

EXHIBIT 12



Transportation
Consultants

Vision That Moves Your Community

MS11-0006

RECEIVED
CONTRA COSTA COUNTY
JUL 28 2014
Dept of Conservation & Development

December 10, 2012

Mr. Bryant Silliman
Bryant Carver Silliman, Architect, AIA, NCARB
P.O. Box 483
Tahoma, CA 96142

Re: Traffic Study for Proposed Retail/Office Building in Alamo

Dear Mr. Silliman:

This is to present the results of a parking and traffic study for the proposed development of a retail/office building located at 3189 Danville Boulevard in the northwest quadrant of the intersection of Stone Valley Road and Danville Boulevard in Alamo. The project is to construct a 2,875 square foot two story building in the parking lot of an existing complex at the same address. The project would add a third building to an existing two-building complex accompanied by adjustment of parcel lot lines and parking arrangements.

The current complex includes 26,371 square feet of gross building area and requires 103 parking spaces to satisfy Contra Costa County Code 82-16.018 parking requirements. The details of the current tenant utilization and parking requirements are shown in the attached BCSA drawing A0.

The proposed development consists of a two story building – the first floor contains 1,441 square feet of retail area; the second floor consists of 1,434 square feet of office area. The details of the addition are shown on attached BCSA drawing A1. The new area requires 14 parking spaces to satisfy code requirements. The total parking requirement for the existing and proposed development is therefore 103 + 14 or 117 stalls. The total number of stalls provided is 117.

Parking Study .

TJKM conducted a parking observation study of the existing facility on Friday, December 7, 2012. The weather was good on the day of the survey. TJKM counted occupancy of the existing parking stalls at one hour intervals at 11 a.m., 12 noon, 1 p.m. and 2 p.m. Based on TJKM's experience parking demands on this day of the week, month of the year, and time of the day are all above average and should represent peak conditions. During the four observations, TJKM noted occupancies of 103, 97, 105 and 106 stalls with the average number of stalls occupied at 103 stalls, which is coincidentally the calculated number of stalls required to satisfy code requirements. The new facility will supply 14 new parking spaces, which also will exactly satisfy code requirements. It is TJKM's opinion that not only will the new parking supply meet parking code requirements; it will also satisfy the parking demand during peak periods.

Internal Circulation

In the "after" condition the parking lot for the development which includes the new building will continue to have access from Danville Boulevard and from Stone Valley Road at the existing driveways. A third access is directly from the Alamo Plaza Center, which has numerous driveways to surrounding streets. There are currently two "internal" connections to the Alamo Plaza parking lots from the existing office complex; one of which will be displaced by the new building. Some of the parking for the existing development is located west of the building complex in a portion of a larger Alamo Plaza parking lot. Overall, the resulting circulation should be very adequate.

Fremont
3875 Hopyard Road
Suite 200
Pleasanton, CA
94588-8526
925.463.0611
925.463.3690 fax

Fresno
516 W. Shaw Avenue
Suite 200
Fresno, CA
93704-2515
559.325.7530
559.221.4940 fax

Sacramento
980 Ninth Street
16th Floor
Sacramento, CA
95814-2736
916.449.9095

Santa Rosa
1400 N. Dutton Avenue
Suite 21
Santa Rosa, CA
95401-4643
707.575.5800
707.575.5888 fax

The design does create a dead end east-west parking aisle leading to the new building itself. It is suggested that the four to six stalls closest to the building be designated as employee parking. That should minimize any issues related to the absence of turn-around point.

Traffic Impacts

TJKM conducted a mini-traffic impact analysis of this proposed development, even though it does not reach the 100 peak hour threshold that dictates the need for a full study. Traffic generation from the proposed development is shown in the Table 1 below.

Table 1 Trip Generation

ITE Code	Land Use	Size, Sq. Ft.	Trip Rates/KSF			Daily	Trips					
			Daily	A.M. Peak (In/Out)	P.M. Peak (In/Out)		A.M.	P.M.	In	Total		
710	General Office Bldg.	1,434	11.01	1.55 (88/12)	1.49 (17/83)	16	2	1	3	1	2	3
820	Retail	1,441	39.0	1.0 (61/39)	3.73 (49/51)	56	1	1	2	3	3	6
Total						72	3	2	5	4	5	9

This evaluation assumes the lower floor of the two story building will be utilized for retail uses. If not, the trip generation would be lower. It can be seen that the proposed development has minimal traffic generation, with five new trips in the a.m. and nine new trips in the p.m. peak.

Table 2 Level of Service (LOS) at Stone Valley Road and Danville Blvd.

Location	Existing				Existing Plus Project			
	A.M.		P.M.		A.M.		P.M.	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CCTA Methodology	50.1	E	40.2	E	50.4	E	40.7	E
HCM Methodology	40.9	D	39.3	D	41.1	D	39.5	D

TJKM conducted peak hour intersection turn counts at Stone Valley Road and Danville Boulevard on December 6, 2012. The counts are shown in Appendix 1. In the a.m. peak hour, beginning at 7:45 a.m., a total of 3,493 vehicles use the intersection. The five additional trips generated by the proposed project produce a 0.14 percent increase in traffic. In the p.m. peak, beginning at 4:30 p.m., a total of 3,425 vehicles use the intersection. The nine additional trips generated by the proposed project produce a 0.26 percent increase in traffic. Both figures are obviously minimal.

When calculating the level of service, TJKM noted a uniform LOS E condition, with and without the project, using the CCTA level of service methodology. The project produces insignificant increases in delay, 0.3 seconds in the a.m. and 0.5 seconds in the p.m. peak. When using the Highway Capacity Manual methodology, TJKM noted that the intersection operates at LOS D, again with and without the project, during both a.m. and p.m. periods. The project increases the average delay per vehicle by 0.2 seconds during both the a.m. and p.m. periods. Again, the increases are deemed insignificant.

It is noted that this project does not trigger the need for a level of service analysis; in any event the results show the project essentially doesn't change conditions at the intersection during peak periods.

Summary

The proposed development of 2,875 square feet of office/retail uses produces minimal parking and traffic impacts.

- The project, when combined with the existing office development on the adjoining parcel, generates a need for 117 parking stalls. A total of 117 stalls are provided.
- A parking study showed that during busy periods, the existing peak parking demand is 103 stalls. With the new development requiring 14 stalls, the peak demand is also 117 stalls.
- With the new building placed on site, internal circulation will be adequate. However, to minimize the impacts of a dead-end parking aisle, four to six of the stalls in this area should be designated for employee parking.
- The project generates 72 daily trips, five a.m. peak hour trips and nine p.m. peak hour trips. This project falls far below the 100 peak hour trip threshold for which comprehensive traffic studies are required.
- Using CCTA methodology, the level of service at the adjacent Stone Valley Road and Danville Boulevard intersection with and without the project during both the a.m. and p.m. periods is LOS E. But, using Highway Capacity methodology, the intersection operates at LOS D during both time periods with and without the project. The project increases the traffic by less than one percent during both time periods.

Please contact me if there are any questions about this report.

Very truly yours,



Chris D. Kinzel, P.E.
Vice-President

Appendix A – Site Drawings

BRYANT
CARVER
SILLIMAN
ARCHITECT

Engineering Workload by
Type, Oct. 2012

Value

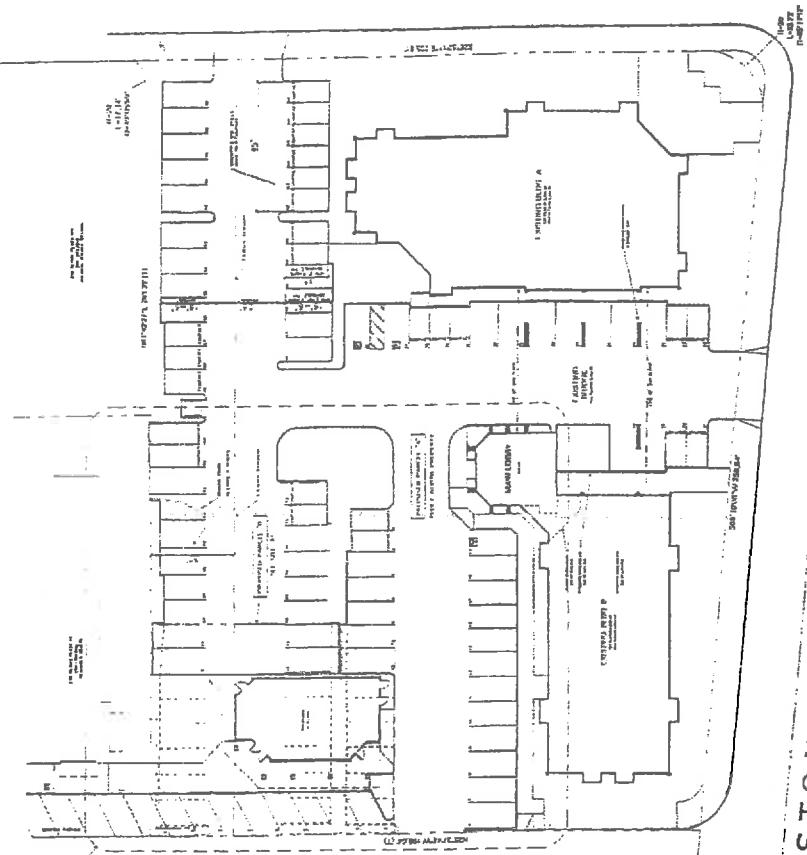
\$112

Value



RETAIL/OFFICE BUILDING
ON RUBEE NORTH OFFICE BUILDINGS
PARCEL A APN 191-093-040
RUBEE NORTH OFFICE BUILDINGS
3189 DANVILLE BLVD.
ALAMO, CA 94507

DANVILLE BOULEVARD



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**BRYANT
CARVER
SILLIMAN
ARCHITECT**



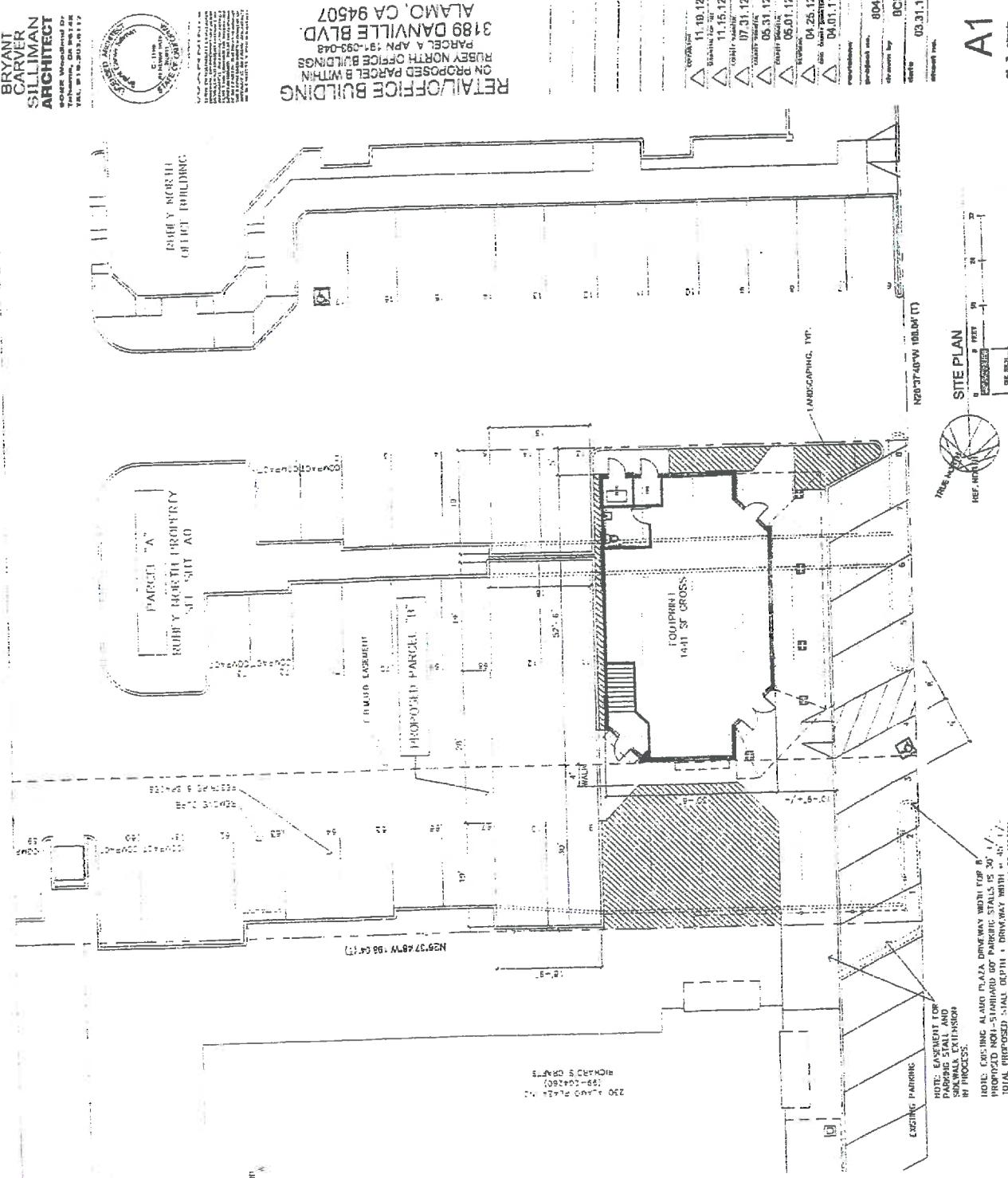
RETAIL OFFICE BUILDING
ON PROPERTY PARCEL #87-093-A
RUEBY NORTH OFFICE BUILDINGS
PARCEL A P/N 13-093-A
3189 DANVILLE BLVD.
ALAMO, CA 94507

MINOR SUBDIVISION APPLICATION

- URBAN & NEW YORK CONTAINING A NEW LIST OF THE "SIXTY-ONE
FAMOUS PAINTERS" WHICH ARE BEING AUTHORIZED FOR VARIOUS
ARTICLES IN THIS NUMBER OF THE JOURNAL OF DRAWING. COPIES, 10
PENNYS.
THE PAPER IS PRINTED ON A FINE QUALITY OF DRAWING PAPER,
PRINTED IN BLACK AND WHITE, AND IS DESIGNED FOR DRAWING, ORGANIZA-
TION, AND STUDY. IT IS THE ONLY PRACTICAL PAPER IN ART, AND
IS ESPECIALLY USEFUL IN THE REGION, WITH ITS HIGHLY EDUCATED POPULATION,
INCLUDES LIBRARIES, AND PROVIDES THE BEST SOURCE OF DRAWING MATERIAL,
AND IT IS QUITE USEFUL IN SERIAL PUBLISHING, LIBRARIES, &
C. C. CHAS. SP. 10:
C. C. CHAS. SP. 10:

SITE ANALYSIS

סינון וניתוח



**CLOSING ALAMO PLAZA DRIVEWAY WOULD TOP A
PROPOSED NON-STANDARD GO PARKING STALLS IN 30' 4"**

Appendix B -- Traffic Counts

All Traffic Data
(916) 771-8700

City of Alamo

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File Name : 12-7544-001 Danville-Stone Valley

Page No : 1
Start Date : 12/02/2012
Site Code : 00000000

Start Time	Group Printed Listsheet												Stone Valley Road														
	Danville Blvd						Stone Valley Road						Danville Blvd						Stone Valley Road								
	Southbound			Northbound			Westbound			Eastbound			Northbound			Southbound			Eastbound			Westbound			Northbound		
Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	Arr.	Left	Right	
07:00	51	64	1	25	16	15	36	36	94	4	4	90	11	11	90	11	11	16	14	14	51	51	51	51	51	51	
07:15	65	152	12	252	53	19	34	34	106	4	4	90	111	111	90	111	111	17	15	15	66	66	66	66	66	66	
07:30	124	192	13	349	59	5	45	45	124	3	6	104	13	13	104	13	13	19	17	17	57	57	57	57	57	57	
07:45	230	338	15	395	65	7	43	43	115	1	11	165	38	38	165	38	38	37	35	35	137	137	137	137	137	137	
Total	475	616	38	124	212	4	35	35	236	32	32	433	57	57	433	57	57	74	74	74	137	137	137	137	137	137	
08:00	352	252	9	382	106	11	61	61	172	4	38	187	229	9	9	19	39	39	39	39	39	953	953	953	953	953	953
08:15	239	205	10	354	143	15	67	67	185	18	18	193	274	9	9	14	34	34	34	34	34	567	567	567	567	567	567
08:30	115	204	9	331	45	39	58	58	113	12	12	142	237	1	1	20	42	42	42	42	42	523	523	523	523	523	523
08:45	116	206	6	334	75	8	58	58	145	19	14	142	362	5	5	33	33	33	33	33	33	32	32	32	32	32	32
Total	903	870	17	243	355	61	35	35	615	59	59	603	1242	21	21	113	62	62	62	62	62	202	202	202	202	202	202

City of Alamo

All Traffic Data
(916) 771-8700

File Name : 12-7544-001 Danville-Stone Valley
 Site Code : 00000000
 Start Date : 12/6/2012
 Page No : 2

Start Time	Danville Blvd Southbound			Stone Valley Road Westbound			Danville Blvd Northbound			Stone Valley Road Eastbound			Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 to 08:45 - Peak 1 of 1													
07:45	170	208	12	390	65	7	43	115	11	111	166	298	57
08:00	132	252	9	393	100	11	61	172	4	138	187	329	59
08:15	139	205	10	354	103	15	67	186	18	123	133	274	54
08:30	118	204	9	331	48	20	45	113	12	183	142	337	42
Total Volume	559	869	40	1468	316	53	216	585	45	555	628	1228	823
% App. Total	38.1	59.2	2.7		54	9.1	36.9	37	45.2	51.1	10.6	52.4	3493
PHF	.822	.862	.833		.267	.663	.806	.791	.625	.758	.910	.911	.916

City of Alamo

All Traffic Data
(916) 771-8700

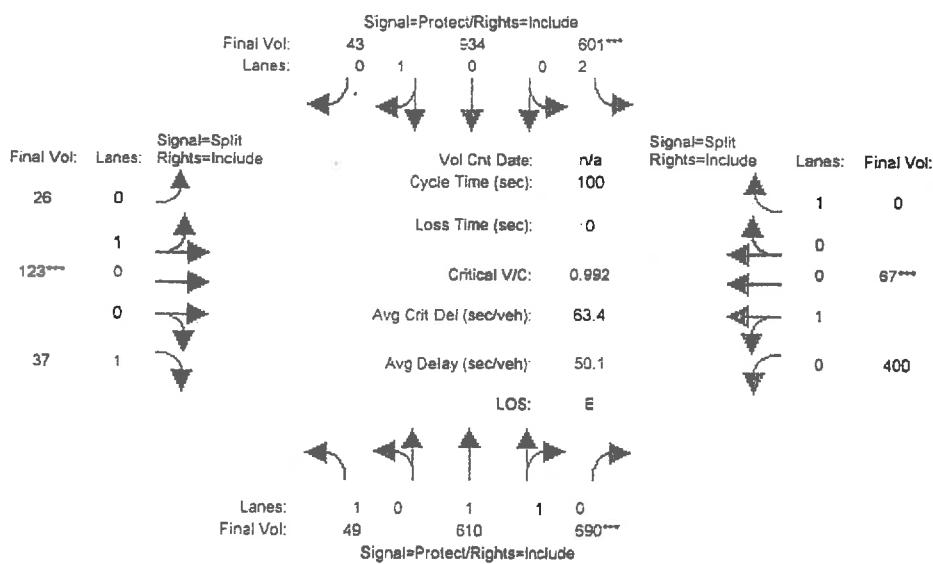
File Name : 12-7544-001 Danville-Stone Valley
 Site Code : 00000000
 Start Date : 12/6/2012
 Page No : 4

Start Time	Danville Blvd Southbound			Stone Valley Road Westbound			Danville Blvd Northbound			Stone Valley Road Eastbound			Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 16:30 to 17:45 - Peak 1 of 1													
16:30	151	159	9	319	64	12	83	159	22	146	115	283	77
16:45	121	220	8	349	57	23	69	149	19	179	79	277	838
17:00	119	167	5	291	67	16	71	154	22	175	86	283	836
17:15	126	209	5	342	74	15	85	174	33	176	103	312	818
Total Volume	519	755	27	1391	262	66	303	636	96	676	383	1155	913
% App. Total	39.9	58	2.1		41.2	10.4	48.4	8.3	58.5	33.2	76	107	3425
PHF	.859	.838	.750		.885	.717	.906	.914	.727	.944	.833	.925	.938

Appendix C -- Level of Service Calculations

Level Of Service Computation Report
CCTALOS (Future Volume Alternative)
AM Existing

Intersection #1: Stone Valley Road/Danville Boulevard



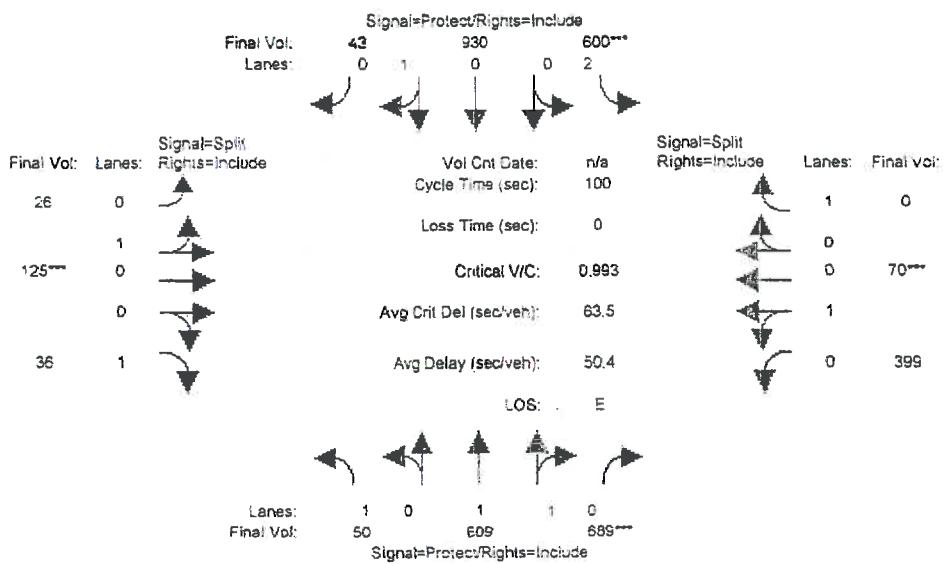
Street Name: Danville Boulevard Stone Valley Road
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 0 3 3 0 3 3 0 3 0 3 0 3 0 3 0 3
V-R: 4.0 4.3 4.0 4.0 4.0 4.3 4.0 4.0 4.0 4.0 4.0 4.2 4.0
Volume Module:
Base Vol: 45 555 628 559 669 49 23 111 79 316 53 216
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 Est: 45 555 628 559 669 49 23 111 79 316 53 216
Reduced Vol: 0 3 3 0 3 3 0 3 0 3 0 3 0 3 0 3
Passenger Vol: 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
Initial Put: 45 555 628 559 669 49 23 111 79 316 53 216
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
PHT Adj: 0.91 0.91 0.91 0.93 0.93 0.93 0.90 0.93 0.90 0.79 0.79 0.79
PHT Volume: 49 610 690 501 634 43 26 123 87 400 67 273
Reduced Vol: 0 3 3 0 3 3 0 3 0 3 0 3 0 3 0 3
Reduced Vol: 49 610 690 501 634 43 26 123 87 400 67 273
RTOR Reduct: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RTOR Vol: 49 610 690 501 634 43 26 123 87 400 67 273
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 Volume: 49 610 690 501 634 43 26 123 87 400 67 273

Saturation Flow Module:
Sat/Lane: 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650
Adjustment: 1.00 1.00 1.00 0.91 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.00 1.00 2.00 0.96 0.94 0.17 0.83 1.00 0.66 0.14 1.00
Final Sat.: 1650 1650 1650 3090 1577 73 283 1367 1650 1413 237 1650

Capacity Analysis Module:
Vol/Sat: 0.93 0.37 0.42 0.20 0.59 0.59 0.09 0.09 0.02 0.28 0.28 0.00
Crit Volume: 550 351 149 467
Crit Moves: **** *** *** ***

Level Of Service Computation Report
CCTALOS (Future Volume Alternative)
AM Existing Plus Proj

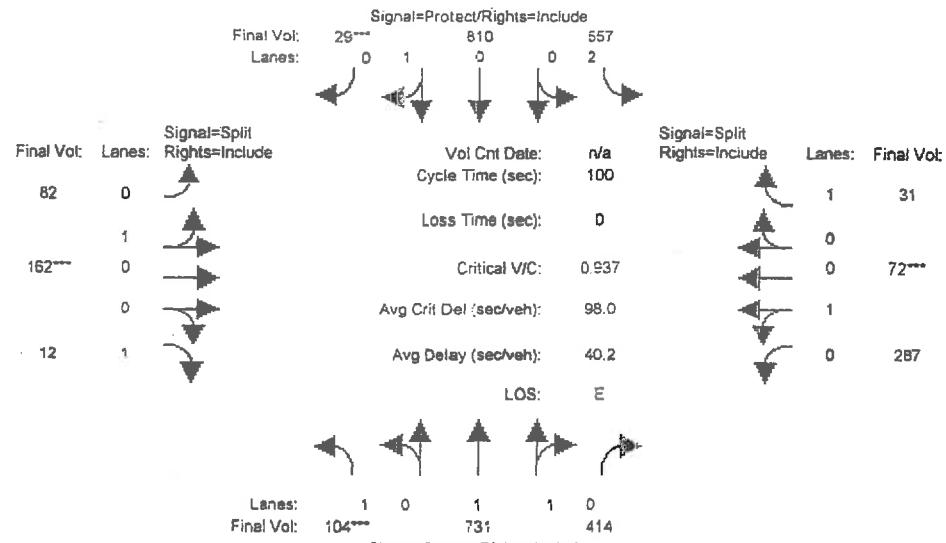
Intersection #1: Stone Valley Road/Danville Boulevard



Street Name:	Danville Boulevard	Stone Valley Road		
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	S - T - R	I - T - R	I - T - R	I - T - R
Min. Green:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
V-R:	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0
<hr/>				
Volume Module:				
Base Vol:	46 555 628 560	359 40 23	112 78 316 55	216
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
Initial Bas:	46 555 628 560	359 40 23	112 78 316 55	216
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PasserByVol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fit:	46 555 628 560	359 40 23	112 78 316 55	216
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
PHF Adj:	0.91 0.91 0.91 0.91	0.93 0.93 0.93 0.93	0.96 0.96 0.96 0.96	0.79 0.79 0.79 0.79
PHF Volume:	50 609 689 600	359 43 26	125 87 359 70	273
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	50 609 689 600	359 43 26	125 87 359 70	273
PTOP Reduct:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PTOP Vol:	50 609 689 600	359 43 26	125 87 359 70	273
FCB Adj:	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
KLF Adj:	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
Final Volume:	50 609 689 600	359 43 26	125 87 359 70	0
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Saturation Flow Module:				
Sat/Lane:	1650 1650 1650 1650	1650 1650 1650 1650	1650 1650 1650 1650	1650
Adjustment:	1.00 1.00 1.00 0.91	1.00 1.00 1.00 0.91	1.00 1.00 1.00 0.91	1.00 1.00 1.00 1.00
Lanes:	1.00 1.00 1.00 2.00	0.96 0.96 0.96 0.96	0.83 0.83 0.83 0.83	1.00 0.85 0.85 1.00
Final Sat.:	1650 1650 1650 3006	1577 73 281 1369	1650 1405 245 1650	
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Capacity Analysis Module:				
Vol/sat:	0.01 0.17 0.42 0.23	0.59 0.59 0.59 0.59	0.02 0.26 0.26 0.26	0.00
Crit Volume:	689 300	150	469	
Crit Moves:	*** ***	***	---	

Level Of Service Computation Report
CCTALOS (Future Volume Alternative)
PM Existing

Intersection #1: Stone Valley Road/Danville Boulevard



Street Name: Danville Boulevard Stone Valley Road

Approach:	North Bound	South Bound	East Bound	West Bound
Movements:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0 0 0 0 0 0 0 0 0 0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0		
Y=R:	0 0 0 0 0 0 0 0 0 0 0 0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0		

Volume Module:

Base Vol:	86 676 323 519 755 27 76 150 107 262 66 305
Stretch Adj:	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 Base:	96 676 383 519 755 27 76 150 107 262 66 308
Added Vol:	0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	96 676 383 519 755 27 76 150 107 262 66 308
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:	0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93
PHF Volume:	104 731 414 557 810 29 82 162 116 287 72 337
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:	104 731 414 557 810 29 92 162 116 287 72 337
RTOR Reduct:	0 0 0 0 0 0 0 0 0 0 0 0
RTOR Vol:	104 731 414 557 810 29 82 162 12 287 72 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
MLT Adj:	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 Volume:	104 731 414 557 810 29 82 162 12 287 72 31

Saturation Flow Module:

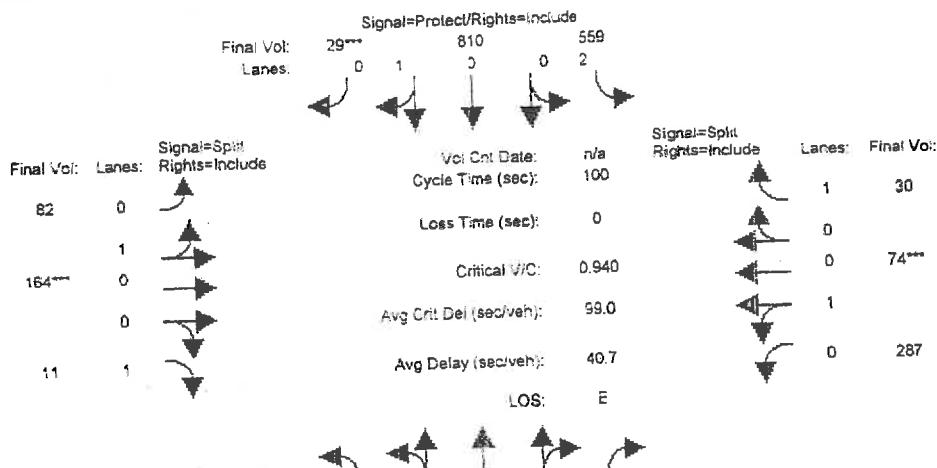
Sat/Lane:	1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650
Adjustment:	1.00 1.00 1.00 0.91 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:	1.00 1.25 0.72 2.00 0.97 0.03 0.94 0.66 1.00 0.80 0.20 1.00
Final Sat.:	1650 2107 1193 3000 1553 57 1555 1095 1650 1318 332 1650

Capacity Analysis Module:

Vol/Sat:	0.06 0.35 0.35 0.19 0.51 0.51 0.15 0.15 0.01 0.22 0.22 0.02
Crit Volume:	104 839 244 359
Crit Moves:	**** **** ****

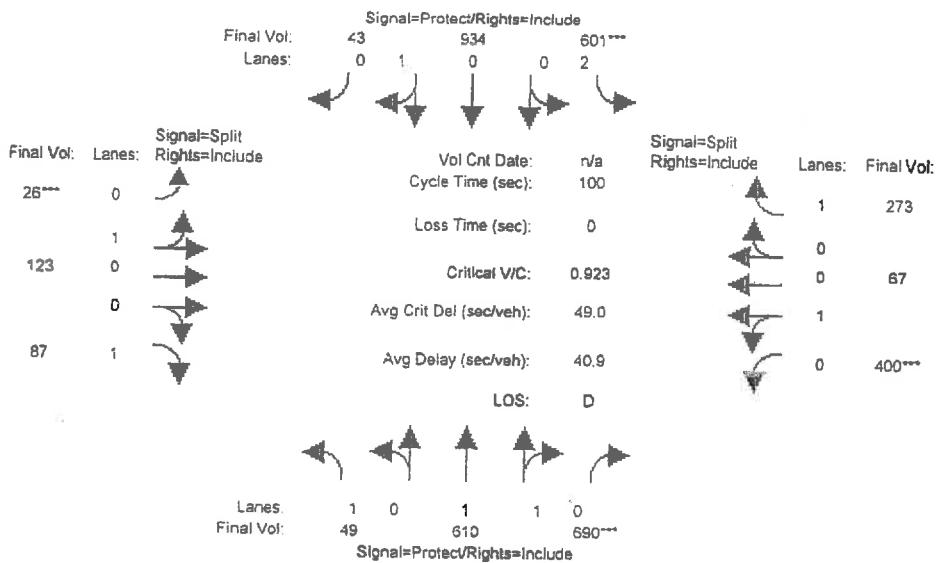
Level Of Service Computation Report
CCTALOS (Future Volume Alternative)
PM Existing Plus Proj

Intersection #1: Stone Valley Road/Danville Boulevard



Street Name:	Danville Boulevard				Stone Valley Road			
Approach:	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	C - T - R	I - T - R	L - T - R	L - T - R	C - T - R	I - T - R	L - T - R
Min. Green:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Y/R:	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0
Volume Module:								
Base Vol:	97 676 383 521 755 27 76 152 107 262 68 308							
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 Vol:	97 676 383 521 755 27 76 152 107 262 68 308							
Added Vol:	0 0 0 0 0 0 0 0 0 0 0 0							
Passenger Vol:	0 0 0 0 0 0 0 0 0 0 0 0							
Initial Fwd:	97 676 383 521 755 27 76 152 107 262 68 308							
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:	0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93							
PHF Volume:	105 731 414 559 810 29 82 164 116 287 74 337							
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0							
PCOR Reduct:	0 0 0 0 0 0 0 0 0 0 0 0							
PTOR Vol:	105 731 414 559 810 29 82 164 116 287 74 337							
ICE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00							
MUF Adj:	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 Volume:	105 731 414 559 810 29 82 164 116 287 74 337							
Saturation Flow Module:								
Sat/Lane:	1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650 1650							
Adjustments:	1.00 1.00 1.00 0.91 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00							
Lanes:	1.00 1.28 0.72 2.00 1.97 0.63 0.33 0.67 1.00 0.79 0.21 1.00							
Final Sat.:	1650 2107 1193 3000 1593 57 550 1120 1650 1310 340 1650							
Capacity Analysis Module:								
Vol/Sat:	0.06 0.35 0.35 0.19 0.51 0.51 0.15 0.15 0.01 0.22 0.22 0.02							
Unit Volume:	105 **** 539 **** 216 **** 361 ****							
Crit Moves:	****							

**Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
AM Existing**

Intersection #1: Stone Valley Road/Danville Boulevard

Street Name: Danville Boulevard Stone Valley Road
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
YAR: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module:

Base Vol:	45	555	628	559	869	43	23	111	78	316	53	216
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 Vol:	45	555	628	559	869	43	23	111	78	316	53	216
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Put:	45	555	628	559	869	40	23	111	78	316	53	216
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
PMF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PMF Volume:	49	610	690	601	934	43	26	123	87	400	67	273
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	610	690	601	934	43	26	123	87	400	67	273
PCB Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLT Adj:	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 Volume:	49	610	690	601	934	42	26	123	87	400	67	273

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.87	0.87	0.52	0.55	0.59	0.98	0.99	0.85	0.86	0.95	0.55
Lanes:	1.00	1.00	1.00	2.00	0.96	0.94	1.17	0.93	1.00	0.86	0.14	1.00
Final Sat:	1805	1661	1661	352	1804	93	323	1560	1615	1560	262	1615

Capacity Analysis Module:

Vol/Sat:	0.03	0.37	0.42	0.17	0.52	0.52	1.08	0.09	0.05	0.26	0.26	0.17
Crit Moves:	---	---	---	---	---	---	---	---	---	---	---	---
Green/Cycle:	0.03	0.45	0.45	0.18	0.46	0.60	0.09	0.09	0.09	0.23	0.26	0.29
Volume/Cap:	0.55	0.52	0.92	0.92	0.86	0.56	0.92	0.92	0.63	0.92	0.92	0.51
Uniform Del:	48.2	23.9	25.8	40.0	16.2	16.2	45.4	45.4	44.2	35.1	35.1	31.4
IntrqueuelDel:	69.4	3.4	10.3	19.8	6.6	6.6	48.6	48.6	8.7	22.6	22.6	2.4
IntrqueuelAdj:	0.0	0.0	0.0	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	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:	117.6	27.2	36.1	58.8	22.8	22.8	84.0	94.0	52.9	57.6	57.6	33.8
User DelayAdj:	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:	117.6	27.2	36.1	58.8	22.8	22.8	84.0	94.0	52.9	57.6	57.6	33.8
LOS by Move:	F	C	B	E	C	E	F	D	E	E	C	C
HCM2KAvgD:	3	19	25	12	27	27	9	8	4	18	16	8

Note: Queues reported is the number of cars per lane.

HCM Ops Adjusted Lane Utilization Module:

Lanes:	1	0	1	0	2	0	1	5	3	1	3	0	1	0	1	0	0	1						
Lane Group:	1	RT	RT	1	RT	RT	LT	LT	R	LT	LT	R	#LnsInGrps:	1	2	2	2	1	1	1	1	1	1	1

HCM Ops Input Saturation Adj Module:

Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrosswalkMid:	5	3	5	5	5	5	5	5	5	5	5	5
# Hvy Veh:	0	0	0	0	0	0	0	0	0	0	0	0
Grade:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking/Hr:	No	No	No	No	No	No	No	No	No	No	No	No
Bus Stop/Hr:	0	0	0	0	0	0	0	0	0	0	0	0
Area Type:	< < < < < < < < < < < < Other	> > > > > > > > > > >	>	>	>	>	>	>	>	>	>	>
Cntr Pad/Hr:	0	0	0	0	0	0	0	0	0	0	0	0
ExclusiveRt:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
% RT Pct:	0	5	0	0	0	0	0	0	0	0	0	0

HCM Ops f(lt) Adj Case Module:

f(lt) Case:	1 XXXX	XXXX	1 XXXX	XXXX	4	4	XXXX	4	4	XXXX	1
-------------	--------	------	--------	------	---	---	------	---	---	------	---

HCM Ops Saturation Adj Module:

Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hvy Veh Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	XXXX	1.00	1.00									
Bus Stop Adj:	XXXX	1.00	1.00									
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	XXXX	0.92	XXXX	0.99	0.93	XXXX	0.93	XXXX	0.93	XXXX	0.93	XXXX
LT Adj:	0.95	XXXX	XXXX	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped/Bike Adj:	1.00	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Usr Sat Adj:	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 Sat Adj:	1.00	0.95	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.95	0.87	0.87	0.92	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00

Delay Adjustment Factor Module:
 Coordinated: < < < < < < < < < < < No > > > > > > > > > >
 Signal Type: < < < < < < < Actuated > > > > > > > > >
 DelAdjFctr: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Level of Service Detailed Computation Report (HCM2000 Queue Method)
 2000 HCM Operations Method
 Future Volume Alternative

Intersection #1 Stone Valley Road/Danville Boulevard

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Green/Cycle:	0.03 0.45	0.19 0.60	0.60 0.99	0.09 0.28
ArrivalType:	3	3	3	3
FrogFactor:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Q1:	1.4 15.5	19.3 8.5	22.3 4.1	2.3 12.6 12.6
UpstreamVC:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
UpstreamAdj:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
EarlyArrAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Q2:	2.0 3.7	6.3 4.8	4.8 3.6	1.4 5.6 5.6
HCM2KQueue:	3.4 19.2	25.4 13.0	27.1 7.7	3.7 19.2 13.1
7DthFactor:	1.18 1.18	1.17 1.15	1.18 1.15	1.19 1.16 1.16
HCM2k7DthQ:	4.6 22.3	28.3 15.5	31.2 5.1	9.4 21.1 21.1
85thFactor:	1.57 1.46	1.43 1.45	1.42 1.42	1.53 1.53 1.57
HCM2k85thQ:	5.3 27.9	36.3 19.3	38.6 11.9	11.3 5.3 26.6 24.6
90thFactor:	1.74 1.55	1.51 1.61	1.50 1.57	1.67 1.73 1.56 1.56
HCM2k90thQ:	5.9 29.8	39.5 21.1	40.9 12.9	12.9 6.4 28.4 28.4
95thFactor:	2.00 1.73	1.65 1.79	1.63 1.63	1.89 1.99 1.99 1.72 1.72 1.58
HCM2k95thQ:	6.5 32.7	41.9 13.7	44.3 14.3	14.6 7.4 31.2 31.2 15.2
98thFactor:	2.47 1.93	1.84 2.06	1.82 1.82	2.25 2.25 2.45 1.95 1.95 2.24
HCM2k98thQ:	6.4 37.0	46.8 17.3	49.5 17.4	17.4 9.1 35.4 35.4 18.0

Fuel Consumption and Emissions
 2000 HCM Operations Method
 Future Volume Alternative

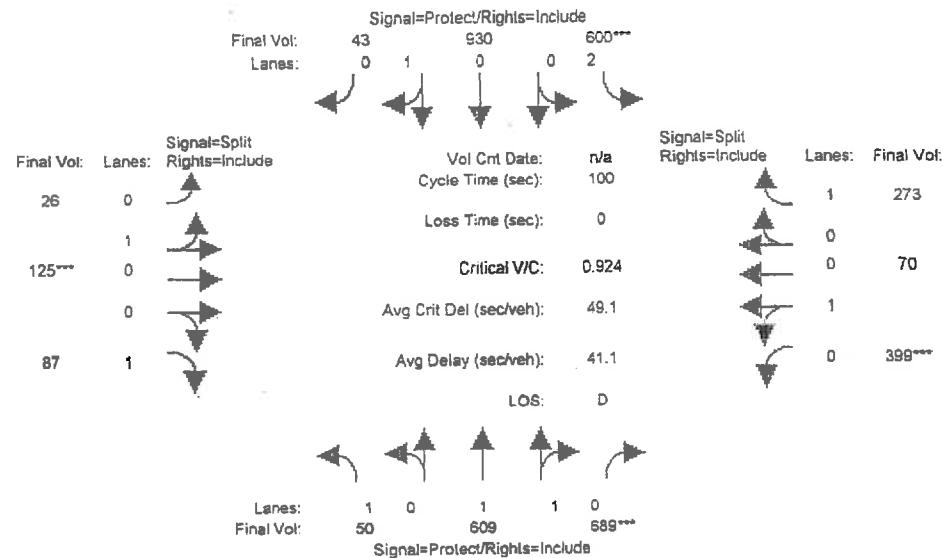
Intersection #1 Stone Valley Road/Danville Boulevard

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Run Speed:	30 MPH	30 MPH	30 MPH	30 MPH
NumOfSteps:	12.3 132	162.2 147	17 192	9.8 5.3 30.6 26.9
Name: year 1995 composite fleet				
Fuel Consumption:	160,619 pounds			
	26,020 gallons			
Carbon Dioxide:	501,131 pounds			
Carbon Monoxide:	41,016 pounds			
Hydrocarbons:	9,420 pounds			
Nitrogen Oxides:	1,301 pounds			
Name: year 2000 composite fleet				
Fuel Consumption:	160,619 pounds			
	26,020 gallons			
Carbon Dioxide:	501,131 pounds			
Carbon Monoxide:	41,016 pounds			
Hydrocarbons:	9,320 pounds			
Nitrogen Oxides:	1,301 pounds			

DISCLAIMER
 The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design, Future Volume Alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

Level Of Service Computation Report
2000 HCM Operations (alternative)
AM Existing Plus Proj

Intersection #1: Stone Valley Road/Danville Boulevard



Delay Adjustment Factor Module:
 Coordinated: < < < < < < < < < No > > > > > > > > > >
 Signal Type: < < < < < < Actuated > > > > > > > > >
 DelAdjFactor: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Level Of Service Detailed Computation Report (HCM2000 Queue Method)

2000 HCM Operations Method
 Future Volume Alternative

Intersection #1 Stone Valley Road/Danville Boulevard

Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T - R	L - T - R	L - T - R		
Green/Cycle:	0.03 0.45	0.45 0.19	0.62 0.60	0.09 0.09	0.28 0.28	0.28 0.28
ArrivalType:	3	3	3	3	3	3
ProgFactor:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Q1:	1.4 15.5	8.4 22.2	22.2 4.1	4.1 2.3	12.7 12.7	6.6 6.6
UpstreamVC:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
UpstreamVd:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
EarlyArrAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Q2:	2.0 3.7	6.5 4.3	4.8 3.6	3.6 3.5	1.4 5.5	5.5 5.5 1.4
HCM2000Queue:	3.4 19.2	25.8 13.3	27.0 7.9	7.9 7.5	3.7 16.1	18.3 8.0
70thPercent:	1.19 1.16	1.15 1.17	1.15 1.15	1.15 1.18	1.19 1.16	1.18 1.18
HCM2000thQ:	4.1 22.3	29.5 15.5	31.1 21.1	9.2 9.2	4.4 21.1	21.2 8.5
85thPercent:	1.57 1.45	1.43 1.49	1.42 1.42	1.53 1.53	1.57 1.46	1.46 1.46 1.53
HCM2000thQ:	5.4 28.0	38.4 18.4	38.4 11.9	11.9 11.9	5.8 26.7	26.7 12.3
90thPercent:	1.74 1.65	1.51 1.61	1.50 1.50	1.67 1.67	1.73 1.56	1.56 1.56 1.67
HCM2000thQ:	5.0 23.8	21.3 40.6	40.6 13.0	13.0 6.4	28.5 28.5	28.5 13.4
95thPercent:	2.00 1.71	1.65 1.75	1.63 1.63	1.89 1.89	1.59 1.72	1.72 1.72 1.68
HCM2000thQ:	6.3 32.7	41.9 23.7	44.2 44.2	14.7 14.7	7.4 31.4	31.4 15.1
98thPercent:	2.47 1.93	1.84 2.06	1.82 1.82	2.25 2.25	2.45 1.95	1.95 1.95 2.24
HCM2000thQ:	8.5 37.0	46.8 27.3	49.3 49.3	17.5 17.5	9.1 35.5	35.5 18.0

Fuel Consumption and Emissions
 2000 HCM Operations Method
 Future Volume Alternative

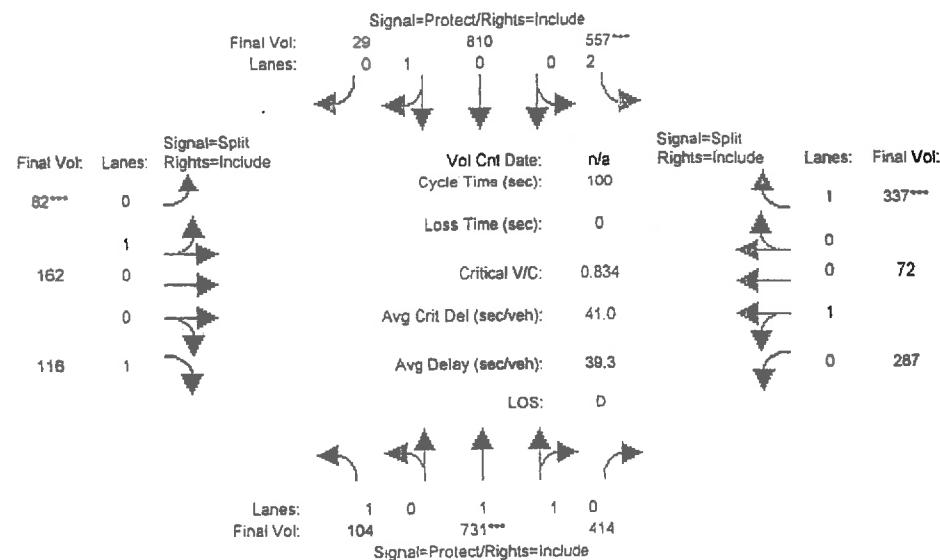
Intersection #1 Stone Valley Road/Danville Boulevard

Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T - R	L - T - R	L - T - R		
Run Speed:	30 MPH	30 MPH	30 MPH	30 MPH		
RunDistSteps:	12.6 132	162.2 147.3	191 8.3	6.4 31.0	21.0 97.0	16.9 59.3
 Name: year 1995 composite fleet						
Fuel Consumption:	169,893 pounds					
	26,065 gallons					
Carbon Dioxide:	521,994 pounds					
Carbon Monoxide:	41,097 pounds					
Hydrocarbons:	8,040 pounds					
Nitrogen Oxides:	1,302 pounds					
 Name: year 2000 composite fleet						
Fuel Consumption:	160,893 pounds					
	26,065 gallons					
Carbon Dioxide:	501,594 pounds					
Carbon Monoxide:	41,097 pounds					
Hydrocarbons:	8,040 pounds					
Nitrogen Oxides:	1,302 pounds					

DISCLAIMER

The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications. As these calculations are applied to the analysis of a single intersection within the CGO and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

**Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
PM Existing**

Intersection #1: Stone Valley Road/Danville Boulevard

Street Name:		Danville Boulevard	Stone Valley Road		
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0	0	0	0	
Yr/P:	4.0	4.0	4.0	4.0	
Volume Module:					
Base Vol...:	96	876	383	515	755
Growth Adj...:	1.00	1.00	1.00	1.00	1.00
Initial Bse:	96	876	383	515	755
Added Vol...:	0	0	0	0	0
PasserbyVol:	1	0	0	0	0
Initial Fut...:	96	876	383	515	755
User Adj...:	1.00	1.00	1.00	1.00	1.00
PHF Adj...:	0.93	0.93	0.93	0.93	0.93
PHF Volume:	104	731	414	557	810
Reduced Vol...:	0	0	0	0	0
Reduced Vol...:	104	731	414	557	810
FCE Adj...:	1.00	1.00	1.00	1.00	1.00
MLF Adj...:	1.00	1.00	1.00	1.00	1.00
Final Volume:	104	731	414	557	810
Saturation Flow Module:					
Sat/Lane:	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.92	1.00
Lanes:	1.60	1.28	0.72	2.00	0.57
Final Sat:	1365	2180	1295	3582	1825
Capacity Analysis Module:					
Veh/Sat:	0.06	0.34	0.34	0.16	0.44
Crit Moves:	***	***	***	***	***
Green/Cycle:	0.07	0.40	0.40	0.19	0.52
Volume/Cap:	0.05	0.03	0.23	0.03	0.05
Unsat Del:	46.1	26.9	28.9	20.3	20.3
Incremental:	38.8	4.5	8.9	6.8	6.8
Init QueueDel:	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	84.5	31.4	31.4	47.8	27.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00
Add Del/Veh:	84.5	31.4	31.4	47.8	27.1
LOS by Move:	F	C	C	D	C
HCM2kAvgQ:	5	19	19	11	24
Note: Queue reported is the number of cars per lane.					
HCM Ops Adjusted Lane Utilization Module:					
Lanes:	1	0	1	1	2
Lane Group:	L	R	L	R	R
#LnsInGrps:	1	2	2	1	1
HCM Ops Input Saturation Adj Module:					
Lane Width:	12	12	12	12	12
CrosswalkKid:	8	9	8	8	9
# Hwy Veh:	0	0	0	0	0
Grade:	0%	0%	0%	0%	0%
Parking/Hr:	No	No	No	No	No
Bus Stp/Hr:	0	0	0	0	0
Area Type:	< < < < < < < < < < < Other	> > > > > > > > >	> > > > > > > >	> > > > > > > >	> > > > > > > >
Crit Ped/Hr:	0	0	0	0	0
ExclusiveRT:	Include	Include	Include	Include	Include
# RT Extct:	0	0	0	0	0
HCM Ops f(1t) Adj Case Module:					
f1t Case:	1 xxxx	xxxx	1 xxxx	xxxx	4 4 xxxx
HCM Ops Saturation Adj Module:					
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00
Hvy Veh Adj:	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxxx	1.00	1.00	xxxxx	xxxxx
Bus Stp Adj:	xxxxx	1.00	1.00	xxxxx	xxxxx
Area Adj:	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxxx	0.95	0.95	xxxxx	xxxxx
LT Adj:	0.95	xxxxx	xxxxx	0.95	xxxxx
Ped/Bike Adj:	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	0.95	0.95	1.00	1.00
User Sat Adj:	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	0.95	0.95	1.00

Delay Adjustment Factor Module:
 Coordinated: < < < < < < < < < < No > > > > > > > > > > >
 Signal Type: < < < < < < < Actuated > > > > > > > > > >
 DelayFactor: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Level Of Service Detailed Computation Report (HCM2000 Queue Method)
 2000 HCM Operations Method
 Future Volume Alternative

Intersection #1 Stone Valley Road/Danville Boulevard

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Green/Cycle:	0.07 0.49 0.49	0.19 0.52 0.52	0.16 0.16 0.16	0.25 0.25 0.25
ArrivalType:	3	3	3	3
PropFactor:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
O1:	2.9 15.1	7.7 19.9	19.9 4.6 6.6	2.9 9.3 9.3 3.9
UpstreamVC:	0.0 0.00	0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
UpstreamAdj:	0.00 0.00	0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
EarlyArrAdj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Q2:	3.6 4.0	3.4 4.4	4.4 3.3 3.3	3.8 2.9 2.9 3.5
HCM2Queue:	5.5 19.0	19.0 11.1	24.4 24.4 9.9	9.9 3.7 12.2 12.2 17.4
70thFactor:	1.15 1.16	1.16 1.15	1.15 1.18 1.18	1.19 1.17 1.17 1.17
HCM270thQ:	6.5 22.1	22.1 13.0	28.1 28.1 11.6	11.6 4.4 14.4 14.4 14.5
85thFactor:	1.55 1.46	1.46 1.51	1.43 1.52 1.52	1.57 1.50 1.50 1.50
HCM285thQ:	4.5 27.8	27.8 16.7	34.9 34.9 14.9	14.9 5.8 18.4 18.4 18.6
90thFactor:	1.70 1.85	1.55 1.43	1.52 1.64 1.64	1.73 1.62 1.62 1.62
HCM290thQ:	9.3 29.6	29.6 19.0	37.0 37.0 16.2	16.2 6.4 19.8 19.8 20.0
95thFactor:	1.84 1.71	1.71 1.82	1.66 1.85 1.85	1.99 1.80 1.80 1.80
HCM295thQ:	10.6 32.5	32.5 20.2	40.3 40.3 19.2	19.2 7.4 22.1 22.1 22.2
98thFactor:	2.36 1.93	1.93 2.13	1.85 1.85 2.17	2.17 2.17 2.45 2.05 2.05 2.09
HCM298thQ:	12.9 36.7	36.7 23.5	45.1 45.1 21.4	21.4 9.1 25.6 25.6 25.9

Fuel Consumption and Emissions
 2000 HCM Operations Method
 Future Volume Alternative

Intersection #1 Stone Valley Road/Danville Boulevard

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Run Speed:	30 MPH	30 MPH	30 MPH	30 MPH
NumOffSteps:	25.7 164	83.1 134.0	173 6.2	19.9 19.3 26.3
Name: year 1995 composite fleet				
Fuel Consumption:	149,217 pounds			
	24,011 gallons			
Carbon Dioxide:	462,437 pounds			
Carbon Monoxide:	17,727 pounds			
Hydrocarbons:	7,334 pounds			
Nitrogen Oxides:	1,216 pounds			
Name: year 2000 composite fleet				
Fuel Consumption:	148,217 pounds			
	24,011 gallons			
Carbon Dioxide:	462,437 pounds			
Carbon Monoxide:	17,727 pounds			
Hydrocarbons:	7,334 pounds			
Nitrogen Oxides:	1,216 pounds			

DISCLAIMER

The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design, Future Volume Alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
 Delay Adjustment Factor Module:
 Coordinated: < < < < < < < < < < Nc > > > > > > > > > >
 Signal Type: < < < < < < < < < Actuated > > > > > > > > >
 DelAdjFctr: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Level Of Service Detailed Computation Report (HCM2000 Queue Method)
 2000 HCM Operations Method
 Future Volume Alternative

Intersection #1 Stone Valley Road/Danville Boulevard

Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R S - T - R E - T - R W - T - R

Green/Cycle: 0.07 0.40 0.40 0.19 0.52 0.52 0.16 0.16 0.16 0.25 0.25 0.25
 ArrivalType: 3 3 3 3 3 3 3 3 3 3 3 3 3

ProgFactor: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Q1: 2.9 15.1 15.1 7.7 20.0 20.0 6.6 6.6 2.9 9.4 9.4 9.4
 UpstreamVC: 0.00 0.00 0.00 0.30 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00
 UpstreamAdj: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 EarlyArrAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Q2: 2.5 4.0 4.0 3.4 4.5 4.5 3.3 3.3 0.8 3.0 3.0 3.6
 HCM20Queue: 5.5 15.1 19.1 11.1 24.4 24.4 9.9 5.9 3.7 12.4 12.4 12.4

75chFactor: 1.19 1.16 1.16 1.08 1.15 1.15 1.18 1.18 1.19 1.17 1.17 1.17
 HCM2k75thQ: 6.5 22.2 22.2 13.1 28.2 28.2 11.7 31.7 4.4 14.5 14.5 14.6

85chFactor: 1.55 1.46 1.46 1.51 1.43 1.43 1.52 1.52 1.57 1.50 1.50 1.50
 HCM2k85thQ: 9.5 27.8 27.8 16.8 35.0 35.0 15.1 15.1 5.8 18.6 18.6 18.6

90chFactor: 1.70 1.55 1.55 1.62 1.52 1.52 1.64 1.64 1.73 1.62 1.62 1.62
 HCM2k90thQ: 9.4 29.6 29.6 19.1 37.1 37.1 16.3 16.3 5.6 20.0 20.0 20.1

95chFactor: 1.94 1.71 1.71 1.82 1.65 1.65 1.85 1.85 1.99 1.80 1.80 1.80
 HCM2k95thQ: 10.7 32.6 32.6 20.3 40.4 40.4 19.3 19.3 7.4 22.3 22.3 22.4

99chFactor: 2.35 1.93 1.93 2.12 1.85 1.85 2.17 2.17 2.45 2.09 2.09 2.08
 HCM2k99thQ: 13.0 36.8 36.8 23.6 45.3 45.3 22.5 21.5 9.1 25.8 25.8 25.9

Fuel Consumption and Emissions
 2000 HCM Operations Method
 Future Volume Alternative

Intersection #1 Stone Valley Road/Danville Boulevard

Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R E - T - R W - T - R

Run Speed: 30 MPH 30 MPH 30 MPH 30 MPH
 NumStops: 25.9 165 93.2 114.5 173 6.2 19.9 39.9 26.2 67.0 17.4 79.9

Name: year 1995 composite fleet

Fuel Consumption: 149,066 pounds
 24,149 gallons
 Carbon Dioxide: 465,086 pounds
 Carbon Monoxide: 37,559 pounds
 Hydrocarbons: 7,384 pounds
 Nitrogen Oxides: 1,222 pounds

Name: year 2000 composite fleet

Fuel Consumption: 149,066 pounds
 24,149 gallons
 Carbon Dioxide: 465,086 pounds
 Carbon Monoxide: 37,559 pounds
 Hydrocarbons: 7,384 pounds
 Nitrogen Oxides: 1,222 pounds

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The fuel consumption and emissions measures should be used with caution and only for comparison of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.