

# K – 2035 TSP High Priority Projects LOS Calculations

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 Beaverton TSP Update  
 2035 Action Plan TSP Projects  
 PM Peak Hour  
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Scenario Report

Scenario: Default Scenario

Command: Default Command  
 Volume: Default Volume  
 Geometry: Default Geometry  
 Impact Fee: Default Impact Fee  
 Trip Generation: Default Trip Generation  
 Trip Distribution: Default Trip Distribution  
 Paths: Default Path  
 Routes: Default Route  
 Configuration: Default Configuration

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Impact Analysis Report  
 Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 1 Bany/170	C	34.2 0.978	C	34.2 0.978	+ 0.000 D/V
# 2 170th Ave / Oak St	D	49.4 1.091	D	49.4 1.091	+ 0.000 D/V
# 3 170th Ave & Farmington Rd	F	106.5 1.214	F	106.5 1.214	+ 0.000 D/V
# 4 170th Ave & Tualatin Valley Hw	F	141.0 1.268	F	141.0 1.268	+ 0.000 D/V
# 5 170th Ave & Merlo Rd	F	126.0 1.294	F	126.0 1.294	+ 0.000 D/V
# 6 170th Ave & Baseline Rd	F	501.0 2.719	F	501.0 2.719	+ 0.000 D/V
# 7 173rd Ave & Walker Rd	F	108.6 1.192	F	108.6 1.192	+ 0.000 D/V
# 8 173th Ave & Cornell Rd	F	188.8 1.589	F	188.8 1.589	+ 0.000 D/V
# 9 160th Ave & Tualatin Valley Hw	E	65.2 1.100	E	65.2 1.100	+ 0.000 D/V
# 10 158th Ave & Jenkins Rd	E	79.5 1.083	E	79.5 1.083	+ 0.000 D/V
# 11 158th Ave & Jay St	C	29.3 0.890	C	29.3 0.890	+ 0.000 D/V
# 12 158th Ave & Walker Rd	F	91.4 1.111	F	91.4 1.111	+ 0.000 D/V
# 13 158th Ave & Cornell Rd	C	31.9 0.846	C	31.9 0.846	+ 0.000 D/V
# 14 Bethany Blvd & Cornell Rd	F	133.0 1.452	F	133.0 1.452	+ 0.000 D/V
# 15 Bethany Blvd & Hwy 26 EB Ramps	F	209.8 1.568	F	209.8 1.568	+ 0.000 D/V
# 16 Bethany Blvd & Hwy 26 WB Ramps	F	161.7 1.499	F	161.7 1.499	+ 0.000 D/V
# 18 Cornell Rd & Hwy 26 WB Ramps	D	36.4 0.966	D	36.4 0.966	+ 0.000 D/V
# 19 143rd Ave & Cornell Rd	E	77.8 1.181	E	77.8 1.181	+ 0.000 D/V
# 20 Walker Rd & Murray Blvd	E	74.6 1.115	E	74.6 1.115	+ 0.000 D/V
# 21 Murray Blvd & Jenkins Rd	E	60.8 1.080	E	60.8 1.080	+ 0.000 D/V
# 22 Murray Blvd & Millkan Way	D	54.9 0.989	D	54.9 0.989	+ 0.000 D/V
# 23 Murray Blvd & Tualatin Valley	F	94.7 1.130	F	94.7 1.130	+ 0.000 D/V
# 24 Murray Blvd & Farmington Rd	D	43.3 0.892	D	43.3 0.892	+ 0.000 D/V

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Intersection	Base		Future		Change in	
	Del/ LOS	V/ C	Del/ LOS	V/ C		
# 25 Murray Blvd & 6th St	C	28.2 0.961	C	28.2 0.961	+ 0.000	D/V
# 26 155th Av & Hart Rd	C	27.4 0.897	C	27.4 0.897	+ 0.000	D/V
# 27 Barrows Rd (West End) & Scholl	B	19.4 0.738	B	19.4 0.738	+ 0.000	D/V
# 28 125th Av & Greenway Blvd	F	96.8 1.187	F	96.8 1.187	+ 0.000	D/V
# 29 Hall Blvd & Hwy 217 SB Ramp	E	63.7 1.007	E	63.7 1.007	+ 0.000	D/V
# 30 Nimbus Av & Hall Blvd	D	47.4 1.057	D	47.4 1.057	+ 0.000	D/V
# 31 Greenway Blvd & Hall Blvd	C	22.4 0.806	C	22.4 0.806	+ 0.000	D/V
# 32 Hall Blvd & Denney Rd	B	17.7 0.768	B	17.7 0.768	+ 0.000	D/V
# 33 Denny Rd & Hwy 217 SB Ramp	B	15.8 0.548	B	15.8 0.548	+ 0.000	D/V
# 34 Denney Rd & Hwy 217 NB Ramp	B	18.6 0.702	B	18.6 0.702	+ 0.000	D/V
# 35 Scholls Ferry Rd & Denney Rd	F	80.6 1.198	F	80.6 1.198	+ 0.000	D/V
# 36 88th Av & Garden Home	F	407.8 1.556	F	407.8 1.556	+ 0.000	D/V
# 37 Oleson Rd & Garden Home Rd	F	87.6 1.170	F	87.6 1.170	+ 0.000	D/V
# 38 Oleson Rd & Vermont St	C	20.8 0.856	C	20.8 0.856	+ 0.000	D/V
# 39 Laurelwood Av & Scholls Ferry	C	32.9 0.949	C	32.9 0.949	+ 0.000	D/V
# 40 Laurelwood Av & Baeverton - Hi	B	18.0 0.808	B	18.0 0.808	+ 0.000	D/V
# 41 87th Ave & Canyon Rd	B	13.1 0.653	B	13.1 0.653	+ 0.000	D/V
# 42 Walker Rd & Hwy 217 SB Ramp	B	18.6 0.864	B	18.6 0.864	+ 0.000	D/V
# 43 Walker Rd & Hwy 217 NB Ramp	C	24.7 0.671	C	24.7 0.671	+ 0.000	D/V
# 44 Cedar Hills & Butner Rd	F	112.1 1.218	F	112.1 1.218	+ 0.000	D/V
# 45 Cedar Hills Blvd & Hwy 26 EB R	F	OVRFL 1.241	F	OVRFL 1.241	Nan	D/V
# 46 Cedar Hills Blvd & Hwy 26 WB R	C	22.6 0.960	C	22.6 0.960	+ 0.000	D/V
# 47 Cedar Hills Blvd & Barnes Rd	F	155.5 1.413	F	155.5 1.413	+ 0.000	D/V
# 48 Cedar Hills Blvd & Cornell Rd	C	27.7 0.770	C	27.7 0.770	+ 0.000	D/V
# 49 Saltzman Rd & Cornell Rd	E	73.2 1.135	E	73.2 1.135	+ 0.000	D/V

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Intersection		Base		Future		Change in	
		Del/ LOS	V/ C	Del/ LOS	V/ C		
# 50 Murray Blvd & Hwy 26 EB Ramps	E	67.0	1.127	E	67.0 1.127	+ 0.000	D/V
# 51 Murray Blvd & Hwy 26 WB Ramps	E	70.3	1.121	E	70.3 1.121	+ 0.000	D/V
# 52 Murray Blvd & Cornell Rd	F	131.2	1.318	F	131.2 1.318	+ 0.000	D/V
# 80 Murray Rd & Allen Blvd	E	58.9	1.048	E	58.9 1.048	+ 0.000	D/V
# 81 Cornell Rd & Hwy 26 EB ramps	C	23.6	0.955	C	23.6 0.955	+ 0.000	D/V
# 82 Hall Blvd & Center St	C	28.6	0.911	C	28.6 0.911	+ 0.000	D/V
# 83 Allen Blvd & Western Ave	D	38.8	0.994	D	38.8 0.994	+ 0.000	D/V
# 84 Hart Rd & Sorrento Ave	F	76.9	1.109	F	76.9 1.109	+ 0.000	V/C
# 85 Scholls Ferry & Allen	E	63.0	0.970	E	63.0 0.970	+ 0.000	D/V
# 86 Murray & hart	E	60.9	1.084	E	60.9 1.084	+ 0.000	D/V

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Bany/170

Cycle (sec): 60 Critical Vol./Cap. (X): 0.978
Loss Time (sec): 16 Average Delay (sec/veh): 34.2
Optimal Cycle: 100 Level of Service: C

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Table with columns: Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns: Saturation Flow Module, Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns: Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 170th Ave / Oak St

Cycle (sec): 60 Critical Vol./Cap. (X): 1.091
Loss Time (sec): 12 Average Delay (sec/veh): 49.4
Optimal Cycle: 180 Level of Service: D

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Table with columns: Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns: Saturation Flow Module, Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns: Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 170th Ave & Farmington Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 1.214
Loss Time (sec): 16 Average Delay (sec/veh): 106.5
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (170th Ave, Farmington Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Protected), Rights (Include, Include), and values for Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various approaches.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 170th Ave & Tualatin Valley Hwy

Cycle (sec): 120 Critical Vol./Cap. (X): 1.268
Loss Time (sec): 16 Average Delay (sec/veh): 141.0
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (170th Ave, Tualatin Valley Hwy), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include, Include), and values for Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various approaches.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 170th Ave & Merlo Rd

Cycle (sec): 120 Critical Vol./Cap. (X): 1.294
Loss Time (sec): 16 Average Delay (sec/veh): 126.0
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (170th Ave, Merlo Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Protected), Rights (Include, Include), and traffic volume data (Min. Green, Y+R, Lanes).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for different movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 170th Ave & Baseline Rd

Cycle (sec): 120 Critical Vol./Cap. (X): 2.719
Loss Time (sec): 12 Average Delay (sec/veh): 501.0
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (170th Ave, Baseline Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted, Protected), Rights (Include, Include), and traffic volume data (Min. Green, Y+R, Lanes).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. values for different movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 173rd Ave & Walker Rd

Cycle (sec): 130 Critical Vol./Cap. (X): 1.192  
Loss Time (sec): 16 Average Delay (sec/veh): 108.6  
Optimal Cycle: 180 Level of Service: F

Street Name:	173rd Ave						Walker Rd						
	North Bound		South Bound		East Bound		West Bound		North Bound		South Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected		Protected		Protected		Protected		Protected		Protected		
Rights:	AddLane		Include		Include		Include		Include		Include		
Min. Green:	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	
Lanes:	1	0	1	0	1	1	0	0	1	0	2	0	1

Volume Module:

Base Vol:	180	410	160	130	460	250	160	2080	410	0	1850	150
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:	180	410	160	130	460	250	160	2080	410	0	1850	150
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:	180	410	160	130	460	250	160	2080	410	0	1850	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	410	160	130	460	250	160	2080	410	0	1850	150
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:	180	410	160	130	460	250	160	2080	410	0	1850	150

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.96	0.80	0.93	0.93	0.93	1.01	1.07	0.91	1.10	1.07	0.91
Lanes:	1.00	1.00	1.00	1.00	0.65	0.35	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1736	1828	1514	1769	1141	620	1928	4059	1725	2090	4059	1725

Capacity Analysis Module:

Vol/Sat:	0.10	0.22	0.11	0.07	0.40	0.40	0.08	0.51	0.24	0.00	0.46	0.09
Crit Moves:	****			****			****			****		
Green/Cycle:	0.09	0.32	0.32	0.10	0.34	0.34	0.07	0.45	0.45	0.00	0.38	0.38
Volume/Cap:	1.19	0.70	0.33	0.70	1.19	1.19	1.19	1.13	0.53	0.00	1.19	0.23
Delay/Veh:	193.5	42.5	34.0	67.5	145	145.4	198.9	103	26.3	0.0	133	27.3
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:	193.5	42.5	34.0	67.5	145	145.4	198.9	103	26.3	0.0	133	27.3
LOS by Move:	F	D	C	E	F	F	F	F	C	A	F	C
HCM2kAvgQ:	13	15	5	6	45	45	12	59	12	0	57	4

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

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Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 173th Ave & Cornell Rd

Cycle (sec): 85 Critical Vol./Cap. (X): 1.589  
Loss Time (sec): 16 Average Delay (sec/veh): 188.8  
Optimal Cycle: 180 Level of Service: F

Street Name:	173th Ave						Cornell Rd						
	North Bound		South Bound		East Bound		West Bound		North Bound		South Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected		Protected		Protected		Protected		Protected		Protected		
Rights:	Include		Include		Include		Include		Include		Include		
Min. Green:	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	
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	340	70	210	30	160	70	70	1640	480	210	1220	10
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:	340	70	210	30	160	70	70	1640	480	210	1220	10
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:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	347	71	214	31	163	71	71	1673	490	214	1245	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	347	71	214	31	163	71	71	1673	490	214	1245	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
FinalVolume:	347	71	214	31	163	71	71	1673	490	214	1245	10

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.95	1.00	0.85	0.94	0.99	0.84	0.94	0.99	0.99
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.01
Final Sat.:	1787	1881	1599	1805	1900	1615	1787	1881	1599	1787	1864	15

Capacity Analysis Module:

Vol/Sat:	0.19	0.04	0.13	0.02	0.09	0.04	0.04	0.89	0.31	0.12	0.67	0.67
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.16	0.16	0.02	0.05	0.05	0.04	0.56	0.56	0.08	0.60	0.60
Volume/Cap:	1.59	0.24	0.86	0.86	1.59	0.82	1.11	1.59	0.55	1.59	1.11	1.11
Delay/Veh:	322.9	31.9	59.0	135.7	346	82.8	188.0	288	12.6	336.3	80.8	80.8
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:	322.9	31.9	59.0	135.7	346	82.8	188.0	288	12.6	336.3	80.8	80.8
LOS by Move:	F	C	E	F	F	F	F	F	B	F	F	F
HCM2kAvgQ:	27	2	8	2	14	4	5	120	9	17	53	53

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 160th Ave & Tualatin Valley Hwy

Cycle (sec): 100 Critical Vol./Cap. (X): 1.100
Loss Time (sec): 16 Average Delay (sec/veh): 65.2
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for 160th Ave North Bound, South Bound, East Bound, West Bound.

Table with columns for Volume Module: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 158th Ave & Jenkins Rd

Cycle (sec): 95 Critical Vol./Cap. (X): 1.083
Loss Time (sec): 16 Average Delay (sec/veh): 79.5
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for 158th Ave North Bound, South Bound, East Bound, West Bound.

Table with columns for Volume Module: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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



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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #11 158th Ave & Jay St

Cycle (sec): 80 Critical Vol./Cap. (X): 0.890
Loss Time (sec): 12 Average Delay (sec/veh): 29.3
Optimal Cycle: 94 Level of Service: C

Table with columns for Street Name (158th Ave, Jay St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Permitted), Rights (Include, Include), and values for Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various approaches.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 158th Ave & Walker Rd

Cycle (sec): 105 Critical Vol./Cap. (X): 1.111
Loss Time (sec): 16 Average Delay (sec/veh): 91.4
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (158th Ave, Walker Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Permit+Prot), Rights (Include, Include), and values for Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various approaches.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #13 158th Ave & Cornell Rd

Cycle (sec): 120 Critical Vol./Cap. (X): 0.846
Loss Time (sec): 12 Average Delay (sec/veh): 31.9
Optimal Cycle: 96 Level of Service: C

Table with columns for Street Name (158th Ave, Cornell Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Ovl), Rights, Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #14 Bethany Blvd & Cornell Rd

Cycle (sec): 85 Critical Vol./Cap. (X): 1.452
Loss Time (sec): 16 Average Delay (sec/veh): 133.0
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (Bethany Blvd, Cornell Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Prot+Permit, Include), Rights, Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Bethany Blvd & Hwy 26 EB Ramps

Cycle (sec): 85 Critical Vol./Cap. (X): 1.568
Loss Time (sec): 12 Average Delay (sec/veh): 209.8
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Bethany Blvd (North/South Bound) and Hwy 26 WB Ramps (East/West Bound).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 Bethany Blvd & Hwy 26 WB Ramps

Cycle (sec): 120 Critical Vol./Cap. (X): 1.499
Loss Time (sec): 12 Average Delay (sec/veh): 161.7
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Bethany Blvd (North/South Bound) and Hwy 26 EB Ramps (East/West Bound).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Cornell Rd & Hwy 26 WB Ramps

Cycle (sec): 80 Critical Vol./Cap. (X): 0.966
Loss Time (sec): 12 Average Delay (sec/veh): 36.4
Optimal Cycle: 127 Level of Service: D

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Cornell Rd and Hwy 26 EB Ramps.

Table with columns for Volume Module: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 143rd Ave & Cornell Rd

Cycle (sec): 80 Critical Vol./Cap. (X): 1.181
Loss Time (sec): 12 Average Delay (sec/veh): 77.8
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include 143rd Ave and Cornell Rd.

Table with columns for Volume Module: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 Walker Rd & Murray Blvd

Cycle (sec): 120 Critical Vol./Cap. (X): 1.115
Loss Time (sec): 16 Average Delay (sec/veh): 74.6
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name (Murray Blvd, Walker Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 Murray Blvd & Jenkins Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 1.080
Loss Time (sec): 16 Average Delay (sec/veh): 60.8
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name (Murray Blvd, Jenkins Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

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Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #22 Murray Blvd & Millkan Way

Cycle (sec): 95 Critical Vol./Cap. (X): 0.989  
Loss Time (sec): 16 Average Delay (sec/veh): 54.9  
Optimal Cycle: 160 Level of Service: D

Street Name:	Murray Blvd						Millikan Way					
	North Bound		South Bound		East Bound		West Bound		North Bound		South Bound	
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected		Protected		Protected		Protected		Protected		Protected	
Rights:	Include		Include		Include		Include		Include		Include	
Min. Green:	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
Lanes:	1	0	1	1	0	1	1	0	1	0	1	1

Volume Module:

Base Vol:	100	1130	190	170	1420	640	280	380	160	200	310	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:	100	1130	190	170	1420	640	280	380	160	200	310	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:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	102	1153	194	173	1449	653	286	388	163	204	316	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	1153	194	173	1449	653	286	388	163	204	316	82
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:	102	1153	194	173	1449	653	286	388	163	204	316	82

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.02	1.00	1.00	1.03	1.03	0.93	0.94	0.99	0.81	0.93	0.95	0.95
Lanes:	1.00	1.71	0.29	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.79	0.21
Final Sat.:	1946	3257	548	1966	3931	1759	1787	1881	1539	1769	1434	370

Capacity Analysis Module:

Vol/Sat:	0.05	0.35	0.35	0.09	0.37	0.37	0.16	0.21	0.11	0.12	0.22	0.22
Crit Moves:	****		****		****		****		****		****	
Green/Cycle:	0.06	0.36	0.36	0.09	0.39	0.39	0.16	0.25	0.25	0.14	0.22	0.22
Volume/Cap:	0.95	0.99	0.99	0.99	0.94	0.95	0.99	0.84	0.43	0.84	0.99	0.99
Delay/Veh:	114.8	52.1	52.1	107.9	39.6	50.3	89.6	46.5	30.9	61.4	78.7	78.7
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:	114.8	52.1	52.1	107.9	39.6	50.3	89.6	46.5	30.9	61.4	78.7	78.7
LOS by Move:	F	D	D	F	D	D	F	D	C	E	E	E
HCM2kAvgQ:	3	20	20	9	27	24	13	13	4	8	17	17

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

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Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 Murray Blvd & Tualatin Valley Hwy

Cycle (sec): 120 Critical Vol./Cap. (X): 1.130  
Loss Time (sec): 16 Average Delay (sec/veh): 94.7  
Optimal Cycle: 180 Level of Service: F

Street Name:	Murray Blvd						Tualatin Valley Hwy									
	North Bound		South Bound		East Bound		West Bound		North Bound		South Bound					
Approach:	L	T	R	L	T	R	L	T	R	L	T	R				
Control:	Protected		Protected		Protected		Protected		Protected		Protected					
Rights:	Include		Include		Include		Include		Include		Include					
Min. Green:	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				
Lanes:	1	0	1	1	0	1	1	0	2	0	1	1	0	2	1	0

Volume Module:

Base Vol:	310	1010	190	320	1190	90	100	1520	360	250	1920	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:	310	1010	190	320	1190	90	100	1520	360	250	1920	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:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	316	1031	194	327	1214	92	102	1551	367	255	1959	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	316	1031	194	327	1214	92	102	1551	367	255	1959	82
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:	316	1031	194	327	1214	92	102	1551	367	255	1959	82

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.01	0.99	0.99	1.03	1.03	0.93	1.01	0.94	0.94	1.02	0.98	0.98
Lanes:	1.00	1.68	0.32	1.00	2.00	1.00	1.00	2.43	0.57	1.00	2.88	0.12
Final Sat.:	1928	3167	596	1966	3931	1759	1928	4349	1030	1946	5336	222

Capacity Analysis Module:

Vol/Sat:	0.16	0.33	0.33	0.17	0.31	0.05	0.05	0.36	0.36	0.13	0.37	0.37
Crit Moves:	****		****		****		****		****		****	
Green/Cycle:	0.15	0.29	0.29	0.15	0.28	0.28	0.05	0.32	0.32	0.12	0.38	0.38
Volume/Cap:	1.09	1.13	1.13	1.13	1.09	0.18	0.97	1.13	1.13	1.13	0.97	0.97
Delay/Veh:	129.0	113	113.1	143.8	96.8	32.6	135.7	108	107.6	152.3	50.7	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:	129.0	113	113.1	143.8	96.8	32.6	135.7	108	107.6	152.3	50.7	50.7
LOS by Move:	F	F	F	F	F	C	F	F	F	F	D	D
HCM2kAvgQ:	15	33	33	16	29	2	4	35	35	16	33	33

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 Murray Blvd & Farmington Rd

Cycle (sec): 120 Critical Vol./Cap. (X): 0.892
Loss Time (sec): 16 Average Delay (sec/veh): 43.3
Optimal Cycle: 125 Level of Service: D

Table with columns for Street Name (Murray Blvd, Farmington Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Y+R, Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume for various movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, Final Sat. for various movements.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 Murray Blvd & 6th St

Cycle (sec): 65 Critical Vol./Cap. (X): 0.961
Loss Time (sec): 16 Average Delay (sec/veh): 28.2
Optimal Cycle: 103 Level of Service: C

Table with columns for Street Name (Murray Blvd, 6th St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Y+R, Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume for various movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, Final Sat. for various movements.

Table for Capacity Analysis Module showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 155th Av & Hart Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.897
Loss Time (sec): 12 Average Delay (sec/veh): 27.4
Optimal Cycle: 81 Level of Service: C

Table with columns for Street Name (155th Av, Hart RD), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted, Prot+Permit), Rights (Include), and various traffic metrics like Min. Green, Y+R, Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each approach.

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

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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 Barrows Rd (West End) & Scholls Ferry Rd

Cycle (sec): 70 Critical Vol./Cap. (X): 0.738
Loss Time (sec): 16 Average Delay (sec/veh): 19.4
Optimal Cycle: 66 Level of Service: B

Table with columns for Street Name (Barrows Rd (West End), Scholls Ferry Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), and various traffic metrics like Min. Green, Y+R, Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each approach.

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



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2000 HCM Operations Method (Base Volume Alternative)

Intersection #28 125th Av & Greenway Blvd

Cycle (sec): 90 Critical Vol./Cap. (X): 1.187  
Loss Time (sec): 16 Average Delay (sec/veh): 96.8  
Optimal Cycle: 180 Level of Service: F

Street Name:	125th Av						Brockman Blvd					
	North Bound		South Bound		East Bound		West Bound					
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected		Protected		Protected		Prot+Permit					
Rights:	Include		Include		Include		Include					
Min. Green:	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
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0

Volume Module:												
Base Vol:	240	310	80	80	550	270	40	380	170	160	640	10
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:	240	310	80	80	550	270	40	380	170	160	640	10
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:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	245	316	82	82	561	276	41	388	173	163	653	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	245	316	82	82	561	276	41	388	173	163	653	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
FinalVolume:	245	316	82	82	561	276	41	388	173	163	653	10

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.96	0.96	0.95	0.95	0.95	0.94	0.99	0.84	0.94	0.99	0.99
Lanes:	1.00	0.79	0.21	1.00	0.67	0.33	1.00	1.00	1.00	1.00	0.98	0.02
Final Sat.:	1787	1448	374	1805	1212	595	1787	1881	1599	1787	1848	29

Capacity Analysis Module:												
Vol/Sat:	0.14	0.22	0.22	0.05	0.46	0.46	0.02	0.21	0.11	0.09	0.35	0.35
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.42	0.42	0.09	0.39	0.39	0.02	0.22	0.22	0.36	0.30	0.30
Volume/Cap:	1.19	0.52	0.52	0.52	1.19	1.19	1.19	0.94	0.49	0.63	1.19	1.19
Delay/Veh:	162.2	20.1	20.1	42.5	126	125.7	258.8	63.8	31.8	25.3	133	132.9
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:	162.2	20.1	20.1	42.5	126	125.7	258.8	63.8	31.8	25.3	133	132.9
LOS by Move:	F	C	C	D	F	F	F	E	C	C	F	F
HCM2kAvgQ:	15	8	8	3	42	42	4	15	5	5	34	34

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

Beaverton TSP Update  
2035 Action Plan TSP Projects  
PM Peak Hour

Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #29 Hall Blvd & Hwy 217 SB Ramp

Cycle (sec): 120 Critical Vol./Cap. (X): 1.007  
Loss Time (sec): 16 Average Delay (sec/veh): 63.7  
Optimal Cycle: 180 Level of Service: E

Street Name:	Hwy 217 SB Ramp						Hall Blvd								
	North Bound		South Bound		East Bound		West Bound								
Approach:	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			
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			
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1

Volume Module:														
Base Vol:	160	10	200	190	120	300	220	1200	130	150	1400	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	1.00	1.00
Initial Bse:	160	10	200	190	120	300	220	1200	130	150	1400	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	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	168	11	211	200	126	316	232	1263	137	158	1474	53		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	11	211	200	126	316	232	1263	137	158	1474	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	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	1.00	1.00
FinalVolume:	168	11	211	200	126	316	232	1263	137	158	1474	53		

Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.94	0.88	0.88	1.03	1.07	1.07	1.02	1.08	0.92		
Lanes:	1.00	1.00	1.00	1.00	0.29	0.71	1.00	1.80	0.20	1.00	2.00	1.00		
Final Sat.:	1787	1881	1599	1787	480	1200	1966	3678	398	1946	4096	1741		

Capacity Analysis Module:														
Vol/Sat:	0.09	0.01	0.13	0.11	0.26	0.26	0.12	0.34	0.34	0.08	0.36	0.03		
Crit Moves:	****			****			****			****				
Green/Cycle:	0.13	0.13	0.13	0.26	0.26	0.26	0.26	0.12	0.38	0.38	0.09	0.36	0.36	
Volume/Cap:	0.72	0.04	1.01	0.43	1.01	1.01	1.01	0.90	0.90	0.90	0.90	1.01	0.08	
Delay/Veh:	60.5	45.7	116.1	37.5	88.9	88.9	114.0	41.8	41.8	93.4	63.7	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	1.00	1.00
AdjDel/Veh:	60.5	45.7	116.1	37.5	88.9	88.9	114.0	41.8	41.8	93.4	63.7	25.6		
LOS by Move:	E	D	F	D	F	F	F	D	D	F	E	C		
HCM2kAvgQ:	7	0	12	6	22	22	9	22	22	9	34	1		

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #30 Nimbus Av & Hall Blvd

Cycle (sec): 60 Critical Vol./Cap. (X): 1.057
Loss Time (sec): 12 Average Delay (sec/veh): 47.4
Optimal Cycle: 180 Level of Service: D

Table with columns for Street Name (Nimbus Av, Hall Blvd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and traffic volume data.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various approaches.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #31 Greenway Blvd & Hall Blvd

Cycle (sec): 105 Critical Vol./Cap. (X): 0.806
Loss Time (sec): 12 Average Delay (sec/veh): 22.4
Optimal Cycle: 76 Level of Service: C

Table with columns for Street Name (Greenway Blvd, Hall Blvd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and traffic volume data.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various approaches.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various approaches.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #32 Hall Blvd & Denney Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.768
Loss Time (sec): 12 Average Delay (sec/veh): 17.7
Optimal Cycle: 59 Level of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Hall Blvd and Denney Rd.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module, Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #33 Denny Rd & Hwy 217 SB Ramp

Cycle (sec): 60 Critical Vol./Cap. (X): 0.548
Loss Time (sec): 12 Average Delay (sec/veh): 15.8
Optimal Cycle: 41 Level of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Hwy 217 SB Ramp and Denney Rd.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module, Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #34 Denney Rd & Hwy 217 NB Ramp

Cycle (sec): 60 Critical Vol./Cap. (X): 0.702
Loss Time (sec): 12 Average Delay (sec/veh): 18.6
Optimal Cycle: 52 Level of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Hwy 217 NB Ramp and Denney Rd with various movement and control details.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #35 Scholls Ferry Rd & Denney Rd

Cycle (sec): 65 Critical Vol./Cap. (X): 1.198
Loss Time (sec): 12 Average Delay (sec/veh): 80.6
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Scholls Ferry Rd and Denney Rd with various movement and control details.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #36 88th Av & Garden Home

Average Delay (sec/veh): 25.7 Worst Case Level Of Service: F[407.8]

Table with columns for Street Name, Approach, Movement, Control, Rights, Lanes, and Volume Module. Includes data for North Bound, South Bound, East Bound, and West Bound movements.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table with columns for Critical Gap Module, Critical Gap, and FollowUpTim.

Table with columns for Capacity Module, Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with columns for Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, and Approach LOS.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #37 Oleson Rd & Garden Home Rd

Cycle (sec): 105 Critical Vol./Cap.(X): 1.170
Loss Time (sec): 16 Average Delay (sec/veh): 87.6
Optimal Cycle: 180 Level Of Service: F

Table with columns for Street Name, Approach, Movement, Control, Rights, Lanes, and Volume Module. Includes data for North Bound, South Bound, East Bound, and West Bound movements.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with columns for Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Table with columns for Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #38 Oleson Rd & Vermont St

Cycle (sec): 60 Critical Vol./Cap. (X): 0.856
Loss Time (sec): 12 Average Delay (sec/veh): 20.8
Optimal Cycle: 72 Level of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Oleson Rd and Vermont St.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #39 Laurelwood Av & Scholls Ferry Rd

Cycle (sec): 70 Critical Vol./Cap. (X): 0.949
Loss Time (sec): 16 Average Delay (sec/veh): 32.9
Optimal Cycle: 106 Level of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Laurelwood Av and Scholls Ferry Rd.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #40 Laurelwood Av & Baeverton - Hillsdale Hwy

Cycle (sec): 60 Critical Vol./Cap. (X): 0.808
Loss Time (sec): 12 Average Delay (sec/veh): 18.0
Optimal Cycle: 65 Level of Service: B

Street Name: Laurelwood Av Beaverton - Hillsdale Hwy
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
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
Lanes: 1 0 0 1 0 1 0 0 1 1 0 1 1 0 1 0

Volume Module:
Base Vol: 110 170 60 180 190 100 100 1520 120 30 1150 90
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: 110 170 60 180 190 100 100 1520 120 30 1150 90
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: 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98
PHF Volume: 112 173 61 184 194 102 102 1551 122 31 1173 92
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 112 173 61 184 194 102 102 1551 122 31 1173 92
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: 112 173 61 184 194 102 102 1551 122 31 1173 92

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.38 0.94 0.94 0.48 0.93 0.93 1.03 1.02 1.02 1.02 1.01 1.01
Lanes: 1.00 0.74 0.26 1.00 0.66 0.34 1.00 1.85 0.15 1.00 1.85 0.15
Final Sat.: 717 1323 467 916 1156 609 1966 3604 284 1946 3569 279

Capacity Analysis Module:
Vol/Sat: 0.16 0.13 0.13 0.20 0.17 0.17 0.05 0.43 0.43 0.02 0.33 0.33
Crit Moves: \*\*\*\*
Green/Cycle: 0.25 0.25 0.25 0.25 0.25 0.25 0.08 0.53 0.53 0.02 0.48 0.48
Volume/Cap: 0.63 0.53 0.53 0.81 0.68 0.68 0.69 0.81 0.81 0.81 0.69 0.69
Delay/Veh: 27.3 20.7 20.7 40.2 24.6 24.6 40.0 14.0 14.0 103.8 13.4 13.4
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: 27.3 20.7 20.7 40.2 24.6 24.6 40.0 14.0 14.0 103.8 13.4 13.4
LOS by Move: C C C D C C D B B F B B
HCM2kAvgQ: 3 4 4 6 6 6 3 16 16 2 11 11

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 87th Ave & Canyon Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.653
Loss Time (sec): 8 Average Delay (sec/veh): 13.1
Optimal Cycle: 40 Level of Service: B

Street Name: 87th Ave Canyon Rd
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
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
Lanes: 0 1 0 0 1 0 1 0 0 0 0 0 2 0 1 0 0 1 1 1

Volume Module:
Base Vol: 190 80 90 120 190 0 0 860 290 0 1040 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: 190 80 90 120 190 0 0 860 290 0 1040 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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 200 84 95 126 200 0 0 905 305 0 1095 53
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 200 84 95 126 200 0 0 905 305 0 1095 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
FinalVolume: 200 84 95 126 200 0 0 905 305 0 1095 53

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.58 0.58 0.83 0.71 0.71 1.00 1.00 0.93 0.83 1.00 0.93 0.93
Lanes: 0.70 0.30 1.00 0.39 0.61 0.00 0.00 2.00 1.00 0.00 2.00 1.00
Final Sat.: 777 327 1583 525 831 0 0 3538 1583 0 3549 1774

Capacity Analysis Module:
Vol/Sat: 0.26 0.26 0.06 0.24 0.24 0.00 0.00 0.26 0.19 0.00 0.31 0.03
Crit Moves: \*\*\*\*
Green/Cycle: 0.39 0.39 0.39 0.39 0.39 0.00 0.00 0.47 0.47 0.00 0.47 0.47
Volume/Cap: 0.65 0.65 0.15 0.61 0.61 0.00 0.00 0.54 0.41 0.00 0.65 0.06
Delay/Veh: 18.4 18.4 11.8 16.6 16.6 0.0 0.0 11.6 10.7 0.0 13.0 8.6
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: 18.4 18.4 11.8 16.6 16.6 0.0 0.0 11.6 10.7 0.0 13.0 8.6
LOS by Move: B B B B B A A B B A B A
HCM2kAvgQ: 6 6 1 6 6 0 0 7 4 0 9 1

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

Beaverton TSP Update  
2035 Action Plan TSP Projects  
PM Peak Hour

Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Walker Rd & Hwy 217 SB Ramp

Cycle (sec): 60 Critical Vol./Cap. (X): 0.864  
Loss Time (sec): 12 Average Delay (sec/veh): 18.6  
Optimal Cycle: 74 Level of Service: B

Street Name:	Hwy 217 SB Ramp			Walker Rd								
	Approach:			Approach:								
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
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
Lanes:	0	0	0	0	1	0	0	1	0	1	0	2

Volume Module:

Base Vol:	0	0	0	230	40	400	0	750	770	20	960	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	230	40	400	0	750	770	20	960	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	230	40	400	0	750	770	20	960	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	230	40	400	0	750	770	20	960	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:	0	0	0	230	40	400	0	750	770	20	960	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	0.95	0.95	0.85	1.10	1.10	0.94	1.05	1.05	1.10
Lanes:	0.00	0.00	0.00	0.85	0.15	1.00	0.00	1.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1536	267	1615	0	2090	1777	1986	3971	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.15	0.15	0.25	0.00	0.36	0.43	0.01	0.24	0.00
Crit Moves:				****				****	****			
Green/Cycle:	0.00	0.00	0.00	0.29	0.29	0.29	0.00	0.50	0.50	0.01	0.51	0.00
Volume/Cap:	0.00	0.00	0.00	0.52	0.52	0.86	0.00	0.72	0.86	0.86	0.47	0.00
Delay/Veh:	0.0	0.0	0.0	18.9	18.9	35.7	0.0	14.0	21.9	155.8	9.5	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	18.9	18.9	35.7	0.0	14.0	21.9	155.8	9.5	0.0
LOS by Move:	A	A	A	B	B	D	A	B	C	F	A	A
HCM2kAvgQ:	0	0	0	5	5	10	0	12	16	2	6	0

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

Beaverton TSP Update  
2035 Action Plan TSP Projects  
PM Peak Hour

Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #43 Walker Rd & Hwy 217 NB Ramp

Cycle (sec): 100 Critical Vol./Cap. (X): 0.671  
Loss Time (sec): 12 Average Delay (sec/veh): 24.7  
Optimal Cycle: 56 Level of Service: C

Street Name:	Hwy 217 NB Ramp			Walker Rd								
	Approach:			Approach:								
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
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
Lanes:	1	0	1	0	0	0	1	0	1	0	0	1

Volume Module:

Base Vol:	680	0	20	0	0	0	180	780	0	0	320	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:	680	0	20	0	0	0	180	780	0	0	320	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:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	694	0	20	0	0	0	184	796	0	0	327	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	694	0	20	0	0	0	184	796	0	0	327	163
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:	694	0	20	0	0	0	184	796	0	0	327	163

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	1.03	1.09	1.10	1.10	0.98	0.98
Lanes:	1.94	0.00	0.06	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.33	0.67
Final Sat.:	3475	0	99	0	0	0	1966	2069	0	0	2490	1245

Capacity Analysis Module:

Vol/Sat:	0.20	0.00	0.21	0.00	0.00	0.00	0.09	0.38	0.00	0.00	0.13	0.13
Crit Moves:				****				****	****			
Green/Cycle:	0.31	0.00	0.31	0.00	0.00	0.00	0.24	0.57	0.00	0.00	0.33	0.33
Volume/Cap:	0.65	0.00	0.67	0.00	0.00	0.00	0.39	0.67	0.00	0.00	0.39	0.39
Delay/Veh:	31.5	0.0	32.0	0.0	0.0	0.0	32.5	16.3	0.0	0.0	25.7	25.7
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:	31.5	0.0	32.0	0.0	0.0	0.0	32.5	16.3	0.0	0.0	25.7	25.7
LOS by Move:	C	A	C	A	A	A	C	B	A	A	C	C
HCM2kAvgQ:	10	0	11	0	0	0	5	17	0	0	6	6

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



Beaverton TSP Update
2035 Action Plan TSP Projects
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #44 Cedar Hills & Butner Rd
Cycle (sec): 100 Critical Vol./Cap. (X): 1.218
Loss Time (sec): 12 Average Delay (sec/veh): 112.1
Optimal Cycle: 180 Level of Service: F
Street Name: Cedar Hills Butner Rd
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
Lanes: 1 0 2 0 1 1 0 1 1 0 0 0 1 0 0 0 0 0 0 0
Min. Green: 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
Lanes: 1 0 2 0 1 1 0 1 1 0 0 0 1 0 0 0 0 0 1 0 0 0
Volume Module:
Base Vol: 30 1250 10 120 1330 240 410 90 30 60 110 180
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: 30 1250 10 120 1330 240 410 90 30 60 110 180
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: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 33 1359 11 130 1446 261 446 98 33 65 120 196
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 33 1359 11 130 1446 261 446 98 33 65 120 196
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
FinalVolume: 33 1359 11 130 1446 261 446 98 33 65 120 196
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.03 1.03 0.93 1.03 1.01 1.01 0.50 0.50 0.50 0.79 0.79 0.79
Lanes: 1.00 2.00 1.00 1.00 1.69 0.31 0.77 0.17 0.06 0.17 0.31 0.52
Final Sat.: 1966 3931 1759 1966 3254 587 729 160 53 258 472 773
Capacity Analysis Module:
Vol/Sat: 0.02 0.35 0.01 0.07 0.44 0.44 0.61 0.61 0.61 0.25 0.25 0.25
Crit Moves: \*\*\*\* \*\*\*\*
Green/Cycle: 0.01 0.32 0.32 0.06 0.36 0.36 0.50 0.50 0.50 0.50 0.50 0.50
Volume/Cap: 1.22 1.09 0.02 1.09 1.22 1.22 1.22 1.22 1.22 0.50 0.50 0.50
Delay/Veh: 296.7 87.5 23.5 155.1 137 136.8 141.2 141 141.2 17.2 17.2 17.2
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: 296.7 87.5 23.5 155.1 137 136.8 141.2 141 141.2 17.2 17.2 17.2
LOS by Move: F F C F F F F F F B B B
HCM2kAvgQ: 3 34 0 6 47 47 33 33 33 8 8 8
Note: Queue reported is the number of cars per lane.

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #45 Cedar Hills Blvd & Hwy 26 EB Ramp
Average Delay (sec/veh): OVERFLOW Worst Case Level of Service: F[xxxxx]
Street Name: Hwy 26 EB Ramp Cedar Hills Blvd
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 0 1 1 0 2 0 0 0 1 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 1480 370 380 1290 0 230 0 280 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 1480 370 380 1290 0 230 0 280 0 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: 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97
PHF Volume: 0 1526 381 392 1330 0 237 0 289 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 1526 381 392 1330 0 237 0 289 0 0 0 0
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxxx 4.1 xxxx xxxxxx 6.8 6.5 6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 xxxxx xxxx xxxxx
Capacity Module:
Cnflct Vol: xxxx xxxx xxxxx 1907 xxxx xxxxx 2876 4021 665 xxxxx xxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxxx 316 xxxxx xxxxxx 13 3 407 xxxxx xxxx xxxxxx
Move Cap.: xxxxx xxxxx xxxxxx 316 xxxxx xxxxxx 0 0 407 xxxxx xxxx xxxxxx
Total Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxxx 0 0 xxxxxx 0 0 xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx 1.24 xxxxx xxxxx xxxxx xxxxx 0.71 xxxxx xxxx xxxxx
Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 17.8 xxxxx xxxxxx xxxxx xxxxx 5.4 xxxxx xxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 167.0 xxxxx xxxxxx xxxxxx xxxxx 32.6 xxxxxx xxxx xxxxxx
LOS by Move: \* \* \* F \* \* \* D \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx xxxxx xxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
ApproachDel: xxxxxxx xxxxxxx +Inf xxxxxxx
ApproachLOS: \* \* F \*
Note: Queue reported is the number of cars per lane.

Beaverton TSP Update  
2035 Action Plan TSP Projects  
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Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #46 Cedar Hills Blvd & Hwy 26 WB Ramps

Cycle (sec): 60 Critical Vol./Cap. (X): 0.960  
Loss Time (sec): 8 Average Delay (sec/veh): 22.6  
Optimal Cycle: 103 Level of Service: C

Street Name:	Cedar Hills Blvd						Hwy 26 WB Ramps					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	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
Lanes:	0	0	1	1	1	1	0	0	0	0	0	1

Volume Module:

Base Vol:	0	1210	460	0	1250	570	0	0	0	180	0	530
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	1210	460	0	1250	570	0	0	0	180	0	530
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	1287	489	0	1330	606	0	0	0	191	0	564
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1287	489	0	1330	606	0	0	0	191	0	564
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:	0	1287	489	0	1330	606	0	0	0	191	0	564

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.10	0.98	0.98	1.10	0.99	0.99	1.00	1.00	1.00	0.90	1.00	0.83
Lanes:	0.00	1.45	0.55	0.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	2704	1028	0	3747	1873	0	0	0	3432	0	1583

Capacity Analysis Module:

Vol/Sat:	0.00	0.48	0.48	0.00	0.35	0.32	0.00	0.00	0.00	0.06	0.00	0.36
Crit Moves:	****			****			****			****		
Green/Cycle:	0.00	0.50	0.50	0.00	0.50	0.50	0.00	0.00	0.00	0.37	0.00	0.37
Volume/Cap:	0.00	0.96	0.96	0.00	0.72	0.65	0.00	0.00	0.00	0.15	0.00	0.96
Delay/Veh:	0.0	27.4	27.4	0.0	12.8	11.8	0.0	0.0	0.0	12.6	0.0	45.9
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	27.4	27.4	0.0	12.8	11.8	0.0	0.0	0.0	12.6	0.0	45.9
LOS by Move:	A	C	C	A	B	B	A	A	A	B	A	D
HCM2kAvgQ:	0	16	16	0	9	8	0	0	0	1	0	16

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

Beaverton TSP Update  
2035 Action Plan TSP Projects  
PM Peak Hour

Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #47 Cedar Hills Blvd & Barnes Rd

Cycle (sec): 120 Critical Vol./Cap. (X): 1.413  
Loss Time (sec): 16 Average Delay (sec/veh): 155.5  
Optimal Cycle: 180 Level of Service: F

Street Name:	Cedar Hills Blvd						Barnes Rd					
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
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
Lanes:	2	0	1	0	1	0	1	0	0	1	0	1

Volume Module:

Base Vol:	640	820	350	130	740	30	140	750	690	560	970	350
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:	640	820	350	130	740	30	140	750	690	560	970	350
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:	688	882	376	140	796	32	151	806	742	602	1043	376
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	688	882	376	140	796	32	151	806	742	602	1043	376
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:	688	882	376	140	796	32	151	806	742	602	1043	376

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.03	1.09	0.93	1.01	1.06	1.06	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	2.00	1.00	1.00	1.00	0.96	0.04	1.00	2.00	1.00	2.00	1.47	0.53
Final Sat.:	3931	2069	1759	1928	1939	79	1769	3724	1583	3538	2627	948

Capacity Analysis Module:

Vol/Sat:	0.18	0.43	0.21	0.07	0.41	0.41	0.09	0.22	0.47	0.17	0.40	0.40
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.35	0.35	0.06	0.29	0.29	0.08	0.33	0.33	0.12	0.37	0.37
Volume/Cap:	1.41	1.20	0.60	1.20	1.41	1.41	1.07	0.65	1.41	1.41	1.07	1.07
Delay/Veh:	250.2	143	33.5	204.5	238	238.3	149.7	35.5	236.9	252.0	82.0	82.0
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:	250.2	143	33.5	204.5	238	238.3	149.7	35.5	236.9	252.0	82.0	82.0
LOS by Move:	F	F	C	F	F	F	F	D	F	F	F	F
HCM2kAvgQ:	24	49	10	11	61	61	10	13	55	24	36	36

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

Beaverton TSP Update
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #48 Cedar Hills Blvd & Cornell Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.770
Loss Time (sec): 16 Average Delay (sec/veh): 27.7
Optimal Cycle: 65 Level of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Cedar Hills Blvd and Cornell Rd.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #49 Saltzman Rd & Cornell Rd

Cycle (sec): 80 Critical Vol./Cap. (X): 1.135
Loss Time (sec): 16 Average Delay (sec/veh): 73.2
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Saltzman Rd and Corenll Rd.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #50 Murray Blvd & Hwy 26 EB Ramps

Cycle (sec): 105 Critical Vol./Cap. (X): 1.127
Loss Time (sec): 12 Average Delay (sec/veh): 67.0
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Murray Blvd North/South Bound and Hwy 26 NB Ramps East/West Bound.

Table with columns for Volume Module: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #51 Murray Blvd & Hwy 26 WB Ramps

Cycle (sec): 120 Critical Vol./Cap. (X): 1.121
Loss Time (sec): 12 Average Delay (sec/veh): 70.3
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Murray Blvd North/South Bound and Hwy 26 EB Ramps East/West Bound.

Table with columns for Volume Module: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
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Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #52 Murray Blvd & Cornell Rd

Cycle (sec): 85 Critical Vol./Cap. (X): 1.318
Loss Time (sec): 16 Average Delay (sec/veh): 131.2
Optimal Cycle: 180 Level of Service: F

Table with columns for Street Name (Murray Blvd, Cornell Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #80 Murray Rd & Allen Blvd

Cycle (sec): 100 Critical Vol./Cap. (X): 1.048
Loss Time (sec): 16 Average Delay (sec/veh): 58.9
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name (Murray Rd, Allen Blvd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for various movements.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #81 Cornell Rd & Hwy 26 EB ramps

Cycle (sec): 60 Critical Vol./Cap. (X): 0.955
Loss Time (sec): 12 Average Delay (sec/veh): 23.6
Optimal Cycle: 97 Level of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Cornell Rd and Hwy 26 EB ramps.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #82 Hall Blvd & Center St

Cycle (sec): 60 Critical Vol./Cap. (X): 0.911
Loss Time (sec): 16 Average Delay (sec/veh): 28.6
Optimal Cycle: 86 Level of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Hall Blvd and Center St.

Table with columns for Volume Module, Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update  
2035 Action Plan TSP Projects  
PM Peak Hour

Level of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

Intersection #83 Allen Blvd & Western Ave

Cycle (sec): 60 Critical Vol./Cap. (X): 0.994  
Loss Time (sec): 12 Average Delay (sec/veh): 38.8  
Optimal Cycle: 111 Level of Service: D

Street Name:	Western Ave			Allen Blvd								
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			Ovl		
Min. Green:	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
Lanes:	0	0	0	0	0	0	1	0	2	0	0	1

Volume Module:

Base Vol:	0	0	0	640	0	590	260	830	0	0	940	300
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	640	0	590	260	830	0	0	940	300
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	681	0	628	277	883	0	0	1000	319
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	681	0	628	277	883	0	0	1000	319
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:	0	0	0	681	0	628	277	883	0	0	1000	319

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.94	1.00	0.84	1.01	1.01	1.10	1.10	1.01	0.91
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1787	0	1599	1928	3856	0	0	3856	1725

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.38	0.00	0.39	0.14	0.23	0.00	0.00	0.26	0.19	
Crit Moves:				****	****						****		
Green/Cycle:	0.00	0.00	0.00	0.39	0.00	0.39	0.14	0.41	0.00	0.00	0.26	0.66	
Volume/Cap:	0.00	0.00	0.00	0.96	0.00	0.99	0.99	0.57	0.00	0.00	0.99	0.28	
Delay/Veh:	0.0	0.0	0.0	43.1	0.0	52.4	77.9	14.3	0.0	0.0	49.0	4.5	
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	43.1	0.0	52.4	77.9	14.3	0.0	0.0	49.0	4.5	
LOS by Move:	A	A	A	D	A	D	E	B	A	A	D	A	
HCM2kAvgQ:	0	0	0	19	0	19	10	7	0	0	17	3	

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

Beaverton TSP Update  
2035 Action Plan TSP Projects  
PM Peak Hour

Level of Service Computation Report  
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #84 Hart Rd & Sorrento Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 1.109  
Loss Time (sec): 0 Average Delay (sec/veh): 76.9  
Optimal Cycle: 0 Level of Service: F

Street Name:	Sorrento/Hart			Hart								
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	0	1	0	1	0

Volume Module:

Base Vol:	90	0	100	0	0	0	0	240	200	340	420	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	100	0	0	0	0	240	200	340	420	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	98	0	109	0	0	0	0	261	217	370	457	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	0	109	0	0	0	0	261	217	370	457	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:	98	0	109	0	0	0	0	261	217	370	457	0

Saturation Flow Module:

Adjustment:	1.80	1.80	1.80	0.70	0.70	0.70	1.08	1.08	1.08	1.09	1.09	1.09
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	0.55	0.45	0.45	0.55	0.00
Final Sat.:	478	0	531	0	0	0	0	406	338	333	412	0

Capacity Analysis Module:

Vol/Sat:	0.20	xxxx	0.20	xxxx	xxxx	xxxx	xxxx	0.64	0.64	1.11	1.11	xxxx
Crit Moves:	****			****			****			****		
Delay/Veh:	12.6	0.0	12.6	0.0	0.0	0.0	0.0	18.9	18.9	126.6	127	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
AdjDel/Veh:	12.6	0.0	12.6	0.0	0.0	0.0	0.0	18.9	18.9	126.6	127	0.0
LOS by Move:	B	*	B	*	*	*	*	C	C	F	F	*
ApproachDel:	12.6	xxxxxx			18.9			126.6				
Delay Adj:	1.00	xxxxxx			1.00			1.00				
ApprAdjDel:	12.6	xxxxxx			18.9			126.6				
LOS by Appr:	B	*			C			F				
AllWayAvgQ:	0.5	0.5	0.5	0.0	0.0	0.0	2.0	2.0	2.0	22.5	22.5	22.5

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #85 Scholls Ferry & Allen

Cycle (sec): 120 Critical Vol./Cap. (X): 0.970
Loss Time (sec): 16 Average Delay (sec/veh): 63.0
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name (Scholls, Allen), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permit+Prot), Rights (Include), and traffic volume data (Min. Green, Y+R, Lanes).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for Scholls and Allen streets.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for Scholls and Allen streets.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for Scholls and Allen streets.

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

Beaverton TSP Update
2035 Action Plan TSP Projects
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #86 Murray & Hart

Cycle (sec): 100 Critical Vol./Cap. (X): 1.084
Loss Time (sec): 16 Average Delay (sec/veh): 60.9
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name (Murray, Hart), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Ovl, Include), and traffic volume data (Min. Green, Y+R, Lanes).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for Murray and Hart streets.























Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for Murray and Hart streets.

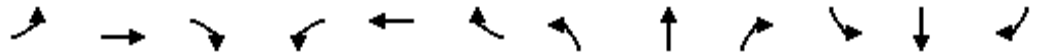
Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for Murray and Hart streets.

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





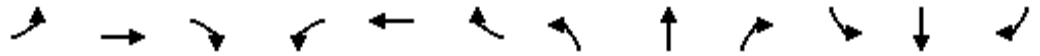
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	1.00			
Frbp, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	1805	3610			3893	1700	1633	1633	1538			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1805	3610			3893	1700	1633	1633	1538			
Volume (vph)	220	790	0	0	1440	430	400	0	170	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	859	0	0	1565	467	435	0	185	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	234	0	0	134	0	0	0
Lane Group Flow (vph)	239	859	0	0	1565	233	218	217	51	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	5%	5%	5%	0%	0%	0%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	15.8	64.4			44.6	44.6	22.6	22.6	22.6			
Effective Green, g (s)	16.8	65.4			45.6	45.6	23.6	23.6	23.6			
Actuated g/C Ratio	0.18	0.69			0.48	0.48	0.25	0.25	0.25			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	2.5	6.0			4.0	4.0	2.5	2.5	2.5			
Lane Grp Cap (vph)	319	2485			1869	816	406	406	382			
v/s Ratio Prot	c0.13	0.24			c0.40		c0.13	0.13				
v/s Ratio Perm						0.14			0.03			
v/c Ratio	0.75	0.35			0.84	0.29	0.54	0.53	0.13			
Uniform Delay, d1	37.1	6.1			21.5	14.9	31.0	30.9	27.8			
Progression Factor	1.19	0.50			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	5.3	0.2			4.7	0.9	1.1	1.1	0.1			
Delay (s)	49.4	3.3			26.1	15.8	32.0	32.0	27.9			
Level of Service	D	A			C	B	C	C	C			
Approach Delay (s)		13.3			23.8			30.8			0.0	
Approach LOS		B			C			C			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			21.9				HCM Level of Service		C			
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			95.0				Sum of lost time (s)		9.0			
Intersection Capacity Utilization			72.8%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑						↑	↑
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0						3.0	3.0
Lane Util. Factor		0.95		1.00	0.95						1.00	1.00
Frbp, ped/bikes		1.00		1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00						1.00	1.00
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.96	1.00
Satd. Flow (prot)		3700		1966	3932						1732	1538
Flt Permitted		1.00		0.95	1.00						0.96	1.00
Satd. Flow (perm)		3700		1966	3932						1732	1538
Volume (vph)	0	760	280	400	1430	0	0	0	0	250	30	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	826	304	421	1505	0	0	0	0	272	33	228
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	0	25
Lane Group Flow (vph)	0	1093	0	421	1505	0	0	0	0	0	305	203
Confl. Peds. (#/hr)						4						
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	0%	0%	0%	5%	5%	5%
Turn Type				Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases												4
Actuated Green, G (s)		31.6		24.0	59.6						27.4	27.4
Effective Green, g (s)		32.6		25.0	60.6						28.4	28.4
Actuated g/C Ratio		0.34		0.26	0.64						0.30	0.30
Clearance Time (s)		4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)		4.0		2.5	6.0						2.5	2.5
Lane Grp Cap (vph)		1270		517	2508						518	460
v/s Ratio Prot		c0.30		c0.21	0.38						c0.18	
v/s Ratio Perm												0.13
v/c Ratio		0.86		0.81	0.60						0.59	0.44
Uniform Delay, d1		29.1		32.8	10.1						28.3	26.9
Progression Factor		1.00		0.65	0.19						1.00	1.00
Incremental Delay, d2		7.8		6.3	0.7						1.4	0.5
Delay (s)		36.8		27.7	2.6						29.8	27.4
Level of Service		D		C	A						C	C
Approach Delay (s)		36.8			8.1			0.0			28.7	
Approach LOS		D			A			A			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			20.2			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			95.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			72.8%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												


























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1909	3707		1966	3877		1787	1808		1770	1756	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1909	3707		1966	3877		1787	1808		1770	1756	
Volume (vph)	90	790	140	180	1400	110	80	200	50	170	300	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	859	152	189	1474	116	87	217	54	185	326	130
RTOR Reduction (vph)	0	14	0	0	6	0	0	9	0	0	14	0
Lane Group Flow (vph)	98	997	0	189	1584	0	87	262	0	185	442	0
Confl. Peds. (#/hr)			8			7			10			18
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	1	0	0	1	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.9	42.5		10.0	45.6		4.8	21.5		10.0	26.7	
Effective Green, g (s)	7.9	43.5		11.0	46.6		5.8	22.5		11.0	27.7	
Actuated g/C Ratio	0.08	0.44		0.11	0.47		0.06	0.22		0.11	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	4.5		2.5	4.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	151	1613		216	1807		104	407		195	486	
v/s Ratio Prot	0.05	c0.27		0.10	c0.41		0.05	c0.14		c0.10	c0.25	
v/s Ratio Perm												
v/c Ratio	0.65	0.62		0.88	0.88		0.84	0.64		0.95	0.91	
Uniform Delay, d1	44.7	21.8		43.8	24.1		46.6	35.1		44.2	34.9	
Progression Factor	1.14	0.26		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.0	0.9		29.9	6.4		40.7	3.1		49.3	20.6	
Delay (s)	55.0	6.5		73.8	30.5		87.3	38.2		93.5	55.5	
Level of Service	E	A		E	C		F	D		F	E	
Approach Delay (s)		10.8			35.1			50.1			66.5	
Approach LOS		B			D			D			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			34.7			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			85.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕		↘	↕	
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	3740		1966	3876		1966	3863		1966	3850	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1947	3740		1966	3876		1966	3863		1966	3850	
Volume (vph)	160	810	240	220	1360	90	300	890	80	170	960	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	174	880	261	239	1478	98	326	967	87	179	1011	126
RTOR Reduction (vph)	0	28	0	0	5	0	0	7	0	0	10	0
Lane Group Flow (vph)	174	1113	0	239	1571	0	326	1047	0	179	1127	0
Confl. Peds. (#/hr)			1			1			1			14
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	1	0	0	2	0	0	2	0	0	0	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.0	34.0		11.0	36.0		16.0	30.0		9.0	23.0	
Effective Green, g (s)	10.0	35.0		12.0	37.0		17.0	31.0		10.0	24.0	
Actuated g/C Ratio	0.10	0.35		0.12	0.37		0.17	0.31		0.10	0.24	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.0		2.5	2.0	
Lane Grp Cap (vph)	195	1309		236	1434		334	1198		197	924	
v/s Ratio Prot	0.09	c0.30		0.12	c0.41		0.17	c0.27		0.09	c0.29	
v/s Ratio Perm												
v/c Ratio	0.89	0.85		1.01	1.10		0.98	0.87		0.91	1.22	
Uniform Delay, d1	44.5	30.1		44.0	31.5		41.3	32.7		44.5	38.0	
Progression Factor	0.89	0.84		0.98	0.49		1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.7	7.0		47.6	50.1		42.4	7.1		39.1	108.8	
Delay (s)	75.1	32.1		90.9	65.4		83.7	39.7		83.7	146.8	
Level of Service	E	C		F	E		F	D		F	F	
Approach Delay (s)		37.8			68.8			50.1			138.2	
Approach LOS		D			E			D			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			73.0				HCM Level of Service			E		
HCM Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)		6.0			
Intersection Capacity Utilization		101.0%					ICU Level of Service		G			
Analysis Period (min)			15									

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1809	3518		1775	3538		1676	1724		1613	1698	1416
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1809	3518		1775	3538		1676	1724		1613	1698	1416
Volume (vph)	150	1470	190	130	1740	30	170	200	30	200	260	220
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	156	1531	198	135	1812	31	177	208	31	208	271	229
RTOR Reduction (vph)	0	9	0	0	1	0	0	5	0	0	0	18
Lane Group Flow (vph)	156	1720	0	135	1842	0	177	234	0	208	271	211
Confl. Peds. (#/hr)			6			4			9			11
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	2%	2%	2%	6%	6%	6%
Bus Blockages (#/hr)	0	3	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot			Prot			Prot		pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases												8
Actuated Green, G (s)	10.0	54.7		10.0	54.7		11.0	17.3		16.5	22.8	32.8
Effective Green, g (s)	11.0	56.2		11.0	56.2		12.0	18.3		17.5	23.8	34.8
Actuated g/C Ratio	0.10	0.49		0.10	0.49		0.10	0.16		0.15	0.21	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	4.3		1.0	4.3		1.0	0.5		1.0	0.5	1.0
Lane Grp Cap (vph)	173	1719		170	1729		175	274		245	351	465
v/s Ratio Prot	0.09	c0.49		0.08	c0.52		c0.11	c0.14		0.13	c0.16	0.04
v/s Ratio Perm												0.11
v/c Ratio	0.90	1.00		0.79	1.07		1.01	0.85		0.85	0.77	0.45
Uniform Delay, d1	51.5	29.4		50.9	29.4		51.5	47.0		47.5	43.0	32.4
Progression Factor	1.00	1.00		0.78	0.61		0.79	0.78		1.00	1.00	1.00
Incremental Delay, d2	40.7	21.9		14.0	37.8		62.4	17.0		22.2	9.2	0.3
Delay (s)	92.2	51.3		53.8	55.8		103.3	53.7		69.6	52.3	32.7
Level of Service	F	D		D	E		F	D		E	D	C
Approach Delay (s)		54.7			55.6			74.8			51.0	
Approach LOS		D			E			E			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			56.2			HCM Level of Service				E		
HCM Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			94.2%			ICU Level of Service			F			
Analysis Period (min)			15									













c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑	↑	↑	↑↑		↑	↑↑	
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3517			3583	1570	1844	3635		1809	3482	
Flt Permitted		1.00			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3517			3583	1570	1844	3635		1809	3482	
Volume (vph)	0	1440	300	0	1350	110	180	660	60	140	570	170
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	1582	330	0	1484	121	198	725	66	154	626	187
RTOR Reduction (vph)	0	15	0	0	0	30	0	6	0	0	24	0
Lane Group Flow (vph)	0	1897	0	0	1484	91	198	785	0	154	789	0
Confl. Peds. (#/hr)						4			6			1
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	2%	2%	2%	4%	4%	4%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Turn Type						Perm	Split			Split		
Protected Phases		6			2		4	4		8	8	
Permitted Phases						2						
Actuated Green, G (s)		58.5			58.5	58.5	19.0	19.0		24.5	24.5	
Effective Green, g (s)		60.0			60.0	60.0	20.0	20.0		26.0	26.0	
Actuated g/C Ratio		0.52			0.52	0.52	0.17	0.17		0.23	0.23	
Clearance Time (s)		4.5			4.5	4.5	4.0	4.0		4.5	4.5	
Vehicle Extension (s)		4.3			4.3	4.3	0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)		1835			1869	819	321	632		409	787	
v/s Ratio Prot		c0.54			0.41		0.11	c0.22		0.09	c0.23	
v/s Ratio Perm						0.06						
v/c Ratio		1.03			0.79	0.11	0.62	1.24		0.38	1.00	
Uniform Delay, d1		27.5			22.5	14.0	44.0	47.5		37.6	44.5	
Progression Factor		0.87			0.44	0.36	0.94	0.95		1.00	1.00	
Incremental Delay, d2		23.1			2.5	0.2	2.4	121.5		0.2	32.7	
Delay (s)		47.0			12.4	5.2	43.6	166.6		37.9	77.2	
Level of Service		D			B	A	D	F		D	E	
Approach Delay (s)		47.0			11.9			142.0			70.9	
Approach LOS		D			B			F			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			58.1				HCM Level of Service				E	
HCM Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)				9.0	
Intersection Capacity Utilization			87.3%				ICU Level of Service				E	
Analysis Period (min)			15									

c Critical Lane Group

2035 TSP Action Plan  
57: Canyon Rd/TV Highway & Watson Ave

HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑					↵	↑↑	
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0		3.0	3.0					3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95					0.91	0.91	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		1.00		1.00	1.00					1.00	0.98	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3564		1775	3549					1523	3140	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3564		1775	3549					1523	3140	
Volume (vph)	0	1380	30	230	1560	0	0	0	0	220	670	100
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1453	32	242	1642	0	0	0	0	232	705	105
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	1484	0	242	1642	0	0	0	0	232	801	0
Confl. Peds. (#/hr)						4				1		6
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Turn Type				Prot							Perm	
Protected Phases		6		5	2							8
Permitted Phases										8		
Actuated Green, G (s)		57.3		15.0	76.3					30.2	30.2	
Effective Green, g (s)		58.8		16.0	77.8					31.2	31.2	
Actuated g/C Ratio		0.51		0.14	0.68					0.27	0.27	
Clearance Time (s)		4.5		4.0	4.5					4.0	4.0	
Vehicle Extension (s)		4.3		2.3	4.3					2.3	2.3	
Lane Grp Cap (vph)		1822		247	2401					413	852	
v/s Ratio Prot		c0.42		c0.14	0.46							
v/s Ratio Perm										0.15	0.25	
v/c Ratio		0.81		0.98	0.68					0.56	0.94	
Uniform Delay, d1		23.5		49.3	11.2					36.0	41.0	
Progression Factor		1.76		0.71	0.29					1.00	1.00	
Incremental Delay, d2		1.1		35.5	0.8					1.3	17.6	
Delay (s)		42.5		70.4	4.1					37.3	58.6	
Level of Service		D		E	A					D	E	
Approach Delay (s)		42.5			12.6			0.0			53.8	
Approach LOS		D			B			A			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			32.4			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			79.6%			ICU Level of Service				D		
Analysis Period (min)			15									
c	Critical Lane Group											



2035 TSP Action Plan  
58: Canyon Rd/TV Highway & Hall Blvd


























HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	
Total Lost time (s)	3.0	3.0			3.0			3.0					
Lane Util. Factor	1.00	0.95			0.95			0.91					
Frbp, ped/bikes	1.00	1.00			1.00			1.00					
Flpb, ped/bikes	1.00	1.00			1.00			1.00					
Frt	1.00	1.00			0.99			0.98					
Flt Protected	0.95	1.00			1.00			0.99					
Satd. Flow (prot)	1791	3583			3458			5089					
Flt Permitted	0.95	1.00			1.00			0.99					
Satd. Flow (perm)	1791	3583			3458			5089					
Volume (vph)	80	1390	0	0	1550	70	220	560	90	0	0	0	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	86	1495	0	0	1667	75	237	602	97	0	0	0	
RTOR Reduction (vph)	0	0	0	0	3	0	0	13	0	0	0	0	
Lane Group Flow (vph)	86	1495	0	0	1739	0	0	923	0	0	0	0	
Conf. Peds. (#/hr)						3	2		2				
Heavy Vehicles (%)	5%	5%	5%	8%	8%	8%	3%	3%	3%	0%	0%	0%	
Turn Type	Prot						Perm						
Protected Phases	1	6			2			4					
Permitted Phases							4	4					
Actuated Green, G (s)	9.0	78.5			65.5			28.0					
Effective Green, g (s)	10.0	80.0			67.0			29.0					
Actuated g/C Ratio	0.09	0.70			0.58			0.25					
Clearance Time (s)	4.0	4.5			4.5			4.0					
Vehicle Extension (s)	2.3	4.3			4.3			2.3					
Lane Grp Cap (vph)	156	2493			2015			1283					
v/s Ratio Prot	0.05	c0.42			c0.50								
v/s Ratio Perm								0.18					
v/c Ratio	0.55	0.60			0.86			0.72					
Uniform Delay, d1	50.3	9.1			20.2			39.3					
Progression Factor	1.26	0.09			0.36			1.14					
Incremental Delay, d2	1.8	0.6			3.1			0.2					
Delay (s)	65.2	1.5			10.3			44.9					
Level of Service	E	A			B			D					
Approach Delay (s)		5.0			10.3			44.9			0.0		
Approach LOS		A			B			D			A		
<b>Intersection Summary</b>													
HCM Average Control Delay			15.9									HCM Level of Service	B
HCM Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			115.0									Sum of lost time (s)	9.0
Intersection Capacity Utilization			79.6%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

2035 TSP Action Plan  
59: Canyon Rd/TV Highway & Lombard

HCM Signalized Intersection Capacity Analysis

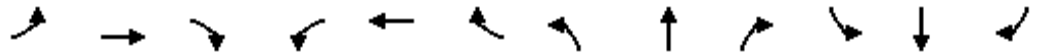
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1791	3571		1775	3542		1500	1528		1462	1538	1283
Flt Permitted	0.95	1.00		0.95	1.00		0.66	1.00		0.44	1.00	1.00
Satd. Flow (perm)	1791	3571		1775	3542		1047	1528		682	1538	1283
Volume (vph)	90	1500	30	50	1670	20	80	150	30	150	80	80
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	1579	32	53	1758	21	84	158	32	158	84	84
RTOR Reduction (vph)	0	1	0	0	1	0	0	6	0	0	0	66
Lane Group Flow (vph)	95	1610	0	53	1778	0	84	184	0	158	84	18
Confl. Peds. (#/hr)			1			3			20			4
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	14%	14%	14%	17%	17%	17%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	12.8	72.9		5.6	65.7		24.0	24.0		24.0	24.0	24.0
Effective Green, g (s)	13.8	74.4		6.6	67.2		25.0	25.0		25.0	25.0	25.0
Actuated g/C Ratio	0.12	0.65		0.06	0.58		0.22	0.22		0.22	0.22	0.22
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	0.5	4.3		0.5	4.3		0.5	0.5		0.5	0.5	0.5
Lane Grp Cap (vph)	215	2310		102	2070		228	332		148	334	279
v/s Ratio Prot	0.05	c0.45		0.03	c0.50			0.12			0.05	
v/s Ratio Perm							0.08			c0.23		0.01
v/c Ratio	0.44	0.70		0.52	0.86		0.37	0.55		1.07	0.25	0.07
Uniform Delay, d1	47.0	13.1		52.7	19.9		38.3	40.0		45.0	37.3	35.7
Progression Factor	0.81	0.72		1.01	1.02		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.5		1.5	4.1		0.4	1.1		93.1	0.1	0.0
Delay (s)	38.4	10.9		54.8	24.4		38.7	41.2		138.1	37.4	35.8
Level of Service	D	B		D	C		D	D		F	D	D
Approach Delay (s)		12.4			25.2			40.4			85.8	
Approach LOS		B			C			D			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			25.7			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			6.0			
Intersection Capacity Utilization			85.7%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 					 		
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.91		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1775	3464		1791	3583	1566	1644	1545		3190	1555	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1775	3464		1791	3583	1566	1644	1545		3190	1555	
Volume (vph)	30	1270	150	50	1370	380	150	60	100	250	50	80
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	31	1323	156	52	1427	396	156	62	104	260	52	83
RTOR Reduction (vph)	0	6	0	0	0	77	0	62	0	0	59	0
Lane Group Flow (vph)	31	1473	0	52	1427	319	156	104	0	260	76	0
Confl. Peds. (#/hr)			1			1			9			3
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Bus Blockages (#/hr)	0	3	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						2						
Actuated Green, G (s)	4.6	65.3		6.7	67.4	67.4	17.6	10.6		15.9	8.9	
Effective Green, g (s)	5.6	66.8		7.7	68.9	68.9	18.6	11.6		16.9	9.9	
Actuated g/C Ratio	0.05	0.58		0.07	0.60	0.60	0.16	0.10		0.15	0.09	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.3	4.3		2.3	4.3	4.3	0.5	0.5		0.5	0.5	
Lane Grp Cap (vph)	86	2012		120	2147	938	266	156		469	134	
v/s Ratio Prot	0.02	c0.43		c0.03	0.40		c0.09	c0.07		0.08	0.05	
v/s Ratio Perm						0.20						
v/c Ratio	0.36	0.73		0.43	0.66	0.34	0.59	0.67		0.55	0.56	
Uniform Delay, d1	53.0	17.6		51.6	15.4	11.6	44.6	49.8		45.6	50.5	
Progression Factor	1.04	1.24		1.10	0.76	0.79	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	1.6		1.2	1.4	0.8	2.1	8.1		0.8	3.2	
Delay (s)	55.9	23.4		58.1	13.0	10.0	46.8	57.9		46.4	53.7	
Level of Service	E	C		E	B	B	D	E		D	D	
Approach Delay (s)		24.1			13.6			52.5			48.9	
Approach LOS		C			B			D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			23.9			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			70.7%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

2035 TSP Action Plan




















62: Canyon Rd/TV Highway & SR 217 SB Off-Ramp HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑						↑↑	↑
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.91	0.91
Frbp, ped/bikes		1.00	0.98	1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						0.97	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3583	1576	1791	3583						3064	1352
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3583	1576	1791	3293						3064	1352
Volume (vph)	0	1310	610	110	1650	0	0	0	0	200	610	610
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1365	635	115	1719	0	0	0	0	208	635	635
RTOR Reduction (vph)	0	0	115	0	0	0	0	0	0	0	15	17
Lane Group Flow (vph)	0	1365	520	115	1719	0	0	0	0	0	1012	434
Confl. Peds. (#/hr)			2									
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	3%	3%	3%
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		6		5	2						8	
Permitted Phases			6							8		8
Actuated Green, G (s)		51.3	51.3	13.7	69.5						36.5	36.5
Effective Green, g (s)		52.8	52.8	15.2	71.0						38.0	38.0
Actuated g/C Ratio		0.46	0.46	0.13	0.62						0.33	0.33
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		4.3	4.3	4.3	4.3						2.3	2.3
Lane Grp Cap (vph)		1645	724	237	2212						1012	447
v/s Ratio Prot		c0.38		0.06	c0.48							
v/s Ratio Perm			0.33								0.33	0.32
v/c Ratio		0.83	0.72	0.49	0.78						1.00	0.97
Uniform Delay, d1		27.2	25.1	46.3	16.2						38.5	38.0
Progression Factor		0.50	0.26	1.20	0.12						1.00	1.00
Incremental Delay, d2		4.4	5.3	1.1	1.3						28.0	35.0
Delay (s)		18.1	11.9	56.7	3.3						66.5	72.9
Level of Service		B	B	E	A						E	E
Approach Delay (s)		16.1			6.6			0.0			68.4	
Approach LOS		B			A			A			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			27.4			HCM Level of Service					C	
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			85.6%			ICU Level of Service					E	
Analysis Period (min)			15									
c Critical Lane Group												

2035 TSP Action Plan

63: Canyon Rd/TV Highway & SR 217 NB On-Ramp HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.91	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)	1726	3451			3516	1573	1468	3041	1443			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	2140	3451			3516	1573	1468	3041	1443			
Volume (vph)	300	1210	0	0	1210	240	550	460	200	0	0	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	312	1260	0	0	1260	250	573	479	208	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	89	0	0	68	0	0	0
Lane Group Flow (vph)	312	1260	0	0	1260	161	339	713	140	0	0	0
Heavy Vehicles (%)	9%	9%	9%	7%	7%	7%	6%	6%	6%	2%	2%	2%
Turn Type	Prot				Perm		Perm	Perm				
Protected Phases	1	6			2			4				
Permitted Phases						2	4		4			
Actuated Green, G (s)	27.0	76.6			45.6	45.6	29.4	29.4	29.4			
Effective Green, g (s)	28.0	78.1			47.1	47.1	30.9	30.9	30.9			
Actuated g/C Ratio	0.24	0.68			0.41	0.41	0.27	0.27	0.27			
Clearance Time (s)	4.0	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	2.3	4.3			4.3	4.3	2.3	2.3	2.3			
Lane Grp Cap (vph)	420	2344			1440	644	394	817	388			
v/s Ratio Prot	c0.18	0.37			c0.36							
v/s Ratio Perm						0.10	0.23	0.23	0.10			
v/c Ratio	0.74	0.54			0.88	0.25	0.86	0.87	0.36			
Uniform Delay, d1	40.2	9.3			31.2	22.3	40.0	40.2	34.1			
Progression Factor	0.68	0.27			0.84	0.65	0.97	0.96	1.04			
Incremental Delay, d2	3.3	0.4			7.0	0.8	12.3	7.2	0.2			
Delay (s)	30.5	2.9			33.1	15.3	51.0	45.8	35.8			
Level of Service	C	A			C	B	D	D	D			
Approach Delay (s)		8.4			30.1			45.5			0.0	
Approach LOS		A			C			D			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			26.7	HCM Level of Service		C						
HCM Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			115.0	Sum of lost time (s)		9.0						
Intersection Capacity Utilization			85.6%	ICU Level of Service		E						
Analysis Period (min)			15									

c Critical Lane Group

2035 TSP Action Plan  
211: BH Highway & Fred Meyer

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1826	3620		1826	3652	1576	1644	1731	1443	1660	1748	1441
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.15	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)	1855	3620		2182	3652	1576	263	1731	1443	782	1748	1441
Volume (vph)	190	1090	30	260	1360	360	130	180	150	220	410	130
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	1124	31	268	1402	371	134	186	155	227	423	134
RTOR Reduction (vph)	0	2	0	0	0	91	0	0	104	0	0	56
Lane Group Flow (vph)	196	1153	0	268	1402	280	134	186	51	227	423	78
Confl. Peds. (#/hr)			5			7			5			13
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot		Perm pm+pt		Perm pm+pt		Perm		Perm
Protected Phases	5	2		1	6		3	8		7		4
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	10.0	51.0		13.0	54.0	54.0	34.0	25.3	25.3	36.0	26.3	26.3
Effective Green, g (s)	11.0	52.0		14.0	55.0	55.0	36.0	26.3	26.3	38.0	27.3	27.3
Actuated g/C Ratio	0.10	0.45		0.12	0.48	0.48	0.31	0.23	0.23	0.33	0.24	0.24
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	0.5	4.6		0.5	4.6	4.6	0.5	0.5	0.5	0.5	0.5	0.5
Lane Grp Cap (vph)	175	1637		222	1747	754	199	396	330	340	415	342
v/s Ratio Prot	c0.11	0.32		c0.15	c0.38		0.06	0.11		c0.06	c0.24	
v/s Ratio Perm						0.18	0.15		0.04	0.16		0.05
v/c Ratio	1.12	0.70		1.21	0.80	0.37	0.67	0.47	0.15	0.67	1.02	0.23
Uniform Delay, d1	52.0	25.3		50.5	25.4	19.0	32.0	38.3	35.5	31.1	43.8	35.3
Progression Factor	0.97	0.55		0.89	0.77	0.55	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	83.5	1.2		114.0	2.2	0.8	6.9	0.3	0.1	3.8	49.2	0.1
Delay (s)	133.8	15.2		159.0	21.8	11.2	38.9	38.6	35.5	34.9	93.0	35.5
Level of Service	F	B		F	C	B	D	D	D	C	F	D
Approach Delay (s)		32.4			37.9			37.7			66.4	
Approach LOS		C			D			D			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			41.1									HCM Level of Service D
HCM Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			115.0									Sum of lost time (s) 15.0
Intersection Capacity Utilization			89.9%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

2035 TSP Action Plan  
212: BH Highway & Lombard Ave

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1826	3652	1600	1826	3652	1599	1629	1560		1629	1654	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1826	2947	1600	1826	3338	1599	1629	1867		1629	1654	
Volume (vph)	30	1110	90	210	1520	150	50	160	150	120	230	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	1233	100	233	1689	167	56	178	167	133	256	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	9	0
Lane Group Flow (vph)	33	1233	100	233	1689	167	56	316	0	133	325	0
Confl. Peds. (#/hr)			2			3			16			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Free	Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free						
Actuated Green, G (s)	7.2	41.5	115.0	17.7	52.0	115.0	5.8	25.1		10.7	30.0	
Effective Green, g (s)	9.2	43.5	115.0	19.7	54.0	115.0	7.8	27.1		12.7	32.0	
Actuated g/C Ratio	0.08	0.38	1.00	0.17	0.47	1.00	0.07	0.24		0.11	0.28	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	1.5	5.0		0.7	4.5		0.7	2.3		0.8	2.3	
Lane Grp Cap (vph)	146	1381	1600	313	1715	1599	110	368		180	460	
v/s Ratio Prot	0.02	c0.34		0.13	c0.46		0.03	c0.20		c0.08	0.20	
v/s Ratio Perm			0.06			0.10						
v/c Ratio	0.23	0.89	0.06	0.74	0.98	0.10	0.51	0.86		0.74	0.71	
Uniform Delay, d1	49.6	33.6	0.0	45.3	30.1	0.0	51.8	42.1		49.5	37.3	
Progression Factor	0.81	0.74	1.00	0.79	0.70	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	8.3	0.1	6.6	16.2	0.1	1.3	17.3		12.8	4.3	
Delay (s)	40.6	33.2	0.1	42.3	37.2	0.1	53.1	59.4		62.3	41.6	
Level of Service	D	C	A	D	D	A	D	E		E	D	
Approach Delay (s)		30.9			34.8			58.5			47.5	
Approach LOS		C			C			E			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			37.2				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)				9.0	
Intersection Capacity Utilization			86.7%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

2035 TSP Action Plan  
 216: BH Highway & SR 217 NB On-Ramp













HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.91	0.91	1.00			
Frbp, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1844	3688			3617	1586	1496	3105	1471			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	2281	3681			3617	1586	1496	3465	1471			
Volume (vph)	260	1430	0	0	1290	430	470	460	220	0	0	0
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	1571	0	0	1418	473	516	505	242	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	68	0	0	30	0	0	0
Lane Group Flow (vph)	286	1571	0	0	1418	405	308	713	212	0	0	0
Confl. Peds. (#/hr)						4						
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	4%	2%	2%	2%
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	19.4	76.2			52.3	52.3	29.8	29.8	29.8			
Effective Green, g (s)	20.9	77.7			53.8	53.8	31.3	31.3	31.3			
Actuated g/C Ratio	0.18	0.68			0.47	0.47	0.27	0.27	0.27			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	2.3	6.1			6.1	6.1	2.3	2.3	2.3			
Lane Grp Cap (vph)	335	2492			1692	742	407	943	400			
v/s Ratio Prot	c0.16	0.43			c0.39							
v/s Ratio Perm						0.26	c0.21	0.21	0.14			
v/c Ratio	0.85	0.63			0.84	0.55	0.76	0.76	0.53			
Uniform Delay, d1	45.6	10.5			26.8	21.9	38.4	38.4	35.6			
Progression Factor	1.18	0.44			0.66	0.46	1.00	1.00	1.00			
Incremental Delay, d2	11.8	0.7			4.9	2.7	7.3	3.2	0.9			
Delay (s)	65.7	5.4			22.7	12.8	45.6	41.6	36.5			
Level of Service	E	A			C	B	D	D	D			
Approach Delay (s)		14.7			20.2			41.6			0.0	
Approach LOS		B			C			D			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			23.6									HCM Level of Service C
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			115.0									Sum of lost time (s) 9.0
Intersection Capacity Utilization			84.7%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												



2035 TSP Action Plan  
 217: BH Highway & SR 217 SB Off-Ramp

HCM Signalized Intersection Capacity Analysis






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑					↖	↗↑↑	↗
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3652	1611	1826	3652					1468	3072	1421
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3652	1611	2790	3652					1468	3072	1421
Volume (vph)	0	1330	350	180	1580	0	0	0	0	360	530	550
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1357	357	184	1612	0	0	0	0	367	541	561
RTOR Reduction (vph)	0	0	94	0	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	1357	263	184	1612	0	0	0	0	292	616	535
Confl. Peds. (#/hr)			1									2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	2%	6%	6%	6%
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		46.5	46.5	21.5	72.5					33.5	33.5	33.5
Effective Green, g (s)		48.0	48.0	23.0	74.0					35.0	35.0	35.0
Actuated g/C Ratio		0.42	0.42	0.20	0.64					0.30	0.30	0.30
Clearance Time (s)		4.5	4.5	4.5	4.5					4.5	4.5	4.5
Vehicle Extension (s)		6.1	6.1	2.3	6.1					2.3	2.3	2.3
Lane Grp Cap (vph)		1524	672	365	2350					447	935	432
v/s Ratio Prot		c0.37		0.10	c0.44							
v/s Ratio Perm			0.16							0.20	0.20	c0.38
v/c Ratio		0.89	0.39	0.50	0.69					0.65	0.66	1.24
Uniform Delay, d1		31.1	23.3	40.9	13.1					34.7	34.8	40.0
Progression Factor		0.48	0.32	0.75	0.34					0.78	0.79	0.79
Incremental Delay, d2		6.9	1.4	0.4	0.9					1.7	0.8	118.8
Delay (s)		21.9	8.9	30.9	5.4					28.9	28.2	150.4
Level of Service		C	A	C	A					C	C	F
Approach Delay (s)		19.2			8.0			0.0			75.0	
Approach LOS		B			A			A			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			31.6			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				6.0		
Intersection Capacity Utilization			84.7%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↘↘↘	
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	
Frbp, ped/bikes	1.00	1.00	1.00	0.98	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.94	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1844	3688	3617	1582	3402	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1844	3688	3617	1582	3402	
Volume (vph)	240	930	1270	280	680	500
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	253	979	1337	295	716	526
RTOR Reduction (vph)	0	0	0	81	115	0
Lane Group Flow (vph)	253	979	1337	214	1127	0
Confl. Peds. (#/hr)				6		7
Heavy Vehicles (%)	2%	2%	4%	4%	1%	1%
Turn Type	Prot		Perm			
Protected Phases	5	2	6		4	
Permitted Phases				6		
Actuated Green, G (s)	14.0	81.5	63.5	63.5	25.0	
Effective Green, g (s)	15.0	83.0	65.0	65.0	26.0	
Actuated g/C Ratio	0.13	0.72	0.57	0.57	0.23	
Clearance Time (s)	4.0	4.5	4.5	4.5	4.0	
Vehicle Extension (s)	2.3	3.6	3.6	3.6	2.3	
Lane Grp Cap (vph)	241	2662	2044	894	769	
v/s Ratio Prot	c0.14	0.27	c0.37		c0.33	
v/s Ratio Perm				0.14		
v/c Ratio	1.05	0.37	0.65	0.24	1.47	
Uniform Delay, d1	50.0	6.1	17.2	12.6	44.5	
Progression Factor	1.09	0.82	0.53	0.20	0.77	
Incremental Delay, d2	71.2	0.4	1.2	0.5	213.7	
Delay (s)	125.7	5.4	10.4	3.0	248.0	
Level of Service	F	A	B	A	F	
Approach Delay (s)		30.1	9.1		248.0	
Approach LOS		C	A		F	
<b>Intersection Summary</b>						
HCM Average Control Delay			87.6		HCM Level of Service	F
HCM Volume to Capacity ratio			0.91			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			90.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

2035 TSP Action Plan  
 229: BH Highway & Hall Blvd

HCM Signalized Intersection Capacity Analysis

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 					
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0					
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95					
Frbp, ped/bikes	1.00	1.00			1.00		1.00	1.00					
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00					
Frt	1.00	1.00			1.00		1.00	0.97					
Flt Protected	0.95	1.00			1.00		0.95	1.00					
Satd. Flow (prot)	1826	3652			3526		1777	3477					
Flt Permitted	0.95	1.00			1.00		0.95	1.00					
Satd. Flow (perm)	1826	3652			3526		1777	3477					
Volume (vph)	150	990	0	0	1380	20	270	880	180	0	0	0	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	155	1021	0	0	1423	21	278	907	186	0	0	0	
RTOR Reduction (vph)	0	0	0	0	1	0	0	15	0	0	0	0	
Lane Group Flow (vph)	155	1021	0	0	1443	0	278	1078	0	0	0	0	
Confl. Peds. (#/hr)						3	5		8				
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	5%	5%	5%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	2	0	0	0	0	0	0	0	
Turn Type	Prot					Perm							
Protected Phases	5	2			6			8					
Permitted Phases							8						
Actuated Green, G (s)	10.9	75.0			60.1		32.0	32.0					
Effective Green, g (s)	11.9	76.0			61.1		33.0	33.0					
Actuated g/C Ratio	0.10	0.66			0.53		0.29	0.29					
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0					
Vehicle Extension (s)	0.5	4.6			4.6		2.3	2.3					
Lane Grp Cap (vph)	189	2413			1873		510	998					
v/s Ratio Prot	c0.08	0.28			c0.41			c0.31					
v/s Ratio Perm							0.16						
v/c Ratio	0.82	0.42			0.77		0.55	1.08					
Uniform Delay, d1	50.5	9.2			21.4		34.7	41.0					
Progression Factor	1.11	0.88			1.04		1.00	1.00					
Incremental Delay, d2	13.4	0.3			1.3		0.8	52.7					
Delay (s)	69.3	8.3			23.5		35.5	93.7					
Level of Service	E	A			C		D	F					
Approach Delay (s)		16.4			23.5			81.9			0.0		
Approach LOS		B			C			F			A		
<b>Intersection Summary</b>													
HCM Average Control Delay			41.5				HCM Level of Service		D				
HCM Volume to Capacity ratio			0.87										
Actuated Cycle Length (s)			115.0				Sum of lost time (s)		9.0				
Intersection Capacity Utilization			86.9%				ICU Level of Service		E				
Analysis Period (min)			15										
c Critical Lane Group													

2035 TSP Action Plan  
230: BH Highway & Hocken Av













HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↶↶	↶↶		↶↶	
Ideal Flow (vphpl)	1980	1980	1980	1980	1800	1800
Total Lost time (s)	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	0.95		0.97	
Frbp, ped/bikes	1.00	1.00	1.00		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.98		0.93	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1862	3717	3564		3060	
Flt Permitted	0.07	1.00	1.00		0.97	
Satd. Flow (perm)	137	3717	3564		3060	
Volume (vph)	140	950	1410	230	330	290
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	146	990	1469	240	344	302
RTOR Reduction (vph)	0	0	11	0	140	0
Lane Group Flow (vph)	146	990	1698	0	506	0
Confl. Peds. (#/hr)				1		3
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	1	0	0	0	0
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)	86.1	86.1	74.0		20.4	
Effective Green, g (s)	87.6	87.6	75.5		21.4	
Actuated g/C Ratio	0.76	0.76	0.66		0.19	
Clearance Time (s)	4.0	4.5	4.5		4.0	
Vehicle Extension (s)	2.3	3.4	3.6		2.3	
Lane Grp Cap (vph)	241	2831	2340		569	
v/s Ratio Prot	c0.05	0.27	c0.48		c0.17	
v/s Ratio Perm	0.41					
v/c Ratio	0.61	0.35	0.73		0.89	
Uniform Delay, d1	19.2	4.4	13.0		45.6	
Progression Factor	1.00	1.00	0.73		0.67	
Incremental Delay, d2	3.3	0.3	2.0		9.8	
Delay (s)	22.5	4.8	11.5		40.2	
Level of Service	C	A	B		D	
Approach Delay (s)		7.1	11.5		40.2	
Approach LOS		A	B		D	
<b>Intersection Summary</b>						
HCM Average Control Delay			15.4		HCM Level of Service	B
HCM Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			81.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

2035 TSP Action Plan  
 231: BH Highway & Watson Ave

HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔	↑↑						↑↑	
Ideal Flow (vphpl)	1980	1980	1980	1980	1980	1980	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0		3.0	3.0						3.0	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frbp, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						0.98	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3465		1775	3542						3190	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3465		1775	3542						3190	
Volume (vph)	0	990	370	180	1360	0	0	0	0	110	710	160
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1021	381	186	1402	0	0	0	0	113	732	165
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	1369	0	186	1402	0	0	0	0	0	996	0
Confl. Peds. (#/hr)			8									
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	2%	2%	2%	4%	4%	4%
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	0	0
Turn Type				Prot							Split	
Protected Phases		2		1	6						4	4
Permitted Phases												
Actuated Green, G (s)		52.2		11.0	67.2						39.8	
Effective Green, g (s)		53.2		12.0	68.2						40.8	
Actuated g/C Ratio		0.46		0.10	0.59						0.35	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		4.6		2.3	4.6						3.5	
Lane Grp Cap (vph)		1603		185	2101						1132	
v/s Ratio Prot		c0.40		c0.10	0.40						c0.31	
v/s Ratio Perm												
v/c Ratio		0.85		1.01	0.67						0.88	
Uniform Delay, d1		27.5		51.5	15.8						34.8	
Progression Factor		0.73		0.75	0.42						0.43	
Incremental Delay, d2		3.5		55.2	1.1						7.1	
Delay (s)		23.6		94.0	7.7						21.9	
Level of Service		C		F	A						C	
Approach Delay (s)		23.6			17.8			0.0			21.9	
Approach LOS		C			B			A			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			20.9			HCM Level of Service					C	
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			86.9%			ICU Level of Service					E	
Analysis Period (min)			15									
c	Critical Lane Group											

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Ideal Flow (vphpl)	1980	1980	1980	1980	1800	1800
Total Lost time (s)	3.0		3.0	3.0	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frbp, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3523		1826	3638	1644	1435
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3523		126	3638	1644	1435
Volume (vph)	1510	390	450	1490	400	530
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1641	424	489	1620	435	576
RTOR Reduction (vph)	20	0	0	0	0	225
Lane Group Flow (vph)	2045	0	489	1620	435	351
Confl. Peds. (#/hr)		2				9
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type			pm+pt			Perm
Protected Phases	2		1	6	8	
Permitted Phases			6			8
Actuated Green, G (s)	56.5		80.5	80.5	26.0	26.0
Effective Green, g (s)	58.0		82.0	82.0	27.0	27.0
Actuated g/C Ratio	0.50		0.71	0.71	0.23	0.23
Clearance Time (s)	4.5		4.0	4.5	4.0	4.0
Vehicle Extension (s)	4.3		2.3	4.3	2.3	2.3
Lane Grp Cap (vph)	1777		400	2594	386	337
v/s Ratio Prot	0.58		c0.22	0.45	c0.26	
v/s Ratio Perm			c0.65			0.24
v/c Ratio	1.15		1.22	0.62	1.13	1.04
Uniform Delay, d1	28.5		49.2	8.5	44.0	44.0
Progression Factor	0.95		1.00	1.00	1.00	1.00
Incremental Delay, d2	74.5		120.6	1.1	85.0	60.3
Delay (s)	101.7		169.8	9.7	129.0	104.3
Level of Service	F		F	A	F	F
Approach Delay (s)	101.7			46.8	114.9	
Approach LOS	F			D	F	
<b>Intersection Summary</b>						
HCM Average Control Delay			82.0		HCM Level of Service	F
HCM Volume to Capacity ratio			1.19			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	6.0
Intersection Capacity Utilization			109.4%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090
Grade (%)		0%			0%			2%			-2%	
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	*0.85		1.00	*0.85		1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1966	3423		1966	3423		1946	3892	1718	1986	3971	1750
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1966	3423		1966	3423		1946	3892	1718	1986	3971	1750
Volume (vph)	210	920	180	280	680	130	280	1200	240	220	1020	160
Peak-hour factor, PHF	0.92	0.92	0.92	0.98	0.95	0.92	0.98	0.92	0.92	0.92	1.00	0.92
Adj. Flow (vph)	228	1000	196	286	716	141	286	1304	261	239	1020	174
RTOR Reduction (vph)	0	12	0	0	12	0	0	0	110	0	0	105
Lane Group Flow (vph)	228	1184	0	286	845	0	286	1304	151	239	1020	69
Confl. Peds. (#/hr)			2			1			1			2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5		2
Permitted Phases									6			2
Actuated Green, G (s)	14.9	30.5		19.1	34.7		21.5	40.9	40.9	11.5	30.9	30.9
Effective Green, g (s)	16.4	32.0		20.6	36.2		23.0	42.4	42.4	13.0	32.4	32.4
Actuated g/C Ratio	0.14	0.27		0.17	0.30		0.19	0.35	0.35	0.11	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	4.3	4.3	2.0	4.3	4.3
Lane Grp Cap (vph)	269	913		337	1033		373	1375	607	215	1072	473
v/s Ratio Prot	0.12	c0.35		0.15	c0.25		0.15	c0.34		c0.12	0.26	
v/s Ratio Perm									0.09			0.04
v/c Ratio	0.85	1.30		0.85	0.82		0.77	0.95	0.25	1.11	0.95	0.15
Uniform Delay, d1	50.6	44.0		48.2	38.8		46.0	37.7	27.5	53.5	43.0	33.3
Progression Factor	1.00	1.00		1.00	1.00		0.81	0.69	0.29	1.00	1.00	1.00
Incremental Delay, d2	20.4	141.8		17.1	5.0		7.5	13.7	0.9	94.5	18.0	0.6
Delay (s)	71.0	185.8		65.2	43.9		44.9	39.8	9.0	148.0	61.1	33.9
Level of Service	E	F		E	D		D	D	A	F	E	C
Approach Delay (s)		167.4			49.2			36.3			72.3	
Approach LOS		F			D			D			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			79.5			HCM Level of Service				E		
HCM Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			97.0%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												


























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090
Grade (%)		0%			0%			2%				-2%
Total Lost time (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1868	1875	1727		1921		1946	3883		1986	3874	
Flt Permitted	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1868	1875	1727		1921		1946	3883		1986	3874	
Volume (vph)	560	10	360	20	10	20	290	1200	20	10	1330	190
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.92
Adj. Flow (vph)	589	11	391	22	11	22	315	1304	22	11	1357	207
RTOR Reduction (vph)	0	0	179	0	20	0	0	1	0	0	9	0
Lane Group Flow (vph)	295	305	212	0	35	0	315	1325	0	11	1555	0
Confl. Peds. (#/hr)			11			5						5
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split		pm+ov	Split			Prot			Prot		
Protected Phases	8	8	1	4	4		1	6		5	2	
Permitted Phases			8									
Actuated Green, G (s)	24.3	24.3	46.8		7.8		22.5	68.3		2.6	48.4	
Effective Green, g (s)	25.3	25.3	49.3		8.8		24.0	69.8		4.1	49.9	
Actuated g/C Ratio	0.21	0.21	0.41		0.07		0.20	0.58		0.03	0.42	
Clearance Time (s)	4.0	4.0	4.5		4.0		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	394	395	753		141		389	2259		68	1611	
v/s Ratio Prot	0.16	c0.16	0.06		c0.02		c0.16	0.34		0.01	c0.40	
v/s Ratio Perm			0.07									
v/c Ratio	0.75	0.77	0.28		0.25		0.81	0.59		0.16	0.97	
Uniform Delay, d1	44.4	44.6	23.5		52.5		45.8	15.9		56.3	34.2	
Progression Factor	1.00	1.00	1.00		1.00		1.03	1.01		0.54	0.36	
Incremental Delay, d2	7.6	9.1	0.2		0.9		11.6	1.1		1.0	14.5	
Delay (s)	52.0	53.7	23.8		53.4		58.8	17.2		31.3	26.9	
Level of Service	D	D	C		D		E	B		C	C	
Approach Delay (s)		41.4			53.4			25.2			26.9	
Approach LOS		D			D			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			30.0				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			84.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1966	3728		1966	2069	1701	1947	3827		1966	3873	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1966	3728		1966	2069	1701	1947	3827		1966	3873	
Volume (vph)	120	340	130	110	340	550	80	800	70	480	1160	80
Peak-hour factor, PHF	0.95	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	370	141	120	370	579	87	870	76	522	1261	87
RTOR Reduction (vph)	0	32	0	0	0	46	0	6	0	0	4	0
Lane Group Flow (vph)	126	479	0	120	370	533	87	940	0	522	1344	0
Confl. Peds. (#/hr)			14			39			14			10
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	1	0	0	1	0
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases						4						
Actuated Green, G (s)	11.6	20.9		12.1	20.9	57.3	9.2	33.6		36.4	60.8	
Effective Green, g (s)	12.6	21.9		13.1	22.4	60.3	10.7	35.1		37.9	62.3	
Actuated g/C Ratio	0.10	0.18		0.11	0.19	0.50	0.09	0.29		0.32	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	206	680		215	386	855	174	1119		621	2011	
v/s Ratio Prot	c0.06	0.13		0.06	c0.18	0.20	0.04	c0.25		c0.27	0.35	
v/s Ratio Perm						0.12						
v/c Ratio	0.61	0.70		0.56	0.96	0.62	0.50	0.84		0.84	0.67	
Uniform Delay, d1	51.4	46.0		50.7	48.3	21.6	52.1	39.8		38.2	21.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.54	0.36	
Incremental Delay, d2	5.3	3.3		3.1	34.7	1.4	2.3	7.7		9.6	1.7	
Delay (s)	56.6	49.3		53.8	83.0	23.0	54.4	47.5		30.2	9.3	
Level of Service	E	D		D	F	C	D	D		C	A	
Approach Delay (s)		50.8			47.3			48.1			15.2	
Approach LOS		D			D			D			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			34.9				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)				9.0	
Intersection Capacity Utilization			82.1%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

Murray  
8: Beard & Murray


























HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2090	2090	2090	2090	2090	2090
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Fr <sub>t</sub>	1.00	0.95		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1769		1770	1863	1583	1947	3866		1947	3893	1742
Fl <sub>t</sub> Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1769		1770	1863	1583	1947	3866		1947	3893	1742
Volume (vph)	110	180	90	210	440	170	70	1030	50	220	1650	300
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	189	95	221	463	179	74	1084	53	232	1737	316
RTOR Reduction (vph)	0	14	0	0	0	121	0	3	0	0	0	61
Lane Group Flow (vph)	116	270	0	221	463	58	74	1134	0	232	1737	255
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	10.8	26.5		18.7	34.4	34.4	8.8	43.6		21.2	56.0	56.0
Effective Green, g (s)	11.8	27.5		19.7	35.4	35.4	9.8	44.6		22.2	57.0	57.0
Actuated g/C Ratio	0.09	0.21		0.15	0.27	0.27	0.08	0.34		0.17	0.44	0.44
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	161	374		268	507	431	147	1326		332	1707	764
v/s Ratio Prot	0.07	c0.15		0.12	c0.25		0.04	c0.29		0.12	c0.45	
v/s Ratio Perm						0.04						0.15
v/c Ratio	0.72	0.72		0.82	0.91	0.14	0.50	0.86		0.70	1.02	0.33
Uniform Delay, d <sub>1</sub>	57.5	47.7		53.5	45.8	35.7	57.8	39.7		50.8	36.5	24.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.89	0.85		1.00	1.00	1.00
Incremental Delay, d <sub>2</sub>	14.7	6.7		18.3	20.8	0.1	2.6	7.1		6.3	26.3	1.2
Delay (s)	72.2	54.4		71.7	66.7	35.9	53.9	41.0		57.1	62.8	25.2
Level of Service	E	D		E	E	D	D	D		E	E	C
Approach Delay (s)		59.6			61.6			41.8			57.0	
Approach LOS		E			E			D			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			54.2			HCM Level of Service			D			
HCM Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			130.0	Sum of lost time (s)			12.0					
Intersection Capacity Utilization			87.6%	ICU Level of Service			E					
Analysis Period (min)			15									
c Critical Lane Group												
























HCM Signalized Intersection Capacity Analysis  
6: Scholls Ferry Rd & Murray
























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090	2090
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1947	3893	1742	1947	3893	1742	1947	2049	1742	1771	3708	1742
Fl <sub>t</sub> Permitted	0.12	1.00	1.00	0.21	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	244	3893	1742	435	3893	1742	1947	2049	1742	1771	3708	1742
Volume (vph)	460	1130	40	60	1570	520	230	290	20	400	600	720
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	500	1228	43	65	1707	565	250	315	22	435	652	783
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	11	0	0	33
Lane Group Flow (vph)	500	1228	43	65	1707	565	250	315	11	350	737	751
Turn Type	pm+pt		Free	pm+pt		Free	Split		Perm	Split		pt+ov
Protected Phases	5	2		1	6		8	8		4	4	4 5
Permitted Phases	2		Free	6		Free			8			
Actuated Green, G (s)	64.6	64.6	144.0	40.0	40.0	144.0	22.0	22.0	22.0	27.0	27.0	64.0
Effective Green, g (s)	66.6	66.6	144.0	42.0	42.0	144.0	24.0	24.0	24.0	29.0	29.0	66.0
Actuated g/C Ratio	0.46	0.46	1.00	0.29	0.29	1.00	0.17	0.17	0.17	0.20	0.20	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	503	1801	1742	215	1135	1742	325	342	290	357	747	798
v/s Ratio Prot	0.23	0.32		0.02	c0.44		0.13	c0.15		0.20	0.20	c0.43
v/s Ratio Perm	0.23		0.02	0.07		0.32			0.01			
v/c Ratio	0.99	0.68	0.02	0.30	1.50	0.32	0.77	0.92	0.04	0.98	0.99	0.94
Uniform Delay, d <sub>1</sub>	44.7	30.4	0.0	43.9	51.0	0.0	57.4	59.1	50.3	57.2	57.3	37.1
Progression Factor	1.00	1.00	1.00	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d <sub>2</sub>	38.4	2.1	0.0	0.3	228.6	0.2	10.5	29.3	0.1	42.2	29.3	18.9
Delay (s)	83.1	32.5	0.0	29.3	262.5	0.2	67.8	88.4	50.4	99.4	86.6	56.0
Level of Service	F	C	A	C	F	A	E	F	D	F	F	E
Approach Delay (s)		46.0			192.6			78.2			76.2	
Approach LOS		D			F			E			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			109.7				HCM Level of Service			F		
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			144.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			106.9%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 9: Scholls Ferry Rd & Davies

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.86		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	3870		1947	3893	1742	1770	1609		1770	1761	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.15	1.00		0.57	1.00	
Satd. Flow (perm)	1947	3870		1947	3893	1742	276	1609		1062	1761	
Volume (vph)	70	1430	60	180	1970	200	60	10	100	110	210	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1554	65	196	2141	217	65	11	109	120	228	130
RTOR Reduction (vph)	0	2	0	0	0	39	0	89	0	0	15	0
Lane Group Flow (vph)	76	1617	0	196	2141	179	65	31	0	120	343	0
Turn Type	Prot			Prot			Perm	Perm			Perm	
Protected Phases	5	2		1	6				8			4
Permitted Phases						6	8				4	
Actuated Green, G (s)	15.0	86.1		14.9	86.0	86.0	25.0	25.0		25.0	25.0	
Effective Green, g (s)	17.0	88.1		16.9	88.0	88.0	27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.12	0.61		0.12	0.61	0.61	0.19	0.19		0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	230	2368		229	2379	1065	52	302		199	330	
v/s Ratio Prot	0.04	c0.42		0.10	c0.55			0.02			0.19	
v/s Ratio Perm						0.10	c0.24			0.11		
v/c Ratio	0.33	0.68		0.86	0.90	0.17	1.25	0.10		0.60	1.04	
Uniform Delay, d1	58.3	18.6		62.4	24.2	12.1	58.5	48.5		53.6	58.5	
Progression Factor	0.61	0.21		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.1		25.5	6.0	0.3	206.7	0.2		5.1	60.5	
Delay (s)	35.9	5.0		87.8	30.2	12.5	265.2	48.6		58.7	119.0	
Level of Service	D	A		F	C	B	F	D		E	F	
Approach Delay (s)		6.4			33.1			124.7			103.8	
Approach LOS		A			C			F			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			34.2									HCM Level of Service C
HCM Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			144.0									Sum of lost time (s) 8.0
Intersection Capacity Utilization			88.1%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 15: Scholls Ferry Rd & 135th

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		1.00	
Satd. Flow (prot)	1947	3787		1947	3893	1742		1790	1583		1779	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00		1.00	
Satd. Flow (perm)	1947	3787		1947	3893	1742		1790	1583		1779	
Volume (vph)	20	1350	300	210	2340	20	90	20	100	0	20	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1467	326	228	2543	22	98	22	109	0	22	11
RTOR Reduction (vph)	0	18	0	0	0	3	0	0	93	0	9	0
Lane Group Flow (vph)	22	1775	0	228	2543	19	0	120	16	0	24	0
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		4!	4!		4!	4!	
Permitted Phases					6				4			
Actuated Green, G (s)	14.1	50.2		14.1	50.2	50.2		11.4	11.4		11.4	
Effective Green, g (s)	16.1	52.2		16.1	52.2	52.2		13.4	13.4		13.4	
Actuated g/C Ratio	0.17	0.56		0.17	0.56	0.56		0.14	0.14		0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	335	2110		335	2169	970		256	226		254	
v/s Ratio Prot	0.01	0.47		c0.12	c0.65			c0.07			0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.07	0.84		0.68	1.17	0.02		0.47	0.07		0.09	
Uniform Delay, d1	32.5	17.3		36.4	20.8	9.3		36.9	34.8		34.9	
Progression Factor	0.90	0.61		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.1	4.2		5.6	82.9	0.0		1.4	0.1		0.2	
Delay (s)	29.3	14.8		42.0	103.6	9.3		38.2	34.9		35.0	
Level of Service	C	B		D	F	A		D	C		D	
Approach Delay (s)		14.9			97.9			36.6			35.0	
Approach LOS		B			F			D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			63.6				HCM Level of Service				E	
HCM Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			93.7				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			84.8%				ICU Level of Service		E			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1947	3836		1947	3893	1742	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1947	3836		1947	3893	1742	1770	1863	1583	1770	1863	1583
Volume (vph)	170	1190	130	70	2160	120	240	340	70	160	300	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	1293	141	76	2348	130	261	370	76	174	326	228
RTOR Reduction (vph)	0	7	0	0	0	22	0	0	25	0	0	107
Lane Group Flow (vph)	185	1427	0	76	2348	108	261	370	51	174	326	121
Turn Type	Prot			Prot		Perm	Prot		Prot	Prot		Perm
Protected Phases	5	2		1	6		3	8	8	7	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.0	61.6		6.4	60.0	60.0	11.0	16.0	16.0	12.0	17.0	17.0
Effective Green, g (s)	10.0	63.6		8.4	62.0	62.0	13.0	18.0	18.0	14.0	19.0	19.0
Actuated g/C Ratio	0.08	0.53		0.07	0.52	0.52	0.11	0.15	0.15	0.12	0.16	0.16
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	2033		136	2011	900	192	279	237	207	295	251
v/s Ratio Prot	c0.10	0.37		0.04	c0.60		c0.15	c0.20	0.03	0.10	0.18	
v/s Ratio Perm						0.06						0.08
v/c Ratio	1.14	0.70		0.56	1.17	0.12	1.36	1.33	0.22	0.84	1.11	0.48
Uniform Delay, d1	55.0	21.1		54.0	29.0	14.9	53.5	51.0	44.8	51.9	50.5	46.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	114.0	2.1		4.9	81.2	0.1	191.6	169.5	0.5	25.2	83.6	1.5
Delay (s)	169.0	23.2		58.9	110.2	15.0	245.1	220.5	45.3	77.1	134.1	47.5
Level of Service	F	C		E	F	B	F	F	D	E	F	D
Approach Delay (s)		39.8			103.8			210.8			93.4	
Approach LOS		D			F			F			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			97.5				HCM Level of Service			F		
HCM Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			105.3%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
23: Scholls Ferry Rd & 121ST

2035 TSP Action Plan  
DKS Associates



























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗		↖	↗
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00		0.99	1.00
Satd. Flow (prot)		3893	1742	1947	3893			1784	1583		1844	1583
Flt Permitted		1.00	1.00	0.95	1.00			0.71	1.00		0.86	1.00
Satd. Flow (perm)		3893	1742	1947	3893			1327	1583		1604	1583
Volume (vph)	0	1100	240	454	2140	0	230	30	220	10	40	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1196	261	493	2326	0	250	33	239	11	43	11
RTOR Reduction (vph)	0	0	72	0	0	0	0	0	122	0	0	9
Lane Group Flow (vph)	0	1196	189	493	2326	0	0	283	117	0	54	2
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)		57.0	57.0	24.0	87.0			26.0	26.0		26.0	26.0
Effective Green, g (s)		59.0	59.0	26.0	89.0			28.0	28.0		28.0	28.0
Actuated g/C Ratio		0.47	0.47	0.21	0.71			0.22	0.22		0.22	0.22
Clearance Time (s)		6.0	6.0	6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1837	822	405	2772			297	355		359	355
v/s Ratio Prot		0.31		c0.25	c0.60							
v/s Ratio Perm			0.11					c0.21	0.07		0.03	0.00
v/c Ratio		0.65	0.23	1.22	0.84			0.95	0.33		0.15	0.01
Uniform Delay, d1		25.2	19.5	49.5	12.9			47.8	40.6		38.9	37.7
Progression Factor		1.00	1.00	0.57	0.15			1.00	1.00		1.00	1.00
Incremental Delay, d2		1.8	0.7	100.0	0.3			39.4	0.5		0.2	0.0
Delay (s)		27.0	20.2	128.0	2.3			87.3	41.2		39.1	37.7
Level of Service		C	C	F	A			F	D		D	D
Approach Delay (s)		25.8			24.3			66.2			38.9	
Approach LOS		C			C			E			D	

Intersection Summary



























HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis  
 26: Scholls Ferry Rd & Conestoga

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95	1.00				1.00	1.00	
Frt	1.00	1.00			1.00	0.85				1.00	0.85	
Flt Protected	0.95	1.00			1.00	1.00				0.95	1.00	
Satd. Flow (prot)	1947	3893			3893	1742				1770	1583	
Flt Permitted	0.95	1.00			1.00	1.00				0.76	1.00	
Satd. Flow (perm)	1947	3893			3893	1742				1410	1583	
Volume (vph)	50	1280	0	0	2510	390	0	0	0	190	0	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1391	0	0	2728	424	0	0	0	207	0	54
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	44	0
Lane Group Flow (vph)	54	1391	0	0	2728	385	0	0	0	207	10	0
Turn Type	Prot		Prot		Perm	Perm				Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8				4	
Actuated Green, G (s)	7.2	92.2			79.0	79.0				20.8	20.8	
Effective Green, g (s)	9.2	94.2			81.0	81.0				22.8	22.8	
Actuated g/C Ratio	0.07	0.75			0.65	0.65				0.18	0.18	
Clearance Time (s)	6.0	6.0			6.0	6.0				6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)	143	2934			2523	1129				257	289	
v/s Ratio Prot	0.03	c0.36			c0.70							0.01
v/s Ratio Perm						0.22				c0.15		
v/c Ratio	0.38	0.47			1.08	0.34				0.81	0.03	
Uniform Delay, d1	55.2	5.9			22.0	9.9				49.0	42.0	
Progression Factor	0.61	0.54			0.32	0.23				1.00	1.00	
Incremental Delay, d2	1.3	0.4			37.4	0.1				16.6	0.0	
Delay (s)	34.9	3.6			44.3	2.3				65.6	42.1	
Level of Service	C	A			D	A				E	D	
Approach Delay (s)		4.8			38.7			0.0			60.7	
Approach LOS		A			D			A			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			29.8	HCM Level of Service						C		
HCM Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			125.0	Sum of lost time (s)						8.0		
Intersection Capacity Utilization			80.3%	ICU Level of Service						D		
Analysis Period (min)			15									
c	Critical Lane Group											



HCM Signalized Intersection Capacity Analysis  
 29: Scholls Ferry Rd & Nimbus

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	*1.00	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1947	3893	1742	1947	4098	1742		1800	1583	1681	1702	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1947	3893	1742	1947	4098	1742		1800	1583	1681	1702	1583
Volume (vph)	140	1340	60	70	2300	30	140	60	190	440	50	540
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	1411	63	74	2421	32	147	63	200	463	53	568
RTOR Reduction (vph)	0	0	21	0	0	5	0	0	113	0	0	112
Lane Group Flow (vph)	147	1411	42	74	2421	27	0	210	87	251	265	456
Turn Type	Prot		Perm		Prot		Perm		Split		Perm	
Protected Phases	5	2		1	6		8	8		8	4	4
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.0	56.6	56.6	6.4	58.0	58.0		15.6	15.6	22.4	22.4	22.4
Effective Green, g (s)	7.0	58.6	58.6	8.4	60.0	60.0		17.6	17.6	24.4	24.4	24.4
Actuated g/C Ratio	0.06	0.47	0.47	0.07	0.48	0.48		0.14	0.14	0.20	0.20	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	109	1825	817	131	1967	836		253	223	328	332	309
v/s Ratio Prot	c0.08	0.36		0.04	c0.59			c0.12		0.15	0.16	
v/s Ratio Perm			0.02			0.02			0.05			c0.29
v/c Ratio	1.35	0.77	0.05	0.56	1.23	0.03		0.83	0.39	0.77	0.80	1.48
Uniform Delay, d1	59.0	27.7	18.1	56.5	32.5	17.2		52.2	48.8	47.6	48.0	50.3
Progression Factor	1.18	0.67	0.42	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	200.5	2.9	0.1	5.5	108.5	0.1		20.0	1.1	10.2	12.5	231.0
Delay (s)	269.9	21.3	7.7	62.0	141.0	17.2		72.3	49.9	57.8	60.5	281.3
Level of Service	F	C	A	E	F	B		E	D	E	E	F
Approach Delay (s)		43.3			137.2			61.4			175.6	
Approach LOS		D			F			E			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			112.1			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			125.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			112.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 32: SW Cascade Ave & Scholls Ferry Rd























												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations								  			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2090	2090	2090	2090	2090	2090
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.92		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1770	1708		1947	5479		1947	3893	1742
Flt Permitted	0.17	1.00		0.19	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	323	1719		350	1708		1947	5479		1947	3893	1742
Volume (vph)	300	180	190	120	170	210	70	1640	260	140	1890	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	196	207	130	185	228	76	1783	283	152	2054	120
RTOR Reduction (vph)	0	31	0	0	36	0	0	18	0	0	0	10
Lane Group Flow (vph)	326	372	0	130	377	0	76	2048	0	152	2054	110
Turn Type	Perm		Perm			Prot			Prot		Perm	
Protected Phases	8		4			5			2		1	
Permitted Phases	8		4								6	
Actuated Green, G (s)	32.9	32.9		32.9	32.9		7.7	59.2		15.9	67.4	67.4
Effective Green, g (s)	32.9	32.9		32.9	32.9		7.7	59.2		15.9	67.4	67.4
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.06	0.49		0.13	0.56	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	89	471		96	468		125	2703		258	2187	978
v/s Ratio Prot		0.22			0.22		0.04	0.37		c0.08	c0.53	
v/s Ratio Perm	c1.01			0.37								0.06
v/c Ratio	3.66	0.79		1.35	0.80		0.61	0.76		0.59	0.94	0.11
Uniform Delay, d1	43.6	40.3		43.6	40.6		54.7	24.6		49.0	24.4	12.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.98	0.75	0.45
Incremental Delay, d2	1225.5	8.6		213.0	9.7		8.1	2.0		2.0	6.2	0.1
Delay (s)	1269.1	48.9		256.6	50.3		62.8	26.6		49.9	24.5	5.7
Level of Service	F	D		F	D		E	C		D	C	A
Approach Delay (s)	594.5		99.7			27.9			25.2			
Approach LOS	F		F			C			C			
<b>Intersection Summary</b>												
HCM Average Control Delay	105.6		HCM Level of Service			F						
HCM Volume to Capacity ratio	1.70											
Actuated Cycle Length (s)	120.0		Sum of lost time (s)			8.0						
Intersection Capacity Utilization	102.8%		ICU Level of Service			G						
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 37: Hwy 217 NB Off Ramp & Scholls Ferry Rd



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↕↕			↕↕
Ideal Flow (vphpl)	1900	1900	2090	2090	2090	2090
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	1583	3893			3893
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	1583	3893			3893
Volume (vph)	810	340	1260	0	0	1110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	880	370	1370	0	0	1207
RTOR Reduction (vph)	0	30	0	0	0	0
Lane Group Flow (vph)	880	340	1370	0	0	1207
Turn Type		Prot				
Protected Phases	4	4	6			2
Permitted Phases						
Actuated Green, G (s)	18.7	18.7	26.3			26.3
Effective Green, g (s)	18.7	18.7	26.3			26.3
Actuated g/C Ratio	0.35	0.35	0.50			0.50
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1211	559	1932			1932
v/s Ratio Prot	c0.26	0.21	c0.35			0.31
v/s Ratio Perm						
v/c Ratio	0.73	0.61	0.71			0.62
Uniform Delay, d1	14.9	14.1	10.4			9.7
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	2.2	1.9	1.2			0.6
Delay (s)	17.1	16.0	11.6			10.4
Level of Service	B	B	B			B
Approach Delay (s)	16.8		11.6			10.4
Approach LOS	B		B			B
<b>Intersection Summary</b>						
HCM Average Control Delay			12.9		HCM Level of Service	B
HCM Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			53.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			74.4%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis  
 39: SW Hall Blvd & Scholls Ferry Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2090	2090	2090	2090	2090	2090	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	3893	1742	1947	3692		1770	3391		1770	3413	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1947	3893	1742	1947	3692		1770	3391		1770	3413	
Volume (vph)	390	670	190	280	610	320	220	980	380	380	1060	330
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	728	207	304	663	348	239	1065	413	413	1152	359
RTOR Reduction (vph)	0	0	26	0	77	0	0	45	0	0	32	0
Lane Group Flow (vph)	424	728	181	304	934	0	239	1433	0	413	1479	0
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	10.0	20.6	35.9	15.5	26.1		15.3	21.1		15.0	20.8	
Effective Green, g (s)	10.0	20.6	35.9	15.5	26.1		15.3	21.1		15.0	20.8	
Actuated g/C Ratio	0.11	0.23	0.41	0.18	0.30		0.17	0.24		0.17	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	909	788	342	1093		307	811		301	805	
v/s Ratio Prot	c0.22	0.19	0.04	c0.16	c0.25		0.14	0.42		c0.23	c0.43	
v/s Ratio Perm			0.06									
v/c Ratio	1.92	0.80	0.23	0.89	0.85		0.78	1.77		1.37	1.84	
Uniform Delay, d1	39.1	31.9	17.1	35.5	29.3		34.8	33.6		36.6	33.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	429.7	5.1	0.1	23.2	6.7		11.8	350.2		187.2	381.6	
Delay (s)	468.8	37.0	17.3	58.7	35.9		46.6	383.8		223.8	415.3	
Level of Service	F	D	B	E	D		D	F		F	F	
Approach Delay (s)		168.7			41.2			336.8			374.2	
Approach LOS		F			D			F			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			250.5			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.33									
Actuated Cycle Length (s)			88.2			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			117.9%			ICU Level of Service				H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
42: 217 NB ON Ramp & Scholls Ferry Rd

2035 TSP Action Plan  
DKS Associates



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↑	↗	↔	↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2090	2090	2090	2090	2090	2090
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				0.97	1.00	1.00	0.97	0.95			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.95	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				3433	1863	1583	3776	3893			3697	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				3433	1863	1583	3776	3893			3697	
Volume (vph)	0	0	0	240	290	290	300	940	0	0	1050	530
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	261	315	315	326	1022	0	0	1141	576
RTOR Reduction (vph)	0	0	0	0	0	88	0	0	0	0	72	0
Lane Group Flow (vph)	0	0	0	261	315	227	326	1022	0	0	1645	0
Turn Type				Perm		Perm	Prot					
Protected Phases					4		1	6			2	
Permitted Phases				4		4						
Actuated Green, G (s)				19.0	19.0	19.0	21.0	53.0			28.0	
Effective Green, g (s)				19.0	19.0	19.0	21.0	53.0			28.0	
Actuated g/C Ratio				0.24	0.24	0.24	0.26	0.66			0.35	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				815	442	376	991	2579			1294	
v/s Ratio Prot					c0.17		0.09	c0.26			c0.44	
v/s Ratio Perm				0.08		0.14						
v/c Ratio				0.32	0.71	0.60	0.33	0.40			1.27	
Uniform Delay, d1				25.2	28.0	27.2	23.8	6.2			26.0	
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2				0.2	5.4	2.7	0.2	0.5			128.2	
Delay (s)				25.4	33.4	29.9	24.0	6.6			154.2	
Level of Service				C	C	C	C	A			F	
Approach Delay (s)		0.0			29.8			10.8			154.2	
Approach LOS		A			C			B			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			77.3									HCM Level of Service E
HCM Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			80.0									Sum of lost time (s) 8.0
Intersection Capacity Utilization			74.9%									ICU Level of Service D
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 48: Hwy 217 SB Ramps & Scholls Ferry Rd



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕	↕					↕↕	↕	↕	↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2090	2090	2090	2090	2090	2090
Total Lost time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00					0.91	0.91	1.00	0.95	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1583					3729	1585	1947	3893	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	1583					3729	1585	1947	3893	
Volume (vph)	70	0	380	0	0	0	0	1180	760	160	1760	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	0	413	0	0	0	0	1283	826	174	1913	0
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	76	408	0	0	0	0	1283	826	174	1913	0
Turn Type	Perm		Perm						Free	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						Free			
Actuated Green, G (s)		34.2	34.2					58.2	120.0	15.6	77.8	
Effective Green, g (s)		34.2	34.2					58.2	120.0	15.6	77.8	
Actuated g/C Ratio		0.29	0.29					0.49	1.00	0.13	0.65	
Clearance Time (s)		4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		504	451					1809	1585	253	2524	
v/s Ratio Prot								0.34		0.09	c0.49	
v/s Ratio Perm		0.04	c0.26						0.52			
v/c Ratio		0.15	0.90					0.71	0.52	0.69	0.76	
Uniform Delay, d1		32.1	41.3					24.3	0.0	49.9	14.6	
Progression Factor		1.00	1.00					0.39	1.00	1.00	1.00	
Incremental Delay, d2		0.1	21.3					1.4	0.7	7.6	2.2	
Delay (s)		32.2	62.6					10.8	0.7	57.4	16.8	
Level of Service		C	E					B	A	E	B	
Approach Delay (s)		57.9			0.0			6.8			20.2	
Approach LOS		E			A			A			C	

**Intersection Summary**

HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			