



## Memorandum

Date: July 18, 2008

To: John M. Ward and Associates

From: Gary Black  
Leilani Valerio

Subject: *Cumulative Scenario for the Traffic Study for the Proposed Laurel Way Joint Venture in Redwood City, CA*

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This is an addendum to Hexagon's original study for the Laurel Way Joint Venture (February 29, 2008). The proposed project consists of an 18-lot subdivision on Laurel Way in Redwood City, California.

This memorandum presents a summary of the traffic operations that would occur under cumulative conditions with the proposed project. Cumulative conditions were estimated for the year 2018. Future 2018 traffic volumes were calculated by applying a 1% annual growth factor to existing volumes.

It is assumed in this analysis that the transportation network under future 2018 conditions, including roadways and intersection lane configurations, would be the same as that described under background conditions in the original memorandum.

### **Cumulative Traffic Volumes**

Cumulative 2018 traffic volumes were calculated by applying a 1% annual growth factor to existing volumes. The growth factor was derived from forecasts from the C/CAG travel demand model.

### **Cumulative LOS Results**

The results of the signalized intersection level of service analysis under cumulative conditions are summarized in Table 1. The results show that, measured against the City of Redwood City level of service standards, all of the signalized study intersections would operate at acceptable levels of service. The level of service calculation sheets are included in the Appendix.

**Table 1**  
**Intersection Levels of Service Under Cumulative Conditions**

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Intersection	Type of Control	Peak Hour	Cumulative No Project	
			Avg. Delay <sup>a</sup>	LOS <sup>b</sup>
Farm Hill Boulevard/Jefferson Avenue and Jefferson Avenue	signal	AM	7.2	A
		PM	5.3	A
Highland Avenue and Jefferson Avenue	2-way	AM	9.7	A
		PM	9.3	A
Highland Avenue and Laurel Way/Altamont Way	2-way	AM	8.9	A
		PM	8.9	A
Farm Hill Boulevard/Jefferson Avenue and Highland Avenue	2-way stop	AM	30.6	D
		PM	29.9	D

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<sup>a</sup> Average control delay (seconds per vehicle) including all movements for intersections controlled by a signal or four-way stop. At intersections under two-way stop control, average delay is reported for the worst controlled lane group.

<sup>b</sup> Level of service (based on average delay).

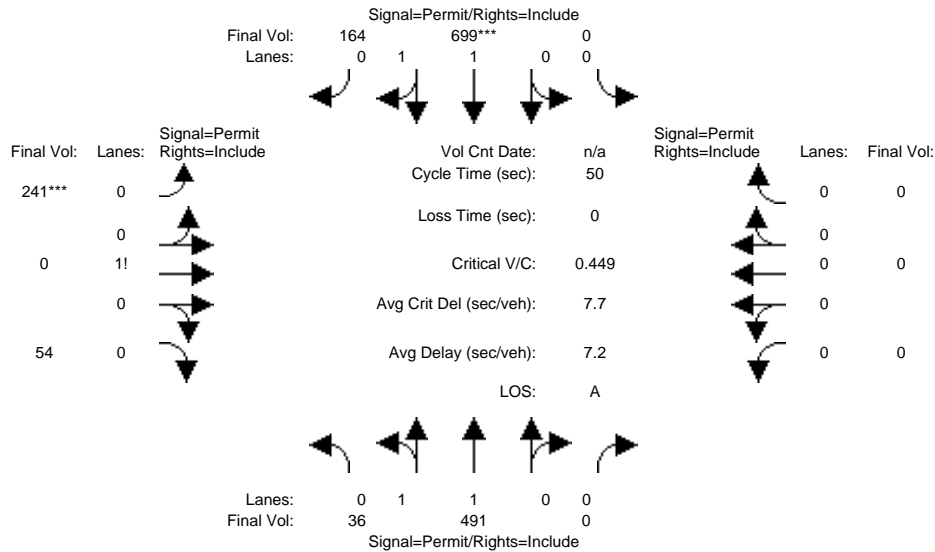
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## **Appendix**

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

Intersection #1: Farm Hill Bl/Jefferson Av and Jefferson Av

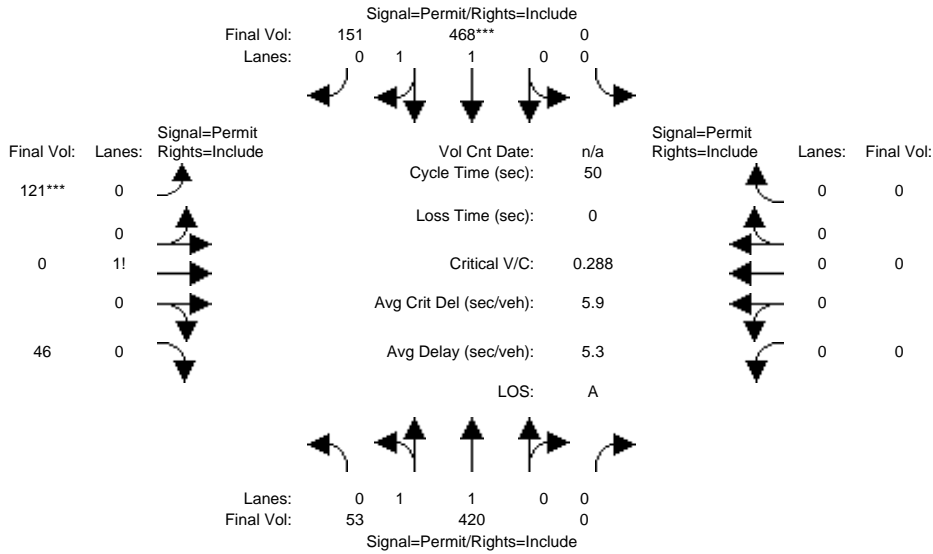


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	36	491	0	0	699	164	241	0	54	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	491	0	0	699	164	241	0	54	0	0	0
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:	36	491	0	0	699	164	241	0	54	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:	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:	36	491	0	0	699	164	241	0	54	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	491	0	0	699	164	241	0	54	0	0	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
FinalVolume:	36	491	0	0	699	164	241	0	54	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.84	1.00	1.00	0.92	0.92	0.77	1.00	0.77	1.00	1.00	1.00
Lanes:	0.14	1.86	0.00	0.00	1.62	0.38	0.82	0.00	0.18	0.00	0.00	0.00
Final Sat.:	219	2987	0	0	2842	667	1190	0	267	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.00	0.00	0.25	0.25	0.20	0.00	0.20	0.00	0.00	0.00
Crit Moves:				****			****					
Green/Cycle:	0.55	0.55	0.00	0.00	0.55	0.55	0.45	0.00	0.45	0.00	0.00	0.00
Volume/Cap:	0.30	0.30	0.00	0.00	0.45	0.45	0.45	0.00	0.45	0.00	0.00	0.00
Uniform Del:	6.1	6.1	0.0	0.0	6.8	6.8	9.4	0.0	9.4	0.0	0.0	0.0
IncemntDel:	0.1	0.1	0.0	0.0	0.2	0.2	0.5	0.0	0.5	0.0	0.0	0.0
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	6.2	6.2	0.0	0.0	6.9	6.9	9.9	0.0	9.9	0.0	0.0	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:	6.2	6.2	0.0	0.0	6.9	6.9	9.9	0.0	9.9	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	3	3	0	0	5	5	4	0	4	0	0	0

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

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

Intersection #1: Farm Hill Bl/Jefferson Av and Jefferson Av



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
Volume Module:												
Base Vol:	53	420	0	0	468	151	121	0	46	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:	53	420	0	0	468	151	121	0	46	0	0	0
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:	53	420	0	0	468	151	121	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:	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:	53	420	0	0	468	151	121	0	46	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	420	0	0	468	151	121	0	46	0	0	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
FinalVolume:	53	420	0	0	468	151	121	0	46	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	1.00	1.00	0.91	0.91	0.80	1.00	0.80	1.00	1.00	1.00
Lanes:	0.22	1.78	0.00	0.00	1.51	0.49	0.72	0.00	0.28	0.00	0.00	0.00
Final Sat.:	352	2786	0	0	2628	848	1099	0	418	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.00	0.00	0.18	0.18	0.11	0.00	0.11	0.00	0.00	0.00
Crit Moves:					****		****					
Green/Cycle:	0.62	0.62	0.00	0.00	0.62	0.62	0.38	0.00	0.38	0.00	0.00	0.00
Volume/Cap:	0.24	0.24	0.00	0.00	0.29	0.29	0.29	0.00	0.29	0.00	0.00	0.00
Uniform Del:	4.3	4.3	0.0	0.0	4.4	4.4	10.7	0.0	10.7	0.0	0.0	0.0
IncrcmntDel:	0.1	0.1	0.0	0.0	0.1	0.1	0.3	0.0	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	4.4	4.4	0.0	0.0	4.5	4.5	11.0	0.0	11.0	0.0	0.0	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:	4.4	4.4	0.0	0.0	4.5	4.5	11.0	0.0	11.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	B	A	B	A	A	A
HCM2kAvgQ:	2	2	0	0	3	3	2	0	2	0	0	0

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

Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #2: Highland Av and Jefferson Av

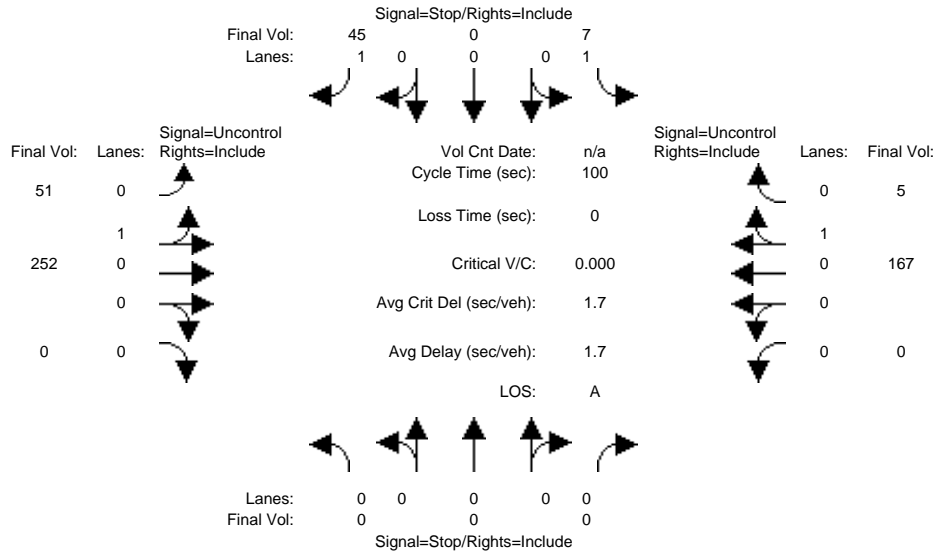


Table with columns for Approach (North, South, East, West) and Movement (L, T, R). Rows include Volume Module, Critical Gap Module, Capacity Module, and Level Of Service Module.

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

Peak Hour Delay Signal Warrant Report

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Intersection #2 Highland Av and Jefferson Av
\*\*\*\*\*
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 0 0 1	0 1 0 0 0	0 0 0 1 0
Initial Vol:	0 0 0 0	7 0 45	51 252 0	0 167 5
ApproachDel:	xxxxxx	9.7	xxxxxx	xxxxxx

Approach[southbound][lanes=2][control=Stop Sign]  
 Signal Warrant Rule #1: [vehicle-hours=0.1]  
 FAIL - Vehicle-hours less than 5 for two or more lane approach.  
 Signal Warrant Rule #2: [approach volume=52]  
 FAIL - Approach volume less than 150 for two or more lane approach.  
 Signal Warrant Rule #3: [approach count=3][total volume=527]  
 FAIL - Total volume less than 650 for intersection  
 with less than four approaches.

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 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #2 Highland Av and Jefferson Av

\*\*\*\*\*

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 0 0 1	0 1 0 0 0	0 0 0 1 0
Initial Vol:	0 0 0 0	7 0 45	51 252 0	0 167 5

Major Street Volume: 475  
 Minor Approach Volume: 52  
 Minor Approach Volume Threshold: 527

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative PM

Intersection #2: Highland Av and Jefferson Av

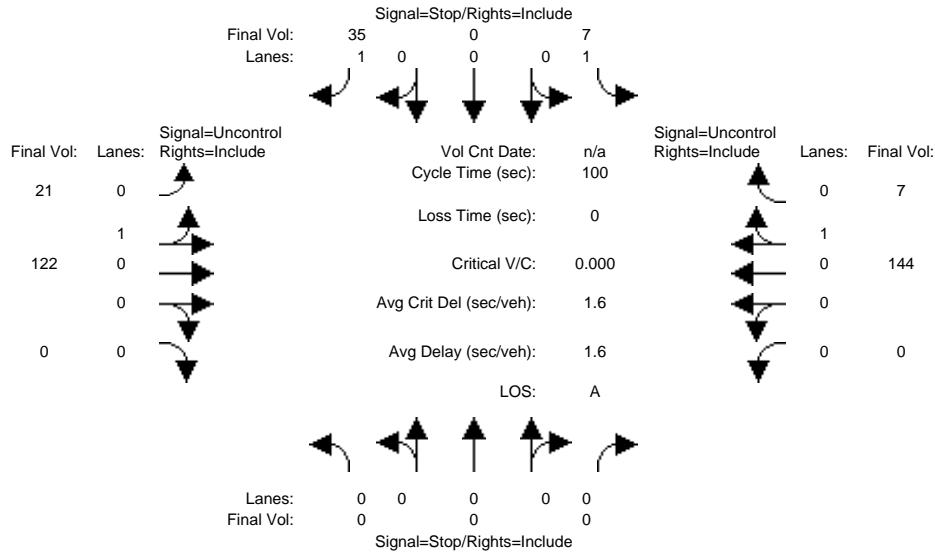


Table with columns for Approach (North, South, East, West) and Movement (L, T, R). Rows include Volume Module, Critical Gap Module, Capacity Module, and Level Of Service Module. Data includes Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume, Critical Gp, FollowUpTim, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap, 2Way95thQ, Control Del, LOS by Move, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #2 Highland Av and Jefferson Av
\*\*\*\*\*
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 0 0 1	0 1 0 0 0	0 0 0 1 0
Initial Vol:	0 0 0 0	7 0 35	21 122 0	0 144 7
ApproachDel:	xxxxxx	9.3	xxxxxx	xxxxxx

Approach[southbound][lanes=2][control=Stop Sign]  
 Signal Warrant Rule #1: [vehicle-hours=0.1]  
 FAIL - Vehicle-hours less than 5 for two or more lane approach.  
 Signal Warrant Rule #2: [approach volume=42]  
 FAIL - Approach volume less than 150 for two or more lane approach.  
 Signal Warrant Rule #3: [approach count=3][total volume=336]  
 FAIL - Total volume less than 650 for intersection  
 with less than four approaches.

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 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #2 Highland Av and Jefferson Av

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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 0 0 0	1 0 0 0 1	0 1 0 0 0	0 0 0 1 0
Initial Vol:	0 0 0 0	7 0 35	21 122 0	0 144 7

Major Street Volume: 294  
 Minor Approach Volume: 42  
 Minor Approach Volume Threshold: 678

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 SIGNAL WARRANT DISCLAIMER

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #3: Highland Av and Laurel Way/Altamont Wy

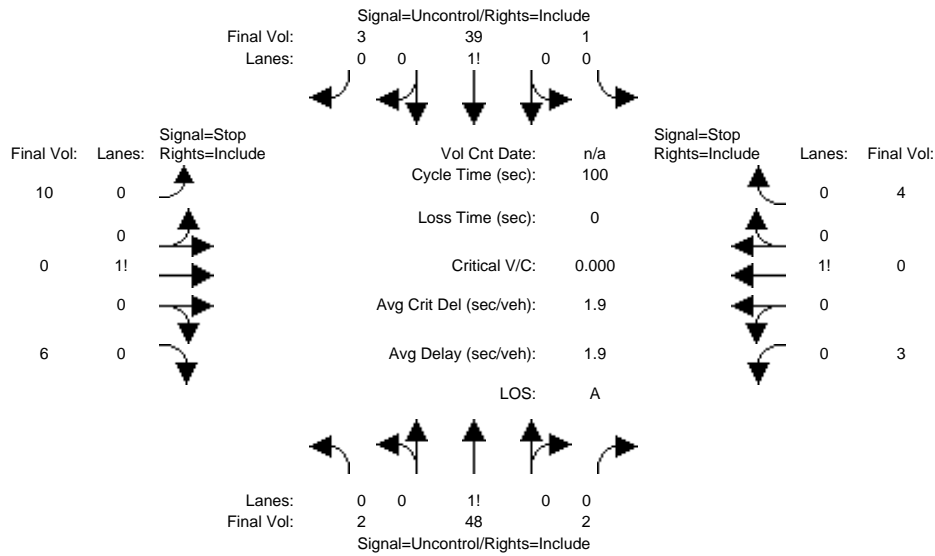


Table with columns for Approach (North, South, East, West) and Movement (L, T, R). Rows include Volume Module (Base Vol, Growth Adj, etc.), Critical Gap Module, Capacity Module, and Level Of Service Module.

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

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #3 Highland Av and Laurel Way/Altamont Wy
\*\*\*\*\*
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	1!	0	0	0	0	1!	0	0
Initial Vol:	2	48		2		1	39		3		10	0		6		3	0		4	
ApproachDel:	xxxxxx				xxxxxx				8.9				8.8							

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 Approach[eastbound][lanes=1][control=Stop Sign]  
 Signal Warrant Rule #1: [vehicle-hours=0.0]  
 FAIL - Vehicle-hours less than 4 for one lane approach.  
 Signal Warrant Rule #2: [approach volume=16]  
 FAIL - Approach volume less than 100 for one lane approach.  
 Signal Warrant Rule #3: [approach count=4][total volume=118]  
 FAIL - Total volume less than 650 for intersection  
 with less than four approaches.  
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 Approach[westbound][lanes=1][control=Stop Sign]  
 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=4][total volume=118]  
 FAIL - Total volume less than 650 for intersection  
 with less than four approaches.  
 -----

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
 Intersection #3 Highland Av and Laurel Way/Altamont Wy  
 \*\*\*\*\*  
 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	1!	0	0	0	0	1!	0	0
Initial Vol:	2	48		2		1	39		3		10	0		6		3	0		4	

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 Major Street Volume: 95  
 Minor Approach Volume: 16  
 Minor Approach Volume Threshold: 847  
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SIGNAL WARRANT DISCLAIMER

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative PM

Intersection #3: Highland Av and Laurel Way/Altamont Wy

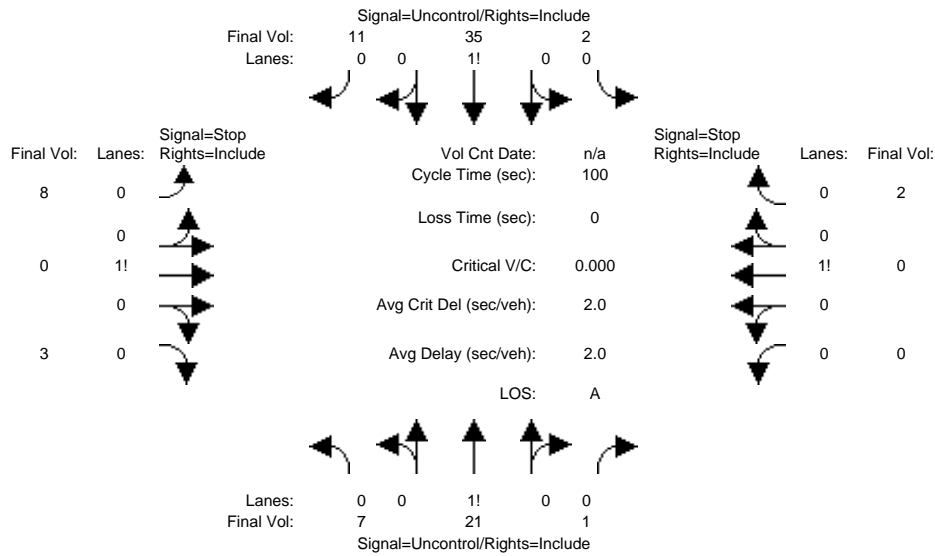


Table with columns for Approach (North, South, East, West) and Movement (L, T, R). Rows include Volume Module, Critical Gap Module, Capacity Module, and Level Of Service Module, providing detailed traffic flow and performance data.

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

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #3 Highland Av and Laurel Way/Altamont Wy
\*\*\*\*\*
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 1! 0 0	0 0 0 0 1
Initial Vol:	7 21 1	2 35 11	8 0 3	0 0 0 2
ApproachDel:	xxxxxx	xxxxxx	8.9	8.4

Approach[eastbound][lanes=1][control=Stop Sign]  
Signal Warrant Rule #1: [vehicle-hours=0.0]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=11]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=90]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Approach[westbound][lanes=1][control=Stop Sign]  
Signal Warrant Rule #1: [vehicle-hours=0.0]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=2]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=90]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #3 Highland Av and Laurel Way/Altamont Wy  
\*\*\*\*\*  
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 1! 0 0	0 0 0 0 1
Initial Vol:	7 21 1	2 35 11	8 0 3	0 0 0 2

Major Street Volume: 77  
Minor Approach Volume: 11  
Minor Approach Volume Threshold: 903

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative AM

Intersection #4: Farm Hill Bl/Jefferson Av and Highland Av

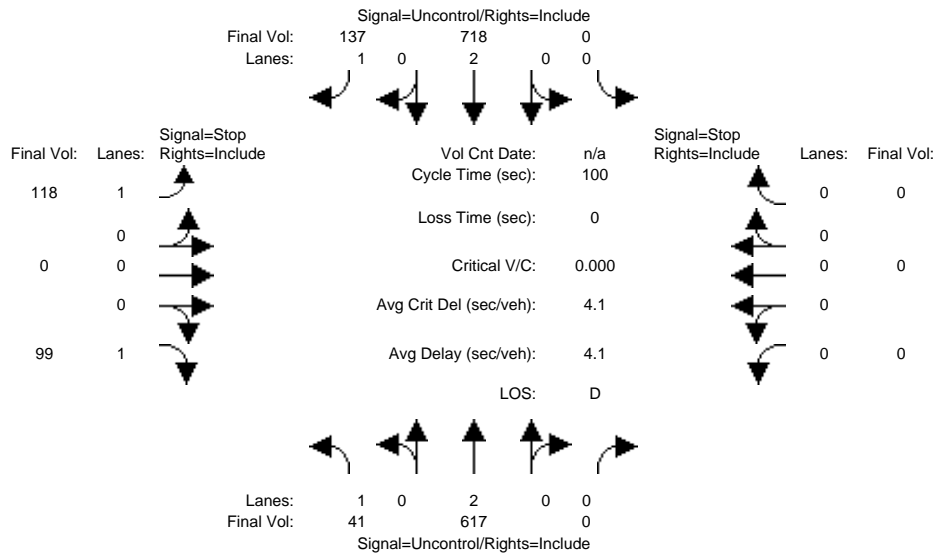


Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Volume Module, Critical Gap Module, Capacity Module, and Level Of Service Module, providing detailed performance metrics.

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

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #4 Farm Hill Bl/Jefferson Av and Highland Av
\*\*\*\*\*
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 2 0 0	0 0 2 0 1	1 0 0 0 1	0 0 0 0 0
Initial Vol:	41 617 0	0 718 137	118 0 99	0 0 0 0
ApproachDel:	xxxxxx	xxxxxx	30.6	xxxxxx

```

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.8]
    FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=217]
    SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1730]
    SUCCEED - Total volume greater than or equal to 650 for intersection
    with less than four approaches.
    
```

-----  
SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #4 Farm Hill Bl/Jefferson Av and Highland Av  
\*\*\*\*\*

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 2 0 0	0 0 2 0 1	1 0 0 0 1	0 0 0 0 0
Initial Vol:	41 617 0	0 718 137	118 0 99	0 0 0 0

```

Major Street Volume:      1513
Minor Approach Volume:    217
Minor Approach Volume Threshold: 196
    
```

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SIGNAL WARRANT DISCLAIMER

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Level Of Service Computation Report
2000 HCM Unsignalized (Future Volume Alternative)
Cumulative PM

Intersection #4: Farm Hill Bl/Jefferson Av and Highland Av

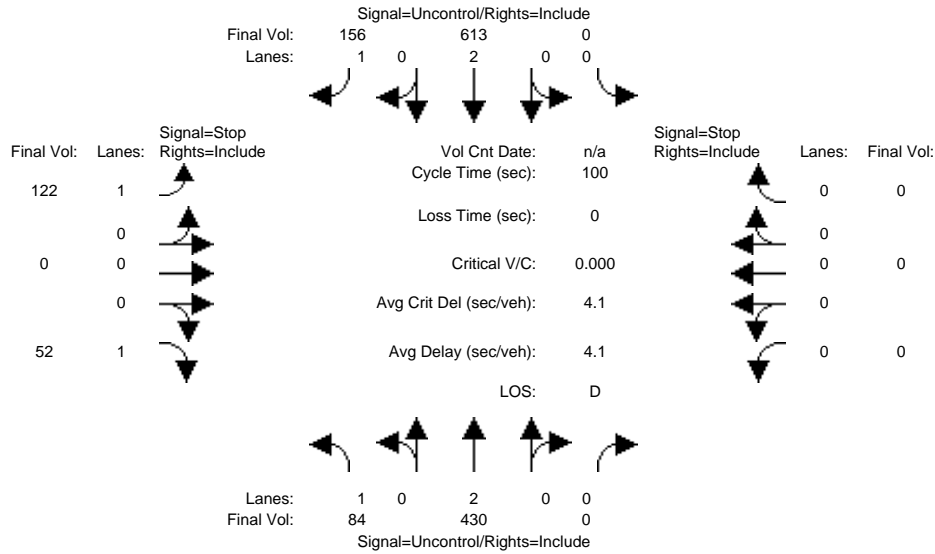


Table with columns for Approach (North, South, East, West) and Movement (L, T, R). Rows include Volume Module, Critical Gap Module, Capacity Module, and Level Of Service Module, providing detailed performance metrics.

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

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #4 Farm Hill Bl/Jefferson Av and Highland Av
\*\*\*\*\*
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 2 0 0	0 0 2 0 1	1 0 0 0 1	0 0 0 0 0
Initial Vol:	84 430 0	0 613 156	122 0 52	0 0 0 0
ApproachDel:	xxxxxx	xxxxxx	29.9	xxxxxx

```

Approach[eastbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.4]
    FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=174]
    SUCCEED - Approach volume >= 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1457]
    SUCCEED - Total volume greater than or equal to 650 for intersection
        with less than four approaches.
    
```

-----  
SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #4 Farm Hill Bl/Jefferson Av and Highland Av  
\*\*\*\*\*

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 2 0 0	0 0 2 0 1	1 0 0 0 1	0 0 0 0 0
Initial Vol:	84 430 0	0 613 156	122 0 52	0 0 0 0

```

Major Street Volume:      1283
Minor Approach Volume:    174
Minor Approach Volume Threshold: 267
    
```

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SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.