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.98	0.83	0.95	0.95	0.95	0.93	0.93	0.83		0.93	0.93	0.93	
Lanes:	1.00	1.00	1.00	0.27	0.57	0.16	1.00	2.00	1.00		1.00	0.69	0.31	
Final Sat.:	1769	1862	1583	482	1021	295	1769	3538	1583		1769	1231	546	
Capacity Analysis Module:														
Vol/Sat:	0.09	0.24	0.07	0.52	0.52	0.52	0.14	0.14	0.10		0.10	0.36	0.36	
Crit Moves:		****		****			****					****		
Green/Cycle:	0.17	0.17	0.31	0.36	0.36	0.46	0.10	0.20	0.37		0.15	0.25	0.25	
Volume/Cap:	0.55	1.42	0.23	1.42	1.42	1.12	1.42	0.69	0.28		0.69	1.42	1.42	
Uniform Del:	38.2	41.6	25.3	31.8	31.8	27.0	45.2	37.1	22.2		40.5	37.4	37.4	
IncremntDel:	2.2	207	0.2	197.9	198	70.7	219.7	3.0	0.3		7.8	202	201.7	
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	40.3	249	25.6	229.7	230	97.7	264.9	40.0	22.5		48.3	239	239.1	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	40.3	249	25.6	229.7	230	97.7	264.9	40.0	22.5		48.3	239	239.1	
HCM2kAvg:	5	32	3	64	64	45	19	8	4		7	44	44	

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Average Delay (sec/veh):	25.9	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 0	1 0		1	0 0	1 0		0	0 1!	0 0		0	0 1!	0 0	
Volume Module:																
Base Vol:	0	181	0		0	272	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	181	0		0	272	0		0	0	0		0	0	0	
Added Vol:	53	101	162		32	91	7		4	0	49		95	0	17	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	53	282	162		32	363	7		4	0	49		95	0	17	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	59	313	180		36	403	8		4	0	54		106	0	19	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	59	313	180		36	403	8		4	0	54		106	0	19	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	xxxx	6.2		7.1	xxxx	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	xxxx	3.3		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	411	xxxx	xxxxx		493	xxxx	xxxxx		1009	xxxx	407		1027	xxxx	403	
Potent Cap.:	1148	xxxx	xxxxx		1070	xxxx	xxxxx		221	xxxx	648		215	xxxx	652	
Move Cap.:	1148	xxxx	xxxxx		1070	xxxx	xxxxx		201	xxxx	648		184	xxxx	652	
Volume/Cap:	0.05	xxxx	xxxx		0.03	xxxx	xxxx		0.02	xxxx	0.08		0.57	xxxx	0.03	
Level Of Service Module:																
Queue:	0.2	xxxx	xxxxx		0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	8.3	xxxx	xxxxx		8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT		LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	555	xxxxx	xxxx	207	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	3.4	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	12.3	xxxxx	xxxxx	45.7	xxxxx			
Shared LOS:	*	*	*		*	*	*	*	B	*	*	E	*			
ApproachDel:	xxxxxx				xxxxxx				12.3			45.7				
ApproachLOS:	*				*				B			E				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Union / Sr Housing North Entr

Average Delay (sec/veh): 9.4 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	181		0	0	272		0	0	0		0	0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	181		0	0	272		0	0	0		0	0	0		0
Added Vol:	65	57		0	0	90		3	2	0		40	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	65	238		0	0	362		3	2	0		40	0	0		0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	72	264		0	0	402		3	2	0		44	0	0		0
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Final Vol.:	72	264		0	0	402		3	2	0		44	0	0		0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2	xxxxx	xxxx	xxxxx		
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	406	xxxx	xxxxx	xxxx	xxxx	xxxxx		813	xxxx		404	xxxx	xxxx	xxxxx		
Potent Cap.:	1153	xxxx	xxxxx	xxxx	xxxx	xxxxx		351	xxxx		651	xxxx	xxxx	xxxxx		
Move Cap.:	1153	xxxx	xxxxx	xxxx	xxxx	xxxxx		333	xxxx		651	xxxx	xxxx	xxxxx		
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx		0.01	xxxx		0.07	xxxx	xxxx	xxxx		
Level Of Service Module:																
Queue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	623	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.2	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx				11.2			xxxxxx					
ApproachLOS:	*			*				B			*					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Airport / Sr Housing

Average Delay (sec/veh): 12.1 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	265		0	0	350		0	0	0		0	0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	265		0	0	350		0	0	0		0	0	0		0
Added Vol:	0	18		54	20	31		0	0	0		0	22	0		11
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	0	283		54	20	381		0	0	0		0	22	0		11
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	0	314		60	22	423		0	0	0		0	24	0		12
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Final Vol.:	0	314		60	22	423		0	0	0		0	24	0		12
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.4	xxxx		6.2
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx		3.3
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		374	xxxx	xxxxx	xxxx	xxxx	xxxxx			812	xxxx		344
Potent Cap.:	xxxx	xxxx	xxxxx		1184	xxxx	xxxxx	xxxx	xxxx	xxxxx			351	xxxx		703
Move Cap.:	xxxx	xxxx	xxxxx		1184	xxxx	xxxxx	xxxx	xxxx	xxxxx			346	xxxx		703
Volume/Cap:	xxxx	xxxx	xxxx		0.02	xxxx	xxxx	xxxx	xxxx	xxxx			0.07	xxxx		0.02
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx		8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	416	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx		8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.5	xxxxx			
Shared LOS:	*	*	*		A	*	*	*	*	*	*	B	*			
ApproachDel:	xxxxxx				xxxxxx				xxxxxx			14.5				
ApproachLOS:	*				*				*			B				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Union / Single Fam South

Average Delay (sec/veh): 28.1 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	181	0	0	272	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	181	0	0	272	0	0	0	0	0	0	0
Added Vol:	0	301	132	26	209	0	0	0	0	75	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	482	132	26	481	0	0	0	0	75	0	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	536	147	29	534	0	0	0	0	83	0	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	536	147	29	534	0	0	0	0	83	0	16
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	682	xxxx	xxxxx	xxxx	xxxx	xxxxx	1201	xxxx	609
Potent Cap.:	xxxx	xxxx	xxxxx	911	xxxx	xxxxx	xxxx	xxxx	xxxxx	206	xxxx	499
Move Cap.:	xxxx	xxxx	xxxxx	911	xxxx	xxxxx	xxxx	xxxx	xxxxx	201	xxxx	499
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	0.41	xxxx	0.03
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	222	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.1	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	33.7	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			33.7		
ApproachLOS:	*			*			*			D		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Union / Lovelace

Average Delay (sec/veh): 10.6 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0 0	0	1 0	0 0	1! 0	0	0 0	0	0 0
Volume Module:												
Base Vol:	40	120	0	0	216	12	20	0	71	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	120	0	0	216	12	20	0	71	0	0	0
Added Vol:	32	27	0	0	40	0	0	0	53	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	147	0	0	256	12	20	0	124	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	80	163	0	0	284	13	22	0	138	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	80	163	0	0	284	13	22	0	138	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	298	xxxx	xxxxx	xxxx	xxxx	xxxxx	614	xxxx	291	xxxx	xxxx	xxxxx
Potent Cap.:	1263	xxxx	xxxxx	xxxx	xxxx	xxxxx	458	xxxx	753	xxxx	xxxx	xxxxx
Move Cap.:	1263	xxxx	xxxxx	xxxx	xxxx	xxxxx	435	xxxx	753	xxxx	xxxx	xxxxx
Volume/Cap:	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	0.18	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	684	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 1.411
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 123.3
Optimal Cycle: 0 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module:												
Base Vol:	68	73	31	50	68	175	210	273	144	100	333	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	73	31	50	68	175	210	273	144	100	333	86
Added Vol:	75	0	0	0	0	74	46	74	59	0	83	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	143	73	31	50	68	249	256	347	203	100	416	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	159	81	34	56	76	277	284	386	226	111	462	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	81	34	56	76	277	284	386	226	111	462	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	159	81	34	56	76	277	284	386	226	111	462	96
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.58	0.30	0.12	0.14	0.18	0.68	1.00	0.63	0.37	1.00	0.83	0.17
Final Sat.:	228	116	49	61	83	303	397	273	160	395	351	73
Capacity Analysis Module:												
Vol/Sat:	0.70	0.70	0.70	0.91	0.91	0.91	0.72	1.41	1.41	0.28	1.32	1.32
Crit Moves:		****			****			****			****	
Delay/Veh:	29.1	29.1	29.1	51.3	51.3	51.3	31.6	221	221.2	15.4	183	183.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.1	29.1	29.1	51.3	51.3	51.3	31.6	221	221.2	15.4	183	183.0
LOS by Move:	D	D	D	F	F	F	D	F	F	C	F	F
ApproachDel:	29.1			51.3			161.0			155.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	29.1			51.3			161.0			155.2		
LOS by Appr:	D			F			F			F		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Lathrop / London

Cycle (sec): 100 Critical Vol./Cap. (X): 0.822
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 19.3
Optimal Cycle: 74 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module:												
Base Vol:	23	0	82	0	0	0	0	600	74	89	350	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	0	82	0	0	0	0	600	74	89	350	0
Added Vol:	0	0	34	0	0	0	0	281	0	37	219	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	0	116	0	0	0	0	881	74	126	569	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	26	0	129	0	0	0	0	979	82	140	632	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	0	129	0	0	0	0	979	82	140	632	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	26	0	129	0	0	0	0	979	82	140	632	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.88	1.00	1.00	1.00	1.00	0.97	0.97	0.93	0.98	1.00
Lanes:	0.17	0.00	0.83	0.00	1.00	0.00	1.00	0.92	0.08	1.00	1.00	0.00
Final Sat.:	277	0	1395	0	1900	0	1900	1697	143	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.58	0.58	0.08	0.34	0.00
Crit Moves:			****					****			****	
Green/Cycle:	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.70	0.70	0.10	0.80	0.00
Volume/Cap:	0.82	0.00	0.82	0.00	0.00	0.00	0.00	0.82	0.82	0.82	0.43	0.00
Uniform Del:	43.4	0.0	43.4	0.0	0.0	0.0	0.0	10.5	10.5	44.3	3.1	0.0
IncremntDel:	24.3	0.0	24.3	0.0	0.0	0.0	0.0	4.4	4.4	26.3	0.2	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	67.7	0.0	67.7	0.0	0.0	0.0	0.0	14.9	14.9	70.7	3.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.7	0.0	67.7	0.0	0.0	0.0	0.0	14.9	14.9	70.7	3.3	0.0
HCM2kAvg:	7	0	7	0	0	0	0	25	25	7	6	0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Average Delay (sec/veh): 35.6 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	0 1	0	1 0	1 0	0
Volume Module:												
Base Vol:	108	0	77	0	0	0	0	646	65	22	368	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	0	77	0	0	0	0	646	65	22	368	0
Added Vol:	0	0	18	0	0	0	0	167	0	15	110	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	0	95	0	0	0	0	813	65	37	478	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	120	0	106	0	0	0	0	903	72	41	531	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	120	0	106	0	0	0	0	903	72	41	531	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	xxxx	3.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	2.2	xxxx	xxxx
Capacity Module:												
Cnflict Vol:	1553	xxxx	939	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	976	xxxx	xxxx
Potent Cap.:	126	xxxx	323	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	707	xxxx	xxxx
Move Cap.:	120	xxxx	323	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	707	xxxx	xxxx
Total Cap:	311	0	xxxxx	0	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.39	xxxx	0.33	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	316	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	5.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	40.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	*	*	*	*	*	*	*	*	*
ApproachDel:		40.2			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		E			*			*			*	

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 1.532
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 181.0
Optimal Cycle: 0 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	75	249	161	64	267	34	35	307	85	76	273	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	249	161	64	267	34	35	307	85	76	273	42
Added Vol:	0	66	0	1	48	20	24	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	315	161	65	315	54	59	307	85	76	273	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	83	350	179	72	350	60	66	341	94	84	303	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	350	179	72	350	60	66	341	94	84	303	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	83	350	179	72	350	60	66	341	94	84	303	50
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.57	0.29	0.15	0.73	0.12	0.13	0.68	0.19	0.19	0.70	0.11
Final Sat.:	54	228	117	59	287	49	52	271	75	76	274	45
Capacity Analysis Module:												
Vol/Sat:	1.53	1.53	1.53	1.22	1.22	1.22	1.26	1.26	1.26	1.11	1.11	1.11
Crit Moves:	****				****			****			****	
Delay/Veh:	275.1	275	275.1	148.2	148	148.2	162.1	162	162.1	107.2	107	107.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	275.1	275	275.1	148.2	148	148.2	162.1	162	162.1	107.2	107	107.2
LOS by Move:	F	F	F	F	F	F	F	F	F	F	F	F
ApproachDel:		275.1			148.2			162.1			107.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		275.1			148.2			162.1			107.2	
LOS by Appr:		F			F			F			F	

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Airport / Yosemite

Cycle (sec):	100	Critical Vol./Cap. (X):	0.602
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	33.2
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	44	273	126	170	180	22	97	349	103	126	232	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	273	126	170	180	22	97	349	103	126	232	177
Added Vol:	0	47	11	3	38	7	14	0	0	6	0	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	320	137	173	218	29	111	349	103	132	232	183
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	49	356	152	192	242	32	123	388	114	147	258	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	356	152	192	242	32	123	388	114	147	258	203
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	49	356	152	192	242	32	123	388	114	147	258	203
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.96	0.96	0.93	0.90	0.90	0.93	0.87	0.87
Lanes:	1.00	1.00	1.00	1.00	0.88	0.12	1.00	1.54	0.46	1.00	1.12	0.88
Final Sat.:	1769	1862	1583	1769	1614	215	1769	2639	779	1769	1847	1457
Capacity Analysis Module:												
Vol/Sat:	0.03	0.19	0.10	0.11	0.15	0.15	0.07	0.15	0.15	0.08	0.14	0.14
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.32	0.32	0.18	0.42	0.42	0.13	0.24	0.24	0.14	0.25	0.25
Volume/Cap:	0.36	0.60	0.30	0.60	0.36	0.36	0.55	0.60	0.60	0.60	0.55	0.55
Uniform Del:	43.8	28.8	25.8	37.7	19.8	19.8	40.9	33.5	33.5	40.5	32.3	32.3
IncremntDel:	1.6	1.7	0.3	3.2	0.3	0.3	2.8	1.2	1.2	4.2	0.8	0.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.4	30.5	26.1	40.9	20.0	20.0	43.8	34.7	34.7	44.7	33.0	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.4	30.5	26.1	40.9	20.0	20.0	43.8	34.7	34.7	44.7	33.0	33.0
HCM2kAvg:	2	10	4	7	6	6	5	8	8	5	7	7

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Union / Louise

Cycle (sec):	100	Critical Vol./Cap. (X):	0.792
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	37.1
Optimal Cycle:	75	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	120	491	193	200	466	50	70	411	75	167	319	143
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	491	193	200	466	50	70	411	75	167	319	143
Added Vol:	0	203	0	44	147	36	43	0	0	0	0	47
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	694	193	244	613	86	113	411	75	167	319	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	133	771	214	271	681	96	126	457	83	186	354	211
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	771	214	271	681	96	126	457	83	186	354	211
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	133	771	214	271	681	96	126	457	83	186	354	211
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.90	0.90	0.93	0.91	0.91	0.95	0.93	0.93	0.95	0.90	0.90
Lanes:	1.00	1.56	0.44	1.00	1.75	0.25	1.00	1.69	0.31	1.00	1.25	0.75
Final Sat.:	1769	2677	744	1769	3047	427	1805	2983	544	1805	2136	1272
Capacity Analysis Module:												
Vol/Sat:	0.08	0.29	0.29	0.15	0.22	0.22	0.07	0.15	0.15	0.10	0.17	0.17
Crit Moves:		****		****				****		****		
Green/Cycle:	0.14	0.36	0.36	0.19	0.42	0.42	0.10	0.19	0.19	0.13	0.23	0.23
Volume/Cap:	0.54	0.79	0.79	0.79	0.54	0.54	0.73	0.79	0.79	0.79	0.73	0.73
Uniform Del:	40.0	28.4	28.4	38.4	21.9	21.9	44.0	38.4	38.4	42.2	35.8	35.8
IncremntDel:	2.3	3.6	3.6	11.9	0.4	0.4	14.6	6.3	6.3	16.7	3.5	3.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.3	32.0	32.0	50.3	22.3	22.3	58.6	44.7	44.7	58.9	39.3	39.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	32.0	32.0	50.3	22.3	22.3	58.6	44.7	44.7	58.9	39.3	39.3
HCM2kAvg:	5	15	15	10	9	9	6	10	10	8	10	10

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Union / CMU Residential

Average Delay (sec/veh): 11.7 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	1	0	0	0		0	0	0	1	0		0	0	1!	0	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	0	181	0				0	272	0				0	0	0				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	181	0				0	272	0				0	0	0				0	0	0			
Added Vol:	90	428	0				0	275	9				5	0	48				0	0	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	90	609	0				0	547	9				5	0	48				0	0	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	100	677	0				0	608	10				6	0	53				0	0	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	100	677	0				0	608	10				6	0	53				0	0	0			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				xxxx	xxxx	xxxxx				6.4	xxxx		6.2	xxxxx		xxxx	xxxx	xxxxx			
FollowUpTim:	2.2	xxxx	xxxxx				xxxx	xxxx	xxxxx				3.5	xxxx		3.3	xxxxx		xxxx	xxxx	xxxxx			
Capacity Module:																								
Cnflict Vol:	618	xxxx	xxxxx				xxxx	xxxx	xxxxx				1489	xxxx		613	xxxx		xxxx	xxxx	xxxxx			
Potent Cap.:	962	xxxx	xxxxx				xxxx	xxxx	xxxxx				138	xxxx		496	xxxx		xxxx	xxxx	xxxxx			
Move Cap.:	962	xxxx	xxxxx				xxxx	xxxx	xxxxx				126	xxxx		496	xxxx		xxxx	xxxx	xxxxx			
Volume/Cap:	0.10	xxxx	xxxx				xxxx	xxxx	xxxx				0.04	xxxx		0.11	xxxx		xxxx	xxxx	xxxx			
Level Of Service Module:																								
Queue:	0.3	xxxx	xxxxx				xxxxx	xxxxx	xxxx				xxxxx	xxxxx	xxxx				xxxxx	xxxxx	xxxx			
Stopped Del:	9.2	xxxx	xxxxx				xxxxx	xxxxx	xxxx				xxxxx	xxxxx	xxxx				xxxxx	xxxxx	xxxx			
LOS by Move:	A	*	*				*	*	*				*	*	*				*	*	*			
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	389	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	0.3	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	0.5	xxxxx				xxxxx	xxxx	xxxxx			
Shrd StpDel:	9.2	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	15.9	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	A	*	*				*	*	*				*	C	*				*	*	*			
ApproachDel:	xxxxxx						xxxxxx						15.9						xxxxxx					
ApproachLOS:	*						*						C						*					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Union / CMU Retail North Access

Average Delay (sec/veh): 274.2 Level Of Service: F

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	0	1	0		1	0	0	1	0		0	0	1!	0	0		0	0	1!	0	0	
Volume Module:																								
Base Vol:	0	181	0				0	272	0				0	0	0				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	181	0				0	272	0				0	0	0				0	0	0			
Added Vol:	76	447	6				33	251	42				45	0	60				84	0	29			
PasserByVol:	14	-6	4				5	-11	6				21	0	45				15	0	2			
Initial Fut:	90	622	10				38	512	48				66	0	105				99	0	31			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	100	691	11				42	569	53				73	0	117				110	0	34			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	100	691	11				42	569	53				73	0	117				110	0	34			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				4.1	xxxx	xxxxx				7.1	xxxx		6.2			7.1	xxxx		6.2		
FollowUpTim:	2.2	xxxx	xxxxx				2.2	xxxx	xxxxx				3.5	xxxx		3.3			3.5	xxxx		3.3		
Capacity Module:																								
Cnflict Vol:	622	xxxx	xxxxx				702	xxxx	xxxxx				1594	xxxx		596			1635	xxxx		697		
Potent Cap.:	959	xxxx	xxxxx				895	xxxx	xxxxx				87	xxxx		508			82	xxxx		445		
Move Cap.:	959	xxxx	xxxxx				895	xxxx	xxxxx				71	xxxx		508			56	xxxx		445		
Volume/Cap:	0.10	xxxx	xxxx				0.05	xxxx	xxxx				1.03	xxxx		0.23			1.97	xxxx		0.08		
Level Of Service Module:																								
Queue:	0.3	xxxx	xxxxx				0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
Stopped Del:	9.2	xxxx	xxxxx				9.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx									
LOS by Move:	A	*	*				A	*	*	*	*	*	*	*	*									
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT							
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	151	xxxxx				xxxx		71	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	11.2	xxxxx				xxxxx		13.3	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	216	xxxxx				xxxxx		612	xxxxx		
Shared LOS:	*	*	*				*	*	*				*	F	*				*		F	*		
ApproachDel:	xxxxxx						xxxxxx						215.9						611.9					
ApproachLOS:	*						*						F						F					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #34 Union CMU Retail South Access

Average Delay (sec/veh): 18.4 Level Of Service: C

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1
Volume Module:																				
Base Vol:	0	181	0			0	272	0			0	0	0			0	0	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	181	0			0	272	0			0	0	0			0	0	0		
Added Vol:	0	522	78			0	395	0			0	0	64			0	0	7		
PasserByVol:	0	13	10			0	31	3			0	0	59			0	0	0		
Initial Fut:	0	716	88			0	698	3			0	0	123			0	0	7		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	0	796	98			0	776	3			0	0	137			0	0	8		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Final Vol.:	0	796	98			0	776	3			0	0	137			0	0	8		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			6.2	xxxxx	xxxx			6.2				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			3.3	xxxxx	xxxx			3.3				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			777	xxxx	xxxx			844				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			400	xxxx	xxxx			366				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			400	xxxx	xxxx			366				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			0.34	xxxx	xxxx			0.02				
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			1.5	xxxxx	xxxx			0.1				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			18.6	xxxxx	xxxx			15.0				
LOS by Move:	*	*	*	*	*	*	*	*			C	*	*			C				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT													
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			18.6			15.0										
ApproachLOS:	*			*			C			C										

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Average Delay (sec/veh): 116.7 Level Of Service: F

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	1	0	0	0	0	0	1	0
Volume Module:																				
Base Vol:	0	0	0			0	0	0			0	550	0			0	387	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			0	0	0			0	550	0			0	387	0		
Added Vol:	0	0	0			45	0	84			78	228	0			0	183	5		
PasserByVol:	0	0	0			29	0	36			68	-68	0			0	-37	37		
Initial Fut:	0	0	0			74	0	120			146	710	0			0	533	42		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	0	0	0			82	0	133			162	789	0			0	592	47		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Final Vol.:	0	0	0			82	0	133			162	789	0			0	592	47		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			6.4	xxxx	6.2			4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx			3.5	xxxx	3.3			2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			1729	xxxx	616			639	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx			98	xxxx	494			945	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx			85	xxxx	494			945	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx			0.96	xxxx	0.27			0.17	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*			*	*	*			A	*	*	*	*	*				
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	175	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	11.9	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	197	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	F	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					197.3					xxxxxx					xxxxxx				
ApproachLOS:	*					F					*					*				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #36 Lathrop / CMU Retail Center Access

Average Delay (sec/veh): 13.4 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 0 0 1			0 0 1 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	550	0	0	387	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	550	0	0	387	0
Added Vol:	0	0	0	0	0	0	0	273	0	0	187	75
PasserByVol:	0	0	0	0	0	22	0	-55	0	0	-14	29
Initial Fut:	0	0	0	0	0	22	0	768	0	0	560	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	24	0	853	0	0	622	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	24	0	853	0	0	622	116
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	680	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	454	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	454	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			13.4			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 Lathrop Rd / 5th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.610
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 42 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	1 0	1 0	1	0 1	1 0	1	0 1	1 0	1	1 0
Volume Module:												
Base Vol:	41	41	49	102	38	36	74	537	72	23	313	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	41	49	102	38	36	74	537	72	23	313	112
Added Vol:	0	0	0	0	0	0	0	167	0	0	110	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	41	49	102	38	36	74	704	72	23	423	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	46	46	54	113	42	40	82	782	80	26	470	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	46	54	113	42	40	82	782	80	26	470	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	46	46	54	113	42	40	82	782	80	26	470	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.92	0.92	0.95	1.00	0.85	0.93	0.98	0.83	0.93	0.90	0.90
Lanes:	1.00	0.46	0.54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.58	0.42
Final Sat.:	1805	795	950	1805	1900	1615	1769	1862	1583	1769	2710	718
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.06	0.06	0.02	0.02	0.05	0.42	0.05	0.01	0.17	0.17
Crit Moves:		****		****				****		****		
Green/Cycle:	0.10	0.09	0.09	0.10	0.10	0.10	0.15	0.69	0.69	0.02	0.56	0.56
Volume/Cap:	0.25	0.61	0.61	0.61	0.23	0.25	0.31	0.61	0.07	0.61	0.31	0.31
Uniform Del:	41.6	43.5	43.5	42.9	41.6	41.7	37.8	8.3	5.1	48.4	11.6	11.6
IncremntDel:	0.7	6.5	6.5	5.8	0.6	0.9	0.7	0.9	0.0	23.4	0.1	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.3	50.1	50.1	48.7	42.3	42.6	38.5	9.2	5.1	71.7	11.7	11.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	50.1	50.1	48.7	42.3	42.6	38.5	9.2	5.1	71.7	11.7	11.7
HCM2kAvg:	2	4	4	5	1	1	3	13	1	2	5	5

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 Lathrop Rd / Harlan Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.656
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 46 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	0 1	1	0 1	0 1
Volume Module:												
Base Vol:	122	50	36	109	49	47	112	634	13	19	319	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	50	36	109	49	47	112	634	13	19	319	54
Added Vol:	0	0	0	0	0	0	0	167	0	0	110	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	122	50	36	109	49	47	112	801	13	19	429	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	136	56	40	121	54	52	124	890	14	21	477	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	56	40	121	54	52	124	890	14	21	477	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	136	56	40	121	54	52	124	890	14	21	477	60
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.89	0.89	0.95	0.88	0.88	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.16	0.84	1.00	1.02	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	1967	1416	1805	1708	1638	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.03	0.07	0.03	0.03	0.07	0.48	0.01	0.01	0.26	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.05	0.05	0.11	0.05	0.05	0.16	0.73	0.73	0.02	0.59	0.59
Volume/Cap:	0.66	0.58	0.58	0.58	0.66	0.66	0.44	0.66	0.01	0.66	0.44	0.06
Uniform Del:	42.4	46.6	46.6	42.0	46.7	46.7	37.9	7.0	3.7	48.8	11.5	8.9
IncremntDel:	7.4	5.4	5.4	4.2	9.3	9.3	1.1	1.2	0.0	39.8	0.3	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.8	52.0	52.0	46.2	56.1	56.1	38.9	8.2	3.7	88.6	11.8	8.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	52.0	52.0	46.2	56.1	56.1	38.9	8.2	3.7	88.6	11.8	8.9
HCM2kAvg:	5	2	2	5	3	3	4	15	0	2	8	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #39 I-5 NB / Lathrop Rd

Average Delay (sec/veh): 33.7 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	1	0	2	0 0	0	0	0	1 0
Volume Module:																
Base Vol:	14		3	380	0		0	0	28		533	0	0		240	342
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	14		3	380	0		0	0	28		533	0	0		240	342
Added Vol:	0		0	83	0		0	0	0		83	0	0		55	55
PasserByVol:	0		0	0	0		0	0	0		0	0	0		0	0
Initial Fut:	14		3	463	0		0	0	28		616	0	0		295	397
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	16		3	514	0		0	0	31		684	0	0		328	441
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Final Vol.:	16		3	514	0		0	0	31		684	0	0		328	441
Critical Gap Module:																
Critical Gp:	6.4		6.5	6.2	xxxxx		xxxx	xxxxx	4.1		xxxx	xxxxx	xxxxx		xxxx	xxxxx
FollowUpTim:	3.5		4.0	3.3	xxxxx		xxxx	xxxxx	2.2		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Capacity Module:																
Cnflict Vol:	1295		1516	342	xxxx		xxxx	xxxxx	769		xxxx	xxxxx	xxxx		xxxx	xxxxx
Potent Cap.:	179		119	700	xxxx		xxxx	xxxxx	845		xxxx	xxxxx	xxxx		xxxx	xxxxx
Move Cap.:	174		115	700	xxxx		xxxx	xxxxx	845		xxxx	xxxxx	xxxx		xxxx	xxxxx
Volume/Cap:	0.09		0.03	0.73	xxxx		xxxx	xxxx	0.04		xxxx	xxxx	xxxx		xxxx	xxxx
Level Of Service Module:																
Queue:	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx	0.1		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Stopped Del:	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx	9.4		xxxx	xxxxx	xxxxx		xxxx	xxxxx
LOS by Move:	*		*	*	*		*	*	A		*	*	*		*	*
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx		625	xxxxx	xxxx		xxxx	xxxxx	xxxx		xxxx	xxxxx	xxxx		xxxx	xxxxx
SharedQueue:	xxxxx		9.5	xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Shrd StpDel:	xxxxx		35.1	xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Shared LOS:	*		E	*	*		*	*	*		*	*	*		*	*
ApproachDel:			35.1				xxxxxx				xxxxxx				xxxxxx	
ApproachLOS:			E				*				*				*	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Average Delay (sec/veh): 301.0 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			0 0 0 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	0	0	0	488	9	4	0	74	5	185	76	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	488	9	4	0	74	5	185	76	0
Added Vol:	0	0	0	83	0	0	0	0	0	55	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	571	9	4	0	74	5	240	76	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	634	10	4	0	82	6	267	84	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	634	10	4	0	82	6	267	84	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	703	706	42	xxxx	xxxx	xxxxx	88	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	404	361	1028	xxxx	xxxx	xxxxx	1508	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	349	297	1028	xxxx	xxxx	xxxxx	1508	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	1.82	0.03	0.00	xxxx	xxxx	xxxx	0.18	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	350	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	43.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	421	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			421.4			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 French Camp Rd / Union Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.424
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.1
Optimal Cycle: 24 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	1 0 1	1	0	1 0 0
Volume Module:												
Base Vol:	116	0	28	0	0	0	0	484	159	25	273	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	0	28	0	0	0	0	484	159	25	273	0
Added Vol:	13	0	13	0	0	0	0	0	20	20	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	0	41	0	0	0	0	484	179	45	273	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	143	0	46	0	0	0	0	538	199	50	303	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	0	46	0	0	0	0	538	199	50	303	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	143	0	46	0	0	0	0	538	199	50	303	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.83	1.00	1.00	1.00	1.00	0.98	0.83	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1769	0	1583	0	0	0	0	1862	1583	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.03	0.00	0.00	0.00	0.00	0.29	0.13	0.03	0.16	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.68	0.68	0.07	0.75	0.00
Volume/Cap:	0.42	0.00	0.15	0.00	0.00	0.00	0.00	0.42	0.18	0.42	0.22	0.00
Uniform Del:	35.6	0.0	33.7	0.0	0.0	0.0	0.0	7.1	5.8	44.8	3.8	0.0
IncremntDel:	0.9	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.1	2.4	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	36.4	0.0	33.9	0.0	0.0	0.0	0.0	7.3	5.9	47.3	3.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	0.0	33.9	0.0	0.0	0.0	0.0	7.3	5.9	47.3	3.9	0.0
HCM2kAvg:	4	0	1	0	0	0	0	7	2	2	3	0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Average Delay (sec/veh): 53.9 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0 0	0 0	0	0	0 1!	0 0		1	0 1	0 0		0	0 0	1 0	
Volume Module:																
Base Vol:	0	0	0		0	0	0		0	601	0		0	500	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	0		0	601	0		0	500	0	
Added Vol:	0	0	0		36	0	43		27	143	0		0	193	39	
PasserByVol:	0	0	0		17	0	10		35	-35	0		0	-25	25	
Initial Fut:	0	0	0		53	0	53		62	709	0		0	668	64	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	0		59	0	59		69	788	0		0	742	71	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	0		59	0	59		69	788	0		0	742	71	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.4	xxxx	6.2		4.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	xxxx	3.3		2.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1703	xxxx	778		813	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		102	xxxx	400		814	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		95	xxxx	400		814	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.62	xxxx	0.15		0.08	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			9.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*			A	*	*	*	*	*		
Movement:	LT -	LTR -	RT	LT -	LTR -	RT			LT -	LTR -	RT	LT -	LTR -	RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	154	xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.8	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	79.7	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*	*	F	*			*	*	*	*	*	*		
ApproachDel:	xxxxxx				79.7				xxxxxx			xxxxxx				
ApproachLOS:	*				F				*			*				

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec):	100	Critical Vol./Cap. (X):	1.022
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	51.3
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 3	0 1	2	0 3	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	200	1696	276	72	895	92	390	250	400	248	392	784
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	1696	276	72	895	92	390	250	400	248	392	784
Added Vol:	0	5	24	28	5	7	8	50	0	52	143	38
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	1701	300	100	900	99	398	300	400	300	535	822
User Adj:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	167	1418	250	83	750	83	332	250	333	250	446	685
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	1418	250	83	750	83	332	250	333	250	446	685
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	167	1418	250	83	750	83	332	250	333	250	446	685
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.16	0.02	0.15	0.05	0.19	0.07	0.21	0.14	0.13	0.43
Crit Moves:		****		****			****					****
Green/Cycle:	0.07	0.27	0.54	0.02	0.22	0.41	0.18	0.31	0.39	0.27	0.40	0.42
Volume/Cap:	0.66	1.02	0.29	1.02	0.66	0.13	1.02	0.23	0.55	0.52	0.32	1.02
Uniform Del:	45.1	36.4	12.3	48.8	35.4	18.6	40.8	25.5	24.0	30.9	20.6	28.8
IncremntDel:	6.4	29.8	0.2	105.8	1.5	0.1	55.6	0.1	1.0	1.0	0.1	40.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.5	66.2	12.5	154.6	36.9	18.7	96.5	25.6	25.0	31.9	20.7	69.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.5	66.2	12.5	154.6	36.9	18.7	96.5	25.6	25.0	31.9	20.7	69.2
HCM2kAvg:	4	21	4	4	8	2	17	3	8	7	5	29

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Lathrop / Sr Housing

Average Delay (sec/veh):	18.6	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	0	0 0	0	0 1	0 0	2	0 0	0 0	1	1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	837	0	0	1342	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	837	0	0	1342	0
Added Vol:	0	0	0	0	0	31	0	114	0	0	210	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	31	0	951	0	0	1552	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	34	0	1057	0	0	1724	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	34	0	1057	0	0	1724	13
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	869	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	299	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	299	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	18.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	C	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			18.6			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec): 100 Critical Vol./Cap. (X): 0.970
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 51.6
Optimal Cycle: 156 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:			Ovl				Ovl				Ovl				Ovl	
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	2	0 1	1	0	1	1 0
Volume Module:																
Base Vol:	350	204	229		128	233	34		22	565	259		374	962	138	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	350	204	229		128	233	34		22	565	259		374	962	138	
Added Vol:	15	74	0		98	154	185		62	19	8		2	21	28	
PasserByVol:	6	-3	-3		0	3	-2		-3	-11	-5		-4	-7	5	
Initial Fut:	371	275	226		226	390	217		81	573	262		372	976	171	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	412	306	251		251	433	241		90	637	291		413	1084	190	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	412	306	251		251	433	241		90	637	291		413	1084	190	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	412	306	251		251	433	241		90	637	291		413	1084	190	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.87	0.87		0.93	0.88	0.88		0.93	0.93	0.83		0.93	0.91	0.91	
Lanes:	1.00	1.10	0.90		1.00	1.29	0.71		1.00	2.00	1.00		1.00	1.70	0.30	
Final Sat.:	1769	1810	1487		1769	2150	1196		1769	3538	1583		1769	2944	516	
Capacity Analysis Module:																
Vol/Sat:	0.23	0.17	0.17		0.14	0.20	0.20		0.05	0.18	0.18		0.23	0.37	0.37	
Crit Moves:	****					****			****					****		
Green/Cycle:	0.24	0.24	0.49		0.20	0.21	0.26		0.05	0.19	0.43		0.24	0.38	0.58	
Volume/Cap:	0.97	0.69	0.35		0.69	0.97	0.77		0.97	0.96	0.43		0.96	0.97	0.63	
Uniform Del:	37.6	34.4	15.8		36.9	39.3	34.3		47.3	40.2	20.0		37.3	30.5	13.7	
IncremntDel:	35.8	2.6	0.1		5.7	26.8	4.4		83.4	24.7	0.4		32.4	18.1	0.6	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	73.4	37.1	15.9		42.6	66.1	38.7		130.7	64.9	20.5		69.7	48.6	14.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	73.4	37.1	15.9		42.6	66.1	38.7		130.7	64.9	20.5		69.7	48.6	14.3	
HCM2kAvg:	19	9	5		9	15	11		6	14	6		18	25	13	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Average Delay (sec/veh): 15.3 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:			Include				Include				Include				Include	
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	364	0		0	395	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	364	0		0	395	0		0	0	0		0	0	0	
Added Vol:	17	62	46		11	68	2		6	0	63		135	0	33	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	17	426	46		11	463	2		6	0	63		135	0	33	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	19	473	51		12	514	2		7	0	70		150	0	37	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	19	473	51		12	514	2		7	0	70		150	0	37	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.5	xxxx	6.9		7.5	xxxx	6.9	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	xxxx	3.3		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	517	xxxx	xxxxx		524	xxxx	xxxxx		814	xxxx	258		818	xxxx	262	
Potent Cap.:	1045	xxxx	xxxxx		1038	xxxx	xxxxx		273	xxxx	747		271	xxxx	742	
Move Cap.:	1045	xxxx	xxxxx		1038	xxxx	xxxxx		254	xxxx	747		240	xxxx	742	
Total Cap:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		426	0	xxxxx		416	0	xxxxx	
Volume/Cap:	0.02	xxxx	xxxx		0.01	xxxx	xxxx		0.02	xxxx	0.09		0.36	xxxx	0.05	
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx		0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	8.5	xxxx	xxxxx		8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	701	xxxxx		xxxx	455	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	0.4	xxxxx		xxxxx	2.0	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	10.8	xxxxx		xxxxx	18.3	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	B	*		*	C	*	
ApproachDel:	xxxxxx				xxxxxx				10.8				18.3			
ApproachLOS:	*				*				B				C			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Union / Sr Housing North Entr

Average Delay (sec/veh): 9.8 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1	0 2	0 0	0	0 1	1 0	0	0 1!	0 0	0	0 0	0 0
Volume Module:												
Base Vol:	0	364	0	0	395	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	364	0	0	395	0	0	0	0	0	0	0
Added Vol:	20	82	0	0	28	1	3	0	52	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	446	0	0	423	1	3	0	52	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	22	496	0	0	470	1	3	0	58	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	22	496	0	0	470	1	3	0	58	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	471	xxxx	xxxxx	xxxx	xxxx	xxxxx	763	xxxx	236	xxxx	xxxx	xxxxx
Potent Cap.:	1087	xxxx	xxxxx	xxxx	xxxx	xxxxx	345	xxxx	772	xxxx	xxxx	xxxxx
Move Cap.:	1087	xxxx	xxxxx	xxxx	xxxx	xxxxx	339	xxxx	772	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	452	0	xxxxx	0	0	xxxxx
Volume/Cap:	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	0.07	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	743	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.3	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			10.3			xxxxxx		
ApproachLOS:	*			*			B			*		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Airport / Sr Housing

Average Delay (sec/veh): 698.0 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0 2	1 0	1	0 3	0 0	0	0 0	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	0	2869	0	0	1059	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2869	0	0	1059	0	0	0	0	0	0	0
Added Vol:	0	37	14	6	12	0	0	0	0	28	0	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2906	14	6	1071	0	0	0	0	28	0	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	3229	16	7	1190	0	0	0	0	31	0	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	3229	16	7	1190	0	0	0	0	31	0	20
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	3244	xxxx	xxxxx	xxxx	xxxx	xxxxx	3647	xxxx	1084
Potent Cap.:	xxxx	xxxx	xxxxx	90	xxxx	xxxxx	xxxx	xxxx	xxxxx	4	xxxx	216
Move Cap.:	xxxx	xxxx	xxxxx	90	xxxx	xxxxx	xxxx	xxxx	xxxxx	4	xxxx	216
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	725	0	xxxxx	16	0	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	1.89	xxxx	0.09
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	48.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	E	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	26	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.2	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	783	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			782.7		
ApproachLOS:	*			*			*			F		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Union / Single Fam South

Average Delay (sec/veh): 14.7 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1	1	0		1	0	2	0	0		0	0	0	0	0		0	0	1!	0	0	
Volume Module:																								
Base Vol:	0	364		0			0	395		0			0		0		0		0		0		0	
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0	364		0			0	395		0			0		0		0		0		0		0	
Added Vol:	0	98		37			9	257		0			0		0		0		106		0		27	
PasserByVol:	0	0		0			0	0		0			0		0		0		0		0		0	
Initial Fut:	0	462		37			9	652		0			0		0		0		106		0		27	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90	0.90		0.90			0.90	0.90		0.90			0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	0	513		41			10	724		0			0		0		0		118		0		30	
Reduct Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
Final Vol.:	0	513		41			10	724		0			0		0		0		118		0		30	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.8	xxxx			6.9					
FollowUpTim:	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx			3.3					
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx				554	xxxx	xxxxx	xxxx	xxxx	xxxxx			916	xxxx			277					
Potent Cap.:	xxxx	xxxx	xxxxx				1012	xxxx	xxxxx	xxxx	xxxx	xxxxx			275	xxxx			726					
Move Cap.:	xxxx	xxxx	xxxxx				1012	xxxx	xxxxx	xxxx	xxxx	xxxxx			273	xxxx			726					
Total Cap:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx		0	0 xxxxx			465		0		xxxxx					
Volume/Cap:	xxxx	xxxx	xxxx				0.01	xxxx	xxxx	xxxx	xxxx	xxxx			0.25	xxxx			0.04					
Level Of Service Module:																								
Queue:	xxxxx	xxxx	xxxxx				0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx				8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*				A	*	*	*	*	*	*	*	*	*	*	*						
Movement:	LT - LTR - RT						LT - LTR - RT						LT - LTR - RT						LT - LTR - RT					
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	502	xxxxx						
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx						
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.1	xxxxx							
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	C	*											
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.1														
ApproachLOS:	*			*			*			C														

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Union / Lovelace

Average Delay (sec/veh): 10.1 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	1	1	0	0		0	0	1	1	0		0	0	1!	0	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	82	289		0			0	334		16			14		0		69		0		0		0	
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	82	289		0			0	334		16			14		0		69		0		0		0	
Added Vol:	56	29		0			0	10		0			0		0		19		0		0		0	
PasserByVol:	0	0		0			0	0		0			0		0		0		0		0		0	
Initial Fut:	138	318		0			0	344		16			14		0		88		0		0		0	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90	0.90		0.90			0.90	0.90		0.90			0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	153	353		0			0	382		18			16		0		98		0		0		0	
Reduct Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
Final Vol.:	153	353		0			0	382		18			16		0		98		0		0		0	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.8	xxxx		6.9	xxxxx	xxxx	xxxxx									
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx		3.3	xxxxx	xxxx	xxxxx									
Capacity Module:																								
Cnflict Vol:	400	xxxx	xxxxx	xxxx	xxxx	xxxxx			874	xxxx		200	xxxx	xxxx	xxxxx									
Potent Cap.:	1155	xxxx	xxxxx	xxxx	xxxx	xxxxx			293	xxxx		814	xxxx	xxxx	xxxxx									
Move Cap.:	1155	xxxx	xxxxx	xxxx	xxxx	xxxxx			260	xxxx		814	xxxx	xxxx	xxxxx									
Volume/Cap:	0.13	xxxx	xxxx	xxxx	xxxx	xxxx			0.06	xxxx		0.12	xxxx	xxxx	xxxx									
Level Of Service Module:																								
Queue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Stopped Del:	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*												
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT														
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	630	xxxxx	xxxx	xxxx	xxxxx												
SharedQueue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx												
Shrd StpDel:	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	12.0	xxxxx	xxxxx	xxxx	xxxxx												
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*												
ApproachDel:	xxxxxx			xxxxxx			12.0			xxxxxx														
ApproachLOS:	*			*			B			*														

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.953
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 45.9
Optimal Cycle: 141 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 1	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	197	200	45	94	132	305	407	385	130	175	972	269
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	197	200	45	94	132	305	407	385	130	175	972	269
Added Vol:	17	0	0	0	0	16	25	51	36	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	214	200	45	94	132	321	432	436	166	175	990	269
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	238	222	50	104	147	357	480	484	184	194	1100	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	222	50	104	147	357	480	484	184	194	1100	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	238	222	50	104	147	357	480	484	184	194	1100	299
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.92	0.92	0.95	0.95	0.85	0.95	0.91	0.91	0.95	0.92	0.92
Lanes:	1.00	1.63	0.37	1.00	2.00	1.00	1.00	1.45	0.55	1.00	1.57	0.43
Final Sat.:	1805	2864	644	1805	3610	1615	1805	2507	955	1805	2748	747
Capacity Analysis Module:												
Vol/Sat:	0.13	0.08	0.08	0.06	0.04	0.22	0.27	0.19	0.19	0.11	0.40	0.40
Crit Moves:	****				****		****				****	
Green/Cycle:	0.14	0.10	0.10	0.08	0.04	0.32	0.28	0.45	0.45	0.25	0.42	0.42
Volume/Cap:	0.95	0.75	0.75	0.75	0.95	0.69	0.95	0.43	0.43	0.43	0.95	0.95
Uniform Del:	42.8	43.6	43.6	45.2	47.8	29.5	35.4	18.8	18.8	31.5	28.0	28.0
IncremntDel:	43.9	8.4	8.4	19.9	58.3	3.8	28.5	0.2	0.2	0.7	13.9	13.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	86.7	51.9	51.9	65.1	106	33.4	63.9	19.0	19.0	32.2	41.9	41.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.7	51.9	51.9	65.1	106	33.4	63.9	19.0	19.0	32.2	41.9	41.9
HCM2kAvg:	12	6	6	5	5	11	20	7	7	6	26	26

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Lathrop / London

Cycle (sec): 100 Critical Vol./Cap. (X): 0.860
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 29.3
Optimal Cycle: 86 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1!	0 0	0	0 0	0 0	0	0 1	1 0	1	0 2	0 0
Volume Module:												
Base Vol:	239	0	267	0	0	0	0	570	26	154	1194	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	0	267	0	0	0	0	570	26	154	1194	0
Added Vol:	0	0	12	0	0	0	0	102	0	8	233	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	0	279	0	0	0	0	672	26	162	1427	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	266	0	310	0	0	0	0	747	29	180	1586	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	0	310	0	0	0	0	747	29	180	1586	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	266	0	310	0	0	0	0	747	29	180	1586	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	1.00
Lanes:	0.46	0.00	0.54	0.00	0.00	0.00	0.00	1.93	0.07	1.00	2.00	0.00
Final Sat.:	794	0	927	0	0	0	0	3386	131	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.33	0.00	0.33	0.00	0.00	0.00	0.00	0.22	0.22	0.10	0.45	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.39	0.00	0.39	0.00	0.00	0.00	0.00	0.36	0.36	0.16	0.52	0.00
Volume/Cap:	0.86	0.00	0.86	0.00	0.00	0.00	0.00	0.62	0.62	0.62	0.86	0.00
Uniform Del:	28.1	0.0	28.1	0.0	0.0	0.0	0.0	26.6	26.6	38.9	20.8	0.0
IncremntDel:	10.9	0.0	10.9	0.0	0.0	0.0	0.0	0.9	0.9	4.0	4.4	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	39.0	0.0	39.0	0.0	0.0	0.0	0.0	27.5	27.5	42.9	25.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	0.0	39.0	0.0	0.0	0.0	0.0	27.5	27.5	42.9	25.1	0.0
HCM2kAvg:	20	0	20	0	0	0	0	10	10	6	24	0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Average Delay (sec/veh): >999 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	1	1 0	1	0	2	0 0
Volume Module:																
Base Vol:	308		0	79	0	0	0		0	962	444		74	610	0	
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	308		0	79	0	0	0		0	962	444		74	610	0	
Added Vol:	0		0	6	0	0	0		0	52	0		12	137	0	
PasserByVol:	0		0	0	0	0	0		0	0	0		0	0	0	
Initial Fut:	308		0	85	0	0	0		0	1014	444		86	747	0	
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	342		0	94	0	0	0		0	1127	493		96	830	0	
Reduct Vol:	0		0	0	0	0	0		0	0	0		0	0	0	
Final Vol.:	342		0	94	0	0	0		0	1127	493		96	830	0	
Critical Gap Module:																
Critical Gp:	6.8	xxxx		6.9	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1979	xxxx		810	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		1620	xxxx	xxxxx	
Potent Cap.:	55	xxxx		327	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		398	xxxx	xxxxx	
Move Cap.:	45	xxxx		327	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		398	xxxx	xxxxx	
Volume/Cap:	7.62	xxxx		0.29	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		0.24	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx		xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.9	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx		xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		16.9	xxxx	xxxxx	
LOS by Move:	*	*		*	*	*	*		*	*	*		C	*	*	
Movement:	LT -	LTR -		RT	LT -	LTR -		RT	LT -	LTR -		RT	LT -	LTR -		RT
Shared Cap.:	xxxx	55		xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	50.9		xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	3252		xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	F		*	*	*	*		*	*	*		*	*	*	
ApproachDel:		3252.1				xxxxxx				xxxxxx				xxxxxx		
ApproachLOS:		F				*				*				*		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.979
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 50.9
Optimal Cycle: 164 Level Of Service: D

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	3	0	1	2	0	3	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	500	1079		200		97	766		91		393	500		300		600	500		399	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	500	1079		200		97	766		91		393	500		300		600	500		399	
Added Vol:	0	18		0		2	39		14		7	0		0		0	0		1	
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0		0	
Initial Fut:	500	1097		200		99	805		105		400	500		300		600	500		400	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	556	1219		222		110	894		117		444	556		333		667	556		444	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	556	1219		222		110	894		117		444	556		333		667	556		444	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	556	1219		222		110	894		117		444	556		333		667	556		444	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.90	0.89		0.83		0.90	0.89		0.83		0.95	0.95		0.85		0.95	0.95		0.85	
Lanes:	2.00	3.00		1.00		2.00	3.00		1.00		1.00	2.00		1.00		1.00	2.00		1.00	
Final Sat.:	3432	5083		1583		3432	5083		1583		1805	3610		1615		1805	3610		1615	
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.24		0.14		0.03	0.18		0.07		0.25	0.15		0.21		0.37	0.15		0.28	
Crit Moves:	****						****					****				****				
Green/Cycle:	0.17	0.30		0.68		0.04	0.18		0.45		0.27	0.16		0.32		0.38	0.27		0.31	
Volume/Cap:	0.98	0.79		0.21		0.79	0.98		0.16		0.92	0.98		0.64		0.98	0.58		0.90	
Uniform Del:	41.6	31.8		5.9		47.5	40.8		16.4		35.4	42.0		28.9		30.7	31.9		33.2	
IncremntDel:	32.2	2.8		0.1		25.0	24.5		0.1		21.9	32.2		2.7		29.0	0.9		19.0	
Delay Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Delay/Veh:	73.7	34.6		6.0		72.6	65.3		16.5		57.4	74.2		31.6		59.8	32.8		52.2	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	73.7	34.6		6.0		72.6	65.3		16.5		57.4	74.2		31.6		59.8	32.8		52.2	
HCM2kAvg:	14	13		3		3	14		2		18	13		10		28	8		17	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Airport / Yosemite

Cycle (sec):	100	Critical Vol./Cap. (X):	1.205
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	87.8
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	100	1385	50	494	1580	493	595	500	50	200	600	798
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	1385	50	494	1580	493	595	500	50	200	600	798
Added Vol:	0	14	2	5	25	9	3	0	0	8	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	1399	52	499	1605	502	598	500	50	208	600	799
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	111	1554	58	554	1783	558	664	556	56	231	667	888
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	1554	58	554	1783	558	664	556	56	231	667	888
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	111	1554	58	554	1783	558	664	556	56	231	667	888
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.04	0.16	0.35	0.35	0.19	0.11	0.04	0.07	0.13	0.56
Crit Moves:		****		****			****					****
Green/Cycle:	0.03	0.25	0.44	0.13	0.36	0.52	0.16	0.30	0.34	0.19	0.33	0.47
Volume/Cap:	0.99	1.20	0.08	1.20	0.99	0.68	1.20	0.36	0.10	0.36	0.40	1.20
Uniform Del:	48.3	37.3	16.2	43.3	32.0	18.1	42.0	27.2	22.8	35.4	25.7	26.7
IncremntDel:	80.9	99.8	0.1	111.3	18.3	2.4	108.5	0.1	0.1	0.3	0.2	104.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	129.2	137	16.2	154.6	50.3	20.5	150.5	27.3	22.8	35.7	25.9	131.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	129.2	137	16.2	154.6	50.3	20.5	150.5	27.3	22.8	35.7	25.9	131.6
HCM2kAvg:	4	30	1	18	25	14	21	5	1	3	5	48

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Union / Louise

Cycle (sec):	100	Critical Vol./Cap. (X):	1.022
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	54.0
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	300	537	200	186	687	286	49	400	400	300	900	189
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	537	200	186	687	286	49	400	400	300	900	189
Added Vol:	0	54	0	15	112	24	11	0	0	0	0	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	591	200	201	799	310	60	400	400	300	900	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	333	657	222	223	888	344	67	444	444	333	1000	222
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	657	222	223	888	344	67	444	444	333	1000	222
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	333	657	222	223	888	344	67	444	444	333	1000	222
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.14	0.13	0.25	0.22	0.04	0.12	0.28	0.18	0.28	0.14
Crit Moves:	****				****				****	****		
Green/Cycle:	0.18	0.26	0.26	0.17	0.25	0.25	0.05	0.27	0.27	0.18	0.40	0.40
Volume/Cap:	1.02	0.73	0.55	0.73	1.02	0.89	0.70	0.46	1.02	1.02	0.70	0.35
Uniform Del:	40.8	34.0	32.2	39.0	37.7	36.4	46.6	30.4	36.5	41.0	25.1	21.1
IncremntDel:	55.5	3.0	1.6	8.3	36.2	20.9	20.3	0.3	48.8	55.5	1.5	0.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	96.3	36.9	33.8	47.4	73.9	57.3	66.8	30.8	85.4	96.5	26.7	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.3	36.9	33.8	47.4	73.9	57.3	66.8	30.8	85.4	96.5	26.7	21.4
HCM2kAvg:	17	11	7	8	20	14	4	6	20	17	14	5

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Union / CMU Residential

Average Delay (sec/veh): 14.3 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	2	0 0	0	0	1	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	364	0		0	395	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	364	0		0	395	0		0	0	0		0	0	0	
Added Vol:	22	122	0		0	360	3		13	0	87		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	22	486	0		0	755	3		13	0	87		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	24	540	0		0	839	3		14	0	97		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	24	540	0		0	839	3		14	0	97		0	0	0	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx xxxx xxxxx					6.8	xxxx		6.9	xxxxx	xxxx	xxxxx	
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx xxxx xxxxx					3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	842	xxxx	xxxxx	xxxx xxxx xxxxx					1159	xxxx		421	xxxx	xxxx	xxxxx	
Potent Cap.:	789	xxxx	xxxxx	xxxx xxxx xxxxx					192	xxxx		587	xxxx	xxxx	xxxxx	
Move Cap.:	789	xxxx	xxxxx	xxxx xxxx xxxxx					187	xxxx		587	xxxx	xxxx	xxxxx	
Volume/Cap:	0.03	xxxx	xxxx	xxxx xxxx xxxx					0.08	xxxx		0.16	xxxx	xxxx	xxxx	
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx	xxxxx xxxx xxxxx					xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Stopped Del:	9.7	xxxx	xxxxx	xxxxx xxxx xxxxx					xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
LOS by Move:	A	*	*	* * *					*	*	*	*	*	*		
Movement:	LT - LTR - RT								LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx xxxx xxxxx					xxxx	459	xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx xxxx xxxxx					xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx xxxx xxxxx					xxxxx	15.3	xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*	* * *					*	C	*	*	*	*		
ApproachDel:	xxxxxx			xxxxxx					15.3			xxxxxx				
ApproachLOS:	*			*					C			*				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Union / CMU Retail North Access

Average Delay (sec/veh): 18.8 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	364	0		0	395	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	364	0		0	395	0		0	0	0		0	0	0	
Added Vol:	22	118	1		20	402	26		17	0	10		15	0	10	
PasserByVol:	3	0	2		3	-7	4		1	0	3		2	0	1	
Initial Fut:	25	482	3		23	790	30		18	0	13		17	0	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	28	536	3		26	878	33		20	0	14		19	0	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	28	536	3		26	878	33		20	0	14		19	0	12	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.5	xxxx		6.9	7.5	xxxx		6.9
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	xxxx		3.3	3.5	xxxx		3.3
Capacity Module:																
Cnflict Vol:	911	xxxx	xxxxx		539	xxxx	xxxxx		1269	xxxx		456	1083	xxxx		269
Potent Cap.:	743	xxxx	xxxxx		1026	xxxx	xxxxx		127	xxxx		557	174	xxxx		735
Move Cap.:	743	xxxx	xxxxx		1026	xxxx	xxxxx		119	xxxx		557	162	xxxx		735
Volume/Cap:	0.04	xxxx	xxxx		0.02	xxxx	xxxx		0.17	xxxx		0.03	0.12	xxxx		0.02
Level Of Service Module:																
Queue:	0.1	xxxx	xxxxx		0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	10.0	xxxx	xxxxx		8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	B	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	178	xxxxx	xxxx	233	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	0.7	xxxxx	xxxxx	0.5	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	30.0	xxxxx	xxxxx	22.8	xxxxx		
Shared LOS:	*	*	*		*	*	*		*	D	*	*	C	*		
ApproachDel:	xxxxxx				xxxxxx				30.0				22.8			
ApproachLOS:	*				*				D				C			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #34 Union CMU Retail South Access

Average Delay (sec/veh): 11.4 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1	1 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 1
Volume Module:																
Base Vol:	0	364	0		0	395	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	364	0		0	395	0		0	0	0		0	0	0	
Added Vol:	0	138	25		0	427	0		0	0	10		0	0	3	
PasserByVol:	0	5	5		0	-4	3		0	0	6		0	0	0	
Initial Fut:	0	507	30		0	818	3		0	0	16		0	0	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	563	33		0	909	3		0	0	18		0	0	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	563	33		0	909	3		0	0	18		0	0	3	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	6.9		xxxxx	xxxx	6.9	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	3.3		xxxxx	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	456		xxxx	xxxx	298	
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	557		xxxx	xxxx	704	
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	557		xxxx	xxxx	704	
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	0.03		xxxx	xxxx	0.00	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	0.1		xxxxx	xxxx	0.0	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	11.7		xxxxx	xxxx	10.1	
LOS by Move:	*	*	*		*	*	*		*	*	B		*	*	B	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				11.7				10.1			
ApproachLOS:	*				*				B				B			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Average Delay (sec/veh): 47.7 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	0	0	1!	0 0	1	0	2	0 0	0	0	1	1 0
Volume Module:																
Base Vol:	0	0	0		0	0	0		0	837	0		0	1342	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	0		0	837	0		0	1342	0	
Added Vol:	0	0	0		6	0	18		28	82	0		0	201	1	
PasserByVol:	0	0	0		5	0	17		24	-24	0		0	-15	0	
Initial Fut:	0	0	0		11	0	35		52	895	0		0	1528	1	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	0		12	0	39		58	994	0		0	1698	1	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	0		12	0	39		58	994	0		0	1698	1	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.8	xxxx	6.9		4.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	xxxx	3.3		2.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		2311	xxxx	849		1699	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		33	xxxx	308		371	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		29	xxxx	308		371	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.42	xxxx	0.13		0.16	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		16.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		C	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	93	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	2.5	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	83.0	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	F	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				83.0				xxxxxx				xxxxxx			
ApproachLOS:	*				F				*				*			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #36 Lathrop / CMU Retail Center Access

Average Delay (sec/veh): 17.4 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	0	0	0	0 1	0	0	2	0 0	0	0	1	1 0
Volume Module:																
Base Vol:	0	0	0		0	0	0		0	837	0		0	1342	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	0		0	837	0		0	1342	0	
Added Vol:	0	0	0		0	0	0		0	89	0		0	202	19	
PasserByVol:	0	0	0		0	0	6		0	-38	0		0	-4	13	
Initial Fut:	0	0	0		0	0	6		0	888	0		0	1540	32	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	0		0	0	7		0	987	0		0	1711	36	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	0		0	0	7		0	987	0		0	1711	36	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	873		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	297		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	297		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	0.02		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	0.1		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	17.4		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	C		*	*	*		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				17.4				xxxxxx				xxxxxx			
ApproachLOS:	*				C				*				*			

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 Lathrop Rd / Harlan Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.989
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 42.0
Optimal Cycle: 176 Level Of Service: D

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	1	0	1	0	1	0	1	1	2	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	660	40	55			125	90	815			205	865	295			40	2665	50		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	660	40	55			125	90	815			205	865	295			40	2665	50		
Added Vol:	0	0	0			0	0	0			0	52	0			0	137	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	660	40	55			125	90	815			205	917	295			40	2802	50		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	660	40	55			125	90	815			205	917	295			40	2802	50		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	660	40	55			125	90	815			205	917	295			40	2802	50		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Final Vol.:	660	40	55			125	90	815			205	917	295			40	2802	50		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.87	0.90	0.90			0.95	0.82	0.72			0.92	0.91	0.85			0.95	0.91	0.85		
Lanes:	3.00	0.42	0.58			1.00	1.00	3.00			2.00	3.00	1.00			1.00	3.00	1.00		
Final Sat.:	4977	720	990			1805	1561	4122			3502	5187	1615			1805	5187	1615		
Capacity Analysis Module:																				
Vol/Sat:	0.13	0.06	0.06			0.07	0.06	0.20			0.06	0.18	0.18			0.02	0.54	0.03		
Crit Moves:	****							****	****								****			
Green/Cycle:	0.13	0.13	0.13			0.14	0.14	0.20			0.06	0.54	0.67			0.07	0.55	0.69		
Volume/Cap:	0.99	0.41	0.41			0.49	0.41	0.99			0.99	0.33	0.27			0.33	0.99	0.05		
Uniform Del:	43.2	39.7	39.7			39.7	39.2	39.9			47.0	13.0	6.6			44.5	22.4	5.1		
IncremntDel:	29.8	0.2	0.2			1.5	0.1	27.0			59.3	0.1	0.1			1.6	14.4	0.0		
Delay Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Delay/Veh:	73.0	39.9	39.9			41.2	39.3	66.9			106.3	13.0	6.7			46.1	36.8	5.1		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	73.0	39.9	39.9			41.2	39.3	66.9			106.3	13.0	6.7			46.1	36.8	5.1		
HCM2kAvg:	12	3	3			4	3	13			7	5	4			2	36	0		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #39 I-5 NB / Lathrop Rd

Cycle (sec):	100	Critical Vol./Cap. (X):	0.988
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	29.8
Optimal Cycle:	180	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1!	0 2	0	0 0	0 0	2	0 3	0 0	0	0 3	0 2
Volume Module:												
Base Vol:	330	0	350	0	0	0	490	1095	0	0	3215	815
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	330	0	350	0	0	0	490	1095	0	0	3215	815
Added Vol:	0	0	26	0	0	0	0	26	0	0	69	69
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	330	0	376	0	0	0	490	1121	0	0	3284	884
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	330	0	376	0	0	0	490	1121	0	0	3284	884
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	330	0	376	0	0	0	490	1121	0	0	3284	884
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	330	0	376	0	0	0	490	1121	0	0	3284	884
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.79	1.00	1.00	1.00	0.92	0.91	1.00	1.00	0.91	0.75
Lanes:	1.54	0.00	2.46	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	2.00
Final Sat.:	2624	0	3702	0	0	0	3502	5187	0	0	5187	2842
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.10	0.00	0.00	0.00	0.14	0.22	0.00	0.00	0.63	0.31
Crit Moves:	****						****				****	
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.14	0.78	0.00	0.00	0.64	0.64
Volume/Cap:	0.99	0.00	0.80	0.00	0.00	0.00	0.99	0.28	0.00	0.00	0.99	0.49
Uniform Del:	43.6	0.0	42.4	0.0	0.0	0.0	42.8	3.0	0.0	0.0	17.6	9.4
IncremntDel:	30.5	0.0	5.1	0.0	0.0	0.0	37.1	0.0	0.0	0.0	12.8	0.2
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	74.0	0.0	47.5	0.0	0.0	0.0	79.9	3.0	0.0	0.0	30.4	9.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.0	0.0	47.5	0.0	0.0	0.0	79.9	3.0	0.0	0.0	30.4	9.6
HCM2kAvg:	11	0	7	0	0	0	13	3	0	0	41	7

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Cycle (sec):	100	Critical Vol./Cap. (X):	0.833
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	25.4
Optimal Cycle:	77	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	2	0 1!	0 1	0	0 4	0 1	2	0 4	0 0
Volume Module:												
Base Vol:	0	0	0	715	0	520	0	870	170	1445	2100	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	715	0	520	0	870	170	1445	2100	0
Added Vol:	0	0	0	26	0	0	0	0	0	69	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	741	0	520	0	870	170	1514	2100	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	741	0	520	0	870	170	1514	2100	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	741	0	520	0	870	170	1514	2100	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	741	0	520	0	870	170	1514	2100	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.88	1.00	0.91	1.00	0.91	0.85	0.92	0.91	1.00
Lanes:	0.00	0.00	0.00	2.49	0.00	1.51	0.00	4.00	1.00	2.00	4.00	0.00
Final Sat.:	0	0	0	4188	0	2605	0	6916	1615	3502	6916	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.18	0.00	0.20	0.00	0.13	0.11	0.43	0.30	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.24	0.00	0.24	0.00	0.15	0.15	0.52	0.67	0.00
Volume/Cap:	0.00	0.00	0.00	0.74	0.00	0.83	0.00	0.83	0.70	0.83	0.45	0.00
Uniform Del:	0.0	0.0	0.0	35.1	0.0	36.1	0.0	41.2	40.3	20.4	7.8	0.0
IncremntDel:	0.0	0.0	0.0	1.7	0.0	4.1	0.0	5.8	8.5	3.5	0.1	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	36.8	0.0	40.2	0.0	47.1	48.8	23.8	7.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.8	0.0	40.2	0.0	47.1	48.8	23.8	7.9	0.0
HCM2kAvg:	0	0	0	10	0	13	0	9	6	23	8	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 French Camp Rd / Union Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.750
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	2	0	1	1	0	2	0	0
Volume Module:																			
Base Vol:	334	0	24	0	0	0	0	778	329	70	1490	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	334	0	24	0	0	0	0	778	329	70	1490	0
Added Vol:	14	0	14	0	0	0	0	0	5	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	348	0	38	0	0	0	0	778	334	75	1490	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	387	0	42	0	0	0	0	864	371	83	1656	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	0	42	0	0	0	0	864	371	83	1656	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	387	0	42	0	0	0	0	864	371	83	1656	0
Saturation Flow Module:																			
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	3538	1583	1769	3538	0
Capacity Analysis Module:																			
Vol/Sat:	0.21	0.00	0.03	0.00	0.00	0.00	0.00	0.24	0.23	0.05	0.47	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.52	0.52	0.10	0.62	0.00
Volume/Cap:	0.75	0.00	0.09	0.00	0.00	0.00	0.00	0.47	0.45	0.47	0.75	0.00
Uniform Del:	32.5	0.0	26.2	0.0	0.0	0.0	0.0	15.0	14.8	42.4	13.3	0.0
IncremntDel:	6.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.4	1.9	1.5	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	38.5	0.0	26.3	0.0	0.0	0.0	0.0	15.2	15.2	44.3	14.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.5	0.0	26.3	0.0	0.0	0.0	0.0	15.2	15.2	44.3	14.7	0.0
HCM2kAvg:	13	0	1	0	0	0	0	8	7	3	19	0

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Average Delay (sec/veh): 42.7 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																					
Base Vol:	0	0	0	0	0	0	0	922	0	0	1474	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	922	0	0	1474	0
Added Vol:	0	0	0	4	0	8	9	108	0	0	43	8
PasserByVol:	0	0	0	3	0	9	7	-7	0	0	-20	20
Initial Fut:	0	0	0	7	0	17	16	1023	0	0	1497	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	8	0	19	18	1137	0	0	1663	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	8	0	19	18	1137	0	0	1663	31
Critical Gap Module:																					
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:																					
Cnflict Vol:	xxxx	xxxx	xxxxx	2283	xxxx	847	1694	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	34	xxxx	309	372	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	33	xxxx	309	372	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.24	xxxx	0.06	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:																					
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	C	*	*	*	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	90	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	61.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			61.0			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Lathrop / Airport

Cycle (sec): 100 Critical Vol./Cap. (X): 0.967
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 45.6
Optimal Cycle: 153 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 3	0 1	2	0 3	0 1	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	400	878	212	749	1697	395	63	329	200	232	190	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	400	878	212	749	1697	395	63	329	200	232	190	82
Added Vol:	0	18	80	57	3	4	31	173	0	74	131	30
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	400	896	292	806	1700	399	94	502	200	306	321	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	444	996	324	896	1889	443	104	558	222	340	357	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	444	996	324	896	1889	443	104	558	222	340	357	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	444	996	324	896	1889	443	104	558	222	340	357	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.93	0.93	0.83	0.93	0.93	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	1769	3538	1583	1769	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.20	0.20	0.26	0.37	0.28	0.06	0.16	0.14	0.19	0.10	0.08
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.22	0.42	0.30	0.38	0.52	0.13	0.16	0.30	0.20	0.23	0.52
Volume/Cap:	0.97	0.88	0.49	0.88	0.97	0.54	0.44	0.97	0.47	0.97	0.44	0.15
Uniform Del:	43.1	37.6	21.1	33.5	30.2	16.1	39.9	41.6	28.7	39.7	33.1	12.3
IncremntDel:	33.4	8.3	0.6	9.1	13.4	0.7	1.3	29.2	0.8	39.1	0.4	0.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	76.5	45.9	21.7	42.7	43.6	16.9	41.2	70.8	29.5	78.8	33.5	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.5	45.9	21.7	42.7	43.6	16.9	41.2	70.8	29.5	78.8	33.5	12.4
HCM2kAvg:	11	13	7	17	25	9	4	13	6	16	5	2

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Lathrop / Sr Housing

Average Delay (sec/veh): 12.1 Level Of Service: B

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0		0		0	0		0		0	0		1255		0	0		589		0
Growth Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0		0		0	0		0		0	0		1255		0	0		589		0
Added Vol:	0		0		0	0		0		20	0		344		0	0		252		41
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	0		0		0	0		0		20	0		1599		0	0		841		41
User Adj:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90
PHF Volume:	0		0		0	0		0		22	0		1777		0	0		934		46
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Final Vol.:	0		0		0	0		0		22	0		1777		0	0		934		46
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx		490	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		529	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		529	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.04		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx							
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		0.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		12.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
LOS by Move:	*	*	*	*	*		B	*	*	*	*	*	*							
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
Shared LOS:	*	*	*	*	*	*		*	*	*	*	*	*							
ApproachDel:	xxxxxx			12.1				xxxxxx			xxxxxx									
ApproachLOS:	*			B				*			*									

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec):	100	Critical Vol./Cap. (X):	1.002
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	54.2
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	94	143	160	120	54	40	65	916	288	383	452	250
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	143	160	120	54	40	65	916	288	383	452	250
Added Vol:	54	256	0	102	218	131	223	56	23	14	94	107
PasserByVol:	13	13	-26	37	68	0	-1	-9	-5	-17	17	0
Initial Fut:	161	412	134	259	340	171	287	963	306	380	563	357
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	179	458	149	288	378	190	319	1070	340	422	626	397
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	458	149	288	378	190	319	1070	340	422	626	397
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	179	458	149	288	378	190	319	1070	340	422	626	397
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.90	0.90	0.93	0.88	0.88	0.93	0.93	0.83	0.93	0.88	0.88
Lanes:	1.00	1.51	0.49	1.00	1.33	0.67	1.00	2.00	1.00	1.00	1.22	0.78
Final Sat.:	1769	2571	836	1769	2236	1125	1769	3538	1583	1769	2039	1293
Capacity Analysis Module:												
Vol/Sat:	0.10	0.18	0.18	0.16	0.17	0.17	0.18	0.30	0.21	0.24	0.31	0.31
Crit Moves:		****		****				****		****		
Green/Cycle:	0.13	0.18	0.42	0.16	0.21	0.41	0.20	0.30	0.43	0.24	0.34	0.50
Volume/Cap:	0.79	1.00	0.43	1.00	0.79	0.41	0.90	1.00	0.50	1.00	0.90	0.61
Uniform Del:	42.4	41.1	20.8	41.9	37.3	20.8	39.0	34.9	20.8	38.1	31.4	17.9
IncremntDel:	17.4	37.1	0.2	53.7	6.1	0.2	25.1	28.1	0.6	44.4	10.0	0.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	59.8	78.2	21.0	95.5	43.4	21.0	64.2	63.0	21.3	82.5	41.4	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.8	78.2	21.0	95.5	43.4	21.0	64.2	63.0	21.3	82.5	41.4	18.5
HCM2kAvg:	8	15	7	15	10	6	14	23	8	20	19	12

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Average Delay (sec/veh):	15.6	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 1	1	0	1	0 1	1	0	0	0 1!	0	0	0	0 1!	0	0
Volume Module:																
Base Vol:	0	458	0		0	214	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	458	0		0	214	0		0	0	0		0	0	0	
Added Vol:	53	105	157		38	100	7		4	0	49		92	0	21	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	53	563	157		38	314	7		4	0	49		92	0	21	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	59	626	174		42	349	8		4	0	54		102	0	23	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	59	626	174		42	349	8		4	0	54		102	0	23	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.5	xxxx	6.9		7.5	xxxx	6.9	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	xxxx	3.3		3.5	xxxx	3.3	
Capacity Module:																
Cnflict Vol:	357	xxxx	xxxxx		800	xxxx	xxxxx		868	xxxx	178		1089	xxxx	400	
Potent Cap.:	1199	xxxx	xxxxx		819	xxxx	xxxxx		250	xxxx	840		172	xxxx	605	
Move Cap.:	1199	xxxx	xxxxx		819	xxxx	xxxxx		222	xxxx	840		149	xxxx	605	
Total Cap:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		394	772	xxxxx		286	0	xxxxx	
Volume/Cap:	0.05	xxxx	xxxx		0.05	xxxx	xxxx		0.01	xxxx	0.06		0.36	xxxx	0.04	
Level Of Service Module:																
Queue:	0.2	xxxx	xxxxx		0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	8.2	xxxx	xxxxx		9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*		A	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	774	xxxxx		xxxx	318	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	1.8	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	10.0	xxxxx	xxxxx	23.6	xxxxx			
Shared LOS:	*	*	*		*	*	*	*	B	*	*	C	*			
ApproachDel:	xxxxxx				xxxxxx				10.0			23.6				
ApproachLOS:	*				*				B			C				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Union / Sr Housing North Entr

Average Delay (sec/veh): 8.8 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	2	0 0	0	0	1	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	458	0		0	214	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	458	0		0	214	0		0	0	0		0	0	0	
Added Vol:	65	65	0		0	104	3		2	0	40		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	65	523	0		0	318	3		2	0	40		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	72	581	0		0	353	3		2	0	44		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	72	581	0		0	353	3		2	0	44		0	0	0	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx xxxx xxxxx		6.8	xxxx		6.9	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx xxxx xxxxx		3.5	xxxx		3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	357	xxxx	xxxxx	xxxx xxxx xxxxx		790	xxxx		178	xxxx	xxxx	xxxxx				
Potent Cap.:	1199	xxxx	xxxxx	xxxx xxxx xxxxx		331	xxxx		840	xxxx	xxxx	xxxxx				
Move Cap.:	1199	xxxx	xxxxx	xxxx xxxx xxxxx		316	xxxx		840	xxxx	xxxx	xxxxx				
Total Cap:	xxxx	xxxx	xxxxx	xxxx xxxx xxxxx		432	0	xxxxx	0	0	xxxxx					
Volume/Cap:	0.06	xxxx	xxxx	xxxx xxxx xxxx		0.01	xxxx	0.05	xxxx	xxxx	xxxx					
Level Of Service Module:																
Queue:	0.2	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					
Stopped Del:	8.2	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					
LOS by Move:	A	*	*	* * *		*	*	*	*	*	*					
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx xxxx xxxxx		xxxx	804	xxxxx	xxxx	xxxx	xxxxx					
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx					
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	9.8	xxxxx	xxxxx	xxxx	xxxxx					
Shared LOS:	*	*	*	* * *		*	A	*	*	*	*					
ApproachDel:	xxxxxx			xxxxxx			9.8		xxxxxx							
ApproachLOS:	*			*			A		*							

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Airport / Sr Housing

Average Delay (sec/veh): 23.1 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	1 0	1	0	3	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	1023	0		0	2841	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1023	0		0	2841	0		0	0	0		0	0	0	
Added Vol:	0	25	54		20	43	0		0	0	0		22	0	11	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1048	54		20	2884	0		0	0	0		22	0	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	1164	60		22	3204	0		0	0	0		24	0	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	1164	60		22	3204	0		0	0	0		24	0	12	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	xxxxx xxxx xxxxx		6.8	xxxx	6.9				
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	xxxxx xxxx xxxxx		3.5	xxxx	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1224	xxxx	xxxxx	xxxx xxxx xxxxx		2307	xxxx	418				
Potent Cap.:	xxxx	xxxx	xxxxx		565	xxxx	xxxxx	xxxx xxxx xxxxx		33	xxxx	589				
Move Cap.:	xxxx	xxxx	xxxxx		565	xxxx	xxxxx	xxxx xxxx xxxxx		32	xxxx	589				
Total Cap:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	783	0	xxxxx	134	0	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx		0.04	xxxx	xxxx	xxxx xxxx xxxx		0.18	xxxx	0.02				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx		11.6	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*		B	*	*	* * *		*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx xxxx xxxxx		xxxx	180	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx xxxx xxxxx		xxxxx	0.7	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx xxxx xxxxx		30.0	xxxxx					
Shared LOS:	*	*	*		*	*	*	* * *		*	D	*				
ApproachDel:	xxxxxx				xxxxxx			xxxxxx			30.0					
ApproachLOS:	*				*			*			D					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Union / Single Fam South

Average Delay (sec/veh): 17.0 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1	1	0		1	0	2	0	0		0	0	0	0	0		0	0	1!	0	0	
Volume Module:																								
Base Vol:	0	458	0				0	214	0				0	0	0				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	458	0				0	214	0				0	0	0				0	0	0			
Added Vol:	0	298	126				31	209	0				0	0	0				72	0	17			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	0	756	126				31	423	0				0	0	0				72	0	17			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	0	840	140				34	470	0				0	0	0				80	0	19			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	0	840	140				34	470	0				0	0	0				80	0	19			
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx							6.8	xxxx	6.9			
FollowUpTim:	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx							3.5	xxxx	3.3			
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx				980	xxxx	xxxxx		xxxx	xxxx	xxxxx						1214	xxxx	490			
Potent Cap.:	xxxx	xxxx	xxxxx				700	xxxx	xxxxx		xxxx	xxxx	xxxxx						177	xxxx	529			
Move Cap.:	xxxx	xxxx	xxxxx				700	xxxx	xxxxx		xxxx	xxxx	xxxxx						170	xxxx	529			
Total Cap:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx		0	0	xxxxx						324	0	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx				0.05	xxxx	xxxx		xxxx	xxxx	xxxx						0.25	xxxx	0.04			
Level Of Service Module:																								
Queue:	xxxxx	xxxx	xxxxx				0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	xxxxx				10.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx								
LOS by Move:	*	*	*				B	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT						LT - LTR - RT						LT - LTR - RT						LT - LTR - RT					
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx						xxxx	350	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx						xxxxx	1.1	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx						xxxxx	19.3	xxxxx			
Shared LOS:	*	*	*				*	*	*		*	*	*						*	C	*			
ApproachDel:	xxxxxx						xxxxxx						xxxxxx						19.3					
ApproachLOS:	*						*						*						C					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Union / Lovelace

Average Delay (sec/veh): 9.5 Level Of Service: A

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	1	1	0	0		0	0	1	1	0		0	0	1!	0	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	121	365	0				0	170	9				13	0	55				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	121	365	0				0	170	9				13	0	55				0	0	0			
Added Vol:	39	27	0				0	40	0				0	0	67				0	0	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	160	392	0				0	210	9				13	0	122				0	0	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	178	436	0				0	233	10				14	0	136				0	0	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	178	436	0				0	233	10				14	0	136				0	0	0			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				xxxxx	xxxx	xxxxx				6.8	xxxx	6.9				xxxxx	xxxx	xxxxx			
FollowUpTim:	2.2	xxxx	xxxxx				xxxxx	xxxx	xxxxx				3.5	xxxx	3.3				xxxxx	xxxx	xxxxx			
Capacity Module:																								
Cnflict Vol:	243	xxxx	xxxxx				xxxx	xxxx	xxxxx				812	xxxx	122				xxxx	xxxx	xxxxx			
Potent Cap.:	1320	xxxx	xxxxx				xxxx	xxxx	xxxxx				321	xxxx	913				xxxx	xxxx	xxxxx			
Move Cap.:	1320	xxxx	xxxxx				xxxx	xxxx	xxxxx				284	xxxx	913				xxxx	xxxx	xxxxx			
Volume/Cap:	0.13	xxxx	xxxx				xxxx	xxxx	xxxx				0.05	xxxx	0.15				xxxx	xxxx	xxxx			
Level Of Service Module:																								
Queue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Stopped Del:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*												
Movement:	LT - LTR - RT						LT - LTR - RT						LT - LTR - RT						LT - LTR - RT					
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	753	xxxxx	xxxx	xxxx	xxxxx												
SharedQueue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx												
Shrd StpDel:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	xxxx	xxxxx												
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*												
ApproachDel:	xxxxxx			xxxxxx				11.0			xxxxxx													
ApproachLOS:	*			*				B			*													

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.744
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 31.9
Optimal Cycle: 66 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 1	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	111	127	54	89	121	302	364	472	245	178	585	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	127	54	89	121	302	364	472	245	178	585	153
Added Vol:	70	0	0	0	0	67	41	70	56	0	74	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	181	127	54	89	121	369	405	542	301	178	659	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	201	141	60	99	134	410	450	602	334	198	732	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	141	60	99	134	410	450	602	334	198	732	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	201	141	60	99	134	410	450	602	334	198	732	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.95	0.85	0.95	0.90	0.90	0.95	0.92	0.92
Lanes:	1.00	1.40	0.60	1.00	2.00	1.00	1.00	1.29	0.71	1.00	1.62	0.38
Final Sat.:	1805	2419	1029	1805	3610	1615	1805	2196	1219	1805	2848	661
Capacity Analysis Module:												
Vol/Sat:	0.11	0.06	0.06	0.05	0.04	0.25	0.25	0.27	0.27	0.11	0.26	0.26
Crit Moves:	****				****		****				****	
Green/Cycle:	0.15	0.10	0.10	0.10	0.05	0.38	0.33	0.49	0.49	0.19	0.35	0.35
Volume/Cap:	0.74	0.57	0.57	0.57	0.74	0.66	0.74	0.56	0.56	0.56	0.74	0.74
Uniform Del:	40.7	42.7	42.7	43.2	46.9	25.4	29.5	18.2	18.2	36.5	28.8	28.8
IncremntDel:	10.7	2.1	2.1	4.3	15.4	2.6	5.0	0.5	0.5	2.1	2.5	2.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.4	44.9	44.9	47.5	62.3	28.0	34.5	18.6	18.6	38.6	31.4	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.4	44.9	44.9	47.5	62.3	28.0	34.5	18.6	18.6	38.6	31.4	31.4
HCM2kAvg:	8	4	4	4	4	11	14	10	10	6	14	14

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Lathrop / London

Cycle (sec): 100 Critical Vol./Cap. (X): 0.795
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 67 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1!	0 0	0	0 0	0 0	0	0 1	1 0	1	0 2	0 0
Volume Module:												
Base Vol:	33	0	109	0	0	0	0	1146	145	117	472	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	0	109	0	0	0	0	1146	145	117	472	0
Added Vol:	0	0	34	0	0	0	0	310	0	37	234	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	0	143	0	0	0	0	1456	145	154	706	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	37	0	159	0	0	0	0	1618	161	171	784	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	0	159	0	0	0	0	1618	161	171	784	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	37	0	159	0	0	0	0	1618	161	171	784	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	1.00	0.88	1.00	1.00	1.00	1.00	0.92	0.92	0.93	0.93	1.00
Lanes:	0.19	0.00	0.81	0.00	0.00	0.00	0.00	1.82	0.18	1.00	2.00	0.00
Final Sat.:	314	0	1362	0	0	0	0	3172	316	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.51	0.51	0.10	0.22	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.64	0.64	0.12	0.76	0.00
Volume/Cap:	0.79	0.00	0.79	0.00	0.00	0.00	0.00	0.79	0.79	0.79	0.29	0.00
Uniform Del:	41.2	0.0	41.2	0.0	0.0	0.0	0.0	13.1	13.1	42.7	3.6	0.0
IncremntDel:	16.2	0.0	16.2	0.0	0.0	0.0	0.0	2.1	2.1	18.2	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	57.4	0.0	57.4	0.0	0.0	0.0	0.0	15.2	15.2	60.9	3.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.4	0.0	57.4	0.0	0.0	0.0	0.0	15.2	15.2	60.9	3.7	0.0
HCM2kAvg:	8	0	8	0	0	0	0	22	22	8	4	0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Average Delay (sec/veh): 136.3 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1! 0	0	0	0	0	0 0	0	0	1	1 0	1	0	2	0 0
Volume Module:																
Base Vol:	90	0	61		0	0	0		0	530	54		54	931	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	90	0	61		0	0	0		0	530	54		54	931	0	
Added Vol:	0	0	21		0	0	0		0	183	0		16	119	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	90	0	82		0	0	0		0	713	54		70	1050	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	100	0	91		0	0	0		0	792	60		78	1167	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	100	0	91		0	0	0		0	792	60		78	1167	0	
Critical Gap Module:																
Critical Gp:	6.8	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1561	xxxx	426		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		852	xxxx	xxxxx	
Potent Cap.:	105	xxxx	582		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		782	xxxx	xxxxx	
Move Cap.:	97	xxxx	582		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		782	xxxx	xxxxx	
Volume/Cap:	1.03	xxxx	0.16		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		0.10	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.3	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		10.1	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		B	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	161	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	10.6	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	188	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	F	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	187.6				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	F				*				*				*			

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.905
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 36.0
Optimal Cycle: 112 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Ovl				Ovl				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	3	0 1	2	0	3	0 1	1	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	300	750	600		396	1069	391		79	500	500		200	500	93	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	300	750	600		396	1069	391		79	500	500		200	500	93	
Added Vol:	0	61	0		1	46	22		27	0	0		0	0	3	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	300	811	600		397	1115	413		106	500	500		200	500	96	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	333	901	667		441	1239	459		118	556	556		222	556	107	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	333	901	667		441	1239	459		118	556	556		222	556	107	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	333	901	667		441	1239	459		118	556	556		222	556	107	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.89	0.83		0.90	0.89	0.83		0.95	0.95	0.85		0.95	0.95	0.85	
Lanes:	2.00	3.00	1.00		2.00	3.00	1.00		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3432	5083	1583		3432	5083	1583		1805	3610	1615		1805	3610	1615	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.18	0.42		0.13	0.24	0.29		0.07	0.15	0.34		0.12	0.15	0.07	
Crit Moves:			****		****						****		****			
Green/Cycle:	0.13	0.33	0.47		0.14	0.34	0.46		0.12	0.27	0.41		0.14	0.29	0.43	
Volume/Cap:	0.72	0.54	0.91		0.91	0.72	0.63		0.54	0.56	0.85		0.91	0.54	0.15	
Uniform Del:	41.5	27.3	24.7		42.2	29.1	20.6		41.3	31.3	26.8		42.6	30.0	17.5	
IncremntDel:	5.6	0.4	14.7		20.3	1.6	1.8		2.6	0.8	9.9		33.4	0.6	0.1	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	47.1	27.7	39.4		62.5	30.6	22.5		43.9	32.0	36.7		75.9	30.6	17.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	47.1	27.7	39.4		62.5	30.6	22.5		43.9	32.0	36.7		75.9	30.6	17.6	
HCM2kAvg:	7		8	23	10		12	11	4		8	18	10		8	2

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Airport / Yosemite

Cycle (sec): 100 Critical Vol./Cap. (X): 0.996
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 43.5
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	3	0 1	2 0	3	0 1	2 0	3	0 1	2 0	3	0 1
Volume Module:												
Base Vol:	50	1550	200	796	1366	595	483	600	100	50	500	493
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	1550	200	796	1366	595	483	600	100	50	500	493
Added Vol:	0	45	9	3	37	6	11	0	0	5	0	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	1595	209	799	1403	601	494	600	100	55	500	499
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	56	1772	232	888	1559	668	549	667	111	61	556	554
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	1772	232	888	1559	668	549	667	111	61	556	554
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	56	1772	232	888	1559	668	549	667	111	61	556	554
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83	0.90	0.89	0.83
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3432	5083	1583	3432	5083	1583	3432	5083	1583	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.35	0.15	0.26	0.31	0.42	0.16	0.13	0.07	0.02	0.11	0.35
Crit Moves:		****		****			****				****	
Green/Cycle:	0.03	0.35	0.38	0.26	0.58	0.74	0.16	0.24	0.27	0.03	0.11	0.37
Volume/Cap:	0.53	1.00	0.38	1.00	0.53	0.57	1.00	0.55	0.26	0.55	1.00	0.95
Uniform Del:	47.8	32.4	22.4	37.0	12.8	5.9	41.9	33.4	28.8	47.7	44.5	30.6
IncremntDel:	5.0	20.4	0.4	29.1	0.2	0.7	37.3	0.5	0.3	5.8	37.1	25.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.8	52.8	22.8	66.1	13.0	6.5	79.2	34.0	29.1	53.5	81.5	55.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.8	52.8	22.8	66.1	13.0	6.5	79.2	34.0	29.1	53.5	81.5	55.6
HCM2kAvg:	2	25	5	20	10	10	14	7	3	2	10	22

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Union / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.954
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 50.1
Optimal Cycle: 142 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	2	0 1	1 0	2	0 1	1 0	2	0 1
Volume Module:												
Base Vol:	400	589	300	158	466	29	254	900	300	200	400	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	400	589	300	158	466	29	254	900	300	200	400	151
Added Vol:	0	178	0	43	134	37	46	0	0	0	0	46
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	400	767	300	201	600	66	300	900	300	200	400	197
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	444	852	333	223	667	73	333	1000	333	222	444	219
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	444	852	333	223	667	73	333	1000	333	222	444	219
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	444	852	333	223	667	73	333	1000	333	222	444	219
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.25	0.24	0.21	0.13	0.19	0.05	0.18	0.28	0.21	0.12	0.12	0.14
Crit Moves:	****				****			****		****		
Green/Cycle:	0.26	0.30	0.30	0.16	0.20	0.20	0.24	0.29	0.29	0.13	0.18	0.18
Volume/Cap:	0.95	0.80	0.70	0.80	0.95	0.23	0.76	0.95	0.71	0.95	0.69	0.76
Uniform Del:	36.2	32.1	30.8	40.5	39.7	33.8	35.3	34.8	31.7	43.3	38.6	39.1
IncremntDel:	30.3	4.3	4.5	14.7	23.4	0.4	7.8	17.8	5.1	46.1	3.3	11.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	66.5	36.3	35.3	55.2	63.0	34.2	43.1	52.7	36.8	89.4	41.9	50.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	36.3	35.3	55.2	63.0	34.2	43.1	52.7	36.8	89.4	41.9	50.7
HCM2kAvg:	19	14	10	9	15	2	12	20	10	11	8	8

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Union / CMU Residential

Average Delay (sec/veh): 10.5 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	2	0	0		0	0	1	1	0		0	0	1!	0	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	0	458	0				0	214	0				0	0	0				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	458	0				0	214	0				0	0	0				0	0	0			
Added Vol:	86	417	0				0	269	13				7	0	46				0	0	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	86	875	0				0	483	13				7	0	46				0	0	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	96	972	0				0	537	14				8	0	51				0	0	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	96	972	0				0	537	14				8	0	51				0	0	0			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				xxxx	xxxx	xxxxx				6.8	xxxx		6.9	xxxxx	xxxx	xxxxx					
FollowUpTim:	2.2	xxxx	xxxxx				xxxx	xxxx	xxxxx				3.5	xxxx		3.3	xxxxx	xxxx	xxxxx					
Capacity Module:																								
Cnflict Vol:	551	xxxx	xxxxx				xxxx	xxxx	xxxxx				1221	xxxx		276	xxxx	xxxx	xxxxx					
Potent Cap.:	1015	xxxx	xxxxx				xxxx	xxxx	xxxxx				175	xxxx		728	xxxx	xxxx	xxxxx					
Move Cap.:	1015	xxxx	xxxxx				xxxx	xxxx	xxxxx				162	xxxx		728	xxxx	xxxx	xxxxx					
Volume/Cap:	0.09	xxxx	xxxx				xxxx	xxxx	xxxx				0.05	xxxx		0.07	xxxx	xxxx	xxxx					
Level Of Service Module:																								
Queue:	0.3	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Stopped Del:	8.9	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*				*	*	*				*	*	*				*	*	*			
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	499	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	0.4	xxxxx				xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	13.2	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*				*	*	*				*	B	*				*	*	*			
ApproachDel:	xxxxxx						xxxxxx						13.2						xxxxxx					
ApproachLOS:	*						*						B						*					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Union / CMU Retail North Access

Average Delay (sec/veh): 193.3 Level Of Service: F

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	1	1	0		1	0	1	1	0		0	0	1!	0	0		0	0	1!	0	0	
Volume Module:																								
Base Vol:	0	458	0				0	214	0				0	0	0				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	458	0				0	214	0				0	0	0				0	0	0			
Added Vol:	76	432	6				33	243	42				45	0	60				84	0	29			
PasserByVol:	14	-6	4				5	-11	6				21	0	45				15	0	2			
Initial Fut:	90	884	10				38	446	48				66	0	105				99	0	31			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90				0.90	0.90	0.90			
PHF Volume:	100	982	11				42	496	53				73	0	117				110	0	34			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	100	982	11				42	496	53				73	0	117				110	0	34			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				4.1	xxxx	xxxxx				7.5	xxxx		6.9			7.5	xxxx		6.9		
FollowUpTim:	2.2	xxxx	xxxxx				2.2	xxxx	xxxxx				3.5	xxxx		3.3			3.5	xxxx		3.3		
Capacity Module:																								
Cnflict Vol:	549	xxxx	xxxxx				993	xxxx	xxxxx				1298	xxxx		274			1520	xxxx		497		
Potent Cap.:	1017	xxxx	xxxxx				692	xxxx	xxxxx				121	xxxx		729			83	xxxx		524		
Move Cap.:	1017	xxxx	xxxxx				692	xxxx	xxxxx				100	xxxx		729			62	xxxx		524		
Volume/Cap:	0.10	xxxx	xxxx				0.06	xxxx	xxxx				0.73	xxxx		0.16			1.79	xxxx		0.07		
Level Of Service Module:																								
Queue:	0.3	xxxx	xxxxx				0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Stopped Del:	8.9	xxxx	xxxxx				10.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*				B	*	*	*	*	*	*	*	*				*	*	*			
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	213	xxxxx				xxxx	78	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	7.1	xxxxx				xxxxx	12.6	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	84.0	xxxxx				xxxxx	518	xxxxx			
Shared LOS:	*	*	*				*	*	*				*	F	*				*	F	*			
ApproachDel:	xxxxxx						xxxxxx						84.0						518.1					
ApproachLOS:	*						*						F						F					

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #34 Union CMU Retail South Access

Average Delay (sec/veh): 12.1 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1	1 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 1
Volume Module:																
Base Vol:	0	458	0	0	214	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	458	0	0	214	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	507	78	0	387	0	0	0	64	0	0	0	0	0	0	7
PasserByVol:	0	13	10	0	31	3	0	0	59	0	0	0	0	0	0	0
Initial Fut:	0	978	88	0	632	3	0	0	123	0	0	0	0	0	0	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	1087	98	0	702	3	0	0	137	0	0	0	0	0	0	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	1087	98	0	702	3	0	0	137	0	0	0	0	0	0	8
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	353	xxxx	xxxx	592				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	649	xxxx	xxxx	454				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	649	xxxx	xxxx	454				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.21	xxxx	xxxx	0.02				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.8	xxxxx	xxxx	0.1				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.0	xxxxx	xxxx	13.1				
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	B				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			12.0			13.1						
ApproachLOS:	*			*			B			B						

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Average Delay (sec/veh): 325.6 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	0	0	1!	0 0	1	0	2	0 0	0	0	1	1 0
Volume Module:																
Base Vol:	0	0	0	0	0	0	0	1255	0	0	589	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	0	0	0	1255	0	0	589	0				
Added Vol:	0	0	0	45	0	84	78	257	0	0	199	5				
PasserByVol:	0	0	0	29	0	36	68	-68	0	0	-37	37				
Initial Fut:	0	0	0	74	0	120	146	1444	0	0	751	42				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	0	0	82	0	133	162	1604	0	0	834	47				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Final Vol.:	0	0	0	82	0	133	162	1604	0	0	834	47				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	1984	xxxx	441	881	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	55	xxxx	570	763	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	46	xxxx	570	763	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	1.80	xxxx	0.23	0.21	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	106	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	18.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	562	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			562.4			xxxxxx			xxxxxx						
ApproachLOS:	*			F			*			*						

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #36 Lathrop / CMU Retail Center Access

Average Delay (sec/veh): 12.1 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	0	0	0	0 1	0	0	2	0 0	0	0	1	1 0
Volume Module:																
Base Vol:	0	0	0		0	0	0		0	1255		0	0	589		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	0	0		0	0	0		0	1255		0	0	589		0
Added Vol:	0	0	0		0	0	0		0	302		0	0	203		75
PasserByVol:	0	0	0		0	0	22		0	-55		0	0	-14		29
Initial Fut:	0	0	0		0	0	22		0	1502		0	0	778		104
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	0	0	0		0	0	24		0	1669		0	0	864		116
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	0	0	0		0	0	24		0	1669		0	0	864		116
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	490		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	529		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	529		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	0.05		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	0.1		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	12.1		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	B		*	*	*		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				12.1				xxxxxx				xxxxxx			
ApproachLOS:	*				B				*				*			

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 Lathrop Rd / 5th St

Cycle (sec): 100 Critical Vol./Cap. (X): 1.018
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 39.1
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	0	1	0	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	135	75	65			225	90	120			215	2165	280			75	1040	215		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	135	75	65			225	90	120			215	2165	280			75	1040	215		
Added Vol:	0	0	0			0	0	0			0	183	0			0	119	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	135	75	65			225	90	120			215	2348	280			75	1159	215		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	135	75	65			225	90	120			215	2348	280			75	1159	215		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	135	75	65			225	90	120			215	2348	280			75	1159	215		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Final Vol.:	135	75	65			225	90	120			215	2348	280			75	1159	215		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.95	0.93	0.93			0.95	1.00	0.85			0.95	0.95	0.85			0.95	0.95	0.85		
Lanes:	1.00	0.54	0.46			1.00	1.00	1.00			1.00	2.00	1.00			1.00	2.00	1.00		
Final Sat.:	1805	947	820			1805	1900	1615			1805	3610	1615			1805	3610	1615		
Capacity Analysis Module:																				
Vol/Sat:	0.07	0.08	0.08			0.12	0.05	0.07			0.12	0.65	0.17			0.04	0.32	0.13		
Crit Moves:		****				****						****					****			
Green/Cycle:	0.12	0.08	0.12			0.12	0.08	0.26			0.18	0.64	0.76			0.04	0.50	0.62		
Volume/Cap:	0.61	1.02	0.67			1.02	0.61	0.28			0.65	1.02	0.23			1.02	0.65	0.22		
Uniform Del:	41.6	46.1	42.2			43.9	44.7	29.5			37.8	18.1	3.4			48.0	18.7	8.4		
IncremntDel:	4.9	81.6	8.0			65.3	7.3	0.4			4.4	23.4	0.1			109.9	0.8	0.1		
Delay Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Delay/Veh:	46.5	128	50.2			109.1	51.9	29.8			42.2	41.4	3.5			157.9	19.6	8.5		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	46.5	128	50.2			109.1	51.9	29.8			42.2	41.4	3.5			157.9	19.6	8.5		
HCM2kAvg:	5	8	5			12	4	3			7	46	3			5	14	3		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 Lathrop Rd / Harlan Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.844
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 89 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	1 0	1 0	1	0 1	1 2	2	0 3	0 1	1	0 3	0 1
Volume Module:												
Base Vol:	285	135	95	70	75	280	790	2770	710	90	1120	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	135	95	70	75	280	790	2770	710	90	1120	160
Added Vol:	0	0	0	0	0	0	0	183	0	0	119	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	135	95	70	75	280	790	2953	710	90	1239	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	285	135	95	70	75	280	790	2953	710	90	1239	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	285	135	95	70	75	280	790	2953	710	90	1239	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	285	135	95	70	75	280	790	2953	710	90	1239	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.87	0.90	0.90	0.95	0.84	0.74	0.92	0.91	0.85	0.95	0.91	0.85
Lanes:	2.24	1.03	0.73	1.00	1.00	3.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3715	1760	1238	1805	1592	4203	3502	5187	1615	1805	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.04	0.05	0.07	0.23	0.57	0.44	0.05	0.24	0.10
Crit Moves:		****			****			****		****		
Green/Cycle:	0.09	0.09	0.09	0.06	0.06	0.41	0.36	0.67	0.77	0.06	0.38	0.43
Volume/Cap:	0.84	0.84	0.84	0.70	0.84	0.16	0.63	0.84	0.57	0.84	0.63	0.23
Uniform Del:	44.8	44.8	44.8	46.4	46.8	18.5	26.8	12.3	4.9	46.6	25.5	17.8
IncremntDel:	10.5	10.5	10.5	19.0	14.5	0.0	1.1	2.0	0.7	42.7	0.7	0.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	55.2	55.2	55.2	65.4	61.2	18.6	27.8	14.4	5.6	89.3	26.2	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.2	55.2	55.2	65.4	61.2	18.6	27.8	14.4	5.6	89.3	26.2	18.0
HCM2kAvg:	6	7	7	4	4	2	11	25	10	5	11	3

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #39 I-5 NB / Lathrop Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 1.039
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 43.4
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1!	0 2	0	0 0	0 0	2	0 3	0 0	0	0 3	0 2
Volume Module:												
Base Vol:	280	0	1010	0	0	0	790	3385	0	0	1290	420
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	0	1010	0	0	0	790	3385	0	0	1290	420
Added Vol:	0	0	91	0	0	0	0	91	0	0	59	59
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	280	0	1101	0	0	0	790	3476	0	0	1349	479
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	0	1101	0	0	0	790	3476	0	0	1349	479
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	0	1101	0	0	0	790	3476	0	0	1349	479
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	280	0	1101	0	0	0	790	3476	0	0	1349	479
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.87	1.00	0.77	1.00	1.00	1.00	0.92	0.91	1.00	1.00	0.91	0.75
Lanes:	1.25	0.00	2.75	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	2.00
Final Sat.:	2071	0	4004	0	0	0	3502	5187	0	0	5187	2842
Capacity Analysis Module:												
Vol/Sat:	0.14	0.00	0.27	0.00	0.00	0.00	0.23	0.67	0.00	0.00	0.26	0.17
Crit Moves:			****					****		****		
Green/Cycle:	0.26	0.00	0.26	0.00	0.00	0.00	0.30	0.65	0.00	0.00	0.35	0.35
Volume/Cap:	0.51	0.00	1.04	0.00	0.00	0.00	0.75	1.04	0.00	0.00	0.75	0.49
Uniform Del:	31.3	0.0	36.8	0.0	0.0	0.0	31.7	17.7	0.0	0.0	28.9	25.8
IncremntDel:	0.2	0.0	35.3	0.0	0.0	0.0	3.1	26.8	0.0	0.0	1.8	0.4
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	31.4	0.0	72.1	0.0	0.0	0.0	34.8	44.5	0.0	0.0	30.8	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.4	0.0	72.1	0.0	0.0	0.0	34.8	44.5	0.0	0.0	30.8	26.1
HCM2kAvg:	6	0	19	0	0	0	13	47	0	0	14	6

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Cycle (sec):	100	Critical Vol./Cap. (X):	0.951
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	33.3
Optimal Cycle:	138	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	2	0 1!	0 1	0	0 4	0 1	2	0 4	0 0
Volume Module:												
Base Vol:	0	0	0	990	0	530	0	3185	300	495	1075	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	990	0	530	0	3185	300	495	1075	0
Added Vol:	0	0	0	91	0	0	0	0	0	59	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1081	0	530	0	3185	300	554	1075	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1081	0	530	0	3185	300	554	1075	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1081	0	530	0	3185	300	554	1075	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1081	0	530	0	3185	300	554	1075	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.92	1.00	0.91	0.85	0.92	0.91	1.00
Lanes:	0.00	0.00	0.00	2.58	0.00	1.42	0.00	4.00	1.00	2.00	4.00	0.00
Final Sat.:	0	0	0	4383	0	2477	0	6916	1615	3502	6916	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.00	0.21	0.00	0.46	0.19	0.16	0.16	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.26	0.00	0.26	0.00	0.48	0.48	0.17	0.65	0.00
Volume/Cap:	0.00	0.00	0.00	0.95	0.00	0.82	0.00	0.95	0.38	0.95	0.24	0.00
Uniform Del:	0.0	0.0	0.0	36.4	0.0	34.9	0.0	24.6	16.3	41.3	7.2	0.0
IncremntDel:	0.0	0.0	0.0	12.2	0.0	3.0	0.0	7.2	0.3	25.6	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	48.6	0.0	37.9	0.0	31.9	16.6	66.8	7.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	48.6	0.0	37.9	0.0	31.9	16.6	66.8	7.3	0.0
HCM2kAvg:	0	0	0	18	0	14	0	29	6	13	3	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 French Camp Rd / Union Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.795
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 16.8
Optimal Cycle: 67 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	0	1	0	0	0	0	0	0	2	0	1	1	0	2	0	0
Volume Module:																			
Base Vol:	235	0	57	0	0	0	0	1610	529	83	908	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	0	57	0	0	0	0	1610	529	83	908	0
Added Vol:	13	0	13	0	0	0	0	0	20	20	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	248	0	70	0	0	0	0	1610	549	103	908	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	276	0	78	0	0	0	0	1789	610	114	1009	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	276	0	78	0	0	0	0	1789	610	114	1009	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	276	0	78	0	0	0	0	1789	610	114	1009	0
Saturation Flow Module:																			
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.93	0.83	0.93	0.93	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	3538	1583	1769	3538	0
Capacity Analysis Module:																			
Vol/Sat:	0.15	0.00	0.05	0.00	0.00	0.00	0.00	0.51	0.39	0.06	0.29	0.00
Crit Moves:	****							****			****								
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.64	0.64	0.08	0.72	0.00
Volume/Cap:	0.79	0.00	0.25	0.00	0.00	0.00	0.00	0.79	0.61	0.79	0.40	0.00
Uniform Del:	38.5	0.0	34.3	0.0	0.0	0.0	0.0	13.4	10.8	45.1	5.6	0.0
IncremntDel:	11.9	0.0	0.4	0.0	0.0	0.0	0.0	2.0	1.1	25.5	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	50.5	0.0	34.7	0.0	0.0	0.0	0.0	15.4	11.8	70.6	5.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	0.0	34.7	0.0	0.0	0.0	0.0	15.4	11.8	70.6	5.7	0.0
HCM2kAvg:	11	0	2	0	0	0	0	22	12	6	6	0

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Average Delay (sec/veh): 400.5 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	0	0	1!	0 0	1	0	2	0 0	0	0	1	1 0
Volume Module:																
Base Vol:	0	0	0	0	0	0	0	1196	0	0	1085	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1196	0	0	1085	0
Added Vol:	0	0	0	36	0	43	27	132	0	0	171	39
PasserByVol:	0	0	0	17	0	10	35	-35	0	0	-25	25
Initial Fut:	0	0	0	53	0	53	62	1293	0	0	1231	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	59	0	59	69	1437	0	0	1368	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	59	0	59	69	1437	0	0	1368	71
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	2259	xxxx	719	1439	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	36	xxxx	375	468	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	32	xxxx	375	468	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	1.86	xxxx	0.16	0.15	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	58	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	11.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	627	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			626.6			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.650
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 28.9
Optimal Cycle: 46 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module:												
Base Vol:	68	73	31	50	68	175	210	273	144	100	333	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	73	31	50	68	175	210	273	144	100	333	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	76	81	34	56	76	194	233	303	160	111	370	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	81	34	56	76	194	233	303	160	111	370	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	76	81	34	56	76	194	233	303	160	111	370	96
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.67	0.67	0.67	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.95	0.95
Lanes:	0.40	0.42	0.18	0.17	0.23	0.60	1.00	0.65	0.35	1.00	0.79	0.21
Final Sat.:	506	543	231	275	374	964	1769	1156	610	1769	1434	370
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.20	0.20	0.20	0.13	0.26	0.26	0.06	0.26	0.26
Crit Moves:					****		****				****	
Green/Cycle:	0.31	0.31	0.31	0.31	0.31	0.31	0.20	0.48	0.48	0.12	0.40	0.40
Volume/Cap:	0.48	0.48	0.48	0.65	0.65	0.65	0.65	0.54	0.54	0.54	0.65	0.65
Uniform Del:	28.0	28.0	28.0	29.8	29.8	29.8	36.6	18.1	18.1	41.7	24.5	24.5
IncremntDel:	0.9	0.9	0.9	3.0	3.0	3.0	4.2	0.7	0.7	3.0	2.1	2.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.9	28.9	28.9	32.8	32.8	32.8	40.8	18.8	18.8	44.7	26.6	26.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.9	28.9	28.9	32.8	32.8	32.8	40.8	18.8	18.8	44.7	26.6	26.6
HCM2kAvg:	7	7	7	10	10	10	8	10	10	4	12	12

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.675
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 39 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0 0
Volume Module:												
Base Vol:	75	249	161	64	267	34	35	307	85	76	273	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	249	161	64	267	34	35	307	85	76	273	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	83	277	179	71	297	38	39	341	94	84	303	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	277	179	71	297	38	39	341	94	84	303	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	83	277	179	71	297	38	39	341	94	84	303	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.82	0.82	0.82	0.92	0.92	0.92	0.78	0.78	0.78
Lanes:	0.15	0.52	0.33	0.18	0.73	0.09	0.08	0.72	0.20	0.19	0.70	0.11
Final Sat.:	243	806	521	273	1139	145	143	1253	347	289	1040	160
Capacity Analysis Module:												
Vol/Sat:	0.34	0.34	0.34	0.26	0.26	0.26	0.27	0.27	0.27	0.29	0.29	0.29
Crit Moves:		****									****	
Green/Cycle:	0.51	0.51	0.51	0.51	0.51	0.51	0.43	0.43	0.43	0.43	0.43	0.43
Volume/Cap:	0.68	0.68	0.68	0.51	0.51	0.51	0.63	0.63	0.63	0.68	0.68	0.68
Uniform Del:	18.4	18.4	18.4	16.4	16.4	16.4	22.2	22.2	22.2	22.8	22.8	22.8
IncremntDel:	2.3	2.3	2.3	0.6	0.6	0.6	1.7	1.7	1.7	2.9	2.9	2.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	20.7	20.7	20.7	16.9	16.9	16.9	23.9	23.9	23.9	25.6	25.6	25.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.7	20.7	20.7	16.9	16.9	16.9	23.9	23.9	23.9	25.6	25.6	25.6
HCM2kAvg:	15	15	15	10	10	10	13	13	13	14	14	14

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Cycle (sec):	100	Critical Vol./Cap. (X):	0.509
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	21.5
Optimal Cycle:	35	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	0	0 1!	0 0	0	0 0	1 0	1	0 2	0 0
Volume Module:												
Base Vol:	0	0	0	488	9	4	0	74	5	185	76	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	488	9	4	0	74	5	185	76	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	542	10	4	0	82	6	206	84	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	542	10	4	0	82	6	206	84	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	542	10	4	0	82	6	206	84	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.97	0.97	0.93	0.93	1.00
Lanes:	0.00	0.00	0.00	0.97	0.02	0.01	0.00	0.94	0.06	1.00	2.00	0.00
Final Sat.:	0	0	0	1810	33	15	0	1728	117	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.30	0.30	0.30	0.00	0.05	0.05	0.12	0.02	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.59	0.59	0.59	0.00	0.09	0.09	0.23	0.32	0.00
Volume/Cap:	0.00	0.00	0.00	0.51	0.51	0.51	0.00	0.51	0.51	0.51	0.07	0.00
Uniform Del:	0.0	0.0	0.0	12.1	12.1	12.1	0.0	43.1	43.1	33.7	23.6	0.0
IncremntDel:	0.0	0.0	0.0	0.4	0.4	0.4	0.0	2.5	2.5	1.1	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	12.5	12.5	12.5	0.0	45.7	45.7	34.8	23.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.5	12.5	12.5	0.0	45.7	45.7	34.8	23.6	0.0
HCM2kAvg:	0	0	0	10	10	10	0	3	3	6	1	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Cycle (sec):	100	Critical Vol./Cap. (X):	0.925
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	29.6
Optimal Cycle:	118	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	2	0 1!	0 1	0	0 4	0 1	2	0 4	0 0
Volume Module:												
Base Vol:	0	0	0	715	0	520	0	870	170	1445	2100	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	715	0	520	0	870	170	1445	2100	0
Added Vol:	0	0	0	26	0	0	0	0	0	69	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	741	0	520	0	870	170	1514	2100	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	823	0	578	0	967	189	1682	2333	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	823	0	578	0	967	189	1682	2333	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	823	0	578	0	967	189	1682	2333	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.88	1.00	0.91	1.00	0.91	0.85	0.92	0.91	1.00
Lanes:	0.00	0.00	0.00	2.49	0.00	1.51	0.00	4.00	1.00	2.00	4.00	0.00
Final Sat.:	0	0	0	4188	0	2605	0	6916	1615	3502	6916	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.22	0.00	0.14	0.12	0.48	0.34	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.24	0.00	0.24	0.00	0.15	0.15	0.52	0.67	0.00
Volume/Cap:	0.00	0.00	0.00	0.82	0.00	0.93	0.00	0.93	0.77	0.93	0.50	0.00
Uniform Del:	0.0	0.0	0.0	36.0	0.0	37.1	0.0	41.9	40.8	22.2	8.2	0.0
IncremntDel:	0.0	0.0	0.0	3.3	0.0	10.0	0.0	13.4	14.3	8.6	0.1	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	39.3	0.0	47.1	0.0	55.3	55.1	30.8	8.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	39.3	0.0	47.1	0.0	55.3	55.1	30.8	8.3	0.0
HCM2kAvg:	0	0	0	12	0	16	0	11	8	30	9	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Lathrop / Union

Cycle (sec): 100 Critical Vol./Cap. (X): 0.855
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 42.5
Optimal Cycle: 92 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	0 1	1 0	1	0 1	1 0	2	0 1	1 0	1	0 1
Volume Module:												
Base Vol:	79	107	131	73	177	22	26	397	127	166	286	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	107	131	73	177	22	26	397	127	166	286	48
Added Vol:	54	278	0	114	230	115	193	56	23	14	94	128
PasserByVol:	13	13	-26	37	68	0	-1	-9	-5	-17	17	0
Initial Fut:	146	398	105	224	475	137	218	444	145	163	397	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	162	442	117	249	528	152	242	493	161	181	441	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	442	117	249	528	152	242	493	161	181	441	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	162	442	117	249	528	152	242	493	161	181	441	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.93	0.83	0.93	0.98	0.83
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	1862	1583	1769	1862	1583	1769	3538	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.07	0.14	0.28	0.10	0.14	0.14	0.10	0.10	0.24	0.12
Crit Moves:		****		****			****				****	
Green/Cycle:	0.11	0.28	0.46	0.16	0.33	0.49	0.16	0.25	0.36	0.19	0.28	0.28
Volume/Cap:	0.85	0.85	0.16	0.85	0.85	0.19	0.85	0.55	0.28	0.55	0.85	0.45
Uniform Del:	43.8	34.2	15.6	40.6	30.9	14.1	40.9	32.5	22.8	37.0	34.2	29.8
IncremntDel:	28.1	13.1	0.1	21.1	10.5	0.1	21.5	0.8	0.3	2.0	13.1	0.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.9	47.3	15.7	61.7	41.5	14.3	62.4	33.2	23.0	39.0	47.3	30.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.9	47.3	15.7	61.7	41.5	14.3	62.4	33.2	23.0	39.0	47.3	30.5
HCM2kAvg:	8	16	2	11	18	3	10	7	4	6	16	5

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Lathrop / Main

Cycle (sec): 100 Critical Vol./Cap. (X): 0.849
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 38.8
Optimal Cycle: 82 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	68	73	31	50	68	175	210	273	144	100	333	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	73	31	50	68	175	210	273	144	100	333	86
Added Vol:	75	0	0	0	0	74	46	74	59	0	83	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	143	73	31	50	68	249	256	347	203	100	416	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	159	81	34	56	76	277	284	386	226	111	462	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	81	34	56	76	277	284	386	226	111	462	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	159	81	34	56	76	277	284	386	226	111	462	96
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.47	0.47	0.47	0.84	0.84	0.84	0.93	0.93	0.93	0.93	0.95	0.95
Lanes:	0.58	0.30	0.12	0.14	0.18	0.68	1.00	0.63	0.37	1.00	0.83	0.17
Final Sat.:	522	267	113	218	296	1084	1769	1110	649	1769	1503	311
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.30	0.26	0.26	0.26	0.16	0.35	0.35	0.06	0.31	0.31
Crit Moves:		****					****				****	
Green/Cycle:	0.36	0.36	0.36	0.36	0.36	0.36	0.19	0.47	0.47	0.08	0.36	0.36
Volume/Cap:	0.85	0.85	0.85	0.71	0.71	0.71	0.85	0.74	0.74	0.74	0.85	0.85
Uniform Del:	29.6	29.6	29.6	27.6	27.6	27.6	39.1	21.7	21.7	44.7	29.4	29.4
IncremntDel:	18.6	18.6	18.6	4.2	4.2	4.2	18.1	3.7	3.7	18.1	10.2	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.2	48.2	48.2	31.8	31.8	31.8	57.2	25.4	25.4	62.8	39.5	39.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.2	48.2	48.2	31.8	31.8	31.8	57.2	25.4	25.4	62.8	39.5	39.5
HCM2kAvg:	19	19	19	13	13	13	12	16	16	5	18	18

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Cycle (sec): 100 Critical Vol./Cap. (X): 0.750
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0
Volume Module:												
Base Vol:	108	0	77	0	0	0	0	646	65	22	368	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	0	77	0	0	0	0	646	65	22	368	0
Added Vol:	0	0	18	0	0	0	0	167	0	15	110	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	0	95	0	0	0	0	813	65	37	478	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	120	0	106	0	0	0	0	903	72	41	531	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	0	106	0	0	0	0	903	72	41	531	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	120	0	106	0	0	0	0	903	72	41	531	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.97	0.93	0.98	1.00
Lanes:	0.53	0.00	0.47	0.00	0.00	0.00	0.00	0.93	0.07	1.00	1.00	0.00
Final Sat.:	923	0	811	0	0	0	0	1707	136	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.53	0.53	0.02	0.29	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.71	0.71	0.03	0.74	0.00
Volume/Cap:	0.75	0.00	0.75	0.00	0.00	0.00	0.00	0.75	0.75	0.75	0.39	0.00
Uniform Del:	39.3	0.0	39.3	0.0	0.0	0.0	0.0	9.2	9.2	48.1	4.9	0.0
IncremntDel:	10.1	0.0	10.1	0.0	0.0	0.0	0.0	2.5	2.5	43.4	0.2	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	49.3	0.0	49.3	0.0	0.0	0.0	0.0	11.7	11.7	91.5	5.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.3	0.0	49.3	0.0	0.0	0.0	0.0	11.7	11.7	91.5	5.0	0.0
HCM2kAvg:	9	0	9	0	0	0	0	20	20	3	6	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Airport / Louise

Cycle (sec): 100 Critical Vol./Cap. (X): 0.739
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 24.1
Optimal Cycle: 47 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0 0
Volume Module:												
Base Vol:	75	249	161	64	267	34	35	307	85	76	273	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	249	161	64	267	34	35	307	85	76	273	42
Added Vol:	0	66	0	1	48	20	24	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	315	161	65	315	54	59	307	85	76	273	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	83	350	179	72	350	60	66	341	94	84	303	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	350	179	72	350	60	66	341	94	84	303	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	83	350	179	72	350	60	66	341	94	84	303	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.82	0.82	0.82	0.86	0.86	0.86	0.77	0.77	0.77
Lanes:	0.14	0.57	0.29	0.15	0.73	0.12	0.13	0.68	0.19	0.19	0.70	0.11
Final Sat.:	215	901	461	233	1129	194	214	1115	309	281	1009	166
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.39	0.31	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30
Crit Moves:		****						****				
Green/Cycle:	0.53	0.53	0.53	0.53	0.53	0.53	0.41	0.41	0.41	0.41	0.41	0.41
Volume/Cap:	0.74	0.74	0.74	0.59	0.59	0.59	0.74	0.74	0.74	0.73	0.73	0.73
Uniform Del:	18.4	18.4	18.4	16.3	16.3	16.3	24.7	24.7	24.7	24.5	24.5	24.5
IncremntDel:	3.5	3.5	3.5	1.1	1.1	1.1	4.3	4.3	4.3	4.4	4.4	4.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.9	21.9	21.9	17.4	17.4	17.4	29.0	29.0	29.0	28.9	28.9	28.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.9	21.9	21.9	17.4	17.4	17.4	29.0	29.0	29.0	28.9	28.9	28.9
HCM2kAvg:	18	18	18	12	12	12	16	16	16	16	16	16

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Union / CMU Retail North Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.646
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 25.7
Optimal Cycle: 45 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0	0	0	1! 0	0	0	1! 0
Volume Module:												
Base Vol:	0	181	0	0	272	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	181	0	0	272	0	0	0	0	0	0	0
Added Vol:	76	447	6	33	251	42	45	0	60	84	0	29
PasserByVol:	14	-6	4	5	-11	6	21	0	45	15	0	2
Initial Fut:	90	622	10	38	512	48	66	0	105	99	0	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	100	691	11	42	569	53	73	0	117	110	0	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	691	11	42	569	53	73	0	117	110	0	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	691	11	42	569	53	73	0	117	110	0	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.98	0.93	0.97	0.97	0.90	1.00	0.90	0.93	1.00	0.93
Lanes:	1.00	0.98	0.02	1.00	0.91	0.09	0.39	0.00	0.61	0.76	0.00	0.24
Final Sat.:	1769	1829	29	1769	1680	158	660	0	1050	1349	0	422
Capacity Analysis Module:												
Vol/Sat:	0.06	0.38	0.38	0.02	0.34	0.34	0.11	0.00	0.11	0.08	0.00	0.08
Crit Moves:	****				****		****			****		
Green/Cycle:	0.09	0.58	0.58	0.04	0.52	0.52	0.17	0.00	0.17	0.13	0.00	0.13
Volume/Cap:	0.65	0.66	0.66	0.66	0.65	0.65	0.65	0.00	0.65	0.65	0.00	0.65
Uniform Del:	44.1	14.5	14.5	47.6	17.1	17.1	38.6	0.0	38.6	41.6	0.0	41.6
IncremntDel:	9.1	1.5	1.5	22.1	1.5	1.5	4.9	0.0	4.9	6.4	0.0	6.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	53.2	16.0	16.0	69.7	18.6	18.6	43.5	0.0	43.5	48.0	0.0	48.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.2	16.0	16.0	69.7	18.6	18.6	43.5	0.0	43.5	48.0	0.0	48.0
HCM2kAvg:	4	15	15	3	14	14	7	0	7	6	0	6

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.565
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 52 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	0	0	1! 0	1	0	1 0	0	0	0 1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	550	0	0	387	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	550	0	0	387	0
Added Vol:	0	0	0	45	0	84	78	228	0	0	183	5
PasserByVol:	0	0	0	29	0	36	68	-68	0	0	-37	37
Initial Fut:	0	0	0	74	0	120	146	710	0	0	533	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	82	0	133	162	789	0	0	592	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	82	0	133	162	789	0	0	592	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	82	0	133	162	789	0	0	592	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.93	0.98	1.00	1.00	0.97	0.97
Lanes:	0.00	0.00	0.00	0.38	0.00	0.62	1.00	1.00	0.00	0.00	0.93	0.07
Final Sat.:	0	0	0	651	0	1056	1769	1862	0	0	1709	135
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.13	0.09	0.42	0.00	0.00	0.35	0.35
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.22	0.00	0.22	0.16	0.78	0.00	0.00	0.61	0.61
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.56	0.56	0.55	0.00	0.00	0.56	0.56
Uniform Del:	0.0	0.0	0.0	34.5	0.0	34.5	38.6	4.3	0.0	0.0	11.4	11.4
IncremntDel:	0.0	0.0	0.0	2.0	0.0	2.0	2.6	0.4	0.0	0.0	0.7	0.7
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	36.4	0.0	36.4	41.2	4.8	0.0	0.0	12.1	12.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.4	0.0	36.4	41.2	4.8	0.0	0.0	12.1	12.1
HCM2kAvg:	0	0	0	7	0	7	6	10	0	0	12	12

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 I-5 SB / Lathrop Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.602
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 23.3
Optimal Cycle: 41 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	488	9	4	0	74	5	185	76	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	488	9	4	0	74	5	185	76	0
Added Vol:	0	0	0	83	0	0	0	0	0	55	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	571	9	4	0	74	5	240	76	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	634	10	4	0	82	6	267	84	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	634	10	4	0	82	6	267	84	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	634	10	4	0	82	6	267	84	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.97	0.97	0.93	0.93	1.00
Lanes:	0.00	0.00	0.00	0.98	0.01	0.01	0.00	0.94	0.06	1.00	2.00	0.00
Final Sat.:	0	0	0	1817	29	13	0	1728	117	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.35	0.35	0.35	0.00	0.05	0.05	0.15	0.02	0.00
Crit Moves:					****			****		****		
Green/Cycle:	0.00	0.00	0.00	0.58	0.58	0.58	0.00	0.08	0.08	0.25	0.33	0.00
Volume/Cap:	0.00	0.00	0.00	0.60	0.60	0.60	0.00	0.60	0.60	0.60	0.07	0.00
Uniform Del:	0.0	0.0	0.0	13.5	13.5	13.5	0.0	44.5	44.5	33.1	23.0	0.0
IncremntDel:	0.0	0.0	0.0	1.0	1.0	1.0	0.0	6.9	6.9	2.3	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	14.5	14.5	14.5	0.0	51.4	51.4	35.4	23.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	14.5	14.5	14.5	0.0	51.4	51.4	35.4	23.0	0.0
HCM2kAvg:	0	0	0	13	13	13	0	4	4	8	1	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Cycle (sec): 100 Critical Vol./Cap. (X): 0.549
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 51 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	601	0	0	500	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	601	0	0	500	0
Added Vol:	0	0	0	36	0	43	27	143	0	0	193	39
PasserByVol:	0	0	0	17	0	10	35	-35	0	0	-25	25
Initial Fut:	0	0	0	53	0	53	62	709	0	0	668	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	59	0	59	69	788	0	0	742	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	59	0	59	69	788	0	0	742	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	59	0	59	69	788	0	0	742	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	0.93	0.98	1.00	1.00	0.97	0.97
Lanes:	0.00	0.00	0.00	0.50	0.00	0.50	1.00	1.00	0.00	0.00	0.91	0.09
Final Sat.:	0	0	0	865	0	865	1769	1862	0	0	1679	161
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.07	0.00	0.07	0.04	0.42	0.00	0.00	0.44	0.44
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.12	0.00	0.12	0.07	0.88	0.00	0.00	0.81	0.81
Volume/Cap:	0.00	0.00	0.00	0.55	0.00	0.55	0.55	0.48	0.00	0.00	0.55	0.55
Uniform Del:	0.0	0.0	0.0	41.2	0.0	41.2	44.9	1.3	0.0	0.0	3.4	3.4
IncremntDel:	0.0	0.0	0.0	3.0	0.0	3.0	5.1	0.2	0.0	0.0	0.4	0.4
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	44.2	0.0	44.2	50.0	1.6	0.0	0.0	3.8	3.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	44.2	0.0	44.2	50.0	1.6	0.0	0.0	3.8	3.8
HCM2kAvg:	0	0	0	4	0	4	3	6	0	0	9	9

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 Lathrop / McKinley

Cycle (sec):	100	Critical Vol./Cap. (X):	0.826
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	23.6
Optimal Cycle:	75	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	308	0	79	0	0	0	0	962	444	74	610	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	308	0	79	0	0	0	0	962	444	74	610	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	342	0	88	0	0	0	0	1069	493	82	678	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	342	0	88	0	0	0	0	1069	493	82	678	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	342	0	88	0	0	0	0	1069	493	82	678	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	1.00	0.94	1.00	1.00	1.00	1.00	0.89	0.89	0.93	0.93	1.00
Lanes:	0.80	0.00	0.20	0.00	0.00	0.00	0.00	1.37	0.63	1.00	2.00	0.00
Final Sat.:	1414	0	363	0	0	0	0	2307	1065	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.46	0.46	0.05	0.19	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.56	0.56	0.06	0.62	0.00
Volume/Cap:	0.83	0.00	0.83	0.00	0.00	0.00	0.00	0.83	0.83	0.83	0.31	0.00
Uniform Del:	33.0	0.0	33.0	0.0	0.0	0.0	0.0	18.0	18.0	46.7	9.1	0.0
IncremntDel:	10.5	0.0	10.5	0.0	0.0	0.0	0.0	3.1	3.1	40.8	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	43.5	0.0	43.5	0.0	0.0	0.0	0.0	21.1	21.1	87.5	9.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.5	0.0	43.5	0.0	0.0	0.0	0.0	21.1	21.1	87.5	9.2	0.0
HCM2kAvg:	15	0	15	0	0	0	0	22	22	5	5	0

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 Lathrop / McKinley

Cycle (sec):	100	Critical Vol./Cap. (X):	0.427
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	11.9
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	90	0	61	0	0	0	0	530	54	54	931	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	0	61	0	0	0	0	530	54	54	931	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	100	0	68	0	0	0	0	589	60	60	1034	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	0	68	0	0	0	0	589	60	60	1034	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	0	68	0	0	0	0	589	60	60	1034	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	1.00	1.00	1.00	1.00	0.92	0.92	0.93	0.93	1.00
Lanes:	0.60	0.00	0.40	0.00	0.00	0.00	0.00	1.82	0.18	1.00	2.00	0.00
Final Sat.:	1039	0	704	0	0	0	0	3166	323	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.19	0.19	0.03	0.29	0.00
Crit Moves:			****				****				****	
Green/Cycle:	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.58	0.58	0.11	0.68	0.00
Volume/Cap:	0.43	0.00	0.43	0.00	0.00	0.00	0.00	0.32	0.32	0.32	0.43	0.00
Uniform Del:	33.2	0.0	33.2	0.0	0.0	0.0	0.0	10.9	10.9	41.4	7.0	0.0
IncremntDel:	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.1	0.1	1.0	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	33.9	0.0	33.9	0.0	0.0	0.0	0.0	11.0	11.0	42.4	7.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.9	0.0	33.9	0.0	0.0	0.0	0.0	11.0	11.0	42.4	7.1	0.0
HCM2kAvg:	5	0	5	0	0	0	0	5	5	2	7	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Airport / Sr Housing

Cycle (sec): 100 Critical Vol./Cap. (X): 0.738
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 3.8
Optimal Cycle: 57 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	1 0	1	0 3	0 0	0	0 0	0 0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	0	2869	0	0	1059	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2869	0	0	1059	0	0	0	0	0	0	0
Added Vol:	0	37	14	6	12	0	0	0	0	28	0	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2906	14	6	1071	0	0	0	0	28	0	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	3229	16	7	1190	0	0	0	0	31	0	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3229	16	7	1190	0	0	0	0	31	0	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3229	16	7	1190	0	0	0	0	31	0	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.89	0.89	0.93	0.89	1.00	1.00	1.00	1.00	0.92	1.00	0.92
Lanes:	0.00	2.99	0.01	1.00	3.00	0.00	0.00	0.00	0.00	0.61	0.00	0.39
Final Sat.:	0	5054	24	1769	5083	0	0	0	0	1062	0	683
Capacity Analysis Module:												
Vol/Sat:	0.00	0.64	0.64	0.00	0.23	0.00	0.00	0.00	0.00	0.03	0.00	0.03
Crit Moves:		****		****								****
Green/Cycle:	0.00	0.87	0.87	0.01	0.87	0.00	0.00	0.00	0.00	0.04	0.00	0.04
Volume/Cap:	0.00	0.74	0.74	0.74	0.27	0.00	0.00	0.00	0.00	0.74	0.00	0.74
Uniform Del:	0.0	2.5	2.5	49.7	1.1	0.0	0.0	0.0	0.0	47.5	0.0	47.5
IncremntDel:	0.0	0.7	0.7	148.0	0.0	0.0	0.0	0.0	0.0	33.9	0.0	33.9
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	3.2	3.2	197.7	1.1	0.0	0.0	0.0	0.0	81.4	0.0	81.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	3.2	3.2	197.7	1.1	0.0	0.0	0.0	0.0	81.4	0.0	81.4
HCM2kAvg:	0	14	14	1	2	0	0	0	0	3	0	3

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Cycle (sec): 100 Critical Vol./Cap. (X): 0.857
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.8
Optimal Cycle: 85 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1!	0 0	0	0 0	0 0 0	0	0 1	1 0	1	0 2	0 0
Volume Module:												
Base Vol:	308	0	79	0	0	0	0	962	444	74	610	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	308	0	79	0	0	0	0	962	444	74	610	0
Added Vol:	0	0	6	0	0	0	0	52	0	12	137	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	308	0	85	0	0	0	0	1014	444	86	747	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	342	0	94	0	0	0	0	1127	493	96	830	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	342	0	94	0	0	0	0	1127	493	96	830	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	342	0	94	0	0	0	0	1127	493	96	830	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.93	1.00	1.00	1.00	1.00	0.89	0.89	0.93	0.93	1.00
Lanes:	0.78	0.00	0.22	0.00	0.00	0.00	0.00	1.39	0.61	1.00	2.00	0.00
Final Sat.:	1391	0	384	0	0	0	0	2347	1028	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.48	0.48	0.05	0.23	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.56	0.56	0.06	0.62	0.00
Volume/Cap:	0.86	0.00	0.86	0.00	0.00	0.00	0.00	0.86	0.86	0.86	0.38	0.00
Uniform Del:	33.7	0.0	33.7	0.0	0.0	0.0	0.0	18.6	18.6	46.4	9.3	0.0
IncremntDel:	13.5	0.0	13.5	0.0	0.0	0.0	0.0	4.1	4.1	44.3	0.1	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	47.2	0.0	47.2	0.0	0.0	0.0	0.0	22.8	22.8	90.7	9.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	0.0	47.2	0.0	0.0	0.0	0.0	22.8	22.8	90.7	9.4	0.0
HCM2kAvg:	16	0	16	0	0	0	0	24	24	5	6	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.597
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 5.2
Optimal Cycle: 41 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	837	0	0	1342	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	837	0	0	1342	0
Added Vol:	0	0	0	6	0	18	28	82	0	0	201	1
PasserByVol:	0	0	0	5	0	17	24	-24	0	0	-15	0
Initial Fut:	0	0	0	11	0	35	52	895	0	0	1528	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	12	0	39	58	994	0	0	1698	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	12	0	39	58	994	0	0	1698	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	12	0	39	58	994	0	0	1698	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.93	0.93	1.00	1.00	0.93	0.93
Lanes:	0.00	0.00	0.00	0.24	0.00	0.76	1.00	2.00	0.00	0.00	1.99	0.01
Final Sat.:	0	0	0	403	0	1281	1769	3538	0	0	3535	2
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.03	0.03	0.28	0.00	0.00	0.48	0.48
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.05	0.00	0.05	0.05	0.86	0.00	0.00	0.80	0.80
Volume/Cap:	0.00	0.00	0.00	0.60	0.00	0.60	0.60	0.33	0.00	0.00	0.60	0.60
Uniform Del:	0.0	0.0	0.0	46.5	0.0	46.5	46.2	1.4	0.0	0.0	3.7	3.7
IncremntDel:	0.0	0.0	0.0	11.0	0.0	11.0	9.8	0.1	0.0	0.0	0.4	0.4
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	57.5	0.0	57.5	56.0	1.4	0.0	0.0	4.0	4.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	57.5	0.0	57.5	56.0	1.4	0.0	0.0	4.0	4.0
HCM2kAvg:	0	0	0	3	0	3	3	3	0	0	10	10

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Cycle (sec): 100 Critical Vol./Cap. (X): 0.556
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 2.6
Optimal Cycle: 38 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	922	0	0	1474	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	922	0	0	1474	0
Added Vol:	0	0	0	4	0	8	9	108	0	0	43	8
PasserByVol:	0	0	0	3	0	9	7	-7	0	0	-20	20
Initial Fut:	0	0	0	7	0	17	16	1023	0	0	1497	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	8	0	19	18	1137	0	0	1663	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	8	0	19	18	1137	0	0	1663	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	8	0	19	18	1137	0	0	1663	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.93	0.93	1.00	1.00	0.93	0.93
Lanes:	0.00	0.00	0.00	0.29	0.00	0.71	1.00	2.00	0.00	0.00	1.96	0.04
Final Sat.:	0	0	0	494	0	1200	1769	3538	0	0	3462	65
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.02	0.01	0.32	0.00	0.00	0.48	0.48
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.03	0.00	0.03	0.02	0.88	0.00	0.00	0.86	0.86
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.56	0.56	0.36	0.00	0.00	0.56	0.56
Uniform Del:	0.0	0.0	0.0	48.0	0.0	48.0	48.7	1.0	0.0	0.0	1.8	1.8
IncremntDel:	0.0	0.0	0.0	13.7	0.0	13.7	19.9	0.1	0.0	0.0	0.2	0.2
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	61.6	0.0	61.6	68.6	1.1	0.0	0.0	2.0	2.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	61.6	0.0	61.6	68.6	1.1	0.0	0.0	2.0	2.0
HCM2kAvg:	0	0	0	2	0	2	1	3	0	0	7	7

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Lathrop / McKinley

Cycle (sec): 100 Critical Vol./Cap. (X): 0.484
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 33 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1!	0	0	0 0 0	0	0	1 1	0	1	0 2	0 0
Volume Module:												
Base Vol:	90	0	61	0	0	0	0	530	54	54	931	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	0	61	0	0	0	0	530	54	54	931	0
Added Vol:	0	0	21	0	0	0	0	183	0	16	119	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	0	82	0	0	0	0	713	54	70	1050	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	100	0	91	0	0	0	0	792	60	78	1167	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	0	91	0	0	0	0	792	60	78	1167	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	0	91	0	0	0	0	792	60	78	1167	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.92	0.92	0.93	0.93	1.00
Lanes:	0.52	0.00	0.48	0.00	0.00	0.00	0.00	1.86	0.14	1.00	2.00	0.00
Final Sat.:	907	0	827	0	0	0	0	3256	247	1769	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.24	0.24	0.04	0.33	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.58	0.58	0.10	0.68	0.00
Volume/Cap:	0.48	0.00	0.48	0.00	0.00	0.00	0.00	0.42	0.42	0.42	0.48	0.00
Uniform Del:	33.5	0.0	33.5	0.0	0.0	0.0	0.0	11.8	11.8	42.0	7.5	0.0
IncremntDel:	0.9	0.0	0.9	0.0	0.0	0.0	0.0	0.1	0.1	1.6	0.2	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	34.4	0.0	34.4	0.0	0.0	0.0	0.0	11.9	11.9	43.5	7.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	0.0	34.4	0.0	0.0	0.0	0.0	11.9	11.9	43.5	7.7	0.0
HCM2kAvg:	6	0	6	0	0	0	0	7	7	3	9	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Union / CMU Retail North Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.476
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 33 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	0	458	0	0	214	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	458	0	0	214	0	0	0	0	0	0	0
Added Vol:	76	432	6	33	243	42	45	0	60	84	0	29
PasserByVol:	14	-6	4	5	-11	6	21	0	45	15	0	2
Initial Fut:	90	884	10	38	446	48	66	0	105	99	0	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	100	982	11	42	496	53	73	0	117	110	0	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	982	11	42	496	53	73	0	117	110	0	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	982	11	42	496	53	73	0	117	110	0	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.92	0.92	0.78	1.00	0.78	0.61	1.00	0.61
Lanes:	1.00	1.98	0.02	1.00	1.81	0.19	0.39	0.00	0.61	0.76	0.00	0.24
Final Sat.:	1769	3491	39	1769	3146	339	572	0	909	889	0	278
Capacity Analysis Module:												
Vol/Sat:	0.06	0.28	0.28	0.02	0.16	0.16	0.13	0.00	0.13	0.12	0.00	0.12
Crit Moves:		****		****			****					
Green/Cycle:	0.17	0.59	0.59	0.05	0.47	0.47	0.27	0.00	0.27	0.27	0.00	0.27
Volume/Cap:	0.33	0.48	0.48	0.48	0.33	0.33	0.48	0.00	0.48	0.46	0.00	0.46
Uniform Del:	36.6	11.7	11.7	46.2	16.6	16.6	30.6	0.0	30.6	30.5	0.0	30.5
IncremntDel:	0.7	0.2	0.2	4.0	0.1	0.1	0.9	0.0	0.9	1.1	0.0	1.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Delay/Veh:	37.2	11.8	11.8	50.2	16.7	16.7	31.5	0.0	31.5	31.5	0.0	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	11.8	11.8	50.2	16.7	16.7	31.5	0.0	31.5	31.5	0.0	31.5
HCM2kAvg:	3	9	9	2	5	5	6	0	6	6	0	6

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 Lathrop / CMU Retail West Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.637
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 44 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0	0	0	1!	0	0	1	0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	1255	0	0	589	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1255	0	0	589	0
Added Vol:	0	0	0	45	0	84	78	257	0	0	199	5
PasserByVol:	0	0	0	29	0	36	68	-68	0	0	-37	37
Initial Fut:	0	0	0	74	0	120	146	1444	0	0	751	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	82	0	133	162	1604	0	0	834	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	82	0	133	162	1604	0	0	834	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	82	0	133	162	1604	0	0	834	47
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.93	0.93	1.00	1.00	0.92	0.92
Lanes:	0.00	0.00	0.00	0.38	0.00	0.62	1.00	2.00	0.00	0.00	1.89	0.11
Final Sat.:	0	0	0	651	0	1056	1769	3538	0	0	3324	186
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.13	0.09	0.45	0.00	0.00	0.25	0.25
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.20	0.19	0.71	0.00	0.00	0.52	0.52
Volume/Cap:	0.00	0.00	0.00	0.64	0.00	0.64	0.48	0.64	0.00	0.00	0.48	0.48
Uniform Del:	0.0	0.0	0.0	36.8	0.0	36.8	36.1	7.6	0.0	0.0	15.3	15.3
IncremntDel:	0.0	0.0	0.0	4.0	0.0	4.0	1.1	0.5	0.0	0.0	0.2	0.2
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	40.8	0.0	40.8	37.2	8.1	0.0	0.0	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	40.8	0.0	40.8	37.2	8.1	0.0	0.0	15.5	15.5
HCM2kAvg:	0	0	0	7	0	7	5	13	0	0	9	9

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #51 Lathrop / East Access CMU Retail

Cycle (sec): 100 Critical Vol./Cap. (X): 0.568
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 7.9
Optimal Cycle: 38 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	1196	0	0	1085	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1196	0	0	1085	0
Added Vol:	0	0	0	36	0	43	27	132	0	0	171	39
PasserByVol:	0	0	0	17	0	10	35	-35	0	0	-25	25
Initial Fut:	0	0	0	53	0	53	62	1293	0	0	1231	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	59	0	59	69	1437	0	0	1368	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	59	0	59	69	1437	0	0	1368	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	59	0	59	69	1437	0	0	1368	71
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	0.93	0.93	1.00	1.00	0.92	0.92
Lanes:	0.00	0.00	0.00	0.50	0.00	0.50	1.00	2.00	0.00	0.00	1.90	0.10
Final Sat.:	0	0	0	865	0	865	1769	3538	0	0	3339	174
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.07	0.00	0.07	0.04	0.41	0.00	0.00	0.41	0.41
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.12	0.00	0.12	0.07	0.79	0.00	0.00	0.72	0.72
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.57	0.57	0.51	0.00	0.00	0.57	0.57
Uniform Del:	0.0	0.0	0.0	41.6	0.0	41.6	45.1	3.7	0.0	0.0	6.6	6.6
IncremntDel:	0.0	0.0	0.0	3.7	0.0	3.7	6.2	0.2	0.0	0.0	0.3	0.3
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	45.2	0.0	45.2	51.3	3.9	0.0	0.0	6.9	6.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	45.2	0.0	45.2	51.3	3.9	0.0	0.0	6.9	6.9
HCM2kAvg:	0	0	0	4	0	4	3	8	0	0	11	11

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 2 Lathrop / Sr Housing	No / No	No / No
# 4 Union / Main Sr Housing Ent / North	No / No	No / No
# 6 Union / Sr Housing North Entr	No / No	No / No
# 7 Airport / Sr Housing	No / No	No / No
# 11 Union / Single Fam South	No / No	No / No
# 12 Union / Lovelace	No / No	No / No
# 14 Lathrop / Main	No / No	No / No
# 16 Lathrop / McKinley	No / No	No / No
# 17 Airport / Louise	No / No	No / No
# 28 Union / CMU Residential	No / No	No / No
# 29 Union / CMU Retail North Access	No / No	No / No
# 31 Lathrop / CMU Retail Middle Access	No / No	No / No
# 34 Union CMU Retail South Access	No / No	No / No
# 35 Lathrop / CMU Retail West Access	No / No	No / No
# 36 Lathrop / CMU Retail East Access	No / No	No / No
# 39 I-5 NB / Lathrop Rd	No / No	No / Yes
# 40 I-5 SB / Lathrop Rd	Yes / No	Yes / No

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 2 Lathrop / Sr Housing	No / No	No / No
# 4 Union / Main Sr Housing Ent / North	No / No	No / No
# 6 Union / Sr Housing North Entr	No / No	No / No
# 7 Airport / Sr Housing	No / No	No / No
# 11 Union / Single Fam South	No / No	No / No
# 12 Union / Lovelace	No / No	No / No
# 14 Lathrop / Main	No / No	No / No
# 16 Lathrop / McKinley	No / No	No / Yes
# 17 Airport / Louise	No / No	No / Yes
# 28 Union / CMU Residential	No / No	No / No
# 29 Union / CMU Retail North Access	No / No	Yes / Yes
# 31 Lathrop / CMU Retail Middle Access	No / No	No / Yes
# 34 Union CMU Retail South Access	No / No	No / Yes
# 35 Lathrop / CMU Retail West Access	No / No	No / Yes
# 36 Lathrop / CMU Retail East Access	No / No	No / No
# 39 I-5 NB / Lathrop Rd	No / Yes	Yes / Yes
# 40 I-5 SB / Lathrop Rd	Yes / No	Yes / Yes

Peak Hour Delay Signal Warrant Report

Intersection #2 Lathrop / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0 0	0 0	1	0 0	2 0	0	0 0	0 1	0
Final Vol.:	0	0	0	0	0	0	0	348	0	0	356	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 Lathrop / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0 0	0 0	1	0 0	2 0	0	0 0	0 1	0
Final Vol.:	0	0	0	0	0	0	0	348	0	0	356	0

Major Street Volume: 703
Minor Approach Volume: 0
Minor Approach Volume Threshold: 406

Peak Hour Delay Signal Warrant Report

Intersection #2 Lathrop / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0 0	0 0	1	0 0	2 0	0	0 0	0 1	0
Final Vol.:	0	0	0	0	0	34	0	466	0	0	560	13
ApproachDel:	xxxxxx			12.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=34]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1073]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 Lathrop / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	0	0 1	0	0	2	0 0	0	0	0	1 0
Final Vol.:	0		0	0	0		0	34	0		466	0	0		560	13

Major Street Volume: 1039
Minor Approach Volume: 34
Minor Approach Volume Threshold: 272

Peak Hour Delay Signal Warrant Report

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	0	253		0	0	202		0	0		0	0	0		0	0
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	0	253		0	0	202		0	0		0	0	0		0	0

Major Street Volume: 456
Minor Approach Volume: 0
Minor Approach Volume Threshold: 556

Peak Hour Delay Signal Warrant Report

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	19	313		52	10	276		2	7		0	70	156		0	31
ApproachDel:	xxxxxx				xxxxxx				10.9				26.9			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=77]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=936]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=187]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=936]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	19	313		52	10	276		2	7		0	70	156		0	31

Major Street Volume: 672
Minor Approach Volume: 187
Minor Approach Volume Threshold: 422

Peak Hour Delay Signal Warrant Report

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	19	313		52	10	276		2	7		0	70	156		0	31
ApproachDel:	xxxxxx				xxxxxx				10.9				26.9			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=77]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=936]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=187]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=936]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	19	313		52	10	276		2	7		0	70	156		0	31

Major Street Volume: 672
Minor Approach Volume: 187
Minor Approach Volume Threshold: 422

Peak Hour Delay Signal Warrant Report

Intersection #6 Union / Sr Housing North Entr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	0	253		0	0	202		0	0		0	0	0		0	0
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 Union / Sr Housing North Entr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	0	253		0	0	202		0	0		0	0	0		0	0

Major Street Volume: 456
Minor Approach Volume: 0
Minor Approach Volume Threshold: 429

Peak Hour Delay Signal Warrant Report

Intersection #6 Union / Sr Housing North Entr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	22	329		0	0	229		1	3		0	58	0		0	0
ApproachDel:	xxxxxx				xxxxxx				10.0				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=61]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=642]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 Union / Sr Housing North Entr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	22	329	0	0	229	1	3	0	58	0	0	0

Major Street Volume: 581
Minor Approach Volume: 61
Minor Approach Volume Threshold: 364

Peak Hour Delay Signal Warrant Report

Intersection #7 Airport / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Final Vol.:	0	321	0	0	250	0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #7 Airport / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Final Vol.:	0	321	0	0	250	0	0	0	0	0	0	0

Major Street Volume: 571
Minor Approach Volume: 0
Minor Approach Volume Threshold: 369

Peak Hour Delay Signal Warrant Report

Intersection #7 Airport / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Final Vol.:	0	350	16	7	260	0	0	0	0	31	0	20
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.7		

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=51]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=683]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #7 Airport / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Final Vol.:	0	350	16	7	260	0	0	0	0	31	0	20

Major Street Volume: 632
Minor Approach Volume: 51
Minor Approach Volume Threshold: 342

Peak Hour Delay Signal Warrant Report

Intersection #11 Union / Single Fam South

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Final Vol.:	0	253	0	0	202	0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Union / Single Fam South

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Final Vol.:	0	253		0	0	202		0	0		0	0	0		0	0

Major Street Volume: 456
Minor Approach Volume: 0
Minor Approach Volume Threshold: 429

Peak Hour Delay Signal Warrant Report

Intersection #11 Union / Single Fam South

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Final Vol.:	0	359		43	0	492		0	0		0	0	122		0	26
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				22.9			

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=148]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1050]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Union / Single Fam South

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Final Vol.:	0	359		43	8	492		0	0		0	0	122		0	26

Major Street Volume: 902
Minor Approach Volume: 148
Minor Approach Volume Threshold: 247

Peak Hour Delay Signal Warrant Report

Intersection #12 Union / Lovelace

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	51	178		0	0	158		8	7		0	33	0		0	0
ApproachDel:	xxxxxx				xxxxxx				9.7				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=40]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=434]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Union / Lovelace

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	51	178		0	0	158		8	7		0	33	0		0	0

Major Street Volume: 394
Minor Approach Volume: 40
Minor Approach Volume Threshold: 468

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Lathrop / McKinley

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	1	0	1	0 0
Final Vol.:	116		0	30	0		0	0	0	362		167	63	527		0

Major Street Volume: 1119
Minor Approach Volume: 146
Minor Approach Volume Threshold: 246

Peak Hour Delay Signal Warrant Report

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Intersection #12 Union / Lovelace

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	98	210		0	0	169		8	7		0	50	0		0	0
ApproachDel:	xxxxxx				xxxxxx				9.9				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=57]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=541]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #12 Union / Lovelace

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	98	210		0	0	169		8	7		0	50	0		0	0

Major Street Volume: 484
Minor Approach Volume: 57
Minor Approach Volume Threshold: 413

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #16 Lathrop / McKinley

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	1	0	1	0 0
Final Vol.:	116		0	36	0		0	0	0		416	167	74		663	0

Major Street Volume: 1320
Minor Approach Volume: 151
Minor Approach Volume Threshold: 189

Peak Hour Delay Signal Warrant Report

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Intersection #16 Lathrop / McKinley

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	1	0	1	0 0
Final Vol.:	116		0	30	0		0	0	0		362	167	63		527	0
ApproachDel:	16.9				xxxxxx				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=146]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1264]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Delay Signal Warrant Report

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Intersection #16 Lathrop / McKinley

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Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	1	0	1	0 0
Final Vol.:	116		0	36	0		0	0	0		416	167	74		663	0
ApproachDel:	20.2				xxxxxx				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=151]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1471]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Delay Signal Warrant Report

Intersection #28 Union / CMU Residential

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:		0	253		0		0	202		0		0	0		0		0	0		0
ApproachDel:		xxxxxx					xxxxxx					xxxxxx					xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Union / CMU Residential

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:		0	253		0		0	202		0		0	0		0		0	0		0

Major Street Volume: 456
Minor Approach Volume: 0
Minor Approach Volume Threshold: 429

Peak Hour Delay Signal Warrant Report

Intersection #28 Union / CMU Residential

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:		26	392		0		0	612		2		10	0		101		0	0		0
ApproachDel:		xxxxxx					xxxxxx					15.5					xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=111]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1143]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Union / CMU Residential

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:		26	392		0		0	612		2		10	0		101		0	0		0

Major Street Volume: 1032
Minor Approach Volume: 111
Minor Approach Volume Threshold: 211

Peak Hour Delay Signal Warrant Report

Intersection #29 Union / CMU Retail North Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	1	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:		0	253		0		0	202		0		0	0		0		0	0		0
ApproachDel:		xxxxxx					xxxxxx					xxxxxx					xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #29 Union / CMU Retail North Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	1	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:		0	253		0		0	202		0		0	0		0		0	0		0

Major Street Volume: 456
Minor Approach Volume: 0
Minor Approach Volume Threshold: 556

Peak Hour Delay Signal Warrant Report

Intersection #29 Union / CMU Retail North Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	40	386		0	0	656		58	33		0	23	0		0	0
ApproachDel:	xxxxxx				xxxxxx				21.6				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=57]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1196]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #29 Union / CMU Retail North Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	40	386		0	0	656		58	33		0	23	0		0	0

Major Street Volume: 1139
Minor Approach Volume: 57
Minor Approach Volume Threshold: 240

Peak Hour Delay Signal Warrant Report

Intersection #31 Lathrop / CMU Retail Middle Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	1	0	2	0 0	0	0	0	1 0
Final Vol.:	0		0	0	0		0	0	0		348	0	0		356	0
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #31 Lathrop / CMU Retail Middle Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	1	0	2	0 0	0	0	0	1 0
Final Vol.:	0		0	0	0		0	0	0		348	0	0		356	0

Major Street Volume: 703
Minor Approach Volume: 0
Minor Approach Volume Threshold: 406

Peak Hour Delay Signal Warrant Report

Intersection #31 Lathrop / CMU Retail Middle Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	1	0	2	0 0	0	0	0	1 0
Final Vol.:	0		0	0	19		0	22	30		364	0	0		541	22
ApproachDel:	xxxxxx				14.2				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=41]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=999]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Delay Signal Warrant Report

Intersection #34 Union CMU Retail South Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	1	0 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	253		0	0	202		0	0		0	0	0		0	0
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #31 Lathrop / CMU Retail Middle Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	0	0	0	1! 0	1	0	2	0	0	1 0
Final Vol.:	0	0	0	19	0	22	30	364	0	0	541	22

Major Street Volume: 958
Minor Approach Volume: 41
Minor Approach Volume Threshold: 300

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #34 Union CMU Retail South Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0	1	0	0	0 0	0	0	0	0	1	0 0 0 0 0
Final Vol.:	0	253	0	0	202	0	0	0	0	0	0	0

Major Street Volume: 456
Minor Approach Volume: 0
Minor Approach Volume Threshold: 429

Peak Hour Delay Signal Warrant Report

Intersection #34 Union CMU Retail South Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0	1	0	0	0 1 0 0	0	0	0	0	1	0 0 0 0 0
Final Vol.:	0	426	0	0	679	3	0	0	22	0	0	0
ApproachDel:	xxxxxx			xxxxxx			13.3			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=22]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1130]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #34 Union CMU Retail South Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0	1	0	0	0 0 1 0 0	0	0	0	0	1	0 0 0 0 0
Final Vol.:	0	426	0	0	679	3	0	0	22	0	0	0

Major Street Volume: 1108
Minor Approach Volume: 22
Minor Approach Volume Threshold: 192

Peak Hour Delay Signal Warrant Report

Intersection #35 Lathrop / CMU Retail West Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	0	0	0	0 0 0 0 1	1	0	2	0	0	0 0 1 0 0
Final Vol.:	0	0	0	0	0	0	0	348	0	0	356	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #35 Lathrop / CMU Retail West Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	0	0	0	0 0 0 0 1	1	0	2	0	0	0 0 1 0 0
Final Vol.:	0	0	0	0	0	0	0	348	0	0	356	0

Major Street Volume: 703
Minor Approach Volume: 0
Minor Approach Volume Threshold: 406

Peak Hour Delay Signal Warrant Report

Intersection #35 Lathrop / CMU Retail West Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	0	0	0	1	1	0	2	0	0	0	1	0
Final Vol.:	0		0		0		3		0		42		76		390	
ApproachDel:	xxxxxx				12.0				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=46]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1041]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #35 Lathrop / CMU Retail West Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	0	0	0	1	1	0	2	0	0	0	1	0
Final Vol.:	0		0		0		3		0		42		76		390	

Major Street Volume: 996
Minor Approach Volume: 46
Minor Approach Volume Threshold: 286

Peak Hour Delay Signal Warrant Report

Intersection #36 Lathrop / CMU Retail East Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0
Final Vol.:	0		0		0		0		0		348		0		356	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #36 Lathrop / CMU Retail East Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0
Final Vol.:	0		0		0		0		0		348		0		356	

Major Street Volume: 703
Minor Approach Volume: 0
Minor Approach Volume Threshold: 406

Peak Hour Delay Signal Warrant Report

Intersection #36 Lathrop / CMU Retail East Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0
Final Vol.:	0		0		0		0		7		0	383	0		0	549	40
ApproachDel:	xxxxxx				11.9				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=979]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #36 Lathrop / CMU Retail East Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0
Final Vol.:	0		0		0		0		7		0	383	0		0	549	40

Major Street Volume: 972
Minor Approach Volume: 7
Minor Approach Volume Threshold: 295

Peak Hour Delay Signal Warrant Report

Intersection #39 I-5 NB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0 0	1 0	2	0 0	0 0	0	1 0
Final Vol.:	12	2	152	0	0	0	3	309	0	0	378	502
ApproachDel:	11.3			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=167]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1359]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #39 I-5 NB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0 0	1 0	2	0 0	0 0	0	1 0
Final Vol.:	12	2	152	0	0	0	3	309	0	0	378	502

Major Street Volume: 1192
Minor Approach Volume: 167
Minor Approach Volume Threshold: 224

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #39 I-5 NB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0 0	1 0	2	0 0	0 0	0	1 0
Final Vol.:	12	2	179	0	0	0	3	336	0	0	447	571

Major Street Volume: 1357
Minor Approach Volume: 193
Minor Approach Volume Threshold: 180

Peak Hour Delay Signal Warrant Report

Intersection #39 I-5 NB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0 0	1 0	2	0 0	0 0	0	1 0
Final Vol.:	12	2	179	0	0	0	3	336	0	0	447	571
ApproachDel:	11.9			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=193]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1550]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Delay Signal Warrant Report

Intersection #40 I-5 SB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0	0	0 0 1!	0	0	0 0	0	1 0	1 0	2	0 0
Final Vol.:	0	0	0	263	10	11	0	48	18	324	63	0
ApproachDel:	xxxxxx			65.6			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=5.2]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=284]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=738]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #40 I-5 SB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	2 0	0
Final Vol.:	0	0	0	263	10	11	0	48	18	324	63	0

Major Street Volume: 453
Minor Approach Volume: 284
Minor Approach Volume Threshold: 557

Peak Hour Delay Signal Warrant Report

Intersection #40 I-5 SB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	2 0	0
Final Vol.:	0	0	0	290	10	11	0	48	18	393	63	0
ApproachDel:	xxxxxx			177.9			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=15.4]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=311]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=833]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #40 I-5 SB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	2 0	0
Final Vol.:	0	0	0	290	10	11	0	48	18	393	63	0

Major Street Volume: 522
Minor Approach Volume: 311
Minor Approach Volume Threshold: 509

Peak Hour Delay Signal Warrant Report

Intersection #2 Lathrop / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	0 0	1	0 0	2 0	0	0 0	0 1	0
Final Vol.:	0	0	0	0	0	0	0	611	0	0	430	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 Lathrop / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	0 0	1	0 0	2 0	0	0 0	0 1	0
Final Vol.:	0	0	0	0	0	0	0	611	0	0	430	0

Major Street Volume: 1041
Minor Approach Volume: 0
Minor Approach Volume Threshold: 271

Peak Hour Delay Signal Warrant Report

Intersection #2 Lathrop / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	0 0	1	0 0	2 0	0	0 0	0 1	0
Final Vol.:	0	0	0	0	0	22	0	961	0	0	692	46
ApproachDel:	xxxxxx			13.7			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=22]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1721]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 Lathrop / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		22	0		961		0	0		692		46

Major Street Volume: 1699
Minor Approach Volume: 22
Minor Approach Volume Threshold: 102

Peak Hour Delay Signal Warrant Report

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Final Vol.:	0		201		0	0		302		0	0		0		0	0		0		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Final Vol.:	0		201		0	0		302		0	0		0		0	0		0		0

Major Street Volume: 503
Minor Approach Volume: 0
Minor Approach Volume Threshold: 521

Peak Hour Delay Signal Warrant Report

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 1!	0 0	0	0 1!	0 0
Final Vol.:	59	313	180	36	403	8	4	0	54	106	0	19
ApproachDel:	xxxxxx			xxxxxx			12.3			45.7		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=59]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1182]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=124]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1182]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Union / Main Sr Housing Ent / North Sing Fam Ent

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 1!	0 0	0	0 1!	0 0
Final Vol.:	59	313	180	36	403	8	4	0	54	106	0	19

Major Street Volume: 999
Minor Approach Volume: 124
Minor Approach Volume Threshold: 285

Peak Hour Delay Signal Warrant Report

Intersection #6 Union / Sr Housing North Entr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 Union / Sr Housing North Entr

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0

Major Street Volume: 503
Minor Approach Volume: 0
Minor Approach Volume Threshold: 402

Peak Hour Delay Signal Warrant Report

Intersection #6 Union / Sr Housing North Entr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	72	264	0	0	402	3	2	0	44	0	0	0
ApproachDel:	xxxxxx			xxxxxx			11.2			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=47]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=789]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 Union / Sr Housing North Entr

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	72		264		0	0		402		3	2		0		44	0		0		0

Major Street Volume: 742
Minor Approach Volume: 47
Minor Approach Volume Threshold: 299

Peak Hour Delay Signal Warrant Report

Intersection #7 Airport / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Final Vol.:	0		294		0	0		389		0	0		0		0	0		0		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #7 Airport / Sr Housing

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Final Vol.:	0		294		0	0		389		0	0		0		0	0		0		0

Major Street Volume: 683
Minor Approach Volume: 0
Minor Approach Volume Threshold: 321

Peak Hour Delay Signal Warrant Report

Intersection #7 Airport / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Final Vol.:	0		314		60	22		423		0	0		0		0	24		0		12
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					14.5				

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=37]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=857]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #7 Airport / Sr Housing

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Final Vol.:	0		314		60	22		423		0	0		0		0	24		0		12

Major Street Volume: 820
Minor Approach Volume: 37
Minor Approach Volume Threshold: 272

Peak Hour Delay Signal Warrant Report

Intersection #11 Union / Single Fam South

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Final Vol.:	0		201		0	0		302		0	0		0		0	0		0		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Union / Single Fam South

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0 1	0	0	1 0 0 0	0	0	0 0 0 0	0	0	0 1! 0	0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0

Major Street Volume: 503
Minor Approach Volume: 0
Minor Approach Volume Threshold: 402

Peak Hour Delay Signal Warrant Report

Intersection #11 Union / Single Fam South

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0 1	0	0	1 0 0 0	0	0	0 0 0 0	0	0	0 1! 0	0
Final Vol.:	0	536	147	29	534	0	0	0	0	83	0	16
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			33.7		

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=99]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1344]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Union / Single Fam South

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 0 1	0	0	1 0 0 0	0	0	0 0 0 0	0	0	0 1! 0	0
Final Vol.:	0	536	147	29	534	0	0	0	0	83	0	16

Major Street Volume: 1246
Minor Approach Volume: 99
Minor Approach Volume Threshold: 161

Peak Hour Delay Signal Warrant Report

Intersection #12 Union / Lovelace

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0 0	0	0	0 0 1	0	0	0 1! 0	0	0	0 0 0	0
Final Vol.:	44	133	0	0	240	13	22	0	79	0	0	0
ApproachDel:	xxxxxx			xxxxxx			10.8			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=101]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=532]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Union / Lovelace

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0 0	0	0	0 0 1	0	0	0 1! 0	0	0	0 0 0	0
Final Vol.:	44	133	0	0	240	13	22	0	79	0	0	0

Major Street Volume: 431
Minor Approach Volume: 101
Minor Approach Volume Threshold: 444

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Union / Lovelace

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0 0	0	0	0 0 1	0	0	0 1! 0	0	0	0 0 0	0
Final Vol.:	80	163	0	0	284	13	22	0	138	0	0	0

Major Street Volume: 541
Minor Approach Volume: 160
Minor Approach Volume Threshold: 383

Peak Hour Delay Signal Warrant Report

Intersection #12 Union / Lovelace

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	80	163		0	0	284		13	22		0	138	0		0	0
ApproachDel:	xxxxxx				xxxxxx				11.9				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=160]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=701]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Delay Signal Warrant Report

Intersection #16 Lathrop / McKinley

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	1	0	1	0 0
Final Vol.:	120		0	86	0		0	0	0	718		72	24	409		0
ApproachDel:	23.0				xxxxxx				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=206]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1429]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Delay Signal Warrant Report

Intersection #28 Union / CMU Residential

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	0	201		0	0	302		0	0		0	0	0		0	0
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Lathrop / McKinley

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0	0 0	0	1	0	1	0 0
Final Vol.:	120	0	86	0	0	0	0	718	72	24	409	0

Major Street Volume: 1223
Minor Approach Volume: 206
Minor Approach Volume Threshold: 215

Peak Hour Delay Signal Warrant Report

Intersection #16 Lathrop / McKinley

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0	0 0	0	1	0	1	0 0
Final Vol.:	120	0	106	0	0	0	0	903	72	41	531	0
ApproachDel:	40.2			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=226]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1773]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Lathrop / McKinley

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1!	0	0	0 0	0	0	0 0	0	1	0	1	0 0
Final Vol.:	120	0	106	0	0	0	0	903	72	41	531	0

Major Street Volume: 1548
Minor Approach Volume: 226

Minor Approach Volume Threshold: 134

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Union / CMU Residential

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0

Major Street Volume: 503
Minor Approach Volume: 0
Minor Approach Volume Threshold: 402

Peak Hour Delay Signal Warrant Report

Intersection #28 Union / CMU Residential

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 0	0	0 1	0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	100	677	0	0	608	10	6	0	53	0	0	0
ApproachDel:	xxxxxx			xxxxxx			15.9			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=59]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1453]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #28 Union / CMU Residential

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 1	0	0 0	0	0 1	0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	100	677	0	0	608	10	6	0	53	0	0	0

Major Street Volume: 1394
Minor Approach Volume: 59
Minor Approach Volume Threshold: 131

Peak Hour Delay Signal Warrant Report

Intersection #29 Union / CMU Retail North Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	0 0	0	0 1	0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #29 Union / CMU Retail North Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	0 0	0	0 1	0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0

Major Street Volume: 503
Minor Approach Volume: 0
Minor Approach Volume Threshold: 521

Peak Hour Delay Signal Warrant Report

Intersection #29 Union / CMU Retail North Access

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1 0	1	0 0	0	0 1	0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	141	683	0	0	569	92	110	0	172	0	0	0
ApproachDel:	xxxxxx			xxxxxx			241.1			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=18.9]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=282]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.

```
Signal Warrant Rule #3: [approach count=3][total volume=1768]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
```


Peak Hour Volume Signal Warrant Report [Urban]

Intersection #29 Union / CMU Retail North Access

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	1	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	141		683		0	0		569		92	110		0		172	0		0		0

```
Major Street Volume:                1486
Minor Approach Volume:              282
Minor Approach Volume Threshold:    148
```


Peak Hour Delay Signal Warrant Report

Intersection #31 Lathrop / CMU Retail Middle Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		0	0		611		0	0		430		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #31 Lathrop / CMU Retail Middle Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		0	0		611		0	0		430		0

```
Major Street Volume:                1041
Minor Approach Volume:              0
Minor Approach Volume Threshold:    271
```


Peak Hour Delay Signal Warrant Report

Intersection #31 Lathrop / CMU Retail Middle Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	120		0		73	86		721		0	0		560		99
ApproachDel:	xxxxxx					47.2					xxxxxx					xxxxxx				

```
Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=193]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1659]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
```


Peak Hour Volume Signal Warrant Report [Urban]

Intersection #31 Lathrop / CMU Retail Middle Access

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	120		0		73	86		721		0	0		560		99

```
Major Street Volume:                1466
Minor Approach Volume:              193
Minor Approach Volume Threshold:    153
```


Peak Hour Delay Signal Warrant Report

Intersection #34 Union CMU Retail South Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Final Vol.:	0		201		0	0		302		0	0		0		0	0		0		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #34 Union CMU Retail South Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1	0	0	0 1	0	0	0 0	1	0	0 0	0
Final Vol.:	0	201	0	0	302	0	0	0	0	0	0	0

Major Street Volume: 503
Minor Approach Volume: 0
Minor Approach Volume Threshold: 402

Peak Hour Delay Signal Warrant Report

Intersection #34 Union CMU Retail South Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1	0	0	0 1	0	0	0 0	1	0	0 0	0
Final Vol.:	0	826	0	0	738	3	0	0	158	0	0	0
ApproachDel:	xxxxxx			xxxxxx			18.6			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=158]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1724]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #34 Union CMU Retail South Access

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1	0	0	0 1	0	0	0 0	1	0	0 0	0
Final Vol.:	0	826	0	0	738	3	0	0	158	0	0	0

Major Street Volume: 1567
Minor Approach Volume: 158
Minor Approach Volume Threshold: 100 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #35 Lathrop / CMU Retail West Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0 0	0	0	0 0	1	1	0 2	0	0	0 1	0
Final Vol.:	0	0	0	0	0	0	0	611	0	0	430	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #35 Lathrop / CMU Retail West Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0 0	0	0	0 0	1	1	0 2	0	0	0 1	0
Final Vol.:	0	0	0	0	0	0	0	611	0	0	430	0

Major Street Volume: 1041
Minor Approach Volume: 0
Minor Approach Volume Threshold: 271

Peak Hour Delay Signal Warrant Report

Intersection #35 Lathrop / CMU Retail West Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0 0	0	0	0 0	1	1	0 2	0	0	0 1	0
Final Vol.:	0	0	0	24	0	154	190	771	0	0	607	30
ApproachDel:	xxxxxx			15.7			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=179]

SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1777]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #35 Lathrop / CMU Retail West Access

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0
Final Vol.:	0		0		0	24		0		154	190		771		0	0		607		30

Major Street Volume: 1598
Minor Approach Volume: 179
Minor Approach Volume Threshold: 123

Peak Hour Delay Signal Warrant Report

Intersection #36 Lathrop / CMU Retail East Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		0	0		611		0	0		430		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #36 Lathrop / CMU Retail East Access

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		0	0		611		0	0		430		0

Major Street Volume: 1041
Minor Approach Volume: 0
Minor Approach Volume Threshold: 271

Peak Hour Delay Signal Warrant Report

Intersection #36 Lathrop / CMU Retail East Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		24	0		840		0	0		621		132
ApproachDel:	xxxxxx					13.5					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1618]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #36 Lathrop / CMU Retail East Access

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0
Final Vol.:	0		0		0	0		0		24	0		840		0	0		621		132

Major Street Volume: 1593
Minor Approach Volume: 24
Minor Approach Volume Threshold: 124

Peak Hour Delay Signal Warrant Report

Intersection #39 I-5 NB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	16		3		422	0		0		0	31		592		0	0		267		380
ApproachDel:	20.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=441]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1711]

SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #39 I-5 NB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	16		3		422	0		0		0	31		592		0	0		267		380

Major Street Volume: 1270
Minor Approach Volume: 441
Minor Approach Volume Threshold: 202

Peak Hour Delay Signal Warrant Report

Intersection #39 I-5 NB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	16		3		514	0		0		0	31		684		0	0		328		441
ApproachDel:	35.1					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=5.2]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=533]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2018]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #39 I-5 NB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0
Final Vol.:	16		3		514	0		0		0	31		684		0	0		328		441

Major Street Volume: 1484
Minor Approach Volume: 533
Minor Approach Volume Threshold: 149

Peak Hour Delay Signal Warrant Report

Intersection #40 I-5 SB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	0	0	1	0	1	0	2	0	0
Final Vol.:	0		0		0	542		10		4	0		82		6	206		84		0
ApproachDel:	xxxxxx					179.7					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=27.8]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=557]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=934]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #40 I-5 SB / Lathrop Rd

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	0	0	1	0	1	0	2	0	0
Final Vol.:	0		0		0	542		10		4	0		82		6	206		84		0

Major Street Volume: 378
Minor Approach Volume: 557
Minor Approach Volume Threshold: 620

Peak Hour Delay Signal Warrant Report

Intersection #40 I-5 SB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	0	0	1	0	1	0	2	0	0
Final Vol.:	0		0		0	634		10		4	0		82		6	267		84		0
ApproachDel:	xxxxxx					421.4					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=76.0]

```
   SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=649]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1088]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
```


Peak Hour Volume Signal Warrant Report [Urban]

Intersection #40 I-5 SB / Lathrop Rd

Future Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	2 0	0
Final Vol.:	0	0	0	634	10	4	0	82	6	267	84	0

```
Major Street Volume:              439
Minor Approach Volume:            649
Minor Approach Volume Threshold: 569
```