

J – 2035 RTP Priority Network Base LOS Calculations

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/	V/	Del/	V/	
	LOS	Veh	LOS	Veh	
# 1 Bany/170	B	19.9 0.680	B	19.9 0.680	+ 0.000 D/V
# 2 170th Ave / Oak St	B	15.1 0.773	B	15.1 0.773	+ 0.000 D/V
# 3 170th Ave & Farmington Rd	C	20.4 0.661	C	20.4 0.661	+ 0.000 D/V
# 4 170th Ave & Tualatin Valley Hw	D	43.1 0.885	D	43.1 0.885	+ 0.000 D/V
# 5 170th Ave & Merlo Rd	E	59.7 0.942	E	59.7 0.942	+ 0.000 D/V
# 6 170th Ave & Baseline Rd	D	38.7 0.959	D	38.7 0.959	+ 0.000 D/V
# 7 173rd Ave & Walker Rd	E	56.2 0.992	E	56.2 0.992	+ 0.000 D/V
# 8 173th Ave & Cornell Rd	C	30.5 0.805	C	30.5 0.805	+ 0.000 D/V
# 9 160th Ave & Tualatin Valley Hw	C	32.8 0.862	C	32.8 0.862	+ 0.000 D/V
# 10 158th Ave & Jenkins Rd	D	36.2 0.837	D	36.2 0.837	+ 0.000 D/V
# 11 158th Ave & Jay St	C	24.8 0.838	C	24.8 0.838	+ 0.000 D/V
# 12 158th Ave & Walker Rd	D	45.7 0.865	D	45.7 0.865	+ 0.000 D/V
# 13 158th Ave & Cornell Rd	D	41.0 0.901	D	41.0 0.901	+ 0.000 D/V
# 14 Bethany Blvd & Cornell Rd	C	30.2 0.806	C	30.2 0.806	+ 0.000 D/V
# 15 Bethany Blvd & Hwy 26 EB Ramps	C	28.8 0.854	C	28.8 0.854	+ 0.000 D/V
# 16 Bethany Blvd & Hwy 26 WB Ramps	D	44.1 0.956	D	44.1 0.956	+ 0.000 D/V
# 18 Cornell Rd & Hwy 26 WB Ramps	C	27.7 0.835	C	27.7 0.835	+ 0.000 D/V
# 19 143rd Ave & Cornell Rd	C	22.4 0.830	C	22.4 0.830	+ 0.000 D/V
# 20 Walker Rd & Murray Blvd	D	52.9 0.909	D	52.9 0.909	+ 0.000 D/V
# 21 Murray Blvd & Jenkins Rd	D	43.0 0.872	D	43.0 0.872	+ 0.000 D/V
# 22 Murray Blvd & Millkan Way	D	35.5 0.838	D	35.5 0.838	+ 0.000 D/V
# 23 Murray Blvd & Tualatin Valley	D	46.3 0.844	D	46.3 0.844	+ 0.000 D/V
# 24 Murray Blvd & Farmington Rd	D	53.7 0.921	D	53.7 0.921	+ 0.000 D/V

Beaverton TSP Update
Existing Conditions
PM Peak Hour

Intersection	Base		Future		Change in	
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C		
# 25 Murray Blvd & 6th St	B	16.1 0.743	B	16.1 0.743	+ 0.000	D/V
# 26 155th Av & Hart Rd	B	16.4 0.595	B	16.4 0.595	+ 0.000	D/V
# 27 Barrows Rd (West End) & Scholl	B	19.6 0.776	B	19.6 0.776	+ 0.000	D/V
# 28 125th Av & Greenway Blvd	B	15.9 0.640	B	15.9 0.640	+ 0.000	D/V
# 29 Hall Blvd & Hwy 217 SB Ramp	D	43.2 0.863	D	43.2 0.863	+ 0.000	D/V
# 30 Nimbus Av & Hall Blvd	C	20.5 0.855	C	20.5 0.855	+ 0.000	D/V
# 31 Greenway Blvd & Hall Blvd	D	37.1 0.889	D	37.1 0.889	+ 0.000	D/V
# 32 Hall Blvd & Denney Rd	B	19.1 0.753	B	19.1 0.753	+ 0.000	D/V
# 33 Denny Rd & Hwy 217 SB Ramp	B	14.9 0.552	B	14.9 0.552	+ 0.000	D/V
# 34 Denney Rd & Hwy 217 NB Ramp	B	19.5 0.682	B	19.5 0.682	+ 0.000	D/V
# 35 Scholls Ferry Rd & Denney Rd	C	20.4 0.801	C	20.4 0.801	+ 0.000	D/V
# 36 88th Av & Garden Home	C	15.6 0.000	C	15.6 0.000	+ 0.000	D/V
# 37 Oleson Rd & Garden Home Rd	D	37.4 0.865	D	37.4 0.865	+ 0.000	D/V
# 38 Oleson Rd & Vermont St	B	11.6 0.437	B	11.6 0.437	+ 0.000	D/V
# 39 Laurelwood Av & Scholls Ferry	C	20.5 0.752	C	20.5 0.752	+ 0.000	D/V
# 40 Laurelwood Av & Baeverton - Hi	B	14.6 0.648	B	14.6 0.648	+ 0.000	D/V
# 41 87th Ave & Canyon Rd	B	10.7 0.526	B	10.7 0.526	+ 0.000	D/V
# 42 Walker Rd & Hwy 217 SB Ramp	B	15.1 0.746	B	15.1 0.746	+ 0.000	D/V
# 43 Walker Rd & Hwy 217 NB Ramp	D	36.9 0.883	D	36.9 0.883	+ 0.000	D/V
# 44 Cedar Hills & Butner Rd	C	34.2 0.889	C	34.2 0.889	+ 0.000	D/V
# 45 Cedar Hills Blvd & Hwy 26 EB R	F	502.0 0.000	F	502.0 0.000	+ 0.000	D/V
# 46 Cedar Hills Blvd & Hwy 26 WB R	B	12.2 0.657	B	12.2 0.657	+ 0.000	D/V
# 47 Cedar Hills Blvd & Barnes Rd	D	52.6 0.931	D	52.6 0.931	+ 0.000	D/V
# 48 Cedar Hills Blvd & Cornell Rd	C	20.3 0.588	C	20.3 0.588	+ 0.000	D/V
# 49 Saltzman Rd & Cornell Rd	C	34.7 0.806	C	34.7 0.806	+ 0.000	D/V

Beaverton TSP Update
Existing Conditions
PM Peak Hour

Intersection	Base		Future		Change in	
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C		
# 50 Murray Blvd & Hwy 26 EB Ramps	C	28.5 0.884	C	28.5 0.884	+ 0.000	D/V
# 51 Murray Blvd & Hwy 26 WB Ramps	D	42.3 0.943	D	42.3 0.943	+ 0.000	D/V
# 52 Murray Blvd & Cornell Rd	D	37.5 0.827	D	37.5 0.827	+ 0.000	D/V
# 80 Murray Rd & Allen Blvd	D	37.9 0.849	D	37.9 0.849	+ 0.000	D/V
# 81 Cornell Rd & Hwy 26 EB ramps	B	11.1 0.651	B	11.1 0.651	+ 0.000	D/V
# 82 Hall Blvd & Center St	B	19.4 0.709	B	19.4 0.709	+ 0.000	D/V
# 83 Allen Blvd & Western Ave	B	18.3 0.726	B	18.3 0.726	+ 0.000	D/V
# 84 Hart Rd & Sorrento Ave	F	55.6 0.997	F	55.6 0.997	+ 0.000	V/C
# 85 Scholls Ferry & Allen	D	45.2 0.803	D	45.2 0.803	+ 0.000	D/V
# 86 Murray & hart	C	31.1 0.816	C	31.1 0.816	+ 0.000	D/V

Beaverton TSP Update Existing Conditions PM Peak Hour

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

Intersection #1 Bany/170

Cycle (sec): 60 Critical Vol./Cap. (X): 0.680
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 56 Level Of Service: B

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, 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: Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with columns: 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 Existing Conditions PM Peak Hour

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): 0.773
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 60 Level Of Service: B

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, 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: Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with columns: 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 Existing Conditions PM Peak Hour

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): 0.661
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 55 Level of Service: C

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), Min. Green (0, 0, 0), and Lanes (1 0 1 1 0, 1 0 1 1 0, 1 0 2 0 1, 1 0 2 0 1).

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., and Final Volume for various movements.

Saturation Flow Module:

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

Capacity Analysis Module:

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

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.885
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 43.1
Optimal Cycle: 122 Level of Service: D

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), Min. Green (0, 0, 0), and Lanes (1 0 1 1 0, 1 0 1 1 0, 1 0 2 0 1, 1 0 2 0 1).

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., and Final Volume for various movements.

Saturation Flow Module:

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

Capacity Analysis Module:

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

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.942
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 59.7
Optimal Cycle: 155 Level of Service: E

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), Rights (Include), 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 movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.959
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 38.7
Optimal Cycle: 167 Level of Service: D

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), 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 movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.992
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 56.2
Optimal Cycle: 180 Level of Service: E

Table with columns for Street Name (173rd Ave, Walker Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, AddLane, Include), Rights, Min. Green, 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.

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.805
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 30.5
Optimal Cycle: 82 Level of Service: C

Table with columns for Street Name (173th Ave, Cornell Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Include), Rights, Min. Green, 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.

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.862
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 32.8
Optimal Cycle: 103 Level Of Service: C

Street Name: 160th Ave Tualatin Valley Hwy
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 0 1

Volume Module:
Base Vol: 60 129 59 22 559 221 101 1064 106 159 1532 15
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: 60 129 59 22 559 221 101 1064 106 159 1532 15
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: 64 137 63 23 595 235 107 1132 113 169 1630 16
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 64 137 63 23 595 235 107 1132 113 169 1630 16
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: 64 137 63 23 595 235 107 1132 113 169 1630 16

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.89 0.89 0.94 0.94 0.84 0.93 0.93 0.83 0.93 0.93 0.83
Lanes: 1.00 1.37 0.63 1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00
Final Sat.: 1769 2312 1058 1787 3574 1599 1769 3538 1583 1769 3538 1583

Capacity Analysis Module:
Vol/Sat: 0.04 0.06 0.06 0.01 0.17 0.15 0.06 0.32 0.07 0.10 0.46 0.01
Crit Moves: ****
Green/Cycle: 0.04 0.19 0.19 0.04 0.19 0.19 0.07 0.47 0.47 0.14 0.53 0.53
Volume/Cap: 0.86 0.31 0.31 0.31 0.86 0.76 0.86 0.69 0.15 0.69 0.86 0.02
Delay/Veh: 107.7 34.9 34.9 48.8 49.8 48.8 87.9 22.2 15.5 48.8 24.4 11.0
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: 107.7 34.9 34.9 48.8 49.8 48.8 87.9 22.2 15.5 48.8 24.4 11.0
LOS by Move: F C C D D D F C B D C B
HCM2kAvgQ: 4 3 3 1 12 9 6 15 2 6 25 0

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

Beaverton TSP Update
Existing Conditions
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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): 0.837
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 36.2
Optimal Cycle: 93 Level Of Service: D

Street Name: 158th Ave Jenkins 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
Lanes: 1 0 1 1 0 1 0 1 0 1 1 0 1 0 0 1 0

Volume Module:
Base Vol: 30 183 120 209 248 54 62 461 18 114 585 130
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: 30 183 120 209 248 54 62 461 18 114 585 130
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: 33 199 130 227 270 59 67 501 20 124 636 141
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 33 199 130 227 270 59 67 501 20 124 636 141
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: 33 199 130 227 270 59 67 501 20 124 636 141

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.88 0.87 0.92 0.97 0.83 0.94 0.93 0.93 0.93 0.95 0.95
Lanes: 1.00 1.20 0.80 1.00 1.00 1.00 1.00 1.92 0.08 1.00 0.82 0.18
Final Sat.: 1769 2002 1313 1753 1845 1568 1787 3419 133 1769 1482 329

Capacity Analysis Module:
Vol/Sat: 0.02 0.10 0.10 0.13 0.15 0.04 0.04 0.15 0.15 0.07 0.43 0.43
Crit Moves: ****
Green/Cycle: 0.03 0.12 0.12 0.15 0.24 0.24 0.05 0.38 0.38 0.18 0.51 0.51
Volume/Cap: 0.60 0.84 0.84 0.84 0.60 0.15 0.84 0.39 0.39 0.39 0.84 0.84
Delay/Veh: 62.9 55.4 55.4 58.7 34.2 28.5 95.2 21.8 21.8 35.1 26.5 26.5
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: 62.9 55.4 55.4 58.7 34.2 28.5 95.2 21.8 21.8 35.1 26.5 26.5
LOS by Move: E E E E C C F C C D C C
HCM2kAvgQ: 2 7 7 9 8 1 4 6 6 4 22 22

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.838
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.8
Optimal Cycle: 79 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), Min. Green, and Lanes.

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., and Final Volume for various movements.

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

Capacity Analysis Module table with columns for 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 Existing Conditions PM Peak Hour

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): 0.865
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 45.7
Optimal Cycle: 106 Level of Service: D

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), Rights (Include, Include), Min. Green, and Lanes.

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., and Final Volume for various movements.

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

Capacity Analysis Module table with columns for 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 Existing Conditions PM Peak Hour

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): 0.901
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 41.0
Optimal Cycle: 120 Level of Service: D

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, Include), Rights, Min. Green, 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 movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.806
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 30.2
Optimal Cycle: 82 Level of Service: C

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, 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 movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.854
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.8
Optimal Cycle: 86 Level Of Service: C

Street Name: Bethany 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: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 1 0 2 0 0 0 1 0 0 0 0 0

Volume Module:
Base Vol: 0 700 47 263 460 0 166 76 98 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: 0 700 47 263 460 0 166 76 98 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: 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94
PHF Volume: 0 745 50 280 489 0 177 81 104 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 745 50 280 489 0 177 81 104 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 745 50 280 489 0 177 81 104 0 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.98 0.98 0.93 0.93 1.00 0.91 0.91 0.83 1.00 1.00 1.00
Lanes: 0.00 0.94 0.06 1.00 2.00 0.00 0.69 0.31 1.00 0.00 0.00 0.00
Final Sat.: 0 1747 117 1769 3538 0 1184 542 1583 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.43 0.43 0.16 0.14 0.00 0.15 0.15 0.07 0.00 0.00 0.00
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.50 0.50 0.19 0.68 0.00 0.17 0.17 0.17 0.00 0.00 0.00
Volume/Cap: 0.00 0.85 0.85 0.85 0.20 0.00 0.85 0.85 0.38 0.00 0.00 0.00
Delay/Veh: 0.0 26.4 26.4 52.6 5.0 0.0 54.5 54.5 31.9 0.0 0.0 0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 26.4 26.4 52.6 5.0 0.0 54.5 54.5 31.9 0.0 0.0 0.0
LOS by Move: A C C D A A D D C A A A
HCM2kAvgQ: 0 21 21 10 2 0 9 9 3 0 0 0

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.956
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 44.1
Optimal Cycle: 163 Level Of Service: D

Street Name: Bethany Blvd Hwy 26 EB Ramps

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

Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 0 0 0 1 1 0 0 0 0 0 1 0 0 1

Volume Module:
Base Vol: 82 776 0 0 667 56 0 0 0 42 256 702
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 82 776 0 0 667 56 0 0 0 42 256 702
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: 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99
PHF Volume: 83 784 0 0 674 57 0 0 0 42 259 709
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 83 784 0 0 674 57 0 0 0 42 259 709
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: 83 784 0 0 674 57 0 0 0 42 259 709

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.99 1.00 1.00 0.92 0.92 1.00 1.00 1.00 0.98 0.98 0.84
Lanes: 1.00 1.00 0.00 0.00 1.84 0.16 0.00 0.00 0.00 0.14 0.86 1.00
Final Sat.: 1787 1881 0 0 3224 271 0 0 0 264 1606 1599

Capacity Analysis Module:
Vol/Sat: 0.05 0.42 0.00 0.00 0.21 0.21 0.00 0.00 0.00 0.16 0.16 0.44
Crit Moves: **** **** ****
Green/Cycle: 0.08 0.44 0.00 0.00 0.36 0.36 0.00 0.00 0.00 0.46 0.46 0.46
Volume/Cap: 0.59 0.96 0.00 0.00 0.59 0.59 0.00 0.00 0.00 0.35 0.35 0.96
Delay/Veh: 59.6 54.0 0.0 0.0 32.1 32.1 0.0 0.0 0.0 20.8 20.8 53.7
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: 59.6 54.0 0.0 0.0 32.1 32.1 0.0 0.0 0.0 20.8 20.8 53.7
LOS by Move: E D A A C C A A A C C D
HCM2kAvgQ: 4 33 0 0 12 12 0 0 0 7 7 30

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.835
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.7
Optimal Cycle: 79 Level Of Service: C

Street Name: Cornell Rd Hwy 26 EB Ramps
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 0 0 0 2 0 1 0 0 0 0 1 0 1 0 1

Volume Module:
Base Vol: 234 784 0 0 501 253 0 0 0 602 557 123
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: 234 784 0 0 501 253 0 0 0 602 557 123
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: 249 834 0 0 533 269 0 0 0 640 593 131
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 249 834 0 0 533 269 0 0 0 640 593 131
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: 249 834 0 0 533 269 0 0 0 640 593 131

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 1.00 1.00 0.93 0.83 1.00 1.00 1.00 0.84 0.99 0.84
Lanes: 1.00 2.00 0.00 0.00 2.00 1.00 0.00 0.00 0.00 1.00 1.00 1.00
Final Sat.: 1787 3574 0 0 3538 1583 0 0 0 1599 1881 1599

Capacity Analysis Module:
Vol/Sat: 0.14 0.23 0.00 0.00 0.15 0.17 0.00 0.00 0.00 0.40 0.32 0.08
Crit Moves: ****
Green/Cycle: 0.17 0.37 0.00 0.00 0.20 0.20 0.00 0.00 0.00 0.48 0.48 0.48
Volume/Cap: 0.84 0.63 0.00 0.00 0.74 0.84 0.00 0.00 0.00 0.84 0.66 0.17
Delay/Veh: 50.4 21.7 0.0 0.0 34.0 47.5 0.0 0.0 0.0 26.0 17.6 11.9
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 50.4 21.7 0.0 0.0 34.0 47.5 0.0 0.0 0.0 26.0 17.6 11.9
LOS by Move: D C A A C D A A A C B B
HCM2kAvgQ: 9 10 0 0 8 9 0 0 0 16 12 2

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.830
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 77 Level Of Service: C

Street Name: 143rd Ave Cornell 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 Prot+Permit Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 1 0 0 0 0 1 0 1

Volume Module:
Base Vol: 0 0 0 312 0 204 316 440 0 0 491 555
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 0 312 0 204 316 440 0 0 491 555
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: 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99
PHF Volume: 0 0 0 315 0 206 319 444 0 0 496 561
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 315 0 206 319 444 0 0 496 561
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 0 315 0 206 319 444 0 0 496 561

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 0.94 0.99 1.00 1.00 0.99 0.84
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 1.00 0.00 0.00 1.00 1.00
Final Sat.: 0 0 0 1787 0 1599 1787 1881 0 0 1881 1599

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.18 0.00 0.13 0.18 0.24 0.00 0.00 0.26 0.35
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.21 0.00 0.21 0.69 0.64 0.00 0.00 0.42 0.42
Volume/Cap: 0.00 0.00 0.00 0.83 0.00 0.61 0.52 0.37 0.00 0.00 0.62 0.83
Delay/Veh: 0.0 0.0 0.0 44.3 0.0 31.6 8.6 7.1 0.0 0.0 19.7 29.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 44.3 0.0 31.6 8.6 7.1 0.0 0.0 19.7 29.1
LOS by Move: A A A D A C A A A A B C
HCM2kAvgQ: 0 0 0 10 0 6 5 5 0 0 10 15

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

Beaverton TSP Update
Existing Conditions
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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): 0.909
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 52.9
Optimal Cycle: 134 Level Of Service: D

Street Name: Murray Blvd Walker 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
Lanes: 1 0 1 1 0 1 0 1 1 0 2 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 178 869 204 119 728 197 420 738 229 171 539 126
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: 178 869 204 119 728 197 420 738 229 171 539 126
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: 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
PHF Volume: 185 905 213 124 758 205 438 769 239 178 561 131
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 185 905 213 124 758 205 438 769 239 178 561 131
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: 185 905 213 124 758 205 438 769 239 178 561 131

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.90 0.90 0.92 0.89 0.89 0.91 0.91 0.91 0.94 0.91 0.91
Lanes: 1.00 1.62 0.38 1.00 1.57 0.43 2.00 1.53 0.47 1.00 1.62 0.38
Final Sat.: 1769 2785 654 1753 2670 723 3467 2628 816 1787 2814 658

Capacity Analysis Module:
Vol/Sat: 0.10 0.33 0.33 0.07 0.28 0.28 0.13 0.29 0.29 0.10 0.20 0.20
Crit Moves: **** **** **** ****
Green/Cycle: 0.12 0.36 0.36 0.08 0.32 0.32 0.17 0.32 0.32 0.11 0.26 0.26
Volume/Cap: 0.89 0.91 0.91 0.91 0.89 0.89 0.76 0.91 0.91 0.91 0.76 0.76
Delay/Veh: 87.1 46.7 46.7 105.4 48.6 48.6 53.3 50.0 50.0 92.6 44.2 44.2
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: 87.1 46.7 46.7 105.4 48.6 48.6 53.3 50.0 50.0 92.6 44.2 44.2
LOS by Move: F D D F D D D D D F D D
HCM2kAvgQ: 10 24 24 7 21 21 10 22 22 10 14 14

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

Beaverton TSP Update
Existing Conditions
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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): 0.872
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 43.0
Optimal Cycle: 106 Level Of Service: D

Street Name: Murray Blvd Jenkins 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
Lanes: 2 0 1 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 345 516 36 68 807 198 110 419 314 89 322 76
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: 345 516 36 68 807 198 110 419 314 89 322 76
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: 375 561 39 74 877 215 120 455 341 97 350 83
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 375 561 39 74 877 215 120 455 341 97 350 83
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: 375 561 39 74 877 215 120 455 341 97 350 83

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.91 0.93 0.93 0.93 0.90 0.90 0.94 0.99 0.83 0.93 0.95 0.95
Lanes: 2.00 1.87 0.13 1.00 1.61 0.39 1.00 1.00 1.00 1.00 0.81 0.19
Final Sat.: 3467 3307 231 1769 2756 676 1787 1881 1579 1769 1463 345

Capacity Analysis Module:
Vol/Sat: 0.11 0.17 0.17 0.04 0.32 0.32 0.07 0.24 0.22 0.05 0.24 0.24
Crit Moves: **** **** **** ****
Green/Cycle: 0.12 0.39 0.39 0.10 0.36 0.36 0.08 0.29 0.29 0.06 0.27 0.27
Volume/Cap: 0.87 0.43 0.43 0.43 0.87 0.87 0.87 0.85 0.76 0.85 0.87 0.87
Delay/Veh: 60.5 22.5 22.5 44.3 36.5 36.5 87.1 45.4 39.6 87.1 50.1 50.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 60.5 22.5 22.5 44.3 36.5 36.5 87.1 45.4 39.6 87.1 50.1 50.1
LOS by Move: E C C D D D F D D F D D
HCM2kAvgQ: 9 7 7 3 20 20 6 16 11 5 16 16

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

Beaverton TSP Update
Existing Conditions
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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): 0.838
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 35.5
Optimal Cycle: 94 Level Of Service: D

Street Name:	Murray Blvd				Millikan Way					
Approach:	North Bound		South Bound		East Bound		West Bound			
Movement:	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	
Lanes:	1	0	1	1	0	1	0	1	0	1

Volume Module:	Murray Blvd		Millikan Way	
Base Vol:	64	709	165	506
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	64	709	165	506
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96
PHF Volume:	67	739	172	527
Reduct Vol:	0	0	0	0
Reduced Vol:	67	739	172	527
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
FinalVolume:	67	739	172	527

Saturation Flow Module:	Murray Blvd		Millikan Way	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.93	0.90	0.94	0.84
Lanes:	1.00	1.62	1.00	1.00
Final Sat.:	1769	2788	1787	1539

Capacity Analysis Module:	Murray Blvd		Millikan Way	
Vol/Sat:	0.04	0.26	0.06	0.24
Crit Moves:	****	****	****	****
Green/Cycle:	0.04	0.36	0.08	0.39
Volume/Cap:	0.84	0.74	0.84	0.84
Delay/Veh:	96.1	28.9	61.1	23.6
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.1	28.9	61.1	23.6
LOS by Move:	F	C	E	D
HCM2kAvgQ:	4	14	5	11

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.844
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 46.3
Optimal Cycle: 106 Level Of Service: D

Street Name:	Murray Blvd				Tualatin Valley Hwy					
Approach:	North Bound		South Bound		East Bound		West Bound			
Movement:	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	
Lanes:	1	0	1	1	0	1	0	2	1	0

Volume Module:	Murray Blvd		Tualatin Valley Hwy	
Base Vol:	258	626	175	12
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	258	626	175	12
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93
PHF Volume:	277	673	188	13
Reduct Vol:	0	0	0	0
Reduced Vol:	277	673	188	13
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
FinalVolume:	277	673	188	13

Saturation Flow Module:	Murray Blvd		Tualatin Valley Hwy	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.92	0.89	0.94	0.84
Lanes:	1.00	1.56	1.00	1.00
Final Sat.:	1753	2649	1787	1539

Capacity Analysis Module:	Murray Blvd		Tualatin Valley Hwy	
Vol/Sat:	0.16	0.25	0.10	0.21
Crit Moves:	****	****	****	****
Green/Cycle:	0.19	0.32	0.12	0.25
Volume/Cap:	0.84	0.80	0.80	0.84
Delay/Veh:	64.8	41.6	69.8	50.0
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.8	41.6	69.8	50.0
LOS by Move:	E	D	E	D
HCM2kAvgQ:	12	17	8	17

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.921
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 53.7
Optimal Cycle: 141 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, and Lanes.

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., and Final Volume.

Saturation Flow Module:

Table with columns for Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.743
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 65 Level Of Service: B

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, and Lanes.

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., and Final Volume.

Saturation Flow Module:

Table with columns for Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.595
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.4
Optimal Cycle: 43 Level of Service: B

Street Name: 155th Av Hart 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 Prot+Permit Prot+Permit
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0

Volume Module:
Base Vol: 104 22 84 18 145 21 21 410 125 137 353 22
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 104 22 84 18 145 21 21 410 125 137 353 22
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: 107 23 87 19 149 22 22 423 129 141 364 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 107 23 87 19 149 22 22 423 129 141 364 23
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Volume: 107 23 87 19 149 22 22 423 129 141 364 23

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.56 0.88 0.88 0.67 0.97 0.97 0.85 0.90 0.90 0.94 0.98 0.98
Lanes: 1.00 0.21 0.79 1.00 0.87 0.13 0.08 1.47 0.45 1.00 0.94 0.06
Final Sat.: 1070 347 1325 1282 1612 233 129 2515 767 1786 1755 109

Capacity Analysis Module:
Vol/Sat: 0.10 0.07 0.07 0.01 0.09 0.09 0.17 0.17 0.17 0.08 0.21 0.21
Crit Moves: ****
Green/Cycle: 0.17 0.17 0.17 0.17 0.17 0.17 0.70 0.43 0.43 0.55 0.35 0.35
Volume/Cap: 0.59 0.39 0.39 0.09 0.55 0.55 0.25 0.39 0.39 0.21 0.59 0.59
Delay/Veh: 28.3 23.1 23.1 21.2 25.0 25.0 9.7 11.9 11.9 6.7 17.5 17.5
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: 28.3 23.1 23.1 21.2 25.0 25.0 9.7 11.9 11.9 6.7 17.5 17.5
LOS by Move: C C C C C C A B B A B B
HCM2kAvgQ: 3 2 2 0 4 4 2 4 4 1 7 7

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.776
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 71 Level of Service: B

Street Name: Barrows Rd (West End) Scholls Ferry 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
Lanes: 1 0 0 1 0 1 0 0 1 0 1 1 0 0 1 0

Volume Module:
Base Vol: 201 14 36 3 12 10 18 524 180 69 781 9
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: 201 14 36 3 12 10 18 524 180 69 781 9
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93
PHF Volume: 216 15 39 3 13 11 19 563 194 74 840 10
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 216 15 39 3 13 11 19 563 194 74 840 10
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Volume: 216 15 39 3 13 11 19 563 194 74 840 10

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.87 0.87 0.95 0.93 0.93 0.94 0.99 0.84 0.94 0.99 0.99
Lanes: 1.00 0.28 0.72 1.00 0.55 0.45 1.00 1.00 1.00 1.00 0.99 0.01
Final Sat.: 1769 464 1192 1805 966 805 1787 1881 1599 1787 1856 21

Capacity Analysis Module:
Vol/Sat: 0.12 0.03 0.03 0.00 0.01 0.01 0.01 0.30 0.12 0.04 0.45 0.45
Crit Moves: ****
Green/Cycle: 0.16 0.17 0.17 0.01 0.02 0.02 0.01 0.52 0.52 0.07 0.58 0.58
Volume/Cap: 0.78 0.20 0.20 0.20 0.78 0.78 0.78 0.57 0.23 0.57 0.78 0.78
Delay/Veh: 41.2 25.5 25.5 40.2 110 110.0 121.4 12.1 9.2 37.4 14.7 14.7
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: 41.2 25.5 25.5 40.2 110 110.0 121.4 12.1 9.2 37.4 14.7 14.7
LOS by Move: D C C D F F F B A D B B
HCM2kAvgQ: 7 1 1 0 2 2 2 9 2 3 16 16

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #28 125th Av & Greenway Blvd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.640
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 15.9
Optimal Cycle: 47 Level of Service: B

Street Name:	125th Av				Brockman Blvd								
Approach:	North Bound		South Bound		East Bound		West Bound						
Movement:	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				
Lanes:	1	0	0	0	1	0	0	1	1	0	1	0	0

Volume Module:	125th Av		Brockman Blvd							
Base Vol:	319	0	151	0	0	326	239	251	598	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	319	0	151	0	0	326	239	251	598	0
User Adj:	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
PHF Volume:	329	0	156	0	0	336	246	259	616	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	329	0	156	0	0	336	246	259	616	0
PCE Adj:	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
Final Volume:	329	0	156	0	0	336	246	259	616	0

Saturation Flow Module:	125th Av		Brockman Blvd							
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	1.00	0.83	1.00	1.00	0.99	0.84	0.94	0.99	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1787	0	1577	0	0	1881	1599	1787	1881	0

Capacity Analysis Module:	125th Av		Brockman Blvd								
Vol/Sat:	0.18	0.00	0.10	0.00	0.00	0.18	0.15	0.14	0.33	0.00	
Crit Moves:	****		****		****		****		****		
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.28	0.28	0.58	0.51	0.00	
Volume/Cap:	0.64	0.00	0.34	0.00	0.00	0.63	0.54	0.48	0.64	0.00	
Delay/Veh:	21.4	0.0	17.3	0.0	0.0	21.2	19.6	6.9	12.1	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	21.4	0.0	17.3	0.0	0.0	21.2	19.6	6.9	12.1	0.0	
LOS by Move:	C	A	B	A	A	A	C	B	A	B	A
HCM2kAvgQ:	6	0	3	0	0	6	5	3	9	0	

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

Beaverton TSP Update
Existing Conditions
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): 0.863
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 43.2
Optimal Cycle: 113 Level of Service: D

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

Volume Module:	Hwy 217 SB Ramp		Hall Blvd									
Base Vol:	116	13	100	241	48	292	207	956	73	57	1116	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	13	100	241	48	292	207	956	73	57	1116	30
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:	126	14	109	262	52	317	225	1039	79	62	1213	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	126	14	109	262	52	317	225	1039	79	62	1213	33
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:	126	14	109	262	52	317	225	1039	79	62	1213	33

Saturation Flow Module:	Hwy 217 SB Ramp		Hall Blvd									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.94	0.86	0.86	0.94	0.98	0.98	0.93	0.98	0.81
Lanes:	1.00	1.00	1.00	1.00	1.00	0.14	0.86	1.00	1.86	0.14	1.00	2.00
Final Sat.:	1787	1881	1599	1787	231	1407	1787	3457	264	1769	3724	1536

Capacity Analysis Module:	Hwy 217 SB Ramp		Hall Blvd									
Vol/Sat:	0.07	0.01	0.07	0.15	0.23	0.23	0.13	0.30	0.30	0.04	0.33	0.02
Crit Moves:	****		****		****		****		****		****	
Green/Cycle:	0.08	0.08	0.08	0.26	0.26	0.26	0.15	0.47	0.47	0.05	0.38	0.38
Volume/Cap:	0.86	0.09	0.83	0.56	0.86	0.86	0.86	0.64	0.64	0.64	0.86	0.06
Delay/Veh:	92.0	51.2	88.4	39.9	58.6	58.6	74.4	25.0	25.0	69.3	40.2	23.8
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:	92.0	51.2	88.4	39.9	58.6	58.6	74.4	25.0	25.0	69.3	40.2	23.8
LOS by Move:	F	D	F	D	E	E	E	C	C	E	D	C
HCM2kAvgQ:	7	1	6	9	16	16	11	16	16	3	23	1

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

Beaverton TSP Update
Existing Conditions
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): 0.855
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 72 Level of Service: C

Street Name:	Nimbus Av				Hall Blvd				
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	L	T	R	L	T	R	L	T	R
Control:	Permitted		Permitted		Prot+Permit		Prot+Permit		
Rights:	Include		Include		Include		Include		
Min. Green:	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	1	0	1

Volume Module:	Nimbus Av		Hall Blvd	
Base Vol:	253	20	309	17
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	253	20	309	17
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90
PHF Volume:	281	22	343	19
Reduct Vol:	0	0	0	0
Reduced Vol:	281	22	343	19
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Volume:	281	22	343	19

Saturation Flow Module:	Nimbus Av		Hall Blvd	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.72	0.85	0.85	0.92
Lanes:	1.00	0.06	0.94	0.38
Final Sat.:	1367	98	1518	657

Capacity Analysis Module:	Nimbus Av		Hall Blvd	
Vol/Sat:	0.21	0.23	0.23	0.30
Crit Moves:	****		****	
Green/Cycle:	0.26	0.26	0.26	0.35
Volume/Cap:	0.78	0.86	0.86	0.86
Delay/Veh:	30.6	36.4	36.4	24.4
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.6	36.4	36.4	24.4
LOS by Move:	C	D	D	B
HCM2kAvgQ:	7	10	10	13

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

Beaverton TSP Update
Existing Conditions
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): 0.889
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 37.1
Optimal Cycle: 107 Level of Service: D

Street Name:	Greenway Blvd				Hall Blvd				
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	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
Lanes:	0	1	0	0	1	0	1	0	1

Volume Module:	Greenway Blvd		Hall Blvd	
Base Vol:	265	3	283	3
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	265	3	283	3
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93
PHF Volume:	285	3	304	3
Reduct Vol:	0	0	0	0
Reduced Vol:	285	3	304	3
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Volume:	285	3	304	3

Saturation Flow Module:	Greenway Blvd		Hall Blvd	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.65	0.65	0.83	0.75
Lanes:	0.99	0.01	1.00	0.35
Final Sat.:	1227	14	1577	499

Capacity Analysis Module:	Greenway Blvd		Hall Blvd	
Vol/Sat:	0.23	0.23	0.19	0.06
Crit Moves:	****		****	
Green/Cycle:	0.26	0.26	0.26	0.26
Volume/Cap:	0.89	0.89	0.74	0.23
Delay/Veh:	61.9	61.9	42.4	30.8
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.9	61.9	42.4	30.8
LOS by Move:	E	E	D	C
HCM2kAvgQ:	12	12	11	2

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

Beaverton TSP Update
Existing Conditions
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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): 0.753
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 19.1
Optimal Cycle: 57 Level Of Service: B

Street Name: Hall Blvd Denney 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 Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 1 0 2 0 0 0 0 0 0 0 1

Volume Module:
Base Vol: 0 821 263 121 773 0 0 0 0 512 0 222
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: 0 821 263 121 773 0 0 0 0 512 0 222
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: 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
PHF Volume: 0 855 274 126 805 0 0 0 0 533 0 231
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 855 274 126 805 0 0 0 0 533 0 231
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: 0 855 274 126 805 0 0 0 0 533 0 231

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 0.85 0.95 0.95 1.00 1.00 1.00 1.00 0.95 1.00 0.85
Lanes: 0.00 2.00 1.00 1.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 1.00
Final Sat.: 0 3610 1615 1805 3610 0 0 0 0 1805 0 1610

Capacity Analysis Module:
Vol/Sat: 0.00 0.24 0.17 0.07 0.22 0.00 0.00 0.00 0.00 0.30 0.00 0.14
Crit Moves: **** **** **** ****
Green/Cycle: 0.00 0.31 0.31 0.09 0.41 0.00 0.00 0.00 0.00 0.39 0.00 0.39
Volume/Cap: 0.00 0.75 0.54 0.75 0.55 0.00 0.00 0.00 0.00 0.75 0.00 0.37
Delay/Veh: 0.0 21.3 18.1 43.9 14.0 0.0 0.0 0.0 0.0 20.3 0.0 13.3
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: 0.0 21.3 18.1 43.9 14.0 0.0 0.0 0.0 0.0 20.3 0.0 13.3
LOS by Move: A C B D B A A A A C A B
HCM2kAvgQ: 0 9 5 4 7 0 0 0 0 10 0 3

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

Beaverton TSP Update
Existing Conditions
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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): 0.552
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 41 Level Of Service: B

Street Name: Hwy 217 SB Ramp Denney 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
Lanes: 0 0 0 0 0 0 1 0 0 1 0 0 1 1 0 1 0 1 0 0

Volume Module:
Base Vol: 0 0 0 75 10 219 0 397 152 144 538 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 75 10 219 0 397 152 144 538 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 0 0 77 10 226 0 409 157 148 555 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 77 10 226 0 409 157 148 555 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 77 10 226 0 409 157 148 555 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.94 0.94 0.83 1.00 0.88 0.88 0.93 0.98 1.00
Lanes: 0.00 0.00 0.00 0.88 0.12 1.00 0.00 1.45 0.55 1.00 1.00 0.00
Final Sat.: 0 0 0 1568 209 1568 0 2427 929 1769 1862 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.05 0.05 0.14 0.00 0.17 0.17 0.08 0.30 0.00
Crit Moves: **** **** **** ****
Green/Cycle: 0.00 0.00 0.00 0.26 0.26 0.26 0.00 0.36 0.36 0.18 0.54 0.00
Volume/Cap: 0.00 0.00 0.00 0.19 0.19 0.55 0.00 0.47 0.47 0.47 0.55 0.00
Delay/Veh: 0.0 0.0 0.0 17.4 17.4 20.8 0.0 15.1 15.1 23.2 9.7 0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 17.4 17.4 20.8 0.0 15.1 15.1 23.2 9.7 0.0
LOS by Move: A A A B B C A B B C A A
HCM2kAvgQ: 0 0 0 1 1 4 0 5 5 3 7 0

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

Beaverton TSP Update Existing Conditions 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): 0.682
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 19.5
Optimal Cycle: 50 Level Of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Hwy 217 NB 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., and Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update Existing Conditions 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): 0.801
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 66 Level Of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Scholls Ferry Rd 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., and Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update Existing Conditions 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): 0.3 Worst Case Level Of Service: C [15.6]

Table with columns for Street Name (88th Av, Garden Home), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes (0 0 1! 0 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across four movements.

Critical Gap Module table with columns for Critical Gp and FollowUpTim across four movements.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap across four movements.

Level Of Service Module table with columns for 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 Existing Conditions 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): 0.865 Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 37.4 Optimal Cycle: 106 Level Of Service: D

Table with columns for Street Name (Oleson Rd, Garden Home Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Prot+Permit), Rights (Include), and Lanes (1 0 1 0 1).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across four movements.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat across four movements.

Capacity Analysis Module table with columns for 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 Existing Conditions 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): 0.437
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 35 Level of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Oleson Rd and Vermont 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., and Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update Existing Conditions 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): 0.752
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 68 Level of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Laurelwood Av and Scholls Ferry 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., and Final Volume.

Table with columns for Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ for Capacity Analysis Module.

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

Beaverton TSP Update
Existing Conditions
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): 0.648
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 47 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
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 1 0 1 1 0

Volume Module:
Base Vol: 68 102 58 155 157 68 64 1064 68 42 897 76
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 68 102 58 155 157 68 64 1064 68 42 897 76
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: 73 110 62 167 169 73 69 1144 73 45 965 82
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 73 110 62 167 169 73 69 1144 73 45 965 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: 73 110 62 167 169 73 69 1144 73 45 965 82

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.45 0.93 0.93 0.59 0.94 0.94 0.94 0.93 0.93 0.93 0.92 0.92
Lanes: 1.00 0.64 0.36 1.00 0.70 0.30 1.00 1.88 0.12 1.00 1.84 0.16
Final Sat.: 860 1122 638 1116 1240 537 1787 3329 213 1769 3222 273

Capacity Analysis Module:
Vol/Sat: 0.08 0.10 0.10 0.15 0.14 0.14 0.04 0.34 0.34 0.03 0.30 0.30
Crit Moves: ****
Green/Cycle: 0.23 0.23 0.23 0.23 0.23 0.23 0.06 0.53 0.53 0.04 0.50 0.50
Volume/Cap: 0.37 0.42 0.42 0.65 0.59 0.59 0.59 0.65 0.65 0.65 0.59 0.59
Delay/Veh: 20.6 20.4 20.4 26.6 22.8 22.8 35.3 10.9 10.9 47.8 11.1 11.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 20.6 20.4 20.4 26.6 22.8 22.8 35.3 10.9 10.9 47.8 11.1 11.1
LOS by Move: C C C C C C D B B D B B
HCM2kAvgQ: 2 3 3 4 5 5 2 9 9 2 8 8

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

Beaverton TSP Update
Existing Conditions
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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): 0.526
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 32 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
Lanes: 0 1 0 0 1 0 0 1 0 0 0 0 2 0 1 0 0 1 1 1

Volume Module:
Base Vol: 173 47 51 25 118 1 0 791 221 0 882 11
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: 173 47 51 25 118 1 0 791 221 0 882 11
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 188 51 55 27 128 1 0 860 240 0 959 12
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 188 51 55 27 128 1 0 860 240 0 959 12
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: 188 51 55 27 128 1 0 860 240 0 959 12

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.67 0.67 0.83 0.89 0.89 0.89 1.00 0.93 0.83 1.00 0.94 0.94
Lanes: 0.79 0.21 1.00 0.17 0.82 0.01 0.00 2.00 1.00 0.00 2.00 1.00
Final Sat.: 1007 274 1577 295 1391 12 0 3538 1580 0 3567 1783

Capacity Analysis Module:
Vol/Sat: 0.19 0.19 0.04 0.09 0.09 0.09 0.00 0.24 0.15 0.00 0.27 0.01
Crit Moves: ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.00 0.51 0.51 0.00 0.51 0.51
Volume/Cap: 0.53 0.53 0.10 0.26 0.26 0.26 0.00 0.48 0.30 0.00 0.53 0.01
Delay/Veh: 16.5 16.5 13.0 14.0 14.0 14.0 0.0 9.7 8.7 0.0 10.1 7.2
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: 16.5 16.5 13.0 14.0 14.0 14.0 0.0 9.7 8.7 0.0 10.1 7.2
LOS by Move: B B B B B B A A A A B A
HCM2kAvgQ: 4 4 1 2 2 2 0 6 3 0 7 0

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

Beaverton TSP Update
Existing Conditions
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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): 0.746
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 57 Level of Service: B

Street Name:	Hwy 217 SB Ramp				Walker Rd													
Approach:	North Bound		South Bound		East Bound		West Bound											
Movement:	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									
Lanes:	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	2	0	0

Volume Module:

Base Vol:	0	0	0	269	37	304	0	522	616	27	898	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	269	37	304	0	522	616	27	898	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:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	0	274	38	310	0	533	629	28	916	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	274	38	310	0	533	629	28	916	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	274	38	310	0	533	629	28	916	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	0.93	0.93	0.85	1.00	1.00	0.85	0.95	0.95	1.00
Lanes:	0.00	0.00	0.00	0.88	0.12	1.00	0.00	1.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1560	215	1615	0	1900	1615	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.18	0.18	0.19	0.00	0.28	0.39	0.02	0.25	0.00	
Crit Moves:				****				****			****		
Green/Cycle:	0.00	0.00	0.00	0.26	0.26	0.26	0.00	0.52	0.52	0.02	0.54	0.00	
Volume/Cap:	0.00	0.00	0.00	0.68	0.68	0.75	0.00	0.54	0.75	0.75	0.47	0.00	
Delay/Veh:	0.0	0.0	0.0	24.3	24.3	27.7	0.0	10.1	14.9	86.7	8.6	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0	24.3	24.3	27.7	0.0	10.1	14.9	86.7	8.6	0.0	
LOS by Move:	A	A	A	C	C	C	A	B	B	F	A	A	
HCM2kAvgQ:	0	0	0	7	7	7	0	7	11	2	6	0	

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

Beaverton TSP Update
Existing Conditions
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): 0.883
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 36.9
Optimal Cycle: 102 Level of Service: D

Street Name:	Hwy 217 NB Ramp				Walker Rd														
Approach:	North Bound		South Bound		East Bound		West Bound												
Movement:	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										
Lanes:	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0

Volume Module:

Base Vol:	698	1	43	0	0	0	168	596	0	0	242	129
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:	698	1	43	0	0	0	168	596	0	0	242	129
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:	720	1	44	0	0	0	173	614	0	0	249	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	720	1	44	0	0	0	173	614	0	0	249	133
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:	720	1	44	0	0	0	173	614	0	0	249	133

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.84	0.84	1.00	1.00	1.00	0.94	0.99	1.00	1.00	0.89	0.89
Lanes:	1.00	0.02	0.98	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.30	0.70
Final Sat.:	1599	36	1568	0	0	0	1787	1881	0	0	2208	1177

Capacity Analysis Module:

Vol/Sat:	0.45	0.03	0.03	0.00	0.00	0.00	0.10	0.33	0.00	0.00	0.11	0.11	
Crit Moves:				****				****			****		
Green/Cycle:	0.51	0.51	0.51	0.00	0.00	0.00	0.17	0.37	0.00	0.00	0.20	0.20	
Volume/Cap:	0.88	0.06	0.06	0.00	0.00	0.00	0.57	0.88	0.00	0.00	0.57	0.57	
Delay/Veh:	33.0	12.4	12.4	0.0	0.0	0.0	40.6	42.2	0.0	0.0	37.3	37.3	
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:	33.0	12.4	12.4	0.0	0.0	0.0	40.6	42.2	0.0	0.0	37.3	37.3	
LOS by Move:	C	B	B	A	A	A	D	D	A	A	D	D	
HCM2kAvgQ:	23	1	1	0	0	0	6	21	0	0	6	6	

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.889
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 34.2
Optimal Cycle: 105 Level of Service: C

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

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 1 0 2 0 1 1 0 1 1 0 0 0 1 0 0 0

Volume Module:

Base Vol: 35 898 12 72 1037 176 284 68 27 15 71 142
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: 35 898 12 72 1037 176 284 68 27 15 71 142
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: 38 976 13 78 1127 191 309 74 29 16 77 154
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 38 976 13 78 1127 191 309 74 29 16 77 154
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: 38 976 13 78 1127 191 309 74 29 16 77 154

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 0.84 0.94 0.92 0.92 0.56 0.56 0.56 0.87 0.88 0.87
Lanes: 1.00 2.00 1.00 1.00 1.71 0.29 0.75 0.18 0.07 0.07 0.31 0.62
Final Sat.: 1787 3574 1599 1787 2988 507 804 192 76 109 518 1035

Capacity Analysis Module:

Vol/Sat: 0.02 0.27 0.01 0.04 0.38 0.38 0.38 0.38 0.38 0.15 0.15 0.15
Crit Moves: ****
Green/Cycle: 0.02 0.39 0.39 0.06 0.42 0.42 0.43 0.43 0.43 0.43 0.43 0.43
Volume/Cap: 0.89 0.71 0.02 0.71 0.89 0.89 0.89 0.89 0.89 0.35 0.35 0.35
Delay/Veh: 144.1 27.6 19.0 64.9 33.7 33.7 44.9 44.9 44.9 19.3 19.3 19.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 144.1 27.6 19.0 64.9 33.7 33.7 44.9 44.9 44.9 19.3 19.3 19.3
LOS by Move: F C B E C C D D D B B B
HCM2kAvgQ: 3 14 0 4 23 23 15 15 15 5 5 5

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

Beaverton TSP Update Existing Conditions 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): 46.5 Worst Case Level of Service: F[502.0]

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: 0 967 367 363 994 0 91 0 160 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: 0 967 367 363 994 0 91 0 160 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: 0 997 378 374 1025 0 94 0 165 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 997 378 374 1025 0 94 0 165 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxxxx 4.1 xxxx xxxxxx 6.8 6.5 6.9 xxxxxx xxxx xxxxxx
FollowUpTim:xxxxx xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 xxxxxx xxxx xxxxxx

Capacity Module:

Cnflct Vol: xxxx xxxx xxxxxx 1375 xxxx xxxxxx 2272 3148 512 xxxx xxxx xxxxxx
Potent Cap.: xxxx xxxx xxxxxx 505 xxxx xxxxxx 35 11 512 xxxx xxxx xxxxxx
Move Cap.: xxxx xxxx xxxxxx 505 xxxx xxxxxx 14 3 512 xxxx xxxx xxxxxx
Total Cap: xxxx xxxx xxxxxx xxxx xxxx xxxxxx 28 0 xxxxxx 27 30 xxxxxx
Volume/Cap: xxxx xxxx xxxxxx 0.74 xxxx xxxxxx 3.36 xxxxx 0.32 xxxxx xxxxx xxxxx

Level of Service Module:

2Way95thQ: xxxx xxxx xxxxxx 6.2 xxxx xxxxxx xxxxx xxxxx 1.4 xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxx xxxxxx 29.8 xxxxx xxxxxx xxxxxx xxxxx 15.3 xxxxxx xxxx xxxxxx
LOS by Move: * * * D * * * * * C * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxxx xxxxx xxxxxx 28 xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx xxxxx xxxxxx 11.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 1358 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * * * * * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx 502.0 xxxxxxx
ApproachLOS: * * F *

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.657
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 12.2
Optimal Cycle: 40 Level of Service: B

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
Lanes: 0 0 1 1 0 0 0 1 1 1 0 0 0 0 0 2 0 0 0 1

Volume Module:
Base Vol: 0 828 202 0 1103 276 0 0 0 311 0 343
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: 0 828 202 0 1103 276 0 0 0 311 0 343
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: 0 881 215 0 1173 294 0 0 0 331 0 365
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 881 215 0 1173 294 0 0 0 331 0 365
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: 0 881 215 0 1173 294 0 0 0 331 0 365

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.90 0.90 1.00 0.91 0.91 1.00 1.00 1.00 0.90 1.00 0.83
Lanes: 0.00 1.61 0.39 0.00 2.00 1.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0 2762 674 0 3467 1733 0 0 0 3432 0 1583

Capacity Analysis Module:
Vol/Sat: 0.00 0.32 0.32 0.00 0.34 0.17 0.00 0.00 0.00 0.10 0.00 0.23
Crit Moves: ****
Green/Cycle: 0.00 0.52 0.52 0.00 0.52 0.52 0.00 0.00 0.00 0.35 0.00 0.35
Volume/Cap: 0.00 0.62 0.62 0.00 0.66 0.33 0.00 0.00 0.00 0.27 0.00 0.66
Delay/Veh: 0.0 11.0 11.0 0.0 11.4 8.5 0.0 0.0 0.0 14.1 0.0 19.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 11.0 11.0 0.0 11.4 8.5 0.0 0.0 0.0 14.1 0.0 19.3
LOS by Move: A B B A B A A A A B A B
HCM2kAvgQ: 0 8 8 0 9 3 0 0 0 2 0 7

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

Beaverton TSP Update
Existing Conditions
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): 0.931
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 52.6
Optimal Cycle: 147 Level of Service: D

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
Lanes: 2 0 1 0 1 1 0 0 1 0 1 0 2 0 1 1 0

Volume Module:
Base Vol: 350 464 233 79 414 9 30 251 445 500 445 291
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 350 464 233 79 414 9 30 251 445 500 445 291
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: 376 499 251 85 445 10 32 270 478 538 478 313
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 376 499 251 85 445 10 32 270 478 538 478 313
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: 376 499 251 85 445 10 32 270 478 538 478 313

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.99 0.84 0.92 0.97 0.97 0.93 0.98 0.83 0.93 0.92 0.92
Lanes: 2.00 1.00 1.00 1.00 0.98 0.02 1.00 2.00 1.00 2.00 1.21 0.79
Final Sat.: 3574 1881 1599 1753 1800 39 1769 3724 1583 3538 2119 1386

Capacity Analysis Module:
Vol/Sat: 0.11 0.27 0.16 0.05 0.25 0.25 0.02 0.07 0.30 0.15 0.23 0.23
Crit Moves: ****
Green/Cycle: 0.11 0.32 0.32 0.06 0.27 0.27 0.04 0.32 0.32 0.16 0.45 0.45
Volume/Cap: 0.93 0.83 0.49 0.83 0.93 0.93 0.50 0.22 0.93 0.93 0.50 0.50
Delay/Veh: 80.8 47.1 33.6 96.3 67.6 67.6 62.7 29.6 63.0 71.5 23.6 23.6
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: 80.8 47.1 33.6 96.3 67.6 67.6 62.7 29.6 63.0 71.5 23.6 23.6
LOS by Move: F D C F E E E C E C C
HCM2kAvgQ: 10 19 8 5 21 21 2 4 21 14 10 10

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.588
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 50 Level of Service: C

Street Name: Cedar Hills Blvd Cornell 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
Lanes: 1 0 1 0 1 1 0 0 1 0 1 1 0 1 1 0

Volume Module:
Base Vol: 91 122 93 9 58 23 22 200 61 87 188 15
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: 91 122 93 9 58 23 22 200 61 87 188 15
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: 0.59 0.59 0.59 0.59 0.59 0.59 0.59 0.59 0.59 0.59 0.59 0.59
PHF Volume: 154 207 158 15 98 39 37 339 103 147 319 25
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 154 207 158 15 98 39 37 339 103 147 319 25
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: 154 207 158 15 98 39 37 339 103 147 319 25

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.92 0.97 0.83 0.90 0.91 0.91 0.94 0.99 0.84 0.93 0.92 0.92
Lanes: 1.00 1.00 1.00 1.00 0.72 0.28 1.00 1.00 1.00 1.00 1.85 0.15
Final Sat.: 1753 1845 1568 1718 1239 492 1787 1881 1599 1769 3240 259

Capacity Analysis Module:
Vol/Sat: 0.09 0.11 0.10 0.01 0.08 0.08 0.02 0.18 0.06 0.08 0.10 0.10
Crit Moves: ****
Green/Cycle: 0.15 0.26 0.26 0.02 0.13 0.13 0.08 0.31 0.31 0.14 0.37 0.37
Volume/Cap: 0.59 0.42 0.38 0.42 0.59 0.59 0.27 0.59 0.21 0.59 0.27 0.27
Delay/Veh: 27.2 18.9 18.7 36.9 28.3 28.3 27.0 19.2 15.6 27.7 13.3 13.3
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: 27.2 18.9 18.7 36.9 28.3 28.3 27.0 19.2 15.6 27.7 13.3 13.3
LOS by Move: C B B D C C C B B C B B
HCM2kAvgQ: 4 4 3 1 3 3 1 6 2 4 2 2

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.806
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 34.7
Optimal Cycle: 80 Level of Service: C

Street Name: Saltzman Rd Corenll 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
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 0 1

Volume Module:
Base Vol: 130 345 79 153 321 89 258 439 30 86 392 133
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: 130 345 79 153 321 89 258 439 30 86 392 133
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: 134 356 81 158 331 92 266 453 31 89 404 137
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 134 356 81 158 331 92 266 453 31 89 404 137
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: 134 356 81 158 331 92 266 453 31 89 404 137

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.99 0.84 0.94 0.99 0.84 0.93 0.92 0.92 0.93 0.98 0.83
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.87 0.13 1.00 1.00 1.00
Final Sat.: 1787 1881 1599 1787 1881 1599 1769 3278 224 1769 1862 1583

Capacity Analysis Module:
Vol/Sat: 0.07 0.19 0.05 0.09 0.18 0.06 0.15 0.14 0.14 0.05 0.22 0.09
Crit Moves: ****
Green/Cycle: 0.10 0.23 0.23 0.11 0.24 0.24 0.19 0.33 0.33 0.12 0.27 0.27
Volume/Cap: 0.73 0.81 0.22 0.81 0.73 0.24 0.81 0.41 0.41 0.41 0.81 0.32
Delay/Veh: 48.6 39.3 25.0 56.0 33.9 24.7 44.7 20.8 20.8 33.8 36.6 23.8
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: 48.6 39.3 25.0 56.0 33.9 24.7 44.7 20.8 20.8 33.8 36.6 23.8
LOS by Move: D D C E C C D C C C D C
HCM2kAvgQ: 5 11 2 6 9 2 9 5 5 2 12 3

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.884
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.5
Optimal Cycle: 105 Level of Service: C

Street Name: Murray Blvd Hwy 26 NB Ramps
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 0 0 0 0 0

Volume Module:
Base Vol: 0 980 495 355 1153 0 196 1 200 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: 0 980 495 355 1153 0 196 1 200 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: 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98
PHF Volume: 0 1000 505 362 1177 0 200 1 204 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1000 505 362 1177 0 200 1 204 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 1000 505 362 1177 0 200 1 204 0 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.88 0.88 0.92 0.92 1.00 0.92 0.92 0.84 1.00 1.00 1.00
Lanes: 0.00 1.33 0.67 1.00 2.00 0.00 0.99 0.01 1.00 0.00 0.00 0.00
Final Sat.: 0 2231 1127 1753 3505 0 1733 9 1597 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.21 0.34 0.00 0.12 0.12 0.13 0.00 0.00 0.00
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.51 0.51 0.23 0.74 0.00 0.14 0.14 0.14 0.00 0.00 0.00
Volume/Cap: 0.00 0.88 0.88 0.88 0.45 0.00 0.80 0.80 0.88 0.00 0.00 0.00
Delay/Veh: 0.0 29.0 29.0 58.6 5.4 0.0 59.7 59.7 74.5 0.0 0.0 0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 29.0 29.0 58.6 5.4 0.0 59.7 59.7 74.5 0.0 0.0 0.0
LOS by Move: A C C E A A E E E A A A
HCM2kAvgQ: 0 26 26 15 8 0 8 8 9 0 0 0

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

Beaverton TSP Update
Existing Conditions
PM Peak Hour

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): 0.943
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 42.3
Optimal Cycle: 151 Level of Service: D

Street Name: Murray Blvd Hwy 26 EB Ramps
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 0 0 0 2 0 1 0 0 0 0 1 1 0 0 1

Volume Module:
Base Vol: 188 704 0 0 1007 127 0 0 0 0 746 51 674
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 188 704 0 0 1007 127 0 0 0 0 746 51 674
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.97 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: 194 726 0 0 1038 131 0 0 0 0 769 53 695
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 726 0 0 1038 131 0 0 0 0 769 53 695
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
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
FinalVolume: 194 726 0 0 1038 131 0 0 0 0 769 53 695

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.92 0.92 1.00 1.00 0.91 0.82 1.00 1.00 1.00 0.91 0.91 0.83
Lanes: 1.00 2.00 0.00 0.00 2.00 1.00 0.00 0.00 0.00 1.87 0.13 1.00
Final Sat.: 1753 3505 0 0 3473 1554 0 0 0 3221 220 1583

Capacity Analysis Module:
Vol/Sat: 0.11 0.21 0.00 0.00 0.30 0.08 0.00 0.00 0.00 0.24 0.24 0.44
Crit Moves: **** **** ****
Green/Cycle: 0.12 0.43 0.00 0.00 0.32 0.32 0.00 0.00 0.00 0.47 0.47 0.47
Volume/Cap: 0.94 0.48 0.00 0.00 0.94 0.27 0.00 0.00 0.00 0.51 0.51 0.94
Delay/Veh: 99.2 24.4 0.0 0.0 55.3 30.9 0.0 0.0 0.0 22.8 22.8 50.9
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: 99.2 24.4 0.0 0.0 55.3 30.9 0.0 0.0 0.0 22.8 22.8 50.9
LOS by Move: F C A A E C A A A C C D
HCM2kAvgQ: 11 10 0 0 24 4 0 0 0 11 11 29

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

Beaverton TSP Update Existing Conditions PM Peak Hour

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): 0.827
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 37.5
Optimal Cycle: 86 Level Of Service: D

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, 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 movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update Existing Conditions 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): 0.849
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 37.9
Optimal Cycle: 99 Level Of Service: D

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, 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 movements.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and 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, and HCM2kAvgQ.

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

Beaverton TSP Update Existing Conditions 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): 0.651
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 48 Level Of Service: B

Street Name: Cornell Rd Hwy 26 EB ramps
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 1 0 2 0 0 0 1 0 1 0 0 0 0 0 0

Volume Module:
Base Vol: 0 839 545 72 1097 0 111 205 55 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: 0 839 545 72 1097 0 111 205 55 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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 0 883 574 76 1155 0 117 216 58 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 883 574 76 1155 0 117 216 58 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 883 574 76 1155 0 117 216 58 0 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.94 0.84 0.94 0.94 1.00 0.87 0.87 0.87 1.00 1.00 1.00
Lanes: 0.00 2.00 1.00 1.00 2.00 0.00 0.60 1.10 0.30 0.00 0.00 0.00
Final Sat.: 0 3574 1593 1787 3574 0 989 1826 490 0 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.25 0.36 0.04 0.32 0.00 0.12 0.12 0.12 0.00 0.00 0.00
Crit Moves: **** **** **** ****
Green/Cycle: 0.00 0.55 0.55 0.07 0.62 0.00 0.18 0.18 0.18 0.00 0.00 0.00
Volume/Cap: 0.00 0.45 0.65 0.65 0.52 0.00 0.65 0.65 0.65 0.00 0.00 0.00
Delay/Veh: 0.0 8.1 11.1 39.7 6.7 0.0 25.3 25.3 25.3 0.0 0.0 0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 8.1 11.1 39.7 6.7 0.0 25.3 25.3 25.3 0.0 0.0 0.0
LOS by Move: A A B D A A C C C A A A
HCM2kAvgQ: 0 5 8 3 7 0 5 5 5 0 0 0 0

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

Beaverton TSP Update Existing Conditions 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): 0.709
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 19.4
Optimal Cycle: 59 Level Of Service: B

Street Name: Hall Blvd Center St
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 Prot+Permit Prot+Permit
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 1 0 1 0 1 0 0 1 0 1 0 1 0 1 1 0 1 0 1 0

Volume Module:
Base Vol: 29 34 37 105 21 234 156 453 35 34 567 96
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: 29 34 37 105 21 234 156 453 35 34 567 96
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 32 37 40 114 23 254 170 492 38 37 616 104
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 37 40 114 23 254 170 492 38 37 616 104
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: 32 37 40 114 23 254 170 492 38 37 616 104

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.88 0.88 0.88 0.89 0.81 0.80 0.93 0.92 0.92 0.92 0.90 0.90
Lanes: 0.58 0.68 0.74 1.00 0.08 0.92 1.00 1.86 0.14 1.00 1.71 0.29
Final Sat.: 966 1132 1232 1688 126 1403 1768 3248 251 1750 2931 496

Capacity Analysis Module:
Vol/Sat: 0.03 0.03 0.03 0.07 0.18 0.18 0.10 0.15 0.15 0.02 0.21 0.21
Crit Moves: **** **** **** ****
Green/Cycle: 0.05 0.10 0.10 0.20 0.26 0.26 0.50 0.38 0.38 0.35 0.30 0.30
Volume/Cap: 0.71 0.33 0.33 0.33 0.71 0.71 0.47 0.40 0.40 0.11 0.71 0.71
Delay/Veh: 42.5 25.8 25.8 21.0 26.3 26.3 10.7 13.8 13.8 13.1 21.2 21.2
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: 42.5 25.8 25.8 21.0 26.3 26.3 10.7 13.8 13.8 13.1 21.2 21.2
LOS by Move: D C C C C C B B B B C C
HCM2kAvgQ: 3 1 1 2 6 6 3 4 4 1 8 8

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

Beaverton TSP Update Existing Conditions 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): 0.726
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 54 Level of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Western Ave and Allen Blvd.

Table with columns for Volume Module metrics: 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 metrics: Sat/Lane, Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module metrics: 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 Existing Conditions 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): 0.997
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 55.6
Optimal Cycle: 0 Level of Service: F

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Sorrento/Hart and Hart.

Table with columns for Volume Module metrics: 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 metrics: Adjustment, Lanes, Final Sat.

Table with columns for Capacity Analysis Module metrics: Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

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

Beaverton TSP Update
Existing Conditions
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): 0.803
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 45.2
Optimal Cycle: 93 Level of Service: D

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

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., and Final Volume for Scholls and Allen.

Saturation Flow Module:

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

Capacity Analysis Module:

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

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

Beaverton TSP Update
Existing Conditions
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): 0.816
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 31.1
Optimal Cycle: 90 Level of Service: C

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

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., and Final Volume for Murray and Hart.

Saturation Flow Module:

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

Capacity Analysis Module:

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

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

Summary of All Intervals

Run Number	1	10	2	3	4	5	6	7
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3	3
# of Recorded Intvls	2	2	2	2	2	2	2	2
Vehs Entered	9955	9897	9819	9726	9800	10101	9957	9981
Vehs Exited	9647	9515	9545	9434	9576	9788	9664	9684
Starting Vehs	588	490	530	568	594	550	539	515
Ending Vehs	896	872	804	860	818	863	832	812
Denied Entry Before	87	75	85	78	50	93	100	95
Denied Entry After	2141	2266	2260	2231	2321	1826	2256	2285
Travel Distance (mi)	5487	5430	5415	5376	5417	5555	5497	5494
Travel Time (hr)	1885.5	1809.0	1858.6	1868.8	1864.0	1711.7	1847.4	1877.9
Total Delay (hr)	1690.6	1615.9	1666.4	1677.7	1671.9	1514.0	1652.5	1683.0
Total Stops	30953	28854	29234	29119	28765	28717	28829	28983
Fuel Used (gal)	1356.4	1309.0	1345.4	1350.9	1344.4	1258.5	1334.9	1356.5

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors, Anti PHF.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	2806	2795	2746	2657	2731	2707	2790	2728
Vehs Exited	2587	2561	2505	2509	2563	2524	2543	2526
Starting Vehs	588	490	530	568	594	550	539	515
Ending Vehs	807	724	771	716	762	733	786	717
Denied Entry Before	87	75	85	78	50	93	100	95
Denied Entry After	532	546	624	660	535	549	534	627
Travel Distance (mi)	1470	1470	1439	1446	1458	1434	1451	1444
Travel Time (hr)	253.0	233.6	256.8	260.2	242.4	244.8	253.7	247.3
Total Delay (hr)	200.5	181.2	205.5	208.7	190.6	193.7	202.2	196.1
Total Stops	6936	5862	6533	6049	6537	6271	6699	5963
Fuel Used (gal)	208.2	199.1	216.2	218.6	204.0	208.4	207.7	209.0

Interval #2 Information Recording

Start Time	5:15
End Time	6:00
Total Time (min)	45
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	7149	7102	7073	7069	7069	7394	7167	7253
Vehs Exited	7060	6954	7040	6925	7013	7264	7121	7158
Starting Vehs	807	724	771	716	762	733	786	717
Ending Vehs	896	872	804	860	818	863	832	812
Denied Entry Before	532	546	624	660	535	549	534	627
Denied Entry After	2141	2266	2260	2231	2321	1826	2256	2285
Travel Distance (mi)	4017	3961	3976	3930	3960	4121	4046	4049
Travel Time (hr)	1632.5	1575.4	1601.8	1608.5	1621.7	1466.8	1593.8	1630.6
Total Delay (hr)	1490.0	1434.7	1460.9	1469.0	1481.3	1320.4	1450.3	1486.8
Total Stops	24017	22992	22701	23070	22228	22446	22130	23020
Fuel Used (gal)	1148.2	1109.8	1129.2	1132.3	1140.5	1050.1	1127.2	1147.4

3: Canyon Rd & Murray Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	74.0	33.8	34.5	680.6	212.0	206.3	215.4	208.8	226.7	287.2	269.6	215.7
Stop Delay (hr)	2.5	8.0	3.1	34.2	76.5	9.1	12.4	33.4	7.6	12.2	53.4	3.8
Travel Dist (mi)	20.9	173.1	68.9	44.4	339.9	41.7	59.6	165.0	34.2	58.1	249.4	24.2
Travel Time (hr)	3.4	15.9	6.8	37.1	95.7	11.6	16.3	44.1	9.9	16.0	69.0	5.2
Avg Speed (mph)	6	11	10	1	7	8	4	4	4	4	4	5

3: Canyon Rd & Murray Blvd Performance by movement

Movement	All
Delay / Veh (s)	187.5
Stop Delay (hr)	256.2
Travel Dist (mi)	1279.3
Travel Time (hr)	331.0
Avg Speed (mph)	5

6: Farmington Rd & Murray Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	961.9	703.8	713.2	1221.9	1177.6	1195.4	320.0	125.6	101.1	180.4	150.2	159.6
Stop Delay (hr)	23.1	116.0	33.9	61.8	251.4	34.1	20.7	24.8	1.7	7.6	36.3	2.7
Travel Dist (mi)	14.3	96.9	27.8	41.5	174.5	23.5	68.7	232.3	19.9	42.7	259.5	18.2
Travel Time (hr)	24.0	122.7	36.0	64.6	263.5	35.8	25.2	38.1	2.8	10.1	52.1	3.9
Avg Speed (mph)	1	2	2	3	3	3	3	6	7	5	5	5

6: Farmington Rd & Murray Blvd Performance by movement

Movement	All
Delay / Veh (s)	523.7
Stop Delay (hr)	614.1
Travel Dist (mi)	1019.8
Travel Time (hr)	678.8
Avg Speed (mph)	4

9: Millikan Way & Murray Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	951.6	913.0	815.1	1266.6	1122.8	1102.8	116.0	42.9	41.5	846.9	826.0	784.7
Stop Delay (hr)	51.9	89.6	25.6	34.7	66.0	14.0	2.0	7.9	1.2	21.9	198.6	117.8
Travel Dist (mi)	30.1	55.0	17.4	26.2	56.3	12.0	21.2	279.4	45.1	14.7	137.8	84.7
Travel Time (hr)	54.0	93.2	26.3	36.5	69.9	14.9	2.9	20.5	3.4	22.7	206.0	122.5
Avg Speed (mph)	2	3	9	2	2	2	7	14	13	5	7	10

9: Millikan Way & Murray Blvd Performance by movement

Movement	All
Delay / Veh (s)	633.1
Stop Delay (hr)	631.2
Travel Dist (mi)	780.0
Travel Time (hr)	672.7
Avg Speed (mph)	6

12: 6th Ave & Murray Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	180.3	57.4	24.6	766.3	730.8	739.9	118.5	52.4	36.7	76.6	21.5	20.4
Stop Delay (hr)	0.5	0.6	0.4	29.3	20.5	12.4	1.7	13.9	0.7	0.9	4.2	0.1
Travel Dist (mi)	0.7	2.8	5.0	7.9	5.8	3.5	7.3	149.9	10.3	13.3	347.3	9.6
Travel Time (hr)	0.5	0.7	0.7	29.9	20.9	12.7	2.1	22.1	1.2	1.5	19.8	0.6
Avg Speed (mph)	1	4	7	1	2	2	4	8	10	9	18	17

12: 6th Ave & Murray Blvd Performance by movement

Movement	All
Delay / Veh (s)	108.6
Stop Delay (hr)	85.3
Travel Dist (mi)	563.4
Travel Time (hr)	112.8
Avg Speed (mph)	10

Total Network Performance

Delay / Veh (s)	619.4
Stop Delay (hr)	1587.0
Travel Dist (mi)	5445.5
Travel Time (hr)	1867.6
Avg Speed (mph)	7

Intersection: 3: Canyon Rd & Murray Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	TR	L
Maximum Queue (ft)	282	484	495	537	384	1270	1271	1263	283	1276	1283	309
Average Queue (ft)	125	283	281	327	374	1125	1025	782	245	1039	1025	214
95th Queue (ft)	236	410	425	496	417	1529	1505	1347	337	1512	1512	365
Link Distance (ft)		850	850	850		1248	1248	1248		1238	1238	
Upstream Blk Time (%)						44	3	1		11	10	
Queuing Penalty (veh)						0	0	0		65	57	
Storage Bay Dist (ft)	400				350				250			275
Storage Blk Time (%)	0	1			78	9			26	46		3
Queuing Penalty (veh)	0	1			412	20			99	138		15

Intersection: 3: Canyon Rd & Murray Blvd

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	1741	1736	357
Average Queue (ft)	1363	1332	132
95th Queue (ft)	2076	2072	359
Link Distance (ft)	1663	1663	
Upstream Blk Time (%)	20	16	
Queuing Penalty (veh)	151	117	
Storage Bay Dist (ft)			325
Storage Blk Time (%)	68	70	0
Queuing Penalty (veh)	177	77	0

Intersection: 6: Farmington Rd & Murray Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	331	862	861	260	1196	1194	384	1362	1365	331	1268	1280
Average Queue (ft)	212	849	850	216	1186	1182	364	1111	1035	214	1017	1022
95th Queue (ft)	391	901	901	304	1208	1213	437	1666	1609	363	1410	1411
Link Distance (ft)		837	837		1170	1170		1342	1342		1238	1238
Upstream Blk Time (%)		60	62		56	46		22	8		3	3
Queuing Penalty (veh)		0	0		0	0		136	50		22	26
Storage Bay Dist (ft)	300			225			350			300		
Storage Blk Time (%)	23	56		25	53		56	15		7	51	
Queuing Penalty (veh)	86	72		147	154		255	43		46	113	

Queuing and Blocking Report
Baseline

1/6/2009

Intersection: 9: Millikan Way & Murray Blvd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	256	814	749	130	1393	242	558	558	206	788	807	214
Average Queue (ft)	224	806	199	113	1305	91	342	353	102	516	554	188
95th Queue (ft)	311	841	642	150	1643	199	546	552	210	862	907	255
Link Distance (ft)		791	791		1370		1663	1663		816	816	
Upstream Blk Time (%)		58	4		61					3	5	
Queuing Penalty (veh)		0	0		0					0	0	
Storage Bay Dist (ft)	225			100		225			175			175
Storage Blk Time (%)	37	37		59	33	1	26		1	40	30	10
Queuing Penalty (veh)	180	102		260	59	5	21		4	51	210	59

Intersection: 12: 6th Ave & Murray Blvd

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	69	198	108	324	273	676	664	211	626	617
Average Queue (ft)	21	83	93	315	88	438	407	62	276	285
95th Queue (ft)	76	163	136	343	207	755	744	135	596	592
Link Distance (ft)		387		301		686	686		1342	1342
Upstream Blk Time (%)		0		74		10	7			
Queuing Penalty (veh)		0		0		0	0			
Storage Bay Dist (ft)	150		75		250			200		
Storage Blk Time (%)	2	1	60	41		31		0	11	
Queuing Penalty (veh)	2	0	132	78		18		1	8	

Network Summary

Network wide Queuing Penalty: 3670

Summary of All Intervals

Run Number	1	10	3	4	5	6	7	8
Start Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
End Time	6:10	6:10	6:10	6:10	6:10	6:10	6:10	6:10
Total Time (min)	70	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3	3
# of Recorded Intvls	2	2	2	2	2	2	2	2
Vehs Entered	12441	12234	12367	12325	12367	12276	12195	11942
Vehs Exited	11788	11576	11823	11618	11799	11683	11466	11323
Starting Vehs	991	966	999	922	981	967	978	970
Ending Vehs	1644	1624	1543	1629	1549	1560	1707	1589
Denied Entry Before	450	398	375	408	389	408	344	296
Denied Entry After	4852	4862	4600	4973	4569	5056	5080	5186
Travel Distance (mi)	9731	9442	9628	9572	9694	9448	9588	9339
Travel Time (hr)	3942.2	3885.2	3783.1	3925.0	3817.1	3902.6	4144.8	4060.7
Total Delay (hr)	3592.8	3544.9	3436.1	3579.8	3467.8	3561.9	3799.8	3725.0
Total Stops	57021	57045	58052	56582	57293	55386	62564	58541
Fuel Used (gal)	2823.6	2766.4	2724.0	2801.7	2746.3	2778.8	2947.3	2876.3

Interval #0 Information Seeding

Start Time	5:00
End Time	5:10
Total Time (min)	10
Volumes adjusted by Growth Factors, Anti PHF.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:10
End Time	5:25
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	10	3	4	5	6	7	8
Vehs Entered	3281	3335	3325	3297	3267	3341	3245	3261
Vehs Exited	3113	3063	3018	2956	3041	3044	2962	2915
Starting Vehs	991	966	999	922	981	967	978	970
Ending Vehs	1159	1238	1306	1263	1207	1264	1261	1316
Denied Entry Before	450	398	375	408	389	408	344	296
Denied Entry After	1540	1452	1382	1572	1507	1437	1605	1520
Travel Distance (mi)	2528	2512	2492	2445	2551	2499	2502	2446
Travel Time (hr)	515.8	504.2	511.2	520.9	507.5	501.6	530.2	518.3
Total Delay (hr)	425.0	413.6	421.8	432.4	416.1	411.2	440.4	430.3
Total Stops	11747	11823	12847	11821	11777	12091	12576	13352
Fuel Used (gal)	425.2	410.9	418.1	423.5	423.3	409.5	430.5	425.5

Interval #2 Information Recording

Start Time	5:25
End Time	6:10
Total Time (min)	45
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	10	3	4	5	6	7	8
Vehs Entered	9160	8899	9042	9028	9100	8935	8950	8681
Vehs Exited	8675	8513	8805	8662	8758	8639	8504	8408
Starting Vehs	1159	1238	1306	1263	1207	1264	1261	1316
Ending Vehs	1644	1624	1543	1629	1549	1560	1707	1589
Denied Entry Before	1540	1452	1382	1572	1507	1437	1605	1520
Denied Entry After	4852	4862	4600	4973	4569	5056	5080	5186
Travel Distance (mi)	7203	6930	7136	7128	7142	6949	7086	6893
Travel Time (hr)	3426.4	3381.0	3271.9	3404.1	3309.6	3401.0	3614.6	3542.4
Total Delay (hr)	3167.9	3131.3	3014.3	3147.4	3051.7	3150.7	3359.4	3294.7
Total Stops	45274	45222	45205	44761	45516	43295	49988	45189
Fuel Used (gal)	2398.4	2355.4	2305.9	2378.3	2323.0	2369.3	2516.7	2450.8

6: Scholls Ferry Rd & Murray Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	457.7	470.6	482.2	210.2	192.1	142.6	1556.8	1464.1	1533.7	1196.9	1109.5	1052.0
Stop Delay (hr)	39.9	70.5	2.5	1.3	45.1	2.8	51.3	89.5	5.5	84.5	128.7	119.0
Travel Dist (mi)	45.1	77.1	2.5	6.9	271.7	22.9	5.8	10.9	0.7	35.2	57.7	56.8
Travel Time (hr)	42.7	74.9	2.6	1.7	61.3	4.2	51.7	90.3	5.6	86.8	132.4	123.0
Avg Speed (mph)	3	3	4	4	4	5	1	2	2	2	3	5

6: Scholls Ferry Rd & Murray Performance by movement

Movement	All
Delay / Veh (s)	689.6
Stop Delay (hr)	640.8
Travel Dist (mi)	593.2
Travel Time (hr)	677.3
Avg Speed (mph)	3

9: Scholls Ferry Rd & Davies Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	324.0	321.0	323.8	117.1	81.2	62.1	262.7	144.1	182.0	418.3	367.1	356.9
Stop Delay (hr)	3.8	55.0	3.7	0.8	18.9	1.2	6.3	0.4	1.5	10.1	15.5	11.3
Travel Dist (mi)	13.0	190.4	12.8	5.6	193.6	17.2	6.1	0.8	2.1	7.2	13.1	9.7
Travel Time (hr)	4.6	66.7	4.5	1.1	28.9	2.1	6.7	0.5	1.6	10.6	16.5	12.1
Avg Speed (mph)	3	3	3	5	7	8	1	2	2	1	2	2

9: Scholls Ferry Rd & Davies Performance by movement

Movement	All
Delay / Veh (s)	212.3
Stop Delay (hr)	128.5
Travel Dist (mi)	471.6
Travel Time (hr)	155.8
Avg Speed (mph)	4

12: Scholls Ferry Rd & Barrows Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Delay / Veh (s)	279.4	284.7	107.5	30.6	47.2	16.7	111.5
Stop Delay (hr)	50.3	1.4	7.3	7.0	0.3	1.5	67.9
Travel Dist (mi)	141.8	3.7	24.1	99.9	2.5	31.1	303.2
Travel Time (hr)	60.4	1.6	8.9	12.8	0.5	3.1	87.3
Avg Speed (mph)	2	2	3	8	6	10	4

15: Scholls Ferry Rd & 135th Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	All
Delay / Veh (s)	55.6	59.8	62.0	99.8	86.1	56.6	50.0	43.1	12.9	34.9	31.5	72.2
Stop Delay (hr)	0.2	11.9	2.1	2.9	23.3	0.1	0.6	0.2	0.4	0.2	0.1	42.0
Travel Dist (mi)	1.5	78.5	13.1	35.9	350.3	3.2	3.2	1.2	7.9	1.3	0.7	496.7
Travel Time (hr)	0.3	17.3	3.1	5.1	43.7	0.3	0.8	0.3	0.8	0.2	0.1	72.0
Avg Speed (mph)	5	5	4	7	8	10	4	5	12	5	6	7

16: Scholls Ferry Rd & 130th Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	87.2	40.0	37.9	147.4	114.0	87.5	277.8	262.1	247.1	80.4	85.9	60.3
Stop Delay (hr)	1.2	6.9	0.5	3.8	33.2	0.8	9.5	5.0	5.1	0.4	1.2	1.6
Travel Dist (mi)	14.7	225.6	16.0	28.1	340.1	11.2	7.5	4.2	4.5	1.0	3.2	5.8
Travel Time (hr)	1.9	17.1	1.2	5.5	53.5	1.5	10.1	5.3	5.4	0.5	1.4	2.0
Avg Speed (mph)	8	13	13	5	6	8	2	2	2	2	2	3

16: Scholls Ferry Rd & 130th Performance by movement

Movement	All
Delay / Veh (s)	102.8
Stop Delay (hr)	69.1
Travel Dist (mi)	661.8
Travel Time (hr)	105.6
Avg Speed (mph)	7

20: Scholls Ferry Rd & 125th Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	180.1	33.9	30.1	141.8	113.9	94.8	758.2	725.5	680.0	2487.4	2273.6	2192.1
Stop Delay (hr)	5.2	5.3	0.2	1.6	33.6	2.3	28.6	39.5	11.1	52.4	95.6	44.3
Travel Dist (mi)	28.0	210.7	10.3	12.7	338.8	28.6	7.7	11.2	3.3	4.4	9.0	4.3
Travel Time (hr)	6.6	15.3	0.7	2.4	54.3	4.0	29.2	40.3	11.3	52.7	96.3	44.7
Avg Speed (mph)	4	14	14	5	6	7	1	2	3	2	1	1

20: Scholls Ferry Rd & 125th Performance by movement

Movement	All
Delay / Veh (s)	375.1
Stop Delay (hr)	319.9
Travel Dist (mi)	669.1
Travel Time (hr)	357.8
Avg Speed (mph)	6

23: Scholls Ferry Rd & 121ST Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	67.6	29.1	21.4	166.2	112.5	78.0	565.7	581.3	481.8	44.2	42.6	51.2
Stop Delay (hr)	0.1	5.0	0.5	9.9	35.8	0.6	22.6	3.3	17.6	0.1	0.5	0.2
Travel Dist (mi)	1.6	210.6	34.0	64.4	359.1	9.1	15.6	2.3	14.2	0.4	1.5	0.4
Travel Time (hr)	0.2	14.2	2.1	14.0	56.8	1.1	23.7	3.5	18.5	0.2	0.6	0.2
Avg Speed (mph)	8	15	17	5	6	8	2	1	2	3	3	2

23: Scholls Ferry Rd & 121ST Performance by movement

Movement	All
Delay / Veh (s)	128.8
Stop Delay (hr)	96.1
Travel Dist (mi)	713.3
Travel Time (hr)	135.0
Avg Speed (mph)	7

26: Scholls Ferry Rd & Conestoga Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR	All
Delay / Veh (s)	63.2	4.7	3.3	90.0	45.9	33.2	40.0	63.0	33.7	33.8
Stop Delay (hr)	0.2	0.2	0.0	0.2	15.1	1.5	0.1	3.2	0.6	21.0
Travel Dist (mi)	3.6	228.4	2.1	2.3	513.1	85.0	0.7	11.3	3.6	850.1
Travel Time (hr)	0.4	9.1	0.1	0.3	39.5	5.8	0.1	3.9	0.8	60.0
Avg Speed (mph)	10	25	24	8	13	15	5	3	5	14

29: Scholls Ferry Rd & Nimbus Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Delay / Veh (s)	460.5	25.9	8.6	70.5	31.1	7810.7	7860.8	7153.7	2998.5	3117.3	3013.5	927.3
Stop Delay (hr)	10.3	4.6	0.2	0.1	9.8	309.9	167.9	31.8	135.4	170.9	40.1	881.1
Travel Dist (mi)	26.2	268.1	66.1	2.3	458.7	11.3	6.1	1.2	12.4	15.3	3.8	871.3
Travel Time (hr)	11.6	15.6	3.0	0.2	29.8	310.7	168.3	31.9	136.3	172.0	40.4	919.8
Avg Speed (mph)	2	17	23	10	15	1	1	2	2	2	3	10

32: SW Cascade Ave & Scholls Ferry Rd Performance by movement

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Delay / Veh (s)	647.1	552.8	543.1	957.0	781.2	796.4	148.2	100.1	79.4	70.3	17.0	9.6
Stop Delay (hr)	18.5	21.5	19.6	22.2	25.7	32.4	1.8	26.2	0.1	2.5	5.4	0.2
Travel Dist (mi)	5.8	8.0	7.4	6.1	8.7	10.8	13.5	306.6	2.2	5.8	54.3	3.7
Travel Time (hr)	18.9	22.1	20.1	22.6	26.3	33.3	2.5	41.5	0.3	2.9	8.4	0.5
Avg Speed (mph)	1	2	3	1	2	2	5	8	9	2	6	8

32: SW Cascade Ave & Scholls Ferry Rd Performance by movement

Movement	All
Delay / Veh (s)	191.4
Stop Delay (hr)	176.2
Travel Dist (mi)	432.9
Travel Time (hr)	199.4
Avg Speed (mph)	5

37: Hwy 217 NB Off Ramp & Scholls Ferry Rd Performance by movement

Movement	WBL	WBR	NBT	SBT	All
Delay / Veh (s)	22.6	17.5	17.7	8.7	15.3
Stop Delay (hr)	2.3	1.6	1.9	1.2	7.0
Travel Dist (mi)	57.6	59.9	231.0	116.0	464.4
Travel Time (hr)	4.7	4.5	12.2	6.4	27.8
Avg Speed (mph)	15	16	19	18	18

39: SW Hall Blvd & Scholls Ferry Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	521.4	522.2	477.3	2543.6	2160.7	2027.1	66.8	60.4	59.7	989.9	970.8	954.0
Stop Delay (hr)	16.6	112.9	33.4	122.9	267.8	77.3	4.2	7.7	3.6	69.2	119.1	35.9
Travel Dist (mi)	14.8	101.4	32.8	21.6	55.5	17.1	20.7	43.0	19.9	105.6	184.8	56.7
Travel Time (hr)	17.7	119.8	35.6	124.5	271.4	78.4	5.6	10.6	5.1	76.6	131.9	39.9
Avg Speed (mph)	3	3	5	1	5	5	4	4	4	5	5	5

39: SW Hall Blvd & Scholls Ferry Rd Performance by movement

Movement	All
Delay / Veh (s)	834.8
Stop Delay (hr)	870.7
Travel Dist (mi)	673.8
Travel Time (hr)	917.1
Avg Speed (mph)	4

42: 217 NB ON Ramp & Scholls Ferry Rd Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	97.6	92.2	114.8	35.4	16.2	164.2	169.2	89.1
Stop Delay (hr)	5.6	4.7	10.3	2.4	3.1	29.9	14.2	70.3
Travel Dist (mi)	63.0	58.1	97.4	40.0	111.1	55.7	25.6	450.9
Travel Time (hr)	8.7	7.6	15.3	4.6	8.6	33.7	16.1	94.6
Avg Speed (mph)	9	10	8	9	13	4	4	8

48: Hwy 217 SB Ramps & Scholls Ferry Rd Performance by movement

Movement	SEL	SER	NET	NER	SWL	SWT	All
Delay / Veh (s)	95.1	85.0	32.9	4.9	94.4	43.3	43.2
Stop Delay (hr)	1.6	9.9	6.2	0.2	2.8	10.0	30.7
Travel Dist (mi)	3.7	25.2	39.2	25.3	31.6	294.7	419.8
Travel Time (hr)	1.9	11.6	8.8	2.0	4.3	23.6	52.2
Avg Speed (mph)	4	4	4	13	7	12	9

Total Network Performance

Delay / Veh (s)	1077.2
Stop Delay (hr)	3421.5
Travel Dist (mi)	9542.4
Travel Time (hr)	3923.0
Avg Speed (mph)	7

Intersection: 6: Scholls Ferry Rd & Murray

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	461	754	751	179	128	1463	1482	280	154	271	128	181
Average Queue (ft)	400	673	580	22	21	1170	1180	60	102	264	16	156
95th Queue (ft)	569	959	951	119	73	1820	1832	248	181	274	75	211
Link Distance (ft)		732	732			1382	1382			249		
Upstream Blk Time (%)		41	16			18	18			73		
Queuing Penalty (veh)		0	0			154	154			0		
Storage Bay Dist (ft)	425			150	150			250	125		125	150
Storage Blk Time (%)	28	35	55	0		67	62	0	21	70	0	31
Queuing Penalty (veh)	102	146	16	0		27	80	0	75	154	0	157

Intersection: 6: Scholls Ferry Rd & Murray

Movement	SB	SB	SB
Directions Served	LT	T	R
Maximum Queue (ft)	737	739	285
Average Queue (ft)	717	722	271
95th Queue (ft)	769	769	318
Link Distance (ft)	715	715	
Upstream Blk Time (%)	30	28	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			250
Storage Blk Time (%)	74	45	19
Queuing Penalty (veh)	144	280	58

Intersection: 9: Scholls Ferry Rd & Davies

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	155	1425	1428	156	977	976	206	158	358	132	442
Average Queue (ft)	58	1052	1057	28	532	554	48	122	172	95	426
95th Queue (ft)	152	1909	1906	104	1072	1094	176	188	426	163	485
Link Distance (ft)		1382	1382		935	935			351		417
Upstream Blk Time (%)		33	32		7	9			22		64
Queuing Penalty (veh)		182	176		59	78			0		0
Storage Bay Dist (ft)	125			150			175	125		100	
Storage Blk Time (%)	1	66			42	41	0	48	1	30	65
Queuing Penalty (veh)	4	46			16	52	0	19	1	88	65

Intersection: 12: Scholls Ferry Rd & Barrows

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	1022	1049	158	480	471	101	276
Average Queue (ft)	922	933	151	383	340	17	99
95th Queue (ft)	1210	1224	168	524	513	66	222
Link Distance (ft)	935	935		383	383		442
Upstream Blk Time (%)	50	51		24	9		0
Queuing Penalty (veh)	278	285		247	90		0
Storage Bay Dist (ft)			125			75	
Storage Blk Time (%)			65	11		1	12
Queuing Penalty (veh)			552	45		4	4

Intersection: 15: Scholls Ferry Rd & 135th

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	LT	R	LTR
Maximum Queue (ft)	110	454	416	182	1362	1362	140	161	126	78
Average Queue (ft)	14	370	373	117	868	818	10	48	30	18
95th Queue (ft)	57	449	437	212	1524	1458	62	112	76	57
Link Distance (ft)		383	383		1298	1298		351		326
Upstream Blk Time (%)		4	9		6	4				
Queuing Penalty (veh)		30	61		70	46				
Storage Bay Dist (ft)	100			150			125		125	
Storage Blk Time (%)	0	65		2	46	42	0	2	0	
Queuing Penalty (veh)	0	13		23	97	9	0	2	0	

Intersection: 16: Scholls Ferry Rd & 130th

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	T	R	LTR	LTR
Maximum Queue (ft)	147	599	583	156	1332	1339	140	324	303
Average Queue (ft)	56	333	326	110	1160	1143	14	307	169
95th Queue (ft)	126	528	521	186	1541	1535	69	362	296
Link Distance (ft)		1298	1298		1276	1276		299	295
Upstream Blk Time (%)					12	10		66	3
Queuing Penalty (veh)					141	117		0	0
Storage Bay Dist (ft)	125			125			125		
Storage Blk Time (%)	1	31		10	51	51	0		
Queuing Penalty (veh)	6	22		99	87	35	0		

Queuing and Blocking Report
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Intersection: 20: Scholls Ferry Rd & 125th

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	R	L	TR
Maximum Queue (ft)	158	719	717	129	1323	1318	181	181	315	108	232	327
Average Queue (ft)	128	373	371	57	1079	1067	61	164	306	41	107	320
95th Queue (ft)	185	685	668	120	1595	1592	173	211	318	106	253	326
Link Distance (ft)		1276	1276		1266	1266			290			302
Upstream Blk Time (%)					18	16			68			80
Queuing Penalty (veh)					205	182			0			0
Storage Bay Dist (ft)	125			100			150	150		75	200	
Storage Blk Time (%)	46	13		2	53	48	0	43	59	1	2	80
Queuing Penalty (veh)	253	20		19	37	86	0	143	148	5	8	136

Intersection: 23: Scholls Ferry Rd & 121ST

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	T	R	LT	R	LT
Maximum Queue (ft)	100	528	535	158	182	1256	1237	1206	181	584	132	104
Average Queue (ft)	12	258	274	63	172	817	755	667	69	528	83	41
95th Queue (ft)	56	490	520	151	213	1356	1308	1263	206	705	170	88
Link Distance (ft)		1266	1266			1222	1222	1222		557		183
Upstream Blk Time (%)						10	6	6		58		
Queuing Penalty (veh)						81	52	48		0		
Storage Bay Dist (ft)	100			125	150				150		100	
Storage Blk Time (%)		25	22	0	35	38		64	0	78	3	2
Queuing Penalty (veh)		3	40	1	245	146		32	0	139	7	0

Intersection: 23: Scholls Ferry Rd & 121ST

Movement	SB
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Queuing and Blocking Report
Baseline

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Intersection: 26: Scholls Ferry Rd & Conestoga

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	TR	L	TR
Maximum Queue (ft)	56	83	72	104	90	944	934	941	134	44	131	302
Average Queue (ft)	13	11	12	22	4	498	475	480	92	7	113	136
95th Queue (ft)	41	50	48	73	41	871	846	859	164	27	152	324
Link Distance (ft)		1222	1222	1222		1533	1533	1533		351		287
Upstream Blk Time (%)						1	0	0				4
Queuing Penalty (veh)						5	4	4				0
Storage Bay Dist (ft)	100				150				100		100	
Storage Blk Time (%)		0				31		25	1	1	31	2
Queuing Penalty (veh)		0				3		101	4	0	19	4

Intersection: 29: Scholls Ferry Rd & Nimbus

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	T	R	L	T	T	T	LT	R	L
Maximum Queue (ft)	258	745	692	506	142	76	508	523	523	430	180	131
Average Queue (ft)	217	358	315	112	38	6	306	304	314	423	24	82
95th Queue (ft)	352	856	761	361	92	44	452	456	462	428	107	156
Link Distance (ft)		1533	1533	1533			1390	1390	1390	405		
Upstream Blk Time (%)										86		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	250				200	100					150	100
Storage Blk Time (%)	53	0		0	0		33		27	85	0	8
Queuing Penalty (veh)	197	0		1	0		3		0	51	0	63

Intersection: 29: Scholls Ferry Rd & Nimbus

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	402	133
Average Queue (ft)	398	31
95th Queue (ft)	403	119
Link Distance (ft)	380	
Upstream Blk Time (%)	73	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	75	0
Queuing Penalty (veh)	221	0

Queuing and Blocking Report
Baseline

12/19/2008

Intersection: 32: SW Cascade Ave & Scholls Ferry Rd

Movement	NB	NB	SB	SB	NE	NE	NE	NE	SW	SW	SW	SW
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	T
Maximum Queue (ft)	183	311	156	396	180	929	952	524	142	216	204	210
Average Queue (ft)	140	294	125	380	72	475	486	396	106	165	155	160
95th Queue (ft)	223	362	193	443	185	1008	1057	617	174	221	195	196
Link Distance (ft)		290		370		1390	1390			142	142	142
Upstream Blk Time (%)		61		70		0	0		9	21	18	20
Queuing Penalty (veh)		0		0		1	3		0	127	113	121
Storage Bay Dist (ft)	150		125		150			500	125			
Storage Blk Time (%)	43	40	46	43	0	54	7	15	15	22		34
Queuing Penalty (veh)	133	48	174	52	1	38	40	77	77	35		38

Intersection: 32: SW Cascade Ave & Scholls Ferry Rd

Movement	SW
Directions Served	R
Maximum Queue (ft)	81
Average Queue (ft)	35
95th Queue (ft)	88
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	2
Queuing Penalty (veh)	9

Intersection: 37: Hwy 217 NB Off Ramp & Scholls Ferry Rd

Movement	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	R	T	T	T	T
Maximum Queue (ft)	136	151	293	490	568	265	227
Average Queue (ft)	70	86	136	238	200	132	107
95th Queue (ft)	115	132	243	443	436	237	206
Link Distance (ft)			731	1331	1331	627	627
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	450	450					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 39: SW Hall Blvd & Scholls Ferry Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	TR	L	T
Maximum Queue (ft)	258	683	681	339	181	664	664	233	446	420	233	2122
Average Queue (ft)	164	669	671	243	176	656	540	199	346	352	217	2114
95th Queue (ft)	303	701	697	439	185	665	890	274	474	450	269	2119
Link Distance (ft)		656	656			639	639		368	368		2095
Upstream Blk Time (%)		34	37			73	12		15	20		43
Queuing Penalty (veh)		0	0			0	0		91	122		0
Storage Bay Dist (ft)	225			300	150			200			200	
Storage Blk Time (%)	4	65	58	3	87	8		19	27		40	27
Queuing Penalty (veh)	17	84	175	14	407	31		61	83		338	239

Intersection: 39: SW Hall Blvd & Scholls Ferry Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	335
Average Queue (ft)	317
95th Queue (ft)	387
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	300
Storage Blk Time (%)	15
Queuing Penalty (veh)	99

Intersection: 42: 217 NB ON Ramp & Scholls Ferry Rd

Movement	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	T	T	TR
Maximum Queue (ft)	290	1330	309	258	535	431	438	416
Average Queue (ft)	151	576	215	173	180	155	357	367
95th Queue (ft)	261	1497	373	279	408	338	446	436
Link Distance (ft)		1395			627	627	368	368
Upstream Blk Time (%)		9			0	0	11	18
Queuing Penalty (veh)		0			2	2	74	117
Storage Bay Dist (ft)	275		275	225				
Storage Blk Time (%)	1	1	26	6	3			
Queuing Penalty (veh)	8	4	123	25	12			

Intersection: 48: Hwy 217 SB Ramps & Scholls Ferry Rd

Movement	SE	SE	NE	NE	NE	NE	SW	SW	SW
Directions Served	LT	R	T	T	TR	R	L	T	T
Maximum Queue (ft)	325	138	205	207	214	204	206	715	688
Average Queue (ft)	246	124	177	178	163	39	130	414	400
95th Queue (ft)	426	149	225	225	219	148	224	826	797
Link Distance (ft)	301		142	142	142	142		1331	1331
Upstream Blk Time (%)	22		30	28	17	0		0	
Queuing Penalty (veh)	0		141	129	79	1		1	
Storage Bay Dist (ft)		100					175		
Storage Blk Time (%)	2	45					5	30	
Queuing Penalty (veh)	8	32					36	46	

Network Summary

Network wide Queuing Penalty: 11105
























6: Scholls Ferry Rd & Murray

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	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
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1610	3374	1583
Flt Permitted	0.12	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	230	3539	1583	230	3539	1583	1770	1863	1583	1610	3374	1583
Volume (vph)	420	720	30	40	1480	130	200	340	20	390	620	620
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)	442	758	32	42	1558	137	211	358	21	411	653	653
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	9	0	0	46
Lane Group Flow (vph)	442	758	32	42	1558	137	211	358	12	342	722	607
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	38.8	38.8	144.0	22.0	22.0	22.0	27.0	27.0	59.2
Effective Green, g (s)	66.6	66.6	144.0	40.8	40.8	144.0	24.0	24.0	24.0	29.0	29.0	63.2
Actuated g/C Ratio	0.46	0.46	1.00	0.28	0.28	1.00	0.17	0.17	0.17	0.20	0.20	0.44
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)	472	1637	1583	155	1003	1583	295	311	264	324	679	695
v/s Ratio Prot	c0.22	0.21		0.02	c0.44		0.12	c0.19		0.21	c0.21	0.38
v/s Ratio Perm	0.21		0.02	0.06		0.09			0.01			
v/c Ratio	0.94	0.46	0.02	0.27	1.55	0.09	0.72	1.15	0.04	1.06	1.06	0.87
Uniform Delay, d1	50.3	26.5	0.0	39.7	51.6	0.0	56.8	60.0	50.4	57.5	57.5	36.8
Progression Factor	1.00	1.00	1.00	1.12	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.1	0.9	0.0	0.6	252.0	0.1	8.0	98.5	0.1	65.4	52.6	11.7
Delay (s)	76.4	27.4	0.0	44.9	301.8	0.1	64.8	158.5	50.4	122.9	110.1	48.5
Level of Service	E	C	A	D	F	A	E	F	D	F	F	D
Approach Delay (s)		44.3			271.8			121.1			89.2	
Approach LOS		D			F			F			F	

Intersection Summary		
HCM Average Control Delay	142.4	HCM Level of Service F
HCM Volume to Capacity ratio	1.17	
Actuated Cycle Length (s)	144.0	Sum of lost time (s) 12.0
Intersection Capacity Utilization	114.4%	ICU Level of Service H
Analysis Period (min)	15	
c Critical Lane Group		












9: Scholls Ferry Rd & Davies

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	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	0.89		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3504		1770	3539	1583	1770	1655		1770	1742	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.20	1.00		0.73	1.00	
Satd. Flow (perm)	1770	3504		1770	3539	1583	368	1655		1358	1742	
Volume (vph)	70	1000	70	40	1480	130	90	10	30	100	170	130
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)	74	1053	74	42	1558	137	95	11	32	105	179	137
RTOR Reduction (vph)	0	3	0	0	0	34	0	25	0	0	19	0
Lane Group Flow (vph)	74	1124	0	42	1558	103	95	18	0	105	297	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)	12.4	87.4		9.8	84.8	84.8	28.8	28.8			28.8	28.8
Effective Green, g (s)	14.4	89.4		11.8	86.8	86.8	30.8	30.8			30.8	30.8
Actuated g/C Ratio	0.10	0.62		0.08	0.60	0.60	0.21	0.21			0.21	0.21
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)	177	2175		145	2133	954	79	354			290	373
v/s Ratio Prot	c0.04	0.32		0.02	c0.44			0.01				0.17
v/s Ratio Perm						0.06	c0.26				0.08	
v/c Ratio	0.42	0.52		0.29	0.73	0.11	1.20	0.05			0.36	0.80
Uniform Delay, d1	60.9	15.2		62.2	20.3	12.2	56.6	45.0			48.2	53.6
Progression Factor	0.72	0.62		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.2	0.7		1.1	2.2	0.2	165.6	0.1			0.8	11.2
Delay (s)	45.1	10.0		63.3	22.5	12.4	222.2	45.0			49.0	64.8
Level of Service	D	B		E	C	B	F	D			D	E
Approach Delay (s)	12.2				22.7		167.0			60.9		
Approach LOS	B				C		F			E		
Intersection Summary												
HCM Average Control Delay			29.4		HCM Level of Service			C				
HCM Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			144.0		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			80.0%		ICU Level of Service			D				
Analysis Period (min)			15									
c Critical Lane Group												

12: Scholls Ferry Rd & Barrows

HCM Signalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3525		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3525		1770	3539	1770	1583
Volume (vph)	1090	30	410	1700	30	330
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1147	32	432	1789	32	347
RTOR Reduction (vph)	2	0	0	0	0	303
Lane Group Flow (vph)	1177	0	432	1789	32	44
Turn Type			Prot			Perm
Protected Phases	2		7	6	8	
Permitted Phases						8
Actuated Green, G (s)	28.1		16.1	50.2	9.6	9.6
Effective Green, g (s)	30.1		18.1	52.2	11.6	11.6
Actuated g/C Ratio	0.33		0.20	0.57	0.13	0.13
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1152		348	2006	223	199
v/s Ratio Prot	c0.33		c0.24	0.51	0.02	
v/s Ratio Perm						c0.03
v/c Ratio	1.02		1.24	0.89	0.14	0.22
Uniform Delay, d1	31.0		37.0	17.5	35.8	36.2
Progression Factor	1.00		1.37	0.43	1.00	1.00
Incremental Delay, d2	32.1		111.0	0.7	0.3	0.6
Delay (s)	63.1		161.5	8.1	36.1	36.7
Level of Service	E		F	A	D	D
Approach Delay (s)	63.1			37.9	36.7	
Approach LOS	E			D	D	
Intersection Summary						
HCM Average Control Delay			45.7		HCM Level of Service	D
HCM Volume to Capacity ratio			0.93			
Actuated Cycle Length (s)			92.1		Sum of lost time (s)	32.3
Intersection Capacity Utilization			67.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

15: Scholls Ferry Rd & 135th

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	
Fr _t	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.95	
Fl _t Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		1.00	
Satd. Flow (prot)	1770	3459		1770	3539	1583		1798	1583		1776	
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00		1.00	
Satd. Flow (perm)	1770	3459		1770	3539	1583		1798	1583		1776	
Volume (vph)	20	1180	210	210	2040	20	50	20	110	0	20	10
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)	21	1242	221	221	2147	21	53	21	116	0	21	11
RTOR Reduction (vph)	0	14	0	0	0	3	0	0	101	0	10	0
Lane Group Flow (vph)	21	1449	0	221	2147	18	0	74	15	0	22	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)	14.3	28.1		14.3	50.2	50.2		9.6	9.6		9.6	
Effective Green, g (s)	16.3	30.1		16.3	52.2	52.2		11.6	11.6		11.6	
Actuated g/C Ratio	0.18	0.33		0.18	0.57	0.57		0.13	0.13		0.13	
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)	313	1130		313	2006	897		226	199		224	
v/s Ratio Prot	0.01	c0.42		c0.12	c0.61			c0.04			0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.07	1.28		0.71	1.07	0.02		0.33	0.07		0.10	
Uniform Delay, d ₁	31.6	31.0		35.6	19.9	8.7		36.7	35.5		35.6	
Progression Factor	0.49	0.68		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d ₂	0.0	129.3		7.1	41.9	0.0		0.9	0.2		0.2	
Delay (s)	15.4	150.3		42.7	61.9	8.8		37.5	35.7		35.8	
Level of Service	B	F		D	E	A		D	D		D	
Approach Delay (s)		148.4			59.6			36.4			35.8	
Approach LOS		F			E			D			D	

Intersection Summary

HCM Average Control Delay	90.5	HCM Level of Service	F
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.


























c Critical Lane Group

16: Scholls Ferry Rd & 130th

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	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	
Fr _t	1.00	0.99		1.00	1.00	0.85		0.96			0.92	
Fl _t Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.99	
Satd. Flow (prot)	1770	3504		1770	3539	1583		1752			1709	
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00		0.98			0.99	
Satd. Flow (perm)	1770	3504		1770	3539	1583		1752			1709	
Volume (vph)	70	1140	80	170	2040	70	130	75	80	20	55	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)	74	1200	84	179	2147	74	137	79	84	21	58	105
RTOR Reduction (vph)	0	3	0	0	0	8	0	7	0	0	28	0
Lane Group Flow (vph)	74	1281	0	179	2147	66	0	293	0	0	156	0
Turn Type	Prot			Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	19.2	81.0		19.2	81.0	81.0		30.7			20.1	
Effective Green, g (s)	21.2	83.0		21.2	83.0	83.0		32.7			22.1	
Actuated g/C Ratio	0.12	0.47		0.12	0.47	0.47		0.19			0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	214	1662		214	1678	751		327			216	
v/s Ratio Prot	0.04	0.37		c0.10	c0.61			c0.17			c0.09	
v/s Ratio Perm						0.04						
v/c Ratio	0.35	0.77		0.84	1.28	0.09		0.90			0.72	
Uniform Delay, d ₁	70.5	38.1		75.2	46.0	25.2		69.5			73.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d ₂	1.0	3.5		23.7	130.5	0.2		25.2			11.3	
Delay (s)	71.5	41.6		98.9	176.5	25.5		94.7			84.8	
Level of Service	E	D		F	F	C		F			F	
Approach Delay (s)		43.3			166.1			94.7			84.8	
Approach LOS		D			F			F			F	
Intersection Summary												
HCM Average Control Delay			118.2			HCM Level of Service		F				
HCM Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			175.0			Sum of lost time (s)		16.0				
Intersection Capacity Utilization			99.8%			ICU Level of Service		F				
Analysis Period (min)			15									
c Critical Lane Group												

20: Scholls Ferry Rd & 125th

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	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		
Lane Util. Factor	1.00	0.95		1.00	0.95	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	0.95		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1770	3516		1770	3539	1583	1770	1863	1583	1770	1770		
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1770	3516		1770	3539	1583	1770	1863	1583	1770	1770		
Volume (vph)	150	1110	50	70	2000	180	180	260	70	170	300	150	
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)	158	1168	53	74	2105	189	189	274	74	179	316	158	
RTOR Reduction (vph)	0	3	0	0	0	36	0	0	32	0	15	0	
Lane Group Flow (vph)	158	1218	0	74	2105	153	189	274	42	179	459	0	
Turn Type	Prot			Prot		Perm	Prot		Prot	Prot			
Protected Phases	5	2		1	6		3	8	8	7	4		
Permitted Phases						6							
Actuated Green, G (s)	8.0	61.6		6.4	60.0	60.0	11.0	16.0	16.0	12.0	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		
Actuated g/C Ratio	0.08	0.53		0.07	0.52	0.52	0.11	0.15	0.15	0.12	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		
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)	148	1863		124	1828	818	192	279	237	207	280		
v/s Ratio Prot	c0.09	0.35		0.04	c0.59		c0.11	0.15	0.03	0.10	c0.26		
v/s Ratio Perm						0.10							
v/c Ratio	1.07	0.65		0.60	1.15	0.19	0.98	0.98	0.18	0.86	1.64		
Uniform Delay, d1	55.0	20.3		54.2	29.0	15.5	53.4	50.8	44.5	52.1	50.5		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	93.1	1.8		7.5	75.0	0.1	60.0	48.7	0.4	29.2	303.1		
Delay (s)	148.1	22.1		61.7	104.0	15.6	113.4	99.5	44.9	81.2	353.6		
Level of Service	F	C		E	F	B	F	F	D	F	F		
Approach Delay (s)		36.5			95.6			96.9			278.9		
Approach LOS		D			F			F			F		
Intersection Summary													
HCM Average Control Delay			103.5									HCM Level of Service	F
HCM Volume to Capacity ratio			1.21										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	16.0
Intersection Capacity Utilization			111.8%									ICU Level of Service	H
Analysis Period (min)			15										
c	Critical Lane Group												

23: Scholls Ferry Rd & 121ST

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	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	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583		1785	1583		1844	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.72	1.00		0.91	1.00
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583		1335	1583		1702	1583
Volume (vph)	10	1070	180	390	2080	50	201	30	180	10	40	10
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)	11	1126	189	411	2189	53	212	32	189	11	42	11
RTOR Reduction (vph)	0	0	58	0	0	9	0	0	114	0	0	9
Lane Group Flow (vph)	11	1126	131	411	2189	44	0	244	75	0	53	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)	4.8	53.8	53.8	28.8	77.8	77.8		24.4	24.4		24.4	24.4
Effective Green, g (s)	6.8	55.8	55.8	30.8	79.8	79.8		26.4	26.4		26.4	26.4
Actuated g/C Ratio	0.05	0.45	0.45	0.25	0.64	0.64		0.21	0.21		0.21	0.21
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)	96	1580	707	436	3246	1011		282	334		359	334
v/s Ratio Prot	0.01	c0.32		c0.23	0.43							
v/s Ratio Perm			0.08			0.03		c0.18	0.05		0.03	0.00
v/c Ratio	0.11	0.71	0.19	0.94	0.67	0.04		0.87	0.23		0.15	0.01
Uniform Delay, d1	56.2	28.1	20.9	46.2	14.4	8.4		47.6	40.8		40.1	38.9
Progression Factor	1.00	1.00	1.00	1.01	1.57	1.92		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	2.8	0.6	21.8	0.7	0.1		23.0	0.3		0.2	0.0
Delay (s)	56.8	30.9	21.5	68.5	23.2	16.2		70.6	41.2		40.3	39.0
Level of Service	E	C	C	E	C	B		E	D		D	D
Approach Delay (s)		29.7			30.1			57.8			40.1	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM Average Control Delay			32.8				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			125.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			80.6%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												

26: Scholls Ferry Rd & Conestoga

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	0.91		1.00	0.91	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	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	5079		1770	5085	1583		1863		1770	1583	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00		0.75	1.00	
Satd. Flow (perm)	1770	5079		1770	5085	1583		1863		1398	1583	
Volume (vph)	20	1240	10	10	2470	410	0	10	0	200	0	60
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)	21	1305	11	11	2600	432	0	11	0	211	0	63
RTOR Reduction (vph)	0	1	0	0	0	61	0	0	0	0	51	0
Lane Group Flow (vph)	21	1315	0	11	2600	371	0	11	0	211	12	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)	7.1	83.5		1.8	78.2	78.2		21.7		21.7	21.7	
Effective Green, g (s)	9.1	85.5		3.8	80.2	80.2		23.7		23.7	23.7	
Actuated g/C Ratio	0.07	0.68		0.03	0.64	0.64		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	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	129	3474		54	3263	1016		353		265	300	
v/s Ratio Prot	c0.01	c0.26		0.01	c0.51			0.01			0.01	
v/s Ratio Perm						0.23				c0.15		
v/c Ratio	0.16	0.38		0.20	0.80	0.37		0.03		0.80	0.04	
Uniform Delay, d1	54.4	8.4		59.1	16.4	10.5		41.3		48.3	41.4	
Progression Factor	1.16	0.35		0.97	1.63	2.27		1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.2		0.2	0.2	0.1		0.0		15.2	0.1	
Delay (s)	63.5	3.2		57.3	27.0	23.9		41.3		63.5	41.4	
Level of Service	E	A		E	C	C		D		E	D	
Approach Delay (s)	4.2				26.7		41.3			58.4		
Approach LOS	A				C		D			E		
Intersection Summary												
HCM Average Control Delay			22.1		HCM Level of Service			C				
HCM Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			125.0		Sum of lost time (s)			8.0				
Intersection Capacity Utilization			72.1%		ICU Level of Service			C				
Analysis Period (min)			15									
c Critical Lane Group												























29: Scholls Ferry Rd & Nimbus

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	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
Lane Util. Factor	1.00	0.91	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			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5588			1804	1583	1681	1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5588			1804	1583	1681	1770	1583
Volume (vph)	110	1130	280	10	1940	0	610	320	60	370	450	110
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)	112	1153	286	10	1980	0	622	327	61	378	459	112
RTOR Reduction (vph)	0	0	141	0	0	0	0	0	13	0	0	35
Lane Group Flow (vph)	112	1153	145	10	1980	0	0	949	48	378	459	77
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.0	61.4	61.4	1.6	58.0			16.0	16.0	22.0	22.0	22.0
Effective Green, g (s)	7.0	63.4	63.4	3.6	60.0			18.0	18.0	24.0	24.0	24.0
Actuated g/C Ratio	0.06	0.51	0.51	0.03	0.48			0.14	0.14	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	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)	99	2579	803	51	2682			260	228	323	340	304
v/s Ratio Prot	c0.06	0.23		0.01	c0.35			c0.53		0.22	c0.26	
v/s Ratio Perm			0.09						0.03			0.05
v/c Ratio	1.13	0.45	0.18	0.20	0.74			3.65	0.21	1.17	1.35	0.25
Uniform Delay, d1	59.0	19.6	16.7	59.3	26.2			53.5	47.2	50.5	50.5	42.9
Progression Factor	1.34	0.29	0.02	1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	126.9	0.5	0.5	1.9	1.9			1202.0	0.5	104.7	175.8	0.4
Delay (s)	206.1	6.3	0.8	61.2	28.0			1255.5	47.7	155.2	226.3	43.3
Level of Service	F	A	A	E	C			F	D	F	F	D
Approach Delay (s)		19.7			28.2			1182.5			176.4	
Approach LOS		B			C			F			F	
Intersection Summary												
HCM Average Control Delay	263.3		HCM Level of Service				F					
HCM Volume to Capacity ratio	1.38											
Actuated Cycle Length (s)	125.0				Sum of lost time (s)				16.0			
Intersection Capacity Utilization	131.2%		ICU Level of Service				H					
Analysis Period (min)	15											
c Critical Lane Group												














32: SW Cascade Ave & Scholls Ferry Rd

HCM Signalized Intersection Capacity Analysis

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	1.00		1.00	1.00		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.93		1.00	0.92		1.00	1.00		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	1727		1770	1708		1770	5080		1770	5085	1583
Flt Permitted	0.16	1.00		0.28	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	303	1727		519	1708		1770	5080		1770	5085	1583
Volume (vph)	120	160	150	120	170	210	70	1590	10	160	1570	110
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)	126	168	158	126	179	221	74	1674	11	168	1653	116
RTOR Reduction (vph)	0	28	0	0	37	0	0	0	0	0	0	16
Lane Group Flow (vph)	126	298	0	126	363	0	74	1685	0	168	1653	100
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases	8			4			5	2		1	6	
Permitted Phases	8			4								6
Actuated Green, G (s)	31.0	31.0		31.0	31.0		7.7	62.0		15.0	69.3	69.3
Effective Green, g (s)	31.0	31.0		31.0	31.0		7.7	62.0		15.0	69.3	69.3
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.06	0.52		0.12	0.58	0.58
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)	78	446		134	441		114	2625		221	2937	914
v/s Ratio Prot		0.17			0.21		0.04	c0.33		c0.09	0.33	
v/s Ratio Perm	c0.42			0.24								0.06
v/c Ratio	1.62	0.67		0.94	0.82		0.65	0.64		0.76	0.56	0.11
Uniform Delay, d1	44.5	39.9		43.6	41.9		54.8	21.0		50.8	15.9	11.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.02	0.93	1.13
Incremental Delay, d2	328.1	3.8		59.5	11.8		12.0	1.2		10.0	0.5	0.2
Delay (s)	372.6	43.7		103.1	53.7		66.9	22.2		61.9	15.3	13.1
Level of Service	F	D		F	D		E	C		E	B	B
Approach Delay (s)		135.3			65.5			24.1			19.2	
Approach LOS		F			E			C			B	
Intersection Summary												
HCM Average Control Delay			37.5			HCM Level of Service		D				
HCM Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)		12.0				
Intersection Capacity Utilization			81.6%			ICU Level of Service		D				
Analysis Period (min)			15									
c Critical Lane Group												

37: Hwy 217 NB Off Ramp & Scholls Ferry Rd

HCM Signalized Intersection Capacity Analysis

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
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	3539			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	1583	3539			3539
Volume (vph)	410	430	1220	0	0	1120
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	432	453	1284	0	0	1179
RTOR Reduction (vph)	0	38	0	0	0	0
Lane Group Flow (vph)	432	415	1284	0	0	1179
Turn Type		Prot				
Protected Phases	4	4	6			2
Permitted Phases						
Actuated Green, G (s)	18.1	18.1	26.2			26.2
Effective Green, g (s)	18.1	18.1	26.2			26.2
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)	1188	548	1773			1773
v/s Ratio Prot	0.13	c0.26	c0.36			0.33
v/s Ratio Perm						
v/c Ratio	0.36	0.76	0.72			0.66
Uniform Delay, d1	12.8	15.2	10.2			9.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	5.9	1.5			1.0
Delay (s)	13.0	21.1	11.7			10.7
Level of Service	B	C	B			B
Approach Delay (s)	17.1		11.7			10.7
Approach LOS	B		B			B
Intersection Summary						
HCM Average Control Delay			12.8		HCM Level of Service	B
HCM Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			52.3		Sum of lost time (s)	8.0
Intersection Capacity Utilization			72.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

39: SW Hall Blvd & Scholls Ferry Rd

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	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	0.97		1.00	0.95		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)	1770	3539	1583	1770	3421		1770	3374		1770	3414	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3421		1770	3374		1770	3414	
Volume (vph)	130	960	300	370	940	270	310	640	290	360	650	200
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)	137	1011	316	389	989	284	326	674	305	379	684	211
RTOR Reduction (vph)	0	0	18	0	29	0	0	58	0	0	32	0
Lane Group Flow (vph)	137	1011	298	389	1244	0	326	921	0	379	863	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)	9.6	22.0	39.0	16.0	28.4		17.0	21.0		15.0	19.0	
Effective Green, g (s)	9.6	22.0	39.0	16.0	28.4		17.0	21.0		15.0	19.0	
Actuated g/C Ratio	0.11	0.24	0.43	0.18	0.32		0.19	0.23		0.17	0.21	
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)	189	865	756	315	1080		334	787		295	721	
v/s Ratio Prot	0.08	0.29	0.07	c0.22	c0.36		0.18	c0.27		c0.21	0.25	
v/s Ratio Perm			0.11									
v/c Ratio	0.72	1.17	0.39	1.23	1.15		0.98	1.17		1.28	1.20	
Uniform Delay, d1	38.9	34.0	17.4	37.0	30.8		36.3	34.5		37.5	35.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.9	88.3	0.3	130.1	79.1		42.4	89.9		151.4	101.6	
Delay (s)	51.8	122.3	17.8	167.1	109.9		78.7	124.4		188.9	137.1	
Level of Service	D	F	B	F	F		E	F		F	F	
Approach Delay (s)		93.2			123.3			113.0			152.5	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			119.7			HCM Level of Service		F				
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)		8.0				
Intersection Capacity Utilization			107.3%			ICU Level of Service		G				
Analysis Period (min)			15									
c Critical Lane Group												

42: 217 NB ON Ramp & Scholls Ferry Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↘	↗	↖	↕			↕	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	1.00	1.00	1.00	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)				1770	1863	1583	1770	3539			3378	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1770	1863	1583	1770	3539			3378	
Volume (vph)	0	0	0	250	230	370	390	870	0	0	1030	450
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	0	0	263	242	389	411	916	0	0	1084	474
RTOR Reduction (vph)	0	0	0	0	0	112	0	0	0	0	56	0
Lane Group Flow (vph)	0	0	0	263	242	277	411	916	0	0	1502	0
Turn Type				Perm		Perm	Prot					
Protected Phases					4		1	6			2	
Permitted Phases				4		4						
Actuated Green, G (s)				18.7	18.7	18.7	21.0	53.3			28.3	
Effective Green, g (s)				18.7	18.7	18.7	21.0	53.3			28.3	
Actuated g/C Ratio				0.23	0.23	0.23	0.26	0.67			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)				414	435	370	465	2358			1195	
v/s Ratio Prot					0.13		c0.23	0.26			c0.44	
v/s Ratio Perm				0.15		c0.18						
v/c Ratio				0.64	0.56	0.75	0.88	0.39			1.26	
Uniform Delay, d1				27.6	27.0	28.5	28.3	6.0			25.9	
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2				3.2	1.5	8.1	17.8	0.5			122.5	
Delay (s)				30.8	28.5	36.5	46.1	6.5			148.3	
Level of Service				C	C	D	D	A			F	
Approach Delay (s)		0.0			32.7			18.8			148.3	
Approach LOS		A			C			B			F	
Intersection Summary												
HCM Average Control Delay			75.5									HCM Level of Service E
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			80.0								12.0	
Intersection Capacity Utilization			88.3%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

48: Hwy 217 SB Ramps & Scholls Ferry Rd

HCM Signalized Intersection Capacity Analysis

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations								  			 		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	1.00					0.86	0.86	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					4806	1362	1770	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	1583					4806	1362	1770	3539		
Volume (vph)	70	0	450	0	0	0	0	1140	720	150	1380	0	
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)	74	0	474	0	0	0	0	1200	758	158	1453	0	
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	74	456	0	0	0	0	1200	758	158	1453	0	
Turn Type	Perm		Perm						Free	Prot			
Protected Phases		4						2		1	6		
Permitted Phases	4		4						Free				
Actuated Green, G (s)		37.9	37.9					55.2	120.0	14.9	74.1		
Effective Green, g (s)		37.9	37.9					55.2	120.0	14.9	74.1		
Actuated g/C Ratio		0.32	0.32					0.46	1.00	0.12	0.62		
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)		559	500					2211	1362	220	2185		
v/s Ratio Prot								0.25		0.09	c0.41		
v/s Ratio Perm		0.04	c0.29						0.56				
v/c Ratio		0.13	0.91					0.54	0.56	0.72	0.66		
Uniform Delay, d1		29.3	39.5					23.3	0.0	50.5	14.9		
Progression Factor		1.00	1.00					0.99	1.00	1.00	1.00		
Incremental Delay, d2		0.1	21.0					0.7	1.2	10.7	1.6		
Delay (s)		29.4	60.4					23.8	1.2	61.2	16.5		
Level of Service		C	E					C	A	E	B		
Approach Delay (s)		56.2			0.0			15.1			20.9		
Approach LOS		E			A			B			C		
Intersection Summary													
HCM Average Control Delay			22.8									HCM Level of Service	C
HCM Volume to Capacity ratio			0.75										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			72.7%									ICU Level of Service	C
Analysis Period (min)			15										
c	Critical Lane Group												

Summary of All Intervals

Run Number	1	10	2	3	4	5	6	7
Start Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
End Time	6:10	6:10	6:10	6:10	6:10	6:10	6:10	6:10
Total Time (min)	70	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3	3
# of Recorded Intvls	2	2	2	2	2	2	2	2
Vehs Entered	17450	16238	16632	14912	15375	11662	13046	17757
Vehs Exited	16670	15166	15411	13676	14147	10334	11665	16891
Starting Vehs	1230	1227	1212	1168	1088	1194	1194	1228
Ending Vehs	2010	2299	2433	2404	2316	2522	2575	2094
Denied Entry Before	165	130	77	110	66	88	121	79
Denied Entry After	4154	5619	4845	6690	6063	9898	8521	3818
Travel Distance (mi)	12075	10658	10666	9444	9795	6956	7882	11977
Travel Time (hr)	3755.2	3981.8	3508.2	4116.3	3652.8	5124.1	4658.3	3430.9
Total Delay (hr)	3322.7	3599.8	3125.2	3777.6	3300.6	4872.7	4374.6	3001.6
Total Stops	77176	66758	65004	55949	52400	39978	46151	71935
Fuel Used (gal)	2968.8	3011.6	2711.0	2999.7	2750.4	3427.3	3223.2	2751.0

Interval #0 Information Seeding

Start Time	5:00
End Time	5:10
Total Time (min)	10
Volumes adjusted by Growth Factors, Anti PHF.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:10
End Time	5:25
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	5018	5122	5057	5084	5204	5074	5135	4983
Vehs Exited	4505	4516	4529	4534	4644	4491	4611	4544
Starting Vehs	1230	1227	1212	1168	1088	1194	1194	1228
Ending Vehs	1743	1833	1740	1718	1648	1777	1718	1667
Denied Entry Before	165	130	77	110	66	88	121	79
Denied Entry After	945	945	736	731	615	740	833	832
Travel Distance (mi)	3275	3237	3222	3229	3380	3189	3275	3255
Travel Time (hr)	509.3	518.3	460.2	472.6	427.7	473.0	492.4	467.2
Total Delay (hr)	391.9	402.3	344.8	357.2	306.4	358.1	374.8	350.5
Total Stops	16851	16284	16368	15457	14996	16691	16995	15309
Fuel Used (gal)	504.2	506.2	462.4	485.2	451.8	467.6	496.6	470.5

Interval #2 Information Recording

Start Time	5:25
End Time	6:10
Total Time (min)	45
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	12432	11116	11575	9828	10171	6588	7911	12774
Vehs Exited	12165	10650	10882	9142	9503	5843	7054	12347
Starting Vehs	1743	1833	1740	1718	1648	1777	1718	1667
Ending Vehs	2010	2299	2433	2404	2316	2522	2575	2094
Denied Entry Before	945	945	736	731	615	740	833	832
Denied Entry After	4154	5619	4845	6690	6063	9898	8521	3818
Travel Distance (mi)	8801	7421	7444	6215	6416	3767	4607	8723
Travel Time (hr)	3245.9	3463.6	3048.0	3643.7	3225.1	4651.2	4165.9	2963.7
Total Delay (hr)	2930.9	3197.5	2780.4	3420.4	2994.2	4514.6	3999.8	2651.1
Total Stops	60325	50474	48636	40492	37404	23287	29156	56626
Fuel Used (gal)	2464.6	2505.4	2248.6	2514.5	2298.6	2959.8	2726.6	2280.5

4: Watson Ave & Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	0.6	0.8	0.8	0.5	0.2	2.8	0.2	5.9
Delay / Veh (s)	48.4	58.7	62.9	39.5	24.9	21.4	16.9	29.4
Travel Time (hr)	0.7	1.0	0.9	0.6	0.3	3.8	0.3	7.5
Avg Speed (mph)	3	2	2	4	7	7	9	6

13: Canyon Rd/TV Highway & 114th Ave Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Total Delay (hr)	11.1	15.5	0.0	4.0	30.7
Delay / Veh (s)	39.3	43.9	26.9	758.1	47.7
Travel Time (hr)	13.4	17.7	0.0	4.1	35.2
Avg Speed (mph)	6	6	10	0	5

55: Canyon Rd/TV Highway & Hocken Av Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	5.2	37.1	7.4	11.0	55.4	1.2	4.6	2.7	0.5	83.0	133.5	103.8
Delay / Veh (s)	183.4	137.3	145.4	380.3	179.6	197.1	136.2	77.3	80.1	9056.2	8145.7	8122.5
Travel Time (hr)	5.9	43.5	8.8	11.7	62.6	1.4	5.0	3.0	0.6	83.3	133.9	104.1
Avg Speed (mph)	5	7	7	2	7	7	2	3	3	1	1	1

55: Canyon Rd/TV Highway & Hocken Av Performance by movement

Movement	All
Total Delay (hr)	445.5
Delay / Veh (s)	552.1
Travel Time (hr)	463.9
Avg Speed (mph)	4

56: Canyon Rd/TV Highway & Cedar Hills Blvd Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	25.8	1.3	16.1	1.1	16.1	51.8	8.7	5.9	11.4	7.8	146.0
Delay / Veh (s)	89.8	77.6	55.9	48.2	656.9	652.5	710.4	211.4	168.1	159.6	166.6
Travel Time (hr)	32.5	1.7	23.1	1.7	16.2	52.3	8.8	6.3	12.2	8.5	163.3
Avg Speed (mph)	7	7	9	10	1	1	1	2	3	3	6

57: Canyon Rd/TV Highway & Watson Ave Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	28.8	0.4	1.2	7.7	32.8	110.7	28.1	209.8
Delay / Veh (s)	92.2	158.4	56.3	27.3	869.1	875.9	830.1	257.0
Travel Time (hr)	36.2	0.5	1.5	11.3	33.5	112.8	28.8	224.6
Avg Speed (mph)	6	4	6	12	2	2	2	4

58: Canyon Rd/TV Highway & Hall Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	0.5	12.0	5.4	0.7	5.2	9.7	0.8	34.3
Delay / Veh (s)	81.3	47.3	19.8	25.6	123.3	56.9	195.4	44.1
Travel Time (hr)	0.6	15.3	10.1	1.3	5.8	11.7	0.8	45.6
Avg Speed (mph)	4	6	13	11	3	5	2	7

59: Canyon Rd/TV Highway & Lombard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	1.5	33.0	0.8	0.2	5.4	0.0	3.1	0.9	1.0	1.5	0.3	0.4
Delay / Veh (s)	154.4	149.2	213.9	99.9	19.1	14.8	188.9	408.5	392.7	771.4	109.8	26.9
Travel Time (hr)	1.7	36.8	0.8	0.2	11.5	0.1	3.4	0.9	1.0	1.5	0.3	0.6
Avg Speed (mph)	3	4	3	5	15	16	2	1	1	0	2	8

59: Canyon Rd/TV Highway & Lombard Performance by movement

Movement	All
Total Delay (hr)	48.2
Delay / Veh (s)	85.3
Travel Time (hr)	59.0
Avg Speed (mph)	6

60: Canyon Rd/TV Highway & Broadway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	3.3	53.5	1.6	0.2	6.7	0.5	2.2	12.0	29.9	76.7	18.0	5.7
Delay / Veh (s)	310.8	266.8	336.9	163.0	24.0	13.8	797.9	958.2	987.0	2939.2	2587.9	2298.7
Travel Time (hr)	3.5	57.8	1.7	0.2	10.6	1.0	2.2	12.1	30.2	77.1	18.1	5.8
Avg Speed (mph)	3	3	2	2	11	13	1	1	1	0	1	1

60: Canyon Rd/TV Highway & Broadway Performance by movement

Movement	All
Total Delay (hr)	210.3
Delay / Veh (s)	343.5
Travel Time (hr)	220.3
Avg Speed (mph)	3

61: Canyon Rd/TV Highway & 115th Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.3	26.7	1.2	9.0	8.0	0.1	6.5	0.5	8.4	1.4	0.7	0.2
Delay / Veh (s)	98.3	114.3	152.1	182.1	25.3	17.4	219.5	347.9	210.6	293.3	251.4	111.8
Travel Time (hr)	0.4	30.2	1.4	9.4	10.2	0.2	6.8	0.5	9.0	1.4	0.7	0.3
Avg Speed (mph)	3	3	2	1	7	9	2	1	2	1	1	2

61: Canyon Rd/TV Highway & 115th Ave Performance by movement

Movement	All
Total Delay (hr)	63.1
Delay / Veh (s)	90.2
Travel Time (hr)	70.5
Avg Speed (mph)	3

62: Canyon Rd/TV Highway & SR 217 SB Off-Ramp Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	11.5	7.8	4.3	24.7	47.1	233.2	125.1	453.7
Delay / Veh (s)	57.4	83.1	198.8	102.0	1784.1	1829.2	1655.3	575.7
Travel Time (hr)	12.6	8.5	4.6	27.9	47.7	236.0	127.0	464.4
Avg Speed (mph)	5	3	2	4	2	2	2	2

63: Canyon Rd/TV Highway & SR 217 NB On-Ramp Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	4.0	1.5	32.5	4.1	50.4	24.2	8.7	125.4
Delay / Veh (s)	81.8	7.7	195.2	109.6	493.1	283.0	218.8	186.8
Travel Time (hr)	4.6	3.8	34.4	4.7	54.1	27.0	10.2	138.9
Avg Speed (mph)	4	19	2	5	2	4	5	4

64: Canyon Rd/TV Highway & 110th Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	1.8	4.5	0.5	7.0	81.3	5.2	55.0	18.0	21.8	4.7	6.5	10.5
Delay / Veh (s)	95.7	19.1	18.4	465.4	473.7	547.3	5657.4	4324.7	4611.9	188.0	376.5	382.3
Travel Time (hr)	2.1	6.8	0.9	7.2	84.0	5.3	55.1	18.1	21.8	5.6	7.1	11.5
Avg Speed (mph)	3	10	10	3	2	2	0	3	5	4	2	2

64: Canyon Rd/TV Highway & 110th Ave Performance by movement

Movement	All
Total Delay (hr)	216.8
Delay / Veh (s)	383.2
Travel Time (hr)	225.4
Avg Speed (mph)	3

65: Canyon Rd/TV Highway & 107th Ave Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	2.2	0.2	13.2	182.2	8.7	5.6	212.0
Delay / Veh (s)	9.7	7.5	717.6	992.1	284.9	274.4	416.6
Travel Time (hr)	5.8	0.7	13.8	188.2	9.2	5.9	223.6
Avg Speed (mph)	18	18	3	2	2	2	3

211: BH Highway & Fred Meyer Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.8	19.6	1.9	5.1	9.2	1.2	8.2	11.8	11.5	50.2	78.9	24.3
Delay / Veh (s)	132.6	93.5	136.8	126.4	41.8	23.1	305.4	332.5	316.9	1380.2	1371.5	1345.5
Travel Time (hr)	3.4	25.1	2.3	5.7	12.0	2.0	8.5	12.2	11.9	50.5	79.2	24.5
Avg Speed (mph)	5	6	5	3	6	9	2	2	2	1	2	3

211: BH Highway & Fred Meyer Performance by movement

Movement	All
Total Delay (hr)	224.7
Delay / Veh (s)	292.7
Travel Time (hr)	237.2
Avg Speed (mph)	5

212: BH Highway & Lombard Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	1.3	14.3	1.0	3.6	10.6	0.7	3.2	31.3	24.2	9.8	11.9	3.9
Delay / Veh (s)	101.9	76.6	54.1	102.0	42.2	26.8	815.8	708.8	676.6	287.9	199.7	208.6
Travel Time (hr)	1.6	18.3	1.5	4.5	16.6	1.4	3.2	31.9	24.9	10.1	12.5	4.1
Avg Speed (mph)	5	7	8	6	11	14	1	2	2	1	4	3

212: BH Highway & Lombard Ave Performance by movement

Movement	All
Total Delay (hr)	115.8
Delay / Veh (s)	159.5
Travel Time (hr)	130.5
Avg Speed (mph)	6

214: BH Highway & 107th Ave Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.8	3.9	0.1	0.7	40.4	2.9	4.7	4.2	1.8	16.0	2.3	8.7
Delay / Veh (s)	47.1	16.9	14.8	138.9	142.6	168.2	278.6	296.8	188.5	365.0	314.4	394.8
Travel Time (hr)	1.1	8.6	0.3	0.8	46.9	3.4	4.9	4.4	2.0	16.6	2.4	9.0
Avg Speed (mph)	9	16	15	4	4	4	1	1	2	2	2	2

214: BH Highway & 107th Ave Performance by movement

Movement	All
Total Delay (hr)	86.5
Delay / Veh (s)	128.4
Travel Time (hr)	100.2
Avg Speed (mph)	5

215: BH Highway & 110th Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Total Delay (hr)	0.4	0.4	37.6	1.0	3.1	6.4	48.9
Delay / Veh (s)	22.1	1.5	143.2	161.9	180.9	184.9	85.1
Travel Time (hr)	0.6	3.0	42.7	1.2	3.3	6.9	57.7
Avg Speed (mph)	9	25	3	3	3	2	5

216: BH Highway & SR 217 NB On-Ramp Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	7.8	3.2	18.4	5.6	60.7	67.3	20.3	183.3
Delay / Veh (s)	199.4	15.6	91.7	82.2	597.2	545.7	463.6	234.0
Travel Time (hr)	8.2	5.3	20.6	6.6	63.0	69.9	21.4	195.0
Avg Speed (mph)	1	11	3	4	3	3	5	3

217: BH Highway & SR 217 SB Off-Ramp Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	23.0	9.1	6.0	15.3	24.2	66.4	26.2	170.1
Delay / Veh (s)	116.1	98.1	139.1	58.6	544.6	492.6	447.2	204.4
Travel Time (hr)	25.5	10.5	6.5	18.0	25.6	70.4	28.2	184.7
Avg Speed (mph)	5	6	2	5	2	3	3	3

227: BH Highway & Erickson Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	4.6	0.2	0.3	0.7	0.8	1.0	7.6
Delay / Veh (s)	18.6	21.4	15.9	2.7	61.5	47.8	13.2
Travel Time (hr)	8.5	0.5	0.5	2.8	0.9	1.2	14.4
Avg Speed (mph)	13	12	8	20	3	4	13

228: BH Highway & Cedar Hills Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Total Delay (hr)	3.2	2.9	2.3	1.4	39.1	0.0	16.8	65.7
Delay / Veh (s)	107.0	15.1	9.7	49.8	329.7	20.0	303.0	99.9
Travel Time (hr)	3.5	4.2	8.6	2.3	39.9	0.0	17.3	75.8
Avg Speed (mph)	2	10	21	10	2	5	3	10

229: BH Highway & Hall Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	2.6	6.4	4.1	0.8	34.6	115.3	19.5	183.3
Delay / Veh (s)	121.2	35.2	15.7	40.8	648.8	658.6	703.0	247.0
Travel Time (hr)	2.9	8.8	9.2	1.3	35.4	117.7	20.0	195.3
Avg Speed (mph)	3	8	16	10	3	3	2	6

230: BH Highway & Hocken Av Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Total Delay (hr)	5.4	10.1	2.7	1.9	4.3	0.1	2.8	27.2
Delay / Veh (s)	183.5	50.7	11.3	49.3	71.2	18.0	57.0	44.1
Travel Time (hr)	6.1	14.5	6.7	2.7	5.0	0.1	3.3	38.4
Avg Speed (mph)	4	14	18	7	3	5	3	10

231: BH Highway & Watson Ave Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	9.7	3.2	1.5	2.4	1.2	5.7	1.1	24.8
Delay / Veh (s)	41.7	43.8	60.0	10.0	44.1	38.7	30.9	31.7
Travel Time (hr)	15.7	5.5	1.9	5.6	1.2	6.0	1.2	37.2
Avg Speed (mph)	11	11	5	16	3	4	6	11

246: BH Highway & Western Av Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	9.0	2.5	50.7	149.9	55.0	45.4	312.5
Delay / Veh (s)	34.6	38.5	696.7	575.3	900.1	508.7	386.7
Travel Time (hr)	14.9	4.2	53.2	158.7	56.3	47.4	334.7
Avg Speed (mph)	12	11	3	4	1	6	5

Total Network Performance

Total Delay (hr)	3660.6
Delay / Veh (s)	875.2
Travel Time (hr)	4024.8
Avg Speed (mph)	5

Arterial Level of Service: EB Canyon Rd/TV Highway

Cross Street	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Hocken Av	137.3	160.9	0.2	7
Cedar Hills Blvd	90.2	113.1	0.2	7
Watson Ave	94.9	118.3	0.2	7
Hall Blvd	45.1	57.6	0.1	6
Lombard	149.1	166.3	0.1	4
Broadway	268.1	289.5	0.2	3
115th Ave	119.4	133.5	0.1	3
114th Ave	42.2	49.8	0.1	6
SR 217 SB Off-Ramp	57.4	62.6	0.1	6
SR 217 NB On-Ramp	6.3	18.3	0.1	22
110th Ave	19.2	28.4	0.1	13
107th Ave	7.8	23.3	0.1	20
Total	1037.0	1221.7	1.6	6

Arterial Level of Service: WB Canyon Rd/TV Highway

Cross Street	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
107th Ave	992.1	1025.1	0.3	2
110th Ave	518.1	533.1	0.1	2
SR 217 NB On-Ramp	203.2	214.0	0.1	2
SR 217 SB Off-Ramp	118.0	130.2	0.1	3
114th Ave	52.7	58.2	0.1	7
115th Ave	25.4	32.3	0.1	8
Broadway	23.6	36.9	0.1	11
Lombard	19.1	40.3	0.2	16
Hall Blvd	18.4	35.2	0.1	15
Watson Ave	27.4	39.8	0.1	12
Cedar Hills Blvd	56.0	79.8	0.2	10
Hocken Av	207.5	230.0	0.2	7
Total	2261.5	2455.2	1.7	4

Arterial Level of Service: EB BH Highway

Cross Street	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Hocken Av	50.7	72.7	0.2	14
Erickson	19.3	34.7	0.1	15
Cedar Hills Blvd	15.8	22.8	0.1	10
Watson Ave	48.6	72.7	0.2	12
Hall Blvd	36.7	49.7	0.1	8
Lombard Ave	78.6	99.4	0.2	7
Fred Meyer	96.3	121.2	0.2	6
SR 217 SB Off-Ramp	133.7	145.2	0.1	6
SR 217 NB On-Ramp	18.4	27.8	0.1	10
110th Ave	1.4	12.0	0.1	27
107th Ave	17.8	37.8	0.2	16
Western Av	34.5	56.6	0.2	13
Total	551.9	752.6	1.7	10

Arterial Level of Service: WB BH Highway

Cross Street	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Western Av	575.3	609.1	0.3	5
107th Ave	146.1	168.3	0.2	4
110th Ave	137.9	157.2	0.2	4
SR 217 NB On-Ramp	90.4	101.1	0.1	4
SR 217 SB Off-Ramp	60.2	69.5	0.1	6
Fred Meyer	41.5	53.4	0.1	7
Lombard Ave	41.9	65.2	0.2	13
Hall Blvd	14.8	34.0	0.2	19
Watson Ave	5.2	18.3	0.1	21
Cedar Hills Blvd	7.3	34.1	0.2	25
Erickson	2.6	10.0	0.1	21
Hocken Av	11.3	28.2	0.1	18
Total	1134.7	1348.4	1.8	7

Queuing and Blocking Report
Proposed PM

12/18/2008

Intersection: 4: Watson Ave &

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	168	204	312	331
Average Queue (ft)	69	73	168	164
95th Queue (ft)	163	176	311	315
Link Distance (ft)	212	252	258	258
Upstream Blk Time (%)	5	2	2	2
Queuing Penalty (veh)	0	0	9	8
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Canyon Rd/TV Highway & 114th Ave

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	370	363	276	286	230
Average Queue (ft)	266	281	202	168	114
95th Queue (ft)	486	420	284	333	256
Link Distance (ft)	268	268	168	168	336
Upstream Blk Time (%)	15	38	54	16	0
Queuing Penalty (veh)	129	318	590	178	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 55: Canyon Rd/TV Highway & Hocken Av

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	241	963	952	178	988	992	133	272	159	994	134
Average Queue (ft)	118	568	561	140	720	726	107	207	61	980	41
95th Queue (ft)	235	934	915	211	1280	1278	164	333	168	996	138
Link Distance (ft)		987	987		959	959		255		970	
Upstream Blk Time (%)		13	12		13	11		29		89	
Queuing Penalty (veh)		0	0		101	89		90		0	
Storage Bay Dist (ft)	210			140			100		125		100
Storage Blk Time (%)	3	40		42	27		43	23	13	83	1
Queuing Penalty (veh)	16	48		342	43		82	37	62	315	5

Intersection: 56: Canyon Rd/TV Highway & Cedar Hills Blvd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	T	TR	T	T	R	LT	TR	LT	TR
Maximum Queue (ft)	860	875	773	797	166	228	260	500	506
Average Queue (ft)	463	460	429	426	47	189	204	301	333
95th Queue (ft)	858	862	1043	1050	150	250	259	525	557
Link Distance (ft)	959	959	1052	1052		208	208	482	482
Upstream Blk Time (%)	13	14	8	9		23	26	15	11
Queuing Penalty (veh)	83	93	71	75		33	37	0	0
Storage Bay Dist (ft)					130				
Storage Blk Time (%)				28	0				
Queuing Penalty (veh)				34	0				

Intersection: 57: Canyon Rd/TV Highway & Watson Ave

Movement	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	TR	L	T	T	L	LT	TR
Maximum Queue (ft)	1001	988	196	299	294	153	698	700
Average Queue (ft)	611	598	79	163	155	90	688	669
95th Queue (ft)	1104	1103	165	416	413	164	715	854
Link Distance (ft)	1052	1052		482	482		675	675
Upstream Blk Time (%)	20	20		7	6		65	61
Queuing Penalty (veh)	150	148		55	47		0	0
Storage Bay Dist (ft)			200			120		
Storage Blk Time (%)			0	10		3	77	
Queuing Penalty (veh)			1	12		14	77	

Intersection: 58: Canyon Rd/TV Highway & Hall Blvd

Movement	EB	EB	EB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	LT	T	TR
Maximum Queue (ft)	88	493	503	392	413	436	409	365
Average Queue (ft)	27	203	199	148	147	266	197	186
95th Queue (ft)	72	584	585	528	535	435	371	327
Link Distance (ft)		482	482	679	679	469	469	469
Upstream Blk Time (%)		22	23	3	3	9	1	1
Queuing Penalty (veh)		151	152	28	24	30	4	4
Storage Bay Dist (ft)	90							
Storage Blk Time (%)	0	32						
Queuing Penalty (veh)	0	9						

Intersection: 59: Canyon Rd/TV Highway & Lombard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	175	698	696	66	589	596	286	174	112	169	92
Average Queue (ft)	46	430	441	9	190	187	114	59	40	23	28
95th Queue (ft)	129	814	833	38	584	587	300	167	110	121	67
Link Distance (ft)		679	679		845	845	484	484		379	
Upstream Blk Time (%)		24	29		1	1	5			1	
Queuing Penalty (veh)		141	174		9	8	0			0	
Storage Bay Dist (ft)	150			120					120		150
Storage Blk Time (%)	0	50			9				7	0	
Queuing Penalty (veh)	3	25			1				5	0	

Intersection: 60: Canyon Rd/TV Highway & Broadway

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	TR	L	L	TR
Maximum Queue (ft)	190	942	915	59	540	547	162	129	321	184	194	435
Average Queue (ft)	58	768	766	5	249	252	53	18	290	116	179	373
95th Queue (ft)	158	1119	1092	33	550	560	150	84	375	229	213	570
Link Distance (ft)		845	845		501	501			295			413
Upstream Blk Time (%)		45	49		3	3			75			76
Queuing Penalty (veh)		277	299		27	29			0			0
Storage Bay Dist (ft)	160			160			130	120		150	150	
Storage Blk Time (%)	1	65			16	19	0		83	28	85	0
Queuing Penalty (veh)	6	39			2	38	0		17	25	76	1

Intersection: 61: Canyon Rd/TV Highway & 115th Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	124	632	609	212	347	344	343	211	218
Average Queue (ft)	16	556	538	199	326	270	167	122	69
95th Queue (ft)	72	703	630	247	408	453	343	225	201
Link Distance (ft)		501	501		268	268	339		311
Upstream Blk Time (%)		29	58		67	20	18		6
Queuing Penalty (veh)		240	474		771	228	0		0
Storage Bay Dist (ft)	160			180				180	
Storage Blk Time (%)		59		68	11		12	15	
Queuing Penalty (veh)		13		596	37		21	20	

Intersection: 62: Canyon Rd/TV Highway & SR 217 SB Off-Ramp

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	LT	TR	R
Maximum Queue (ft)	244	246	161	569	533	568	1086	1087	1083
Average Queue (ft)	177	229	150	419	460	417	1068	1068	1011
95th Queue (ft)	315	270	179	746	563	683	1112	1117	1319
Link Distance (ft)	168	168		446	446	446	1059	1059	1059
Upstream Blk Time (%)	15	43	9	18	42	21	68	64	25
Queuing Penalty (veh)	126	364	0	110	252	123	0	0	0
Storage Bay Dist (ft)			160						
Storage Blk Time (%)		42	35						
Queuing Penalty (veh)		258	214						

Intersection: 63: Canyon Rd/TV Highway & SR 217 NB On-Ramp

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	T	T	R	L	LT	T	R
Maximum Queue (ft)	442	388	183	493	455	334	364	1561	1556	283
Average Queue (ft)	200	72	43	432	408	199	327	1138	1055	93
95th Queue (ft)	402	230	132	523	444	425	396	1983	1945	269
Link Distance (ft)	446	446	446	371	371			1546	1546	
Upstream Blk Time (%)	2	0	0	30	61			20	23	
Queuing Penalty (veh)	7	0	0	207	424			116	137	
Storage Bay Dist (ft)						300	330			250
Storage Blk Time (%)					69	0	45	59	38	0
Queuing Penalty (veh)					178	1	239	182	83	0

Intersection: 64: Canyon Rd/TV Highway & 110th Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	144	359	357	156	673	662	287	166	999	1036
Average Queue (ft)	67	166	165	59	610	600	265	23	317	466
95th Queue (ft)	152	318	317	156	700	682	311	101	937	1003
Link Distance (ft)		371	371		586	586	266	266	1225	1225
Upstream Blk Time (%)		1	0		54	55	88	0	3	5
Queuing Penalty (veh)		4	2		317	321	0	0	0	0
Storage Bay Dist (ft)	120			125						
Storage Blk Time (%)	12	17		0	73					
Queuing Penalty (veh)	72	17		2	73					

Intersection: 65: Canyon Rd/TV Highway & 107th Ave

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	414	405	1424	1426	1430	552
Average Queue (ft)	94	90	1084	1153	1149	321
95th Queue (ft)	253	250	1899	1847	1860	611
Link Distance (ft)	586	586	1404	1404	1404	576
Upstream Blk Time (%)	0	0	26	50	51	18
Queuing Penalty (veh)	0	0	0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 211: BH Highway & Fred Meyer

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	R	L	T
Maximum Queue (ft)	230	993	1002	133	536	554	151	114	307	112	145	287
Average Queue (ft)	90	437	472	103	377	362	61	73	261	86	123	277
95th Queue (ft)	209	951	964	181	703	710	155	141	372	132	168	289
Link Distance (ft)		1068	1068		468	468			282			263
Upstream Blk Time (%)		10	15		21	11			44			67
Queuing Penalty (veh)		56	86		195	101			0			0
Storage Bay Dist (ft)	200			100			120	80		75	110	
Storage Blk Time (%)	1	34		45	25	26	1	22	32	34	49	38
Queuing Penalty (veh)	7	34		260	62	77	3	75	93	98	223	127

Intersection: 211: BH Highway & Fred Meyer

Movement	SB
Directions Served	R
Maximum Queue (ft)	149
Average Queue (ft)	39
95th Queue (ft)	124
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	120
Storage Blk Time (%)	0
Queuing Penalty (veh)	1

Intersection: 212: BH Highway & Lombard Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	161	697	704	133	182	748	765	182	114	545	184	326
Average Queue (ft)	52	313	312	33	121	327	316	32	23	532	149	274
95th Queue (ft)	135	671	673	116	212	735	736	136	79	577	212	388
Link Distance (ft)		852	852			1068	1068			519		302
Upstream Blk Time (%)		10	10			0	0			79		35
Queuing Penalty (veh)		49	47			2	2			0		0
Storage Bay Dist (ft)	130			100	150			150	100		150	
Storage Blk Time (%)	1	38	41	0	17	25	27	0	0	81	36	23
Queuing Penalty (veh)	4	23	37	0	113	45	35	0	1	16	117	34

Intersection: 214: BH Highway & 107th Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	147	441	438	84	1030	1020	399	168	451	134
Average Queue (ft)	52	210	219	14	747	755	220	35	359	94
95th Queue (ft)	128	433	446	49	1292	1283	458	124	554	166
Link Distance (ft)		801	801		960	960	399		429	
Upstream Blk Time (%)					37	38	23		45	
Queuing Penalty (veh)					310	320	0		0	
Storage Bay Dist (ft)	120			75				150		100
Storage Blk Time (%)	1	11		0	62		43	0	56	23
Queuing Penalty (veh)	7	10		1	19		17	0	57	51

Intersection: 215: BH Highway & 110th Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	132	66	72	886	884	378	133
Average Queue (ft)	37	11	11	695	702	160	103
95th Queue (ft)	94	43	44	1130	1123	378	156
Link Distance (ft)		394	394	801	801	384	
Upstream Blk Time (%)				36	38	14	
Queuing Penalty (veh)				282	299	0	
Storage Bay Dist (ft)	230						100
Storage Blk Time (%)						7	36
Queuing Penalty (veh)						9	27

Intersection: 216: BH Highway & SR 217 NB On-Ramp

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	T	T	R	L	LT	T	R
Maximum Queue (ft)	326	411	312	474	483	335	335	1037	1029	256
Average Queue (ft)	238	194	95	399	411	238	295	937	813	91
95th Queue (ft)	363	450	281	497	511	434	392	1243	1143	236
Link Distance (ft)		347	347	394	394			1010	1010	
Upstream Blk Time (%)	0	28	6	40	40			42	9	
Queuing Penalty (veh)	0	199	39	303	302			0	0	
Storage Bay Dist (ft)	300					300	300			150
Storage Blk Time (%)	34	4			30	16	33	65	62	1
Queuing Penalty (veh)	192	9			112	86	185	163	136	3

Intersection: 217: BH Highway & SR 217 SB Off-Ramp

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	LT	T	R
Maximum Queue (ft)	487	513	160	336	431	411	1370	1386	287
Average Queue (ft)	303	316	104	252	340	260	1228	1244	185
95th Queue (ft)	540	566	204	414	508	510	1485	1500	376
Link Distance (ft)	468	468			347	347	1323	1323	
Upstream Blk Time (%)	24	22		2	31	14	27	33	
Queuing Penalty (veh)	159	143		0	250	115	228	279	
Storage Bay Dist (ft)			125	300					250
Storage Blk Time (%)		24	16	21	24			62	12
Queuing Penalty (veh)		116	83	145	61			273	60

Intersection: 227: BH Highway & Erickson

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	478	474	78	195	216	129	228
Average Queue (ft)	112	103	38	31	44	51	56
95th Queue (ft)	415	411	77	124	133	104	162
Link Distance (ft)	671	671		239	239	338	338
Upstream Blk Time (%)	4	4		0	0		2
Queuing Penalty (veh)	23	21		2	1		0
Storage Bay Dist (ft)			50				
Storage Blk Time (%)			7	1			
Queuing Penalty (veh)			46	1			

Intersection: 228: BH Highway & Cedar Hills Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	LR
Maximum Queue (ft)	160	288	260	311	341	162	208	222
Average Queue (ft)	115	135	111	92	104	57	139	165
95th Queue (ft)	186	288	229	247	270	148	186	224
Link Distance (ft)		239	239	1125	1125		208	208
Upstream Blk Time (%)		18	6				1	6
Queuing Penalty (veh)		81	27				2	10
Storage Bay Dist (ft)	130					130		
Storage Blk Time (%)	28	7			1	11		
Queuing Penalty (veh)	114	10			2	58		

Intersection: 229: BH Highway & Hall Blvd

Movement	EB	EB	EB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	T	TR
Maximum Queue (ft)	113	464	457	485	474	232	597	596
Average Queue (ft)	72	181	148	160	169	172	575	576
95th Queue (ft)	129	449	404	493	501	285	701	627
Link Distance (ft)		510	510	852	852		570	570
Upstream Blk Time (%)		11	8	2	2		51	41
Queuing Penalty (veh)		49	34	13	11		0	0
Storage Bay Dist (ft)	80					195		
Storage Blk Time (%)	28	20				13	60	
Queuing Penalty (veh)	118	20				57	157	

Intersection: 230: BH Highway & Hocken Av

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	LR
Maximum Queue (ft)	172	608	604	432	455	160	306
Average Queue (ft)	99	231	203	148	173	119	248
95th Queue (ft)	195	706	647	379	415	186	339
Link Distance (ft)		925	925	671	671		255
Upstream Blk Time (%)		8	1		0		25
Queuing Penalty (veh)		0	0		0		155
Storage Bay Dist (ft)	160					125	
Storage Blk Time (%)	22	2				8	44
Queuing Penalty (veh)	80	3				39	81

Intersection: 231: BH Highway & Watson Ave

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	TR	L	T	T	LT	TR
Maximum Queue (ft)	767	764	159	324	314	80	92
Average Queue (ft)	273	292	88	108	94	38	50
95th Queue (ft)	751	763	166	238	215	62	83
Link Distance (ft)	1125	1125		510	510	23	23
Upstream Blk Time (%)	5	6				66	56
Queuing Penalty (veh)	35	36				213	180
Storage Bay Dist (ft)			130				
Storage Blk Time (%)			8	2			
Queuing Penalty (veh)			43	3			

Intersection: 246: BH Highway & Western Av

















Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	755	780	227	1462	1459	937	936
Average Queue (ft)	361	388	178	1322	1267	786	733
95th Queue (ft)	787	832	312	1767	1772	1134	1200
Link Distance (ft)	960	960		1435	1435	913	913
Upstream Blk Time (%)	0	0		48	25	43	38
Queuing Penalty (veh)	2	3		0	0	0	0
Storage Bay Dist (ft)			190				
Storage Blk Time (%)			40	38			
Queuing Penalty (veh)			280	141			

Network Summary

Network wide Queuing Penalty: 20445
























Future 2035 Conditions
4: Watson Ave &

Proposed PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0			3.0						3.0	
Lane Util. Factor		1.00			1.00						0.95	
Fr _t		0.93			1.00						0.99	
Fl _t Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1646			1722						3301	
Fl _t Permitted		1.00			0.84						1.00	
Satd. Flow (perm)		1646			1479						3301	
Volume (vph)	0	50	50	50	50	0	0	0	0	50	543	50
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)	0	56	56	56	56	0	0	0	0	56	603	56
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	101	0	0	112	0	0	0	0	0	710	0
Turn Type				Perm							Split	
Protected Phases		6 7			6 7					8	8	
Permitted Phases				6 7								
Actuated Green, G (s)		80.5			80.5						26.5	
Effective Green, g (s)		81.5			81.5						27.5	
Actuated g/C Ratio		0.71			0.71						0.24	
Clearance Time (s)											4.0	
Vehicle Extension (s)											3.0	
Lane Grp Cap (vph)		1167			1048						789	
v/s Ratio Prot		0.06									c0.22	
v/s Ratio Perm					c0.08							
v/c Ratio		0.09			0.11						0.90	
Uniform Delay, d ₁		5.2			5.3						42.4	
Progression Factor		1.00			1.00						0.50	
Incremental Delay, d ₂		0.0			0.0						5.0	
Delay (s)		5.2			5.3						26.2	
Level of Service		A			A						C	
Approach Delay (s)		5.2			5.3			0.0			26.2	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM Average Control Delay			21.2			HCM Level of Service					C	
HCM Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			6.0			
Intersection Capacity Utilization			38.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c	Critical Lane Group											

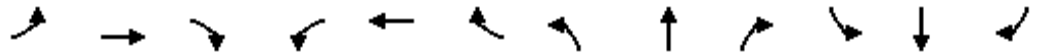
Future 2035 Conditions
55: Canyon Rd/TV Highway & Hocken Av

Proposed PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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	0.99		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)	1644	3176		1613	3216		1676	1716		1613	1698	1417
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1644	3176		1613	3216		1676	1716		1613	1698	1417
Volume (vph)	120	1130	200	160	1640	30	160	160	30	170	270	210
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)	125	1177	208	167	1708	31	167	167	31	177	281	219
RTOR Reduction (vph)	0	12	0	0	1	0	0	6	0	0	0	22
Lane Group Flow (vph)	125	1373	0	167	1738	0	167	192	0	177	281	197
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)	10.1	57.0		10.0	56.9		11.0	15.2		16.3	20.5	30.6
Effective Green, g (s)	11.1	58.5		11.0	58.4		12.0	16.2		17.3	21.5	32.6
Actuated g/C Ratio	0.10	0.51		0.10	0.51		0.10	0.14		0.15	0.19	0.28
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)	159	1616		154	1633		175	242		243	317	439
v/s Ratio Prot	0.08	c0.43		0.10	c0.54		c0.10	c0.11		0.11	c0.17	0.04
v/s Ratio Perm												0.10
v/c Ratio	0.79	0.85		1.08	1.06		0.95	0.79		0.73	0.89	0.45
Uniform Delay, d1	50.8	24.4		52.0	28.3		51.2	47.8		46.6	45.6	33.8
Progression Factor	1.00	1.00		0.74	0.51		0.79	0.78		1.00	1.00	1.00
Incremental Delay, d2	20.6	5.8		78.3	36.9		50.3	13.7		8.9	23.7	0.3
Delay (s)	71.4	30.2		116.8	51.3		90.8	50.8		55.5	69.3	34.1
Level of Service	E	C		F	D		F	D		E	E	C
Approach Delay (s)		33.7			57.1			69.1			54.3	
Approach LOS		C			E			E			D	
Intersection Summary												
HCM Average Control Delay			49.7			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			94.9%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
56: Canyon Rd/TV Highway & Cedar Hills Blvd













Proposed PM
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑	↑		↑↑			↑↑	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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			0.95	1.00		0.95			0.95	
Frbp, ped/bikes		1.00			1.00	0.98		1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.98			0.95	
Flt Protected		1.00			1.00	1.00		0.99			0.99	
Satd. Flow (prot)		3255			3257	1427		3254			3079	
Flt Permitted		1.00			1.00	1.00		0.99			0.99	
Satd. Flow (perm)		3255			3257	1427		3254			3079	
Volume (vph)	0	1370	80	0	1290	120	140	430	70	120	280	200
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	1505	88	0	1418	132	154	473	77	132	308	220
RTOR Reduction (vph)	0	4	0	0	0	34	0	8	0	0	55	0
Lane Group Flow (vph)	0	1589	0	0	1418	98	0	696	0	0	605	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)		59.8			59.8	59.8		19.0			23.2	
Effective Green, g (s)		61.3			61.3	61.3		20.0			24.7	
Actuated g/C Ratio		0.53			0.53	0.53		0.17			0.21	
Clearance Time (s)		4.5			4.5	4.5		4.0			4.5	
Vehicle Extension (s)		4.3			4.3	4.3		0.5			0.5	
Lane Grp Cap (vph)		1735			1736	761		566			661	
v/s Ratio Prot		c0.49			0.44			c0.21			c0.20	
v/s Ratio Perm						0.07						
v/c Ratio		0.92			0.82	0.13		1.23			0.92	
Uniform Delay, d1		24.5			22.2	13.5		47.5			44.1	
Progression Factor		0.79			0.67	0.26		1.00			1.00	
Incremental Delay, d2		6.5			2.7	0.2		117.9			17.0	
Delay (s)		25.9			17.6	3.7		165.5			61.2	
Level of Service		C			B	A		F			E	
Approach Delay (s)		25.9			16.4			165.5			61.2	
Approach LOS		C			B			F			E	
Intersection Summary												
HCM Average Control Delay			49.6				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			90.6%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

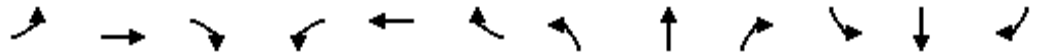
Future 2035 Conditions
57: Canyon Rd/TV Highway & Watson Ave

Proposed PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑					↵	↑↑	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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	0.97	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3246		1613	3226					1523	3101	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3246		1613	3226					1523	3101	
Volume (vph)	0	1170	10	120	1530	0	0	0	0	200	680	170
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	1232	11	126	1611	0	0	0	0	211	716	179
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	1243	0	126	1611	0	0	0	0	211	877	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)		56.5		15.0	75.5					31.0	31.0	
Effective Green, g (s)		58.0		16.0	77.0					32.0	32.0	
Actuated g/C Ratio		0.50		0.14	0.67					0.28	0.28	
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)		1637		224	2160					424	863	
v/s Ratio Prot		c0.38		0.08	c0.50							
v/s Ratio Perm										0.14	0.28	
v/c Ratio		0.76		0.56	0.75					0.50	1.02	
Uniform Delay, d1		22.9		46.2	12.5					34.8	41.5	
Progression Factor		1.43		0.78	0.45					1.00	1.00	
Incremental Delay, d2		1.2		1.3	1.3					0.5	34.7	
Delay (s)		34.0		37.2	6.9					35.3	76.2	
Level of Service		C		D	A					D	E	
Approach Delay (s)		34.0			9.1			0.0			68.4	
Approach LOS		C			A			A			E	
Intersection Summary												
HCM Average Control Delay			32.8			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			6.0			
Intersection Capacity Utilization			76.1%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
58: Canyon Rd/TV Highway & Hall Blvd

Proposed PM
HCM Signalized Intersection Capacity Analysis


























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑			↙↘				
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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			0.98			1.00				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1629	3257			3112			4683				
Flt Permitted	0.95	1.00			1.00			0.99				
Satd. Flow (perm)	1629	3257			3112			4683				
Volume (vph)	30	1200	0	0	1410	160	210	550	20	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)	32	1290	0	0	1516	172	226	591	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	32	1290	0	0	1682	0	0	837	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)	4.9	82.0			73.1			24.5				
Effective Green, g (s)	5.9	83.5			74.6			25.5				
Actuated g/C Ratio	0.05	0.73			0.65			0.22				
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)	84	2365			2019			1038				
v/s Ratio Prot	0.02	c0.40			c0.54							
v/s Ratio Perm								0.18				
v/c Ratio	0.38	0.55			0.83			0.81				
Uniform Delay, d1	52.8	7.1			15.4			42.4				
Progression Factor	1.18	0.09			0.57			1.69				
Incremental Delay, d2	1.1	0.6			2.9			0.4				
Delay (s)	63.4	1.2			11.8			72.0				
Level of Service	E	A			B			E				
Approach Delay (s)		2.7			11.8			72.0			0.0	
Approach LOS		A			B			E			A	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Future 2035 Conditions
59: Canyon Rd/TV Highway & Lombard

Proposed PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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	0.98		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	0.92		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)	1629	3248		1613	3223		1500	1428		1462	1538	1283
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1629	3248		1613	3223		1500	1428		1462	1538	1283
Volume (vph)	50	1230	20	10	1590	10	70	10	10	10	10	60
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)	53	1295	21	11	1674	11	74	11	11	11	11	63
RTOR Reduction (vph)	0	1	0	0	0	0	0	10	0	0	0	59
Lane Group Flow (vph)	53	1315	0	11	1685	0	74	12	0	11	11	4
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			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												8
Actuated Green, G (s)	12.0	83.2		1.0	72.2		7.8	12.7		1.6	6.5	6.5
Effective Green, g (s)	13.0	84.7		2.0	73.7		8.8	13.7		2.6	7.5	7.5
Actuated g/C Ratio	0.11	0.74		0.02	0.64		0.08	0.12		0.02	0.07	0.07
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		3.0	0.5		3.0	0.5	0.5
Lane Grp Cap (vph)	184	2392		28	2066		115	170		33	100	84
v/s Ratio Prot	0.03	c0.40		0.01	c0.52		c0.05	0.01		0.01	c0.01	
v/s Ratio Perm												0.00
v/c Ratio	0.29	0.55		0.39	0.82		0.64	0.07		0.33	0.11	0.05
Uniform Delay, d1	46.8	6.7		55.9	15.5		51.6	45.0		55.3	50.6	50.4
Progression Factor	0.80	1.11		1.42	0.38		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.8		1.2	1.3		11.7	0.1		5.9	0.2	0.1
Delay (s)	37.8	8.2		80.4	7.2		63.3	45.1		61.2	50.8	50.5
Level of Service	D	A		F	A		E	D		E	D	D
Approach Delay (s)		9.4			7.7			59.1			51.9	
Approach LOS		A			A			E			D	
Intersection Summary												
HCM Average Control Delay			11.1									B
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			115.0								9.0	
Intersection Capacity Utilization			67.4%									C
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
60: Canyon Rd/TV Highway & Broadway

Proposed PM
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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	0.98		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	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1613	3194		1629	3257	1424	1644	1525		3190	1667	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1613	3194		1629	3257	1424	1644	1525		3190	1667	
Volume (vph)	60	1210	30	10	1680	200	20	80	180	250	70	20
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)	62	1260	31	10	1750	208	21	83	188	260	73	21
RTOR Reduction (vph)	0	1	0	0	0	38	0	79	0	0	10	0
Lane Group Flow (vph)	62	1290	0	10	1750	170	21	192	0	260	84	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)	7.3	65.5		2.0	60.2	60.2	9.8	16.7		14.3	21.2	
Effective Green, g (s)	8.3	67.0		3.0	61.7	61.7	10.8	17.7		15.3	22.2	
Actuated g/C Ratio	0.07	0.58		0.03	0.54	0.54	0.09	0.15		0.13	0.19	
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)	116	1861		42	1747	764	154	235		424	322	
v/s Ratio Prot	0.04	c0.40		0.01	c0.54		0.01	c0.13		c0.08	0.05	
v/s Ratio Perm						0.12						
v/c Ratio	0.53	0.69		0.24	1.00	0.22	0.14	0.82		0.61	0.26	
Uniform Delay, d1	51.5	16.8		54.9	26.6	14.0	47.8	47.1		47.1	39.4	
Progression Factor	1.09	0.82		0.91	0.87	0.97	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	1.9		1.0	16.6	0.4	0.1	18.5		1.9	0.2	
Delay (s)	58.9	15.8		51.0	39.7	13.9	48.0	65.6		48.9	39.6	
Level of Service	E	B		D	D	B	D	E		D	D	
Approach Delay (s)		17.7			37.0			64.3			46.4	
Approach LOS		B			D			E			D	
Intersection Summary												
HCM Average Control Delay			33.3				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			88.2%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
61: Canyon Rd/TV Highway & 115th Ave

Proposed PM
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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		1.00	0.95			1.00	1.00		1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1629	3230		1613	3210			1605	1407		1703	
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.98	
Satd. Flow (perm)	1629	3230		1613	3210			1605	1407		1703	
Volume (vph)	21	1500	56	350	1750	50	125	6	176	20	12	7
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)	22	1579	59	368	1842	53	132	6	185	21	13	7
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	163	0	7	0
Lane Group Flow (vph)	22	1636	0	368	1894	0	0	138	22	0	34	0
Confl. Peds. (#/hr)			3			3			3			5
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	7%	7%	7%	0%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases									4			
Actuated Green, G (s)	3.1	60.5		20.5	77.9			12.6	12.6		4.9	
Effective Green, g (s)	4.1	62.0		21.5	79.4			13.6	13.6		5.9	
Actuated g/C Ratio	0.04	0.54		0.19	0.69			0.12	0.12		0.05	
Clearance Time (s)	4.0	4.5		4.0	4.5			4.0	4.0		4.0	
Vehicle Extension (s)	2.3	4.3		2.3	4.3			0.7	0.7		2.5	
Lane Grp Cap (vph)	58	1741		302	2216			190	166		87	
v/s Ratio Prot	0.01	c0.51		c0.23	0.59			c0.09			c0.02	
v/s Ratio Perm									0.02			
v/c Ratio	0.38	0.94		1.22	0.85			0.73	0.13		0.39	
Uniform Delay, d1	54.2	24.8		46.8	13.4			48.9	45.4		52.8	
Progression Factor	1.16	0.61		0.86	0.69			1.00	1.00		1.00	
Incremental Delay, d2	1.8	8.8		114.1	2.5			11.1	0.1		2.1	
Delay (s)	64.7	24.0		154.2	11.8			60.0	45.5		55.0	
Level of Service	E	C		F	B			E	D		D	
Approach Delay (s)		24.5			35.0			51.7			55.0	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay			32.4			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			89.7%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
62: Canyon Rd/TV Highway & SR 217 SB Off-Ramp

Proposed PM
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑						↑↑	↑
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3257	1433	1629	3257						3141	1352
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3257	1433	1629	3293						3141	1352
Volume (vph)	0	1220	610	160	1640	0	0	0	0	190	920	540
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	1271	635	167	1708	0	0	0	0	198	958	562
RTOR Reduction (vph)	0	0	68	0	0	0	0	0	0	0	1	17
Lane Group Flow (vph)	0	1271	567	167	1708	0	0	0	0	0	1188	512
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)		48.8	48.8	16.2	69.5						36.5	36.5
Effective Green, g (s)		50.3	50.3	17.7	71.0						38.0	38.0
Actuated g/C Ratio		0.44	0.44	0.15	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)		1425	627	251	2011						1038	447
v/s Ratio Prot		0.39		0.10	c0.52							
v/s Ratio Perm			c0.40								0.38	c0.38
v/c Ratio		0.89	0.91	0.67	0.85						1.14	1.14
Uniform Delay, d1		29.8	30.1	45.9	17.7						38.5	38.5
Progression Factor		0.43	0.30	1.15	0.16						1.00	1.00
Incremental Delay, d2		5.6	12.6	2.8	1.8						76.5	88.5
Delay (s)		18.4	21.5	55.7	4.5						115.0	127.0
Level of Service		B	C	E	A						F	F
Approach Delay (s)		19.4			9.1			0.0			118.7	
Approach LOS		B			A			A			F	
Intersection Summary												
HCM Average Control Delay			46.9			HCM Level of Service					D	
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			98.2%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

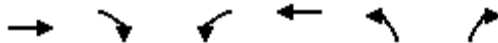
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.91	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	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)	1569	3138			3196	1430	1468	3033	1443			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	2140	3138			3196	1430	1468	3033	1443			
Volume (vph)	300	1110	0	0	1180	260	620	450	220	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	1156	0	0	1229	271	646	469	229	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	91	0	0	83	0	0	0
Lane Group Flow (vph)	312	1156	0	0	1229	180	359	756	146	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	76.5			45.5	45.5	29.5	29.5	29.5			
Effective Green, g (s)	28.0	78.0			47.0	47.0	31.0	31.0	31.0			
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)	382	2128			1306	584	396	818	389			
v/s Ratio Prot	c0.20	0.37			c0.38							
v/s Ratio Perm						0.13	0.24	0.25	0.10			
v/c Ratio	0.82	0.54			0.94	0.31	0.91	0.92	0.37			
Uniform Delay, d1	41.1	9.4			32.7	23.0	40.6	40.9	34.1			
Progression Factor	0.65	0.27			0.81	0.66	1.02	1.01	1.17			
Incremental Delay, d2	4.9	0.4			12.1	1.1	16.1	10.7	0.2			
Delay (s)	31.6	3.0			38.6	16.2	57.6	52.2	40.2			
Level of Service	C	A			D	B	E	D	D			
Approach Delay (s)		9.0			34.5			51.6			0.0	
Approach LOS		A			C			D			A	
Intersection Summary												
HCM Average Control Delay			31.2				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			98.2%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
64: Canyon Rd/TV Highway & 110th Ave

Proposed PM
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			-1%			0%				-1%
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	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	0.98		1.00	0.99		1.00	0.92		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1676	3284		1652	3277		1644	1587		1591	1518	
Flt Permitted	0.16	1.00		0.12	1.00		0.40	1.00		0.57	1.00	
Satd. Flow (perm)	277	3284		211	3277		689	1587		952	1518	
Volume (vph)	100	1200	160	100	1150	60	131	51	64	101	70	117
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)	105	1263	168	105	1211	63	138	54	67	106	74	123
RTOR Reduction (vph)	0	6	0	0	2	0	0	46	0	0	61	0
Lane Group Flow (vph)	105	1425	0	105	1272	0	138	75	0	106	136	0
Confl. Peds. (#/hr)			2			1						
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	4%	8%	8%	8%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	81.0	73.2		81.0	73.2		21.5	21.5		21.5	21.5	
Effective Green, g (s)	83.5	74.7		83.5	74.7		22.5	22.5		22.5	22.5	
Actuated g/C Ratio	0.73	0.65		0.73	0.65		0.20	0.20		0.20	0.20	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.3	4.3		2.3	4.3		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	308	2133		263	2129		135	311		186	297	
v/s Ratio Prot	0.03	c0.43		c0.03	0.39			0.05			0.09	
v/s Ratio Perm	0.22			0.26			c0.20			0.11		
v/c Ratio	0.34	0.67		0.40	0.60		1.02	0.24		0.57	0.46	
Uniform Delay, d1	7.2	12.5		9.0	11.5		46.2	39.0		41.9	40.9	
Progression Factor	1.81	0.82		1.67	0.81		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.5		0.5	1.2		83.5	0.3		3.2	0.8	
Delay (s)	13.4	11.7		15.5	10.5		129.7	39.3		45.1	41.7	
Level of Service	B	B		B	B		F	D		D	D	
Approach Delay (s)		11.8			10.8			87.5			42.9	
Approach LOS		B			B			F			D	
Intersection Summary												
HCM Average Control Delay			19.8			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			78.7%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-1%	0%	
Total Lost time (s)	3.0		3.0	3.0	3.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.98		1.00	1.00	0.94	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	3447		1778	3557	1709	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	3447		1778	3557	1709	
Volume (vph)	1250	150	100	1050	130	90
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1316	158	105	1105	137	95
RTOR Reduction (vph)	6	0	0	0	23	0
Lane Group Flow (vph)	1468	0	105	1105	209	0
Turn Type	custom					
Protected Phases	6		5	2	4	
Permitted Phases	6		5	2	4	
Actuated Green, G (s)	73.1		11.3	88.4	18.1	
Effective Green, g (s)	74.6		12.3	89.9	19.1	
Actuated g/C Ratio	0.65		0.11	0.78	0.17	
Clearance Time (s)	4.5		4.0	4.5	4.0	
Vehicle Extension (s)	4.3		2.3	4.3	2.3	
Lane Grp Cap (vph)	2236		190	2781	284	
v/s Ratio Prot	c0.43		c0.06	0.31	c0.12	
v/s Ratio Perm						
v/c Ratio	0.66		0.55	0.40	0.73	
Uniform Delay, d1	12.4		48.7	4.0	45.5	
Progression Factor	0.37		1.00	1.00	1.00	
Incremental Delay, d2	1.2		2.5	0.4	8.7	
Delay (s)	5.7		51.2	4.4	54.2	
Level of Service	A		D	A	D	
Approach Delay (s)	5.7			8.5	54.2	
Approach LOS	A			A	D	

Intersection Summary

HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.6%	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)	1800	1800	1800	1800	1800	1800	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	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)	1660	3265		1660	3320	1432	1644	1731	1443	1660	1748	1441
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.17	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	1855	3265		2182	3320	1432	287	1731	1443	767	1748	1441
Volume (vph)	100	930	70	250	1160	290	120	170	170	220	350	110
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)	103	959	72	258	1196	299	124	175	175	227	361	113
RTOR Reduction (vph)	0	5	0	0	0	81	0	0	128	0	0	57
Lane Group Flow (vph)	103	1026	0	258	1196	218	124	175	47	227	361	56
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
Protected Phases	5	2		1	6		3	8		8	4	4
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	8.6	53.0		13.0	57.4	57.4	31.6	23.1	23.1	34.4	24.5	24.5
Effective Green, g (s)	9.6	54.0		14.0	58.4	58.4	33.6	24.1	24.1	36.4	25.5	25.5
Actuated g/C Ratio	0.08	0.47		0.12	0.51	0.51	0.29	0.21	0.21	0.32	0.22	0.22
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)	139	1533		202	1686	727	196	363	302	327	388	320
v/s Ratio Prot	c0.06	0.31		c0.16	c0.36		0.05	0.10		c0.07	c0.21	
v/s Ratio Perm						0.15	0.13		0.03	0.15		0.04
v/c Ratio	0.74	0.67		1.28	0.71	0.30	0.63	0.48	0.16	0.69	0.93	0.18
Uniform Delay, d1	51.5	23.6		50.5	21.8	16.4	32.7	40.0	37.1	32.4	43.9	36.2
Progression Factor	0.73	1.27		0.88	0.71	0.45	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.4	1.2		147.4	1.7	0.7	4.8	0.4	0.1	5.1	28.4	0.1
Delay (s)	47.2	31.2		192.0	17.1	8.1	37.6	40.3	37.2	37.5	72.3	36.3
Level of Service	D	C		F	B	A	D	D	D	D	E	D
Approach Delay (s)		32.6			41.3			38.5			55.2	
Approach LOS		C			D			D			E	
Intersection Summary												
HCM Average Control Delay			41.0									HCM Level of Service D
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			115.0									Sum of lost time (s) 15.0
Intersection Capacity Utilization			84.4%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
212: BH Highway & Lombard Ave

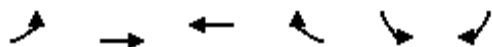
Proposed PM
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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)	1660	3320	1454	1660	3320	1454	1629	1571		1629	1652	
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)	1660	2947	1454	1660	3338	1454	1629	1867		1629	1652	
Volume (vph)	60	900	90	180	1320	130	20	210	170	150	250	80
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)	67	1000	100	200	1467	144	22	233	189	167	278	89
RTOR Reduction (vph)	0	0	0	0	0	0	0	24	0	0	9	0
Lane Group Flow (vph)	67	1000	100	200	1467	144	22	398	0	167	358	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)	9.6	39.4	115.0	15.6	45.4	115.0	2.6	28.4		11.6	37.4	
Effective Green, g (s)	11.6	41.4	115.0	17.6	47.4	115.0	4.6	30.4		13.6	39.4	
Actuated g/C Ratio	0.10	0.36	1.00	0.15	0.41	1.00	0.04	0.26		0.12	0.34	
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)	167	1195	1454	254	1368	1454	65	415		193	566	
v/s Ratio Prot	0.04	c0.30		0.12	c0.44		0.01	c0.25		c0.10	0.22	
v/s Ratio Perm			0.07			0.10						
v/c Ratio	0.40	0.84	0.07	0.79	1.07	0.10	0.34	0.96		0.87	0.63	
Uniform Delay, d1	48.4	33.7	0.0	46.9	33.8	0.0	53.7	41.7		49.8	31.7	
Progression Factor	1.00	1.01	1.00	1.36	0.70	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	6.5	0.1	12.0	44.7	0.1	1.1	33.1		30.0	1.9	
Delay (s)	48.9	40.5	0.1	75.7	68.5	0.1	54.8	74.7		79.8	33.6	
Level of Service	D	D	A	E	E	A	D	E		E	C	
Approach Delay (s)		37.6			63.9			73.8			48.0	
Approach LOS		D			E			E			D	
Intersection Summary												
HCM Average Control Delay			55.1				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			90.6%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
214: BH Highway & 107th Ave

Proposed PM
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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
Lane Util. Factor	1.00	0.95		1.00	0.95			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	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.96	1.00
Satd. Flow (prot)	1644	3256		1629	3217			1718	1500		1659	1439
Flt Permitted	0.07	1.00		0.14	1.00			0.59	1.00		0.58	1.00
Satd. Flow (perm)	119	3256		243	3217			1043	1500		995	1439
Volume (vph)	90	1250	40	30	1400	100	70	60	40	200	30	100
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)	94	1302	42	31	1458	104	73	62	42	208	31	104
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	31	0	0	71
Lane Group Flow (vph)	94	1342	0	31	1558	0	0	135	11	0	239	33
Confl. Peds. (#/hr)			5			5						6
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	2%	2%	2%	4%	4%	4%
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt			pm+pt			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	77.7	70.3		68.9	65.5			28.8	28.8		28.8	28.8
Effective Green, g (s)	79.2	71.8		71.4	67.0			29.8	29.8		29.8	29.8
Actuated g/C Ratio	0.69	0.62		0.62	0.58			0.26	0.26		0.26	0.26
Clearance Time (s)	4.0	4.5		4.0	4.5			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.3	4.6		2.3	4.6			1.0	1.0		2.5	2.5
Lane Grp Cap (vph)	204	2033		204	1874			270	389		258	373
v/s Ratio Prot	c0.04	0.41		0.01	c0.48							
v/s Ratio Perm	0.28			0.09				0.13	0.01		c0.24	0.02
v/c Ratio	0.46	0.66		0.15	0.83			0.50	0.03		0.93	0.09
Uniform Delay, d1	16.5	13.8		10.4	19.4			36.3	31.8		41.5	32.3
Progression Factor	0.90	1.15		0.79	0.72			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	1.5		0.1	3.2			0.5	0.0		36.4	0.1
Delay (s)	15.7	17.4		8.4	17.1			36.8	31.8		78.0	32.4
Level of Service	B	B		A	B			D	C		E	C
Approach Delay (s)		17.3			16.9			35.6			64.1	
Approach LOS		B			B			D			E	
Intersection Summary												
HCM Average Control Delay			22.6			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			79.5%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↶↶	↶↶		↶	↶
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
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	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1660	3314	3242		1676	1500
Flt Permitted	0.14	1.00	1.00		0.95	1.00
Satd. Flow (perm)	243	3314	3242		1676	1500
Volume (vph)	100	1290	1370	45	75	140
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	1316	1398	46	77	143
RTOR Reduction (vph)	0	0	1	0	0	130
Lane Group Flow (vph)	102	1316	1443	0	77	13
Heavy Vehicles (%)	3%	3%	5%	5%	2%	2%
Bus Blockages (#/hr)	0	1	0	0	0	0
Turn Type	pm+pt			Perm		
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	97.4	96.9	80.9		9.6	9.6
Effective Green, g (s)	98.4	98.4	82.4		10.6	10.6
Actuated g/C Ratio	0.86	0.86	0.72		0.09	0.09
Clearance Time (s)	4.0	4.5	4.5		4.0	4.0
Vehicle Extension (s)	2.5	4.6	4.6		2.3	2.3
Lane Grp Cap (vph)	368	2836	2323		154	138
v/s Ratio Prot	0.03	c0.40	c0.45		c0.05	
v/s Ratio Perm	0.21					0.01
v/c Ratio	0.28	0.46	0.62		0.50	0.10
Uniform Delay, d1	8.9	2.0	8.3		49.7	47.8
Progression Factor	0.51	0.56	0.16		1.00	1.00
Incremental Delay, d2	1.5	0.5	0.8		1.5	0.2
Delay (s)	6.1	1.6	2.1		51.2	48.0
Level of Service	A	A	A		D	D
Approach Delay (s)		1.9	2.1		49.1	
Approach LOS		A	A		D	

Intersection Summary

HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			













Future 2035 Conditions
216: BH Highway & SR 217 NB On-Ramp

Proposed PM
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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)	1676	3353			3288	1442	1496	3117	1471			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	2281	3681			3288	1442	1496	3465	1471			
Volume (vph)	240	1170	0	0	1140	370	510	620	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)	264	1286	0	0	1253	407	560	681	242	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	54	0	0	0
Lane Group Flow (vph)	264	1286	0	0	1253	355	374	867	188	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)	18.9	73.6			50.2	50.2	32.4	32.4	32.4			
Effective Green, g (s)	20.4	75.1			51.7	51.7	33.9	33.9	33.9			
Actuated g/C Ratio	0.18	0.65			0.45	0.45	0.29	0.29	0.29			
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)	297	2190			1478	648	441	1021	434			
v/s Ratio Prot	c0.16	0.38			c0.38							
v/s Ratio Perm						0.25	0.25	c0.25	0.13			
v/c Ratio	0.89	0.59			0.85	0.55	0.85	0.85	0.43			
Uniform Delay, d1	46.2	11.2			28.1	23.1	38.1	38.1	32.8			
Progression Factor	1.26	0.38			0.49	0.28	1.00	1.00	1.00			
Incremental Delay, d2	13.8	0.5			5.2	2.8	13.7	6.6	0.4			
Delay (s)	72.1	4.8			19.1	9.3	51.9	44.7	33.2			
Level of Service	E	A			B	A	D	D	C			
Approach Delay (s)		16.2			16.7			44.6			0.0	
Approach LOS		B			B			D			A	
Intersection Summary												
HCM Average Control Delay			25.4				HCM Level of Service		C			
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			115.0			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												

Future 2035 Conditions
217: BH Highway & SR 217 SB Off-Ramp

Proposed PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖↑	↗
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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						0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3320	1465	1660	3320						3185	1421
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3320	1465	2790	3320						3185	1421
Volume (vph)	0	1060	490	250	1410	0	0	0	0	350	1010	440
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	1082	500	255	1439	0	0	0	0	357	1031	449
RTOR Reduction (vph)	0	0	51	0	0	0	0	0	0	0	0	38
Lane Group Flow (vph)	0	1082	449	255	1439	0	0	0	0	0	1388	411
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
Effective Green, g (s)		48.0	48.0	23.0	74.0						35.0	35.0
Actuated g/C Ratio		0.42	0.42	0.20	0.64						0.30	0.30
Clearance Time (s)		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
Lane Grp Cap (vph)		1386	611	332	2136						969	432
v/s Ratio Prot		c0.33		c0.15	0.43							
v/s Ratio Perm			0.31								0.44	0.29
v/c Ratio		0.78	0.74	0.77	0.67						1.43	0.95
Uniform Delay, d1		29.0	28.2	43.5	12.9						40.0	39.2
Progression Factor		0.49	0.42	0.81	0.46						0.72	0.66
Incremental Delay, d2		3.8	6.6	5.0	0.9						196.3	13.2
Delay (s)		18.1	18.4	40.2	6.8						225.0	39.0
Level of Service		B	B	D	A						F	D
Approach Delay (s)		18.2			11.8			0.0			179.5	
Approach LOS		B			B			A			F	
Intersection Summary												
HCM Average Control Delay			74.0			HCM Level of Service					E	
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			115.0			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												

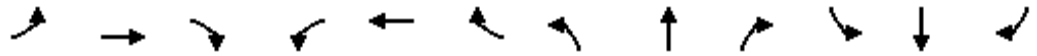
	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0		3.0	3.0	3.0	3.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3325		1676	3353	1676	1500
Flt Permitted	1.00		0.26	1.00	0.95	1.00
Satd. Flow (perm)	3325		459	3353	1676	1500
Volume (vph)	850	50	100	1260	50	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	944	56	111	1400	56	83
RTOR Reduction (vph)	2	0	0	0	0	78
Lane Group Flow (vph)	998	0	111	1400	56	5
Turn Type			pm+pt			Perm
Protected Phases	2		1	6	8	
Permitted Phases			6			8
Actuated Green, G (s)	92.0		100.5	100.5	6.0	6.0
Effective Green, g (s)	93.5		102.0	102.0	7.0	7.0
Actuated g/C Ratio	0.81		0.89	0.89	0.06	0.06
Clearance Time (s)	4.5		4.5	4.5	4.0	4.0
Vehicle Extension (s)	4.2		0.5	4.5	0.5	0.5
Lane Grp Cap (vph)	2703		465	2974	102	91
v/s Ratio Prot	0.30		0.01	c0.42	c0.03	
v/s Ratio Perm			0.20			0.00
v/c Ratio	0.37		0.24	0.47	0.55	0.06
Uniform Delay, d1	2.9		1.2	1.3	52.5	50.9
Progression Factor	1.41		0.06	0.04	1.00	1.00
Incremental Delay, d2	0.3		0.1	0.4	3.2	0.1
Delay (s)	4.4		0.1	0.4	55.7	51.0
Level of Service	A		A	A	E	D
Approach Delay (s)	4.4			0.4	52.9	
Approach LOS	A			A	D	
Intersection Summary						
HCM Average Control Delay			4.7		HCM Level of Service	A
HCM Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	6.0
Intersection Capacity Utilization			48.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↵	↑↑	↑↑	↵	↵↵	↵
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
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	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.95	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1676	3353	3288	1438	3142	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1676	3353	3288	1438	3142	
Volume (vph)	140	820	1120	150	510	240
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	863	1179	158	537	253
RTOR Reduction (vph)	0	0	0	48	51	0
Lane Group Flow (vph)	147	863	1179	110	739	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)	12.7	81.5	64.8	64.8	25.0	
Effective Green, g (s)	13.7	83.0	66.3	66.3	26.0	
Actuated g/C Ratio	0.12	0.72	0.58	0.58	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)	200	2420	1896	829	710	
v/s Ratio Prot	c0.09	0.26	c0.36		c0.24	
v/s Ratio Perm				0.08		
v/c Ratio	0.74	0.36	0.62	0.13	1.04	
Uniform Delay, d1	48.9	6.0	16.1	11.2	44.5	
Progression Factor	1.13	0.69	0.51	0.00	0.73	
Incremental Delay, d2	11.4	0.4	1.2	0.3	43.2	
Delay (s)	66.6	4.6	9.4	0.3	75.6	
Level of Service	E	A	A	A	E	
Approach Delay (s)		13.6	8.3		75.6	
Approach LOS		B	A		E	
Intersection Summary						
HCM Average Control Delay			27.0		HCM Level of Service	C
HCM Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			74.4%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Future 2035 Conditions
229: BH Highway & Hall Blvd

Proposed PM
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑		↘	↑↑				
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1660	3320			3169		1615	3173				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	1660	3320			3169		1615	3173				
Volume (vph)	100	830	0	0	1080	100	260	860	150	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)	103	856	0	0	1113	103	268	887	155	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	12	0	0	0	0
Lane Group Flow (vph)	103	856	0	0	1210	0	268	1030	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)	9.3	75.0			61.7		32.0	32.0				
Effective Green, g (s)	10.3	76.0			62.7		33.0	33.0				
Actuated g/C Ratio	0.09	0.66			0.55		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)	149	2194			1728		463	911				
v/s Ratio Prot	c0.06	0.26			c0.38			c0.32				
v/s Ratio Perm							0.17					
v/c Ratio	0.69	0.39			0.70		0.58	1.13				
Uniform Delay, d1	50.8	8.9			19.2		35.1	41.0				
Progression Factor	1.13	0.72			0.71		1.00	1.00				
Incremental Delay, d2	7.3	0.4			0.7		1.3	72.6				
Delay (s)	65.0	6.8			14.4		36.4	113.6				
Level of Service	E	A			B		D	F				
Approach Delay (s)		13.0			14.4			97.8			0.0	
Approach LOS		B			B			F			A	
Intersection Summary												
HCM Average Control Delay			45.3				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			81.0%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↵	↑↑	↑↑		↵↵	
Ideal Flow (vphpl)	1800	1800	1800	1800	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)	1693	3379	3235		3068	
Flt Permitted	0.14	1.00	1.00		0.97	
Satd. Flow (perm)	251	3379	3235		3068	
Volume (vph)	120	750	1090	190	370	300
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	125	781	1135	198	385	312
RTOR Reduction (vph)	0	0	12	0	127	0
Lane Group Flow (vph)	125	781	1321	0	570	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)	85.5	85.5	74.5		21.0	
Effective Green, g (s)	87.0	87.0	76.0		22.0	
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)	290	2556	2138		587	
v/s Ratio Prot	c0.03	0.23	c0.41		c0.19	
v/s Ratio Perm	0.30					
v/c Ratio	0.43	0.31	0.62		0.97	
Uniform Delay, d1	7.8	4.4	11.2		46.2	
Progression Factor	1.00	1.00	0.40		0.68	
Incremental Delay, d2	0.6	0.3	1.2		18.7	
Delay (s)	8.4	4.7	5.7		50.2	
Level of Service	A	A	A		D	
Approach Delay (s)		5.2	5.7		50.2	
Approach LOS		A	A		D	
Intersection Summary						
HCM Average Control Delay			16.1		HCM Level of Service	B
HCM Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			76.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

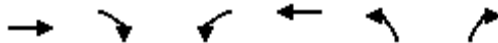
Future 2035 Conditions
231: BH Highway & Watson Ave

Proposed PM
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔	↑↑						↑↑	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	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						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3140		1613	3220						3182	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3140		1613	3220						3182	
Volume (vph)	0	760	310	130	1080	0	0	0	0	130	680	170
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	784	320	134	1113	0	0	0	0	134	701	175
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1067	0	134	1113	0	0	0	0	0	994	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)		52.8		11.0	67.8						39.2	
Effective Green, g (s)		53.8		12.0	68.8						40.2	
Actuated g/C Ratio		0.47		0.10	0.60						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)		1469		168	1926						1112	
v/s Ratio Prot		c0.34		c0.08	0.35						c0.31	
v/s Ratio Perm												
v/c Ratio		0.73		0.80	0.58						0.89	
Uniform Delay, d1		24.7		50.3	14.2						35.4	
Progression Factor		0.69		0.92	0.55						0.44	
Incremental Delay, d2		2.5		16.5	0.9						8.3	
Delay (s)		19.4		62.6	8.8						23.9	
Level of Service		B		E	A						C	
Approach Delay (s)		19.4			14.5			0.0			23.9	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM Average Control Delay			19.0			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			80.0%			ICU Level of Service					D	
Analysis Period (min)			15									

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Ideal Flow (vphpl)	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	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)	3203		1660	3307	1644	1435
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3203		115	3307	1644	1435
Volume (vph)	1290	330	380	1360	350	480
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1402	359	413	1478	380	522
RTOR Reduction (vph)	20	0	0	0	0	233
Lane Group Flow (vph)	1741	0	413	1478	380	289
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)	1615		364	2358	386	337
v/s Ratio Prot	0.54		c0.21	0.45	c0.23	
v/s Ratio Perm			c0.60			0.20
v/c Ratio	1.08		1.13	0.63	0.98	0.86
Uniform Delay, d1	28.5		39.7	8.6	43.8	42.2
Progression Factor	0.77		1.00	1.00	1.00	1.00
Incremental Delay, d2	44.9		89.0	1.3	41.3	18.6
Delay (s)	67.0		128.7	9.8	85.1	60.8
Level of Service	E		F	A	F	E
Approach Delay (s)	67.0			35.8	71.0	
Approach LOS	E			D	E	
Intersection Summary						
HCM Average Control Delay			54.8		HCM Level of Service	D
HCM Volume to Capacity ratio			1.09			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	6.0
Intersection Capacity Utilization			101.5%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

Summary of All Intervals

Run Number	1	10	2	3	4	5	6	7
Start Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
End Time	6:10	6:10	6:10	6:10	6:10	6:10	6:10	6:10
Total Time (min)	70	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3	3
# of Recorded Intvls	2	2	2	2	2	2	2	2
Vehs Entered	8142	9621	9195	7595	7019	8292	9144	5731
Vehs Exited	7479	9111	8850	6675	5874	7739	8785	4368
Starting Vehs	597	573	679	607	551	593	639	548
Ending Vehs	1260	1083	1024	1527	1696	1146	998	1911
Denied Entry Before	10	6	3	5	4	7	1	5
Denied Entry After	1897	282	660	2398	2887	1564	874	4334
Travel Distance (mi)	8090	9899	9529	7346	6534	8434	9425	4919
Travel Time (hr)	1445.7	1059.8	1226.5	1659.3	1874.7	1434.8	1270.5	2750.2
Total Delay (hr)	1178.4	734.9	914.5	1417.5	1659.7	1157.0	960.4	2588.6
Total Stops	29645	36877	38375	28042	24130	30838	36496	18498
Fuel Used (gal)	1175.8	1038.2	1124.2	1247.6	1324.9	1185.1	1146.3	1753.2

Interval #0 Information Seeding

Start Time	5:00
End Time	5:10
Total Time (min)	10
Volumes adjusted by Growth Factors, Anti PHF.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:10
End Time	5:25
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	2606	2676	2535	2617	2626	2493	2608	2661
Vehs Exited	2313	2374	2290	2315	2286	2184	2268	2155
Starting Vehs	597	573	679	607	551	593	639	548
Ending Vehs	890	875	924	909	891	902	979	1054
Denied Entry Before	10	6	3	5	4	7	1	5
Denied Entry After	102	66	169	96	95	173	127	166
Travel Distance (mi)	2465	2588	2503	2510	2508	2400	2466	2423
Travel Time (hr)	195.3	190.3	224.5	207.1	193.7	199.1	211.3	205.5
Total Delay (hr)	114.0	105.1	142.4	124.7	111.3	120.1	130.4	126.1
Total Stops	7215	6989	8127	7420	7071	6976	7794	6790
Fuel Used (gal)	220.9	217.1	236.1	229.5	218.5	213.3	227.9	217.6

Interval #2 Information Recording

Start Time	5:25
End Time	6:10
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	5536	6945	6660	4978	4393	5799	6536	3070
Vehs Exited	5166	6737	6560	4360	3588	5555	6517	2213
Starting Vehs	890	875	924	909	891	902	979	1054
Ending Vehs	1260	1083	1024	1527	1696	1146	998	1911
Denied Entry Before	102	66	169	96	95	173	127	166
Denied Entry After	1897	282	660	2398	2887	1564	874	4334
Travel Distance (mi)	5625	7311	7027	4836	4026	6034	6959	2496
Travel Time (hr)	1250.4	869.5	1002.0	1452.3	1681.0	1235.7	1059.2	2544.7
Total Delay (hr)	1064.4	629.8	772.1	1292.8	1548.4	1036.9	830.0	2462.5
Total Stops	22430	29888	30248	20622	17059	23862	28702	11708
Fuel Used (gal)	954.9	821.1	888.1	1018.1	1106.3	971.8	918.4	1535.6

18: Allen Blvd & SR 217 NB Performance by movement Interval #1 5:10

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	1.9	0.7	12.0	5.2	2.9	5.7	1.2	29.5
Delay / Veh (s)	94.9	11.2	143.9	146.4	163.6	178.0	119.6	114.6
Travel Dist (mi)	6.2	17.7	66.1	28.2	27.0	48.8	14.8	208.8
Travel Time (hr)	2.1	1.3	14.1	6.2	3.7	7.2	1.7	36.3
Avg Speed (mph)	3	14	7	7	8	7	10	7

18: Allen Blvd & SR 217 NB Performance by movement Interval #2 5:25

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	11.7	5.6	198.7	79.9	44.6	83.4	23.9	447.8
Delay / Veh (s)	312.8	51.1	1459.9	1338.5	1588.6	1547.4	1591.9	1014.6
Travel Dist (mi)	11.3	32.4	112.1	48.8	42.5	80.8	22.7	350.7
Travel Time (hr)	12.2	6.7	202.4	81.7	45.9	85.8	24.6	459.3
Avg Speed (mph)	1	12	3	4	3	2	3	3

18: Allen Blvd & SR 217 NB Performance by movement Entire Run

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Total Delay (hr)	13.6	6.3	210.7	85.1	47.5	89.1	25.1	477.3
Delay / Veh (s)	237.7	37.2	960.0	895.8	1029.6	1035.0	1003.0	683.3
Travel Dist (mi)	17.5	50.1	178.2	77.0	69.5	129.7	37.5	559.5
Travel Time (hr)	14.3	8.0	216.5	87.9	49.6	92.9	26.3	495.5
Avg Speed (mph)	1	12	3	4	3	3	4	4

21: Allen Blvd & SR 217 SB Performance by movement Interval #1 5:10

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	4.7	0.5	1.0	0.4	3.7	3.0	2.6	15.9
Delay / Veh (s)	77.7	69.6	47.0	5.3	199.1	193.2	104.8	69.6
Travel Dist (mi)	37.4	4.3	6.9	25.0	23.0	18.6	30.6	145.7
Travel Time (hr)	5.9	0.6	1.3	1.3	4.4	3.5	3.6	20.6
Avg Speed (mph)	6	7	5	20	6	6	10	8

21: Allen Blvd & SR 217 SB Performance by movement Interval #2 5:25

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	29.1	2.2	9.2	4.6	62.2	52.2	67.1	226.7
Delay / Veh (s)	259.4	165.9	250.2	35.4	2174.3	2293.3	1871.8	595.2
Travel Dist (mi)	70.6	8.2	11.8	41.1	33.5	26.8	41.3	233.3
Travel Time (hr)	31.4	2.5	9.7	6.0	63.3	53.0	68.4	234.3
Avg Speed (mph)	2	4	1	12	2	2	3	2

21: Allen Blvd & SR 217 SB Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Total Delay (hr)	33.8	2.6	10.3	5.1	65.9	55.2	69.7	242.6
Delay / Veh (s)	196.4	131.5	175.1	23.9	1395.8	1450.2	1140.9	398.2
Travel Dist (mi)	108.1	12.5	18.7	66.1	56.5	45.4	71.8	379.0
Travel Time (hr)	37.3	3.1	11.0	7.3	67.7	56.5	72.0	254.9
Avg Speed (mph)	3	4	2	14	2	2	4	3

24: Allen Blvd & King Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.8	0.0	0.3	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Delay / Veh (s)	24.1	11.6	9.1	39.5	6.6	6.8	21.0	23.7	8.7	24.0	16.8	9.9
Travel Dist (mi)	1.8	65.8	4.8	4.7	56.0	1.3	3.0	1.0	3.1	0.6	0.3	0.2
Travel Time (hr)	0.1	2.9	0.2	0.5	2.5	0.1	0.2	0.1	0.2	0.1	0.0	0.0
Avg Speed (mph)	18	23	22	10	23	21	15	13	20	8	10	12

24: Allen Blvd & King Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	2.0
Delay / Veh (s)	10.6
Travel Dist (mi)	142.4
Travel Time (hr)	6.8
Avg Speed (mph)	21

24: Allen Blvd & King Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.7	31.9	1.8	0.5	1.0	0.0	2.4	0.8	4.6	1.8	1.3	0.4
Delay / Veh (s)	256.9	234.6	177.8	42.4	6.4	4.7	292.6	369.1	537.2	460.3	467.6	337.8
Travel Dist (mi)	3.1	139.2	11.0	7.9	94.8	2.7	6.3	1.7	6.9	1.1	0.8	0.3
Travel Time (hr)	0.8	36.5	2.2	0.8	4.1	0.1	2.7	0.9	4.9	1.8	1.3	0.4
Avg Speed (mph)	4	4	5	10	23	22	3	2	2	1	1	1

24: Allen Blvd & King Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	47.4
Delay / Veh (s)	135.6
Travel Dist (mi)	275.9
Travel Time (hr)	56.7
Avg Speed (mph)	5

24: Allen Blvd & King Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.8	32.7	1.9	0.8	1.6	0.0	2.5	0.9	4.7	1.8	1.3	0.4
Delay / Veh (s)	169.6	161.9	126.9	41.3	6.5	5.3	206.1	236.2	364.9	300.6	338.8	228.5
Travel Dist (mi)	4.9	205.0	15.9	12.6	150.7	4.0	9.3	2.7	10.0	1.7	1.1	0.5
Travel Time (hr)	0.9	39.4	2.4	1.3	6.6	0.2	2.9	1.0	5.1	1.9	1.4	0.4
Avg Speed (mph)	6	6	7	10	23	22	4	3	2	1	1	2

24: Allen Blvd & King Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	49.4
Delay / Veh (s)	92.2
Travel Dist (mi)	418.4
Travel Time (hr)	63.5
Avg Speed (mph)	7

28: Allen Blvd & Lombard Ave Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.5	0.6	0.1	1.0	4.3	0.3	0.2	1.6	0.7	2.2	3.1	0.8
Delay / Veh (s)	86.7	12.0	11.1	97.5	48.8	50.2	114.2	98.9	89.1	185.4	136.4	141.0
Travel Dist (mi)	5.2	48.1	10.7	10.5	91.6	5.5	3.3	24.1	12.2	21.2	40.3	10.3
Travel Time (hr)	0.6	2.2	0.5	1.3	7.2	0.4	0.3	2.3	1.1	2.9	4.5	1.2
Avg Speed (mph)	8	22	21	8	13	13	10	11	11	7	9	9

28: Allen Blvd & Lombard Ave Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	15.3
Delay / Veh (s)	64.0
Travel Dist (mi)	283.0
Travel Time (hr)	24.6
Avg Speed (mph)	12

28: Allen Blvd & Lombard Ave Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.1	13.9	3.7	1.5	6.6	0.3	2.0	14.3	7.0	16.5	28.0	7.9
Delay / Veh (s)	171.7	110.8	126.0	77.2	39.6	33.7	390.5	383.7	366.8	698.7	583.7	595.5
Travel Dist (mi)	11.9	112.9	27.9	19.1	168.4	9.8	7.5	55.2	28.6	40.9	84.0	23.1
Travel Time (hr)	2.6	17.6	4.7	2.1	12.0	0.7	2.2	15.9	7.9	17.9	30.9	8.8
Avg Speed (mph)	5	7	6	9	14	14	4	4	4	3	4	4

28: Allen Blvd & Lombard Ave Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	103.9
Delay / Veh (s)	204.3
Travel Dist (mi)	589.4
Travel Time (hr)	123.3
Avg Speed (mph)	6

28: Allen Blvd & Lombard Ave Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.6	14.5	3.8	2.4	10.8	0.6	2.2	15.8	7.7	18.7	31.2	8.8
Delay / Veh (s)	146.4	81.4	93.9	83.4	42.8	39.2	301.1	298.7	283.7	529.0	439.8	457.2
Travel Dist (mi)	17.0	161.0	38.6	29.6	260.0	15.3	10.8	79.3	40.9	62.2	124.3	33.4
Travel Time (hr)	3.2	19.8	5.2	3.4	19.2	1.1	2.5	18.2	9.0	20.9	35.4	10.0
Avg Speed (mph)	5	8	8	9	14	14	5	5	5	4	5	4

28: Allen Blvd & Lombard Ave Performance by movement Entire Run

Movement	All
Total Delay (hr)	119.1
Delay / Veh (s)	159.3
Travel Dist (mi)	872.4
Travel Time (hr)	147.9
Avg Speed (mph)	7

31: Allen Blvd & Hall Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.8	2.6	0.6	2.0	8.7	0.5	4.8	7.3	0.6	2.5	16.8	1.6
Delay / Veh (s)	81.6	45.9	45.6	156.4	109.9	108.1	228.6	125.0	106.3	320.5	299.6	310.9
Travel Dist (mi)	2.9	16.4	3.9	11.5	72.6	4.6	31.6	86.0	9.2	15.6	111.2	10.6
Travel Time (hr)	0.9	3.1	0.8	2.3	11.1	0.7	5.7	9.6	0.9	3.0	20.6	2.0
Avg Speed (mph)	3	5	5	5	7	7	6	9	10	5	5	5

31: Allen Blvd & Hall Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	49.0
Delay / Veh (s)	147.6
Travel Dist (mi)	376.0
Travel Time (hr)	60.8
Avg Speed (mph)	6

31: Allen Blvd & Hall Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.1	9.7	2.1	6.0	29.2	2.1	33.3	60.2	7.5	19.7	127.6	11.5
Delay / Veh (s)	94.9	69.3	63.0	234.9	174.1	185.0	581.5	405.1	473.9	1089.2	881.6	862.1
Travel Dist (mi)	6.4	40.7	9.5	22.7	151.3	10.0	80.6	210.7	23.5	35.5	274.4	25.4
Travel Time (hr)	2.4	11.1	2.5	6.8	34.1	2.4	35.5	65.7	8.2	20.9	137.0	12.4
Avg Speed (mph)	3	4	4	4	6	5	3	4	3	2	2	2

31: Allen Blvd & Hall Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	311.0
Delay / Veh (s)	389.3
Travel Dist (mi)	890.9
Travel Time (hr)	339.0
Avg Speed (mph)	3

31: Allen Blvd & Hall Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.9	12.3	2.7	8.0	37.9	2.6	38.1	67.5	8.2	22.2	144.4	13.1
Delay / Veh (s)	90.9	62.7	58.1	209.1	153.3	161.1	486.4	325.9	366.9	857.8	719.0	705.8
Travel Dist (mi)	9.3	57.1	13.4	34.2	223.9	14.6	112.2	296.7	32.7	51.1	385.5	36.0
Travel Time (hr)	3.3	14.2	3.3	9.1	45.1	3.1	41.2	75.3	9.1	23.9	157.7	14.4
Avg Speed (mph)	3	4	4	4	6	6	3	5	4	3	3	3

31: Allen Blvd & Hall Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	359.9
Delay / Veh (s)	318.1
Travel Dist (mi)	1266.8
Travel Time (hr)	399.8
Avg Speed (mph)	4

34: Allen Blvd & Main St Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.1	1.2	0.1	0.0	0.3	0.0	0.2	0.0	0.1	0.1	0.0	0.1
Delay / Veh (s)	30.3	16.2	20.3	13.4	3.5	3.1	43.8	53.1	24.9	45.8	34.1	17.1
Travel Dist (mi)	2.4	57.0	1.9	0.4	28.8	1.8	2.1	0.4	2.2	2.7	0.9	7.8
Travel Time (hr)	0.2	3.0	0.1	0.0	1.3	0.1	0.3	0.1	0.2	0.2	0.1	0.4
Avg Speed (mph)	14	19	16	13	22	19	7	7	11	14	14	19

34: Allen Blvd & Main St Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	2.3
Delay / Veh (s)	11.5
Travel Dist (mi)	108.5
Travel Time (hr)	6.0
Avg Speed (mph)	18

34: Allen Blvd & Main St Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.6	13.3	0.4	0.0	0.7	0.0	1.3	0.3	1.4	0.9	0.4	1.5
Delay / Veh (s)	83.3	74.6	87.1	9.0	3.3	2.7	105.9	143.4	119.6	155.5	182.5	117.9
Travel Dist (mi)	5.4	143.2	4.0	1.0	69.9	4.3	5.3	0.8	5.4	8.5	2.8	18.3
Travel Time (hr)	0.8	18.0	0.6	0.1	3.1	0.2	1.5	0.3	1.7	1.3	0.5	2.3
Avg Speed (mph)	8	8	7	14	22	19	4	4	4	7	6	8

34: Allen Blvd & Main St Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	20.9
Delay / Veh (s)	43.8
Travel Dist (mi)	268.8
Travel Time (hr)	30.3
Avg Speed (mph)	9

34: Allen Blvd & Main St Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.7	14.5	0.5	0.0	1.1	0.1	1.5	0.3	1.5	1.0	0.4	1.6
Delay / Veh (s)	67.1	57.8	64.8	10.1	3.4	2.8	88.3	116.3	92.8	123.6	138.0	86.8
Travel Dist (mi)	7.9	200.2	6.0	1.4	98.7	6.1	7.4	1.2	7.6	11.2	3.7	26.1
Travel Time (hr)	0.9	21.0	0.7	0.1	4.5	0.3	1.8	0.4	1.9	1.5	0.5	2.7
Avg Speed (mph)	9	10	9	14	22	19	5	5	4	8	7	10

34: Allen Blvd & Main St Performance by movement Entire Run

Movement	All
Total Delay (hr)	23.2
Delay / Veh (s)	34.4
Travel Dist (mi)	377.4
Travel Time (hr)	36.3
Avg Speed (mph)	11

43: Allen Blvd & Erickson Av Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.2	1.0	0.0	0.0	0.6	0.0	0.1	0.1	0.0	0.4	0.3	0.2
Delay / Veh (s)	31.8	16.1	10.0	10.2	6.3	5.9	37.4	37.1	20.3	65.0	59.3	49.9
Travel Dist (mi)	4.7	60.3	0.7	0.4	76.0	3.2	0.8	1.0	0.7	8.4	5.5	5.9
Travel Time (hr)	0.3	3.0	0.0	0.0	3.1	0.1	0.1	0.1	0.1	0.8	0.5	0.5
Avg Speed (mph)	14	20	21	22	25	23	7	7	10	11	11	12

43: Allen Blvd & Erickson Av Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	3.0
Delay / Veh (s)	15.4
Travel Dist (mi)	167.6
Travel Time (hr)	8.7
Avg Speed (mph)	19

43: Allen Blvd & Erickson Av Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.8	9.6	0.1	0.0	1.5	0.0	0.3	0.6	0.4	2.1	1.7	1.5
Delay / Veh (s)	70.2	55.6	76.9	19.1	6.3	5.1	74.4	86.4	93.0	123.1	157.4	103.3
Travel Dist (mi)	10.3	160.2	1.8	1.5	187.6	6.9	1.6	2.8	1.7	21.5	13.7	18.7
Travel Time (hr)	1.1	14.7	0.2	0.1	7.6	0.3	0.4	0.7	0.5	3.0	2.3	2.3
Avg Speed (mph)	10	11	10	17	25	23	4	4	4	7	6	8

43: Allen Blvd & Erickson Av Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	18.8
Delay / Veh (s)	38.2
Travel Dist (mi)	428.4
Travel Time (hr)	33.2
Avg Speed (mph)	13

43: Allen Blvd & Erickson Av Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.9	10.6	0.2	0.0	2.1	0.1	0.4	0.7	0.4	2.6	2.0	1.8
Delay / Veh (s)	57.6	44.8	56.9	19.3	6.3	5.4	62.6	72.7	72.2	106.9	131.7	90.5
Travel Dist (mi)	15.0	220.5	2.5	1.9	263.7	10.1	2.4	3.8	2.3	30.0	19.2	24.5
Travel Time (hr)	1.4	17.7	0.2	0.1	10.6	0.4	0.5	0.9	0.5	3.8	2.8	2.8
Avg Speed (mph)	11	13	12	18	25	23	5	4	4	8	7	9

43: Allen Blvd & Erickson Av Performance by movement Entire Run

Movement	All
Total Delay (hr)	21.8
Delay / Veh (s)	31.7
Travel Dist (mi)	595.9
Travel Time (hr)	41.9
Avg Speed (mph)	15

46: Allen Blvd & Menlo Dr Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.1	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.2	0.1	0.5
Delay / Veh (s)	17.9	6.8	4.9	16.4	10.9	10.1	33.2	32.6	8.8	48.2	47.5	34.8
Travel Dist (mi)	1.2	21.4	0.4	1.3	83.4	3.5	0.5	0.2	0.3	6.4	2.2	19.0
Travel Time (hr)	0.1	1.2	0.0	0.1	3.7	0.2	0.1	0.0	0.0	0.5	0.2	1.3
Avg Speed (mph)	11	18	17	20	23	22	8	8	15	13	13	15

46: Allen Blvd & Menlo Dr Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	2.4
Delay / Veh (s)	12.5
Travel Dist (mi)	139.8
Travel Time (hr)	7.3
Avg Speed (mph)	19

46: Allen Blvd & Menlo Dr Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.3	2.6	0.0	0.0	2.4	0.1	0.2	0.1	0.1	1.2	0.4	2.3
Delay / Veh (s)	25.4	14.6	6.2	15.9	10.3	9.1	52.9	34.0	35.0	93.3	96.0	63.9
Travel Dist (mi)	3.2	55.6	1.2	2.1	209.3	9.7	1.6	0.8	0.9	18.4	6.1	50.4
Travel Time (hr)	0.4	4.4	0.1	0.1	9.2	0.4	0.3	0.1	0.1	1.9	0.6	4.4
Avg Speed (mph)	9	13	16	20	23	22	5	8	7	9	10	12

46: Allen Blvd & Menlo Dr Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	9.7
Delay / Veh (s)	19.3
Travel Dist (mi)	359.4
Travel Time (hr)	22.1
Avg Speed (mph)	17

46: Allen Blvd & Menlo Dr Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.3	3.1	0.0	0.1	3.5	0.1	0.3	0.1	0.1	1.4	0.5	2.7
Delay / Veh (s)	23.4	12.4	5.8	16.1	10.5	9.3	48.8	33.7	27.8	81.7	82.1	55.9
Travel Dist (mi)	4.4	77.0	1.7	3.4	292.7	13.2	2.1	1.0	1.2	24.8	8.2	69.4
Travel Time (hr)	0.5	5.6	0.1	0.2	12.9	0.6	0.3	0.1	0.1	2.4	0.8	5.6
Avg Speed (mph)	10	14	17	20	23	22	6	8	8	10	10	12

46: Allen Blvd & Menlo Dr Performance by movement Entire Run

Movement	All
Total Delay (hr)	12.1
Delay / Veh (s)	17.4
Travel Dist (mi)	499.2
Travel Time (hr)	29.3
Avg Speed (mph)	17

50: Allen Blvd & Wilson Av Performance by movement Interval #1 5:10

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.5	0.0	0.2	0.3	0.2	0.0	1.3
Delay / Veh (s)	7.7	5.3	16.2	3.1	44.8	6.6	6.9
Travel Dist (mi)	79.8	9.8	4.1	28.1	4.9	6.9	133.7
Travel Time (hr)	3.1	0.4	0.4	1.2	0.4	0.3	5.8
Avg Speed (mph)	26	26	11	23	12	20	23

50: Allen Blvd & Wilson Av Performance by movement Interval #2 5:25

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	5.6	0.6	0.3	0.6	0.6	0.5	8.2
Delay / Veh (s)	33.2	28.6	11.5	2.6	44.7	27.0	17.4
Travel Dist (mi)	206.7	24.9	9.6	71.1	13.1	18.0	343.5
Travel Time (hr)	12.2	1.4	0.7	3.0	1.2	1.3	19.7
Avg Speed (mph)	19	19	13	24	11	14	19

50: Allen Blvd & Wilson Av Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	6.1	0.6	0.5	0.9	0.8	0.5	9.4
Delay / Veh (s)	26.1	21.8	12.9	2.8	44.7	21.2	14.4
Travel Dist (mi)	286.6	34.7	13.7	99.3	18.0	25.0	477.2
Travel Time (hr)	15.3	1.8	1.1	4.2	1.6	1.6	25.5
Avg Speed (mph)	20	21	13	24	11	16	20

Total Network Performance By Interval

Interval Start	5:10	5:25	All
Total Delay (hr)	123.6	1200.8	1324.5
Delay / Veh (s)	182.4	817.0	616.7
Travel Dist (mi)	2485.2	5534.4	8019.6
Travel Time (hr)	205.4	1383.0	1588.3
Avg Speed (mph)	13	7	8

Intersection: 18: Allen Blvd & SR 217 NB, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	T	R	L	LT	R
Maximum Queue (ft)	323	367	237	1207	1208	333	317	1997	305
Average Queue (ft)	267	220	140	937	946	310	194	1376	140
95th Queue (ft)	358	490	317	1369	1389	383	349	2482	359
Link Distance (ft)		411	411	1188	1188			2217	
Upstream Blk Time (%)		12	0	6	7			11	
Queuing Penalty (veh)		80	2	0	0			0	
Storage Bay Dist (ft)	300					300	300		300
Storage Blk Time (%)	23	0			25	24	1	45	0
Queuing Penalty (veh)	108	0			146	168	5	133	0

Intersection: 18: Allen Blvd & SR 217 NB, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	T	R	L	LT	R
Maximum Queue (ft)	330	481	385	1210	1210	334	310	2236	297
Average Queue (ft)	308	372	132	1185	1190	202	190	2156	99
95th Queue (ft)	368	618	373	1258	1242	457	365	2581	319
Link Distance (ft)		411	411	1188	1188			2217	
Upstream Blk Time (%)		54	2	43	49			63	
Queuing Penalty (veh)		312	14	0	0			0	
Storage Bay Dist (ft)	300					300	300		300
Storage Blk Time (%)	67	0			47	18	2	72	0
Queuing Penalty (veh)	278	0			242	112	16	191	0

Intersection: 18: Allen Blvd & SR 217 NB, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	T	R	L	LT	R
Maximum Queue (ft)	332	482	397	1210	1210	336	322	2239	332
Average Queue (ft)	298	335	134	1125	1131	228	191	1968	109
95th Queue (ft)	372	609	361	1408	1413	466	361	2825	330
Link Distance (ft)		411	411	1188	1188			2217	
Upstream Blk Time (%)		44	2	33	39			50	
Queuing Penalty (veh)		254	11	0	0			0	
Storage Bay Dist (ft)	300					300	300		300
Storage Blk Time (%)	56	0			42	19	2	65	0
Queuing Penalty (veh)	236	0			218	126	13	177	0

Intersection: 21: Allen Blvd & SR 217 SB, Interval #1

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	TR	L	T	T	LT	R
Maximum Queue (ft)	652	624	314	385	209	1484	847
Average Queue (ft)	450	436	233	136	49	948	614
95th Queue (ft)	715	682	359	407	184	1787	1117
Link Distance (ft)	875	875		411	411	1739	
Upstream Blk Time (%)				6	0	11	
Queuing Penalty (veh)				49	0	0	
Storage Bay Dist (ft)			300				850
Storage Blk Time (%)			10			21	11
Queuing Penalty (veh)			62			90	65

Intersection: 21: Allen Blvd & SR 217 SB, Interval #2

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	TR	L	T	T	LT	R
Maximum Queue (ft)	832	838	328	490	347	1759	885
Average Queue (ft)	657	651	280	331	116	1691	817
95th Queue (ft)	1033	1037	400	643	391	2038	1032
Link Distance (ft)	875	875		411	411	1739	
Upstream Blk Time (%)	37	37		50	13	66	
Queuing Penalty (veh)	172	172		380	101	0	
Storage Bay Dist (ft)			300				850
Storage Blk Time (%)			53	2		70	42
Queuing Penalty (veh)			312	6		264	227

Intersection: 21: Allen Blvd & SR 217 SB, All Intervals

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	TR	L	T	T	LT	R
Maximum Queue (ft)	855	853	329	492	384	1761	887
Average Queue (ft)	607	599	269	284	100	1512	768
95th Queue (ft)	988	987	395	616	353	2244	1110
Link Distance (ft)	875	875		411	411	1739	
Upstream Blk Time (%)	28	28		39	10	52	
Queuing Penalty (veh)	129	129		297	76	0	
Storage Bay Dist (ft)			300				850
Storage Blk Time (%)			42	1		58	34
Queuing Penalty (veh)			249	5		221	186

Intersection: 24: Allen Blvd & King Blvd, Interval #1

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	244	226	129	228	203	77	52	85
Average Queue (ft)	148	130	74	108	108	46	31	37
95th Queue (ft)	260	239	143	251	223	82	63	82
Link Distance (ft)	1582	1582		875	875	1105		406
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140				80	
Storage Blk Time (%)			2	2		1	0	
Queuing Penalty (veh)			13	2		1	0	

Intersection: 24: Allen Blvd & King Blvd, Interval #2

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	1064	1049	128	207	221	548	100	242
Average Queue (ft)	599	582	42	59	66	242	53	106
95th Queue (ft)	1642	1641	120	170	194	846	111	323
Link Distance (ft)	1582	1582		875	875	1105		406
Upstream Blk Time (%)	24	24				10		10
Queuing Penalty (veh)	111	113				0		0
Storage Bay Dist (ft)			140				80	
Storage Blk Time (%)			2	1		1	31	
Queuing Penalty (veh)			12	1		1	22	

Intersection: 24: Allen Blvd & King Blvd, All Intervals

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	1084	1070	163	257	246	548	100	251
Average Queue (ft)	490	473	50	71	76	195	48	89
95th Queue (ft)	1454	1450	129	195	204	739	103	286
Link Distance (ft)	1582	1582		875	875	1105		406
Upstream Blk Time (%)	18	18				7		7
Queuing Penalty (veh)	83	85				0		0
Storage Bay Dist (ft)			140				80	
Storage Blk Time (%)			2	1		1	24	
Queuing Penalty (veh)			13	1		1	16	

Intersection: 28: Allen Blvd & Lombard Ave, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	130	150	188	228	722	679	112	603	179	1203
Average Queue (ft)	78	86	100	154	536	524	42	386	164	836
95th Queue (ft)	139	161	186	265	817	788	123	714	206	1631
Link Distance (ft)		1315	1315		1582	1582		2177		2578
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	200			200			150		150	
Storage Blk Time (%)	0	0		6	34		1	51	34	41
Queuing Penalty (veh)	2	0		45	56		3	17	146	71

Intersection: 28: Allen Blvd & Lombard Ave, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	161	848	854	217	652	630	174	1481	181	2224
Average Queue (ft)	63	355	365	98	293	281	45	768	155	1550
95th Queue (ft)	151	1161	1161	224	687	667	139	1888	216	3027
Link Distance (ft)		1315	1315		1582	1582		2177		2578
Upstream Blk Time (%)		18	18					10		24
Queuing Penalty (veh)		88	87					0		0
Storage Bay Dist (ft)	200			200			150		150	
Storage Blk Time (%)	2	24		1	17		0	62	45	38
Queuing Penalty (veh)	6	19		8	27		1	18	173	59

Intersection: 28: Allen Blvd & Lombard Ave, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	168	848	854	230	781	749	177	1520	181	2226
Average Queue (ft)	66	290	301	112	351	339	44	676	157	1378
95th Queue (ft)	149	1019	1020	240	760	739	135	1701	214	2814
Link Distance (ft)		1315	1315		1582	1582		2177		2578
Upstream Blk Time (%)		13	13					8		18
Queuing Penalty (veh)		66	65					0		0
Storage Bay Dist (ft)	200			200			150		150	
Storage Blk Time (%)	1	18		2	21		0	60	42	39
Queuing Penalty (veh)	5	14		17	34		2	18	166	62

Intersection: 31: Allen Blvd & Hall Blvd, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	261	392	384	353	1151	1142	231	1364	1296	221	1980	1878
Average Queue (ft)	136	321	330	245	834	827	227	930	854	136	1436	1373
95th Queue (ft)	260	439	425	439	1354	1312	237	1537	1434	245	2235	2141
Link Distance (ft)		362	362		1315	1315		2114	2114		2882	2882
Upstream Blk Time (%)		12	12		2	1		2	1		1	0
Queuing Penalty (veh)		69	73		12	10		0	0		0	0
Storage Bay Dist (ft)	260			350			200			200		
Storage Blk Time (%)	2	22		5	39		64	29		4	69	
Queuing Penalty (veh)	10	31		32	88		287	100		17	94	

Intersection: 31: Allen Blvd & Hall Blvd, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	289	405	394	354	1245	1226	231	2136	2133	229	2904	2902
Average Queue (ft)	129	337	343	180	720	712	222	1886	1802	138	2688	2631
95th Queue (ft)	283	434	427	405	1609	1598	268	2537	2511	258	3348	3355
Link Distance (ft)		362	362		1315	1315		2114	2114		2882	2882
Upstream Blk Time (%)		26	28		6	5		34	19		52	46
Queuing Penalty (veh)		136	147		45	38		0	0		0	0
Storage Bay Dist (ft)	260			350			200			200		
Storage Blk Time (%)	1	35		4	30		69	23		14	62	
Queuing Penalty (veh)	6	44		26	60		278	72		60	79	

Intersection: 31: Allen Blvd & Hall Blvd, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	289	408	396	380	1270	1258	232	2136	2133	229	2904	2902
Average Queue (ft)	131	333	340	196	748	740	224	1655	1573	138	2385	2327
95th Queue (ft)	278	436	427	418	1567	1552	264	2586	2527	255	3511	3480
Link Distance (ft)		362	362		1315	1315		2114	2114		2882	2882
Upstream Blk Time (%)		22	24		5	4		26	14		39	34
Queuing Penalty (veh)		119	128		36	31		0	0		0	0
Storage Bay Dist (ft)	260			350			200			200		
Storage Blk Time (%)	2	32		4	32		68	25		11	64	
Queuing Penalty (veh)	7	41		28	67		281	79		49	83	

Intersection: 34: Allen Blvd & Main St, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	81	320	302	36	33	55	119	100	125	60
Average Queue (ft)	38	151	147	12	6	16	71	47	56	50
95th Queue (ft)	92	317	318	41	32	50	126	103	133	76
Link Distance (ft)		1135	1135		362	362	657		1970	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80			75				90		30
Storage Blk Time (%)	0	17		0	0		7	1	31	17
Queuing Penalty (veh)	2	7		2	0		4	1	24	7

Intersection: 34: Allen Blvd & Main St, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	89	744	741	32	71	82	354	116	438	61
Average Queue (ft)	25	296	290	7	9	17	110	53	122	40
95th Queue (ft)	70	891	882	28	46	57	355	115	480	77
Link Distance (ft)		1135	1135		362	362	657		1970	
Upstream Blk Time (%)		12	12				4			
Queuing Penalty (veh)		58	58				0			
Storage Bay Dist (ft)	80			75				90		30
Storage Blk Time (%)	0	31			0		4	13	43	10
Queuing Penalty (veh)	2	12			0		2	9	29	4

Intersection: 34: Allen Blvd & Main St, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	100	758	748	40	76	84	354	118	448	62
Average Queue (ft)	28	261	256	8	8	17	100	52	106	42
95th Queue (ft)	77	796	788	32	43	55	317	112	424	78
Link Distance (ft)		1135	1135		362	362	657		1970	
Upstream Blk Time (%)		9	9				3			
Queuing Penalty (veh)		44	44				0			
Storage Bay Dist (ft)	80			75				90		30
Storage Blk Time (%)	0	27		0	0		4	10	40	11
Queuing Penalty (veh)	2	11		0	0		3	7	28	5

Intersection: 43: Allen Blvd & Erickson Av, Interval #1

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	324	306	159	147	121	284
Average Queue (ft)	211	181	86	78	66	192
95th Queue (ft)	349	326	175	156	124	326
Link Distance (ft)	1349	1349	1135	1135	562	1810
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 43: Allen Blvd & Erickson Av, Interval #2

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	734	727	181	160	234	634
Average Queue (ft)	286	261	70	58	81	258
95th Queue (ft)	817	806	153	135	229	763
Link Distance (ft)	1349	1349	1135	1135	562	1810
Upstream Blk Time (%)	6	6			1	2
Queuing Penalty (veh)	28	28			0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 43: Allen Blvd & Erickson Av, All Intervals

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	736	728	199	169	241	640
Average Queue (ft)	268	241	74	63	77	242
95th Queue (ft)	738	725	159	141	210	689
Link Distance (ft)	1349	1349	1135	1135	562	1810
Upstream Blk Time (%)	5	5			0	2
Queuing Penalty (veh)	21	21			0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 46: Allen Blvd & Menlo Dr, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	79	172	165	46	240	207	65	305
Average Queue (ft)	35	96	83	15	140	127	28	176
95th Queue (ft)	79	173	160	49	247	220	69	304
Link Distance (ft)		418	418		1349	1349	562	2100
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	105			80				
Storage Blk Time (%)	0	7			18			
Queuing Penalty (veh)	0	4			4			

Intersection: 46: Allen Blvd & Menlo Dr, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	78	272	261	58	274	288	112	539
Average Queue (ft)	29	110	97	9	113	112	36	224
95th Queue (ft)	70	253	242	39	244	248	87	670
Link Distance (ft)		418	418		1349	1349	562	2100
Upstream Blk Time (%)		5	4					1
Queuing Penalty (veh)		22	20					0
Storage Bay Dist (ft)	105			80				
Storage Blk Time (%)		10			13			
Queuing Penalty (veh)		5			3			

Intersection: 46: Allen Blvd & Menlo Dr, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	89	277	269	64	289	298	117	553
Average Queue (ft)	31	107	94	10	120	116	34	212
95th Queue (ft)	72	237	226	41	247	243	83	608
Link Distance (ft)		418	418		1349	1349	562	2100
Upstream Blk Time (%)		4	3					1
Queuing Penalty (veh)		16	15					0
Storage Bay Dist (ft)	105			80				
Storage Blk Time (%)	0	10			14			
Queuing Penalty (veh)	0	5			3			

Intersection: 50: Allen Blvd & Wilson Av, Interval #1

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	204	180	120	120	113	116	71
Average Queue (ft)	98	82	72	33	42	65	46
95th Queue (ft)	194	175	127	116	122	117	79
Link Distance (ft)	1808	1808		418	418	1412	1412
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100				
Storage Blk Time (%)			5	0			
Queuing Penalty (veh)			35	1			

Intersection: 50: Allen Blvd & Wilson Av, Interval #2

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	443	436	117	122	111	178	138
Average Queue (ft)	144	125	56	21	31	60	51
95th Queue (ft)	624	607	104	77	83	128	160
Link Distance (ft)	1808	1808		418	418	1412	1412
Upstream Blk Time (%)	2	2					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			100				
Storage Blk Time (%)			1	0			
Queuing Penalty (veh)			7	0			

Intersection: 50: Allen Blvd & Wilson Av, All Intervals

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	455	450	122	163	149	182	143
Average Queue (ft)	133	115	60	24	34	61	50
95th Queue (ft)	555	538	111	88	94	125	146
Link Distance (ft)	1808	1808		418	418	1412	1412
Upstream Blk Time (%)	2	2					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			100				
Storage Blk Time (%)			2	0			
Queuing Penalty (veh)			14	0			























Network Summary

Network wide Queuing Penalty, Interval #1: 2180
Network wide Queuing Penalty, Interval #2: 4823
Network wide Queuing Penalty, All Intervals: 4162

HCM Signalized Intersection Capacity Analysis

18: Allen Blvd & SR 217 NB

12/19/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	1.00	1.00			
Satd. Flow (prot)	1641	3282			3539	1546	1633	1719	1538			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1641	3282			3539	1546	1633	1719	1538			
Volume (vph)	340	850	0	0	1290	530	270	500	140	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)	370	924	0	0	1402	576	293	543	152	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	68	0	0	104	0	0	0
Lane Group Flow (vph)	370	924	0	0	1402	508	293	543	48	0	0	0
Conf. 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)	19.0	58.0			35.0	35.0	29.0	29.0	29.0			
Effective Green, g (s)	20.0	59.0			36.0	36.0	30.0	30.0	30.0			
Actuated g/C Ratio	0.21	0.62			0.38	0.38	0.32	0.32	0.32			
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)	345	2038			1341	586	516	543	486			
v/s Ratio Prot	c0.23	0.28			c0.40		0.18	c0.32				
v/s Ratio Perm						0.33			0.03			
v/c Ratio	1.07	0.45			1.05	0.87	0.57	1.00	0.10			
Uniform Delay, d1	37.5	9.5			29.5	27.3	27.1	32.5	23.0			
Progression Factor	1.27	0.68			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	38.5	0.1			37.4	15.8	1.2	38.6	0.1			
Delay (s)	86.2	6.5			66.9	43.1	28.3	71.1	23.0			
Level of Service	F	A			E	D	C	E	C			
Approach Delay (s)		29.3			59.9			51.0			0.0	
Approach LOS		C			E			D			A	
Intersection Summary												
HCM Average Control Delay			48.6				HCM Level of Service		D			
HCM Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			95.0				Sum of lost time (s)		9.0			
Intersection Capacity Utilization			87.8%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

21: Allen Blvd & SR 217 SB

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑						↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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		0.98		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		3451		1787	3574						1761	1538
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		3451		1787	3574						1761	1538
Volume (vph)	0	880	100	360	1200	0	0	0	0	310	250	390
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	957	109	379	1263	0	0	0	0	337	272	424
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	1057	0	379	1263	0	0	0	0	0	609	382
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)		28.0		24.0	56.0						31.0	31.0
Effective Green, g (s)		29.0		25.0	57.0						32.0	32.0
Actuated g/C Ratio		0.31		0.26	0.60						0.34	0.34
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)		1053		470	2144						593	518
v/s Ratio Prot		c0.31		c0.21	0.35						c0.35	
v/s Ratio Perm												0.25
v/c Ratio		1.00		0.81	0.59						1.03	0.74
Uniform Delay, d1		33.0		32.7	11.8						31.5	27.8
Progression Factor		1.00		0.63	0.14						1.00	1.00
Incremental Delay, d2		28.6		3.7	0.4						44.0	5.1
Delay (s)		61.6		24.2	2.1						75.5	32.9
Level of Service		E		C	A						E	C
Approach Delay (s)		61.6			7.2			0.0			58.0	
Approach LOS		E			A			A			E	
Intersection Summary												
HCM Average Control Delay			36.8			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			95.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			87.8%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

24: Allen Blvd & King Blvd

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↕↕			↖	↖		↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			0%			0%	
Total Lost time (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00		1.00	
Frbp, ped/bikes		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	
Frt		0.99		1.00	1.00			1.00	0.85		0.98	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.97	
Satd. Flow (prot)		3490		1805	3592			1788	1583		1771	
Flt Permitted		0.91		0.95	1.00			0.81	1.00		0.81	
Satd. Flow (perm)		3171		1805	3592			1501	1583		1468	
Volume (vph)	20	850	70	120	1400	40	59	12	59	32	17	8
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	895	74	126	1474	42	64	13	64	35	18	9
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	55	0	8	0
Lane Group Flow (vph)	0	984	0	126	1514	0	0	77	9	0	54	0
Confl. Peds. (#/hr)			1			7						6
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Parking (#/hr)												2
Turn Type	Perm			Prot			Perm		Perm	Perm		
Protected Phases		2		1	6			8				4
Permitted Phases	2						8		8		4	
Actuated Green, G (s)		37.2		4.2	45.4			7.2	7.2		7.2	
Effective Green, g (s)		38.2		5.2	46.4			8.2	8.2		8.2	
Actuated g/C Ratio		0.63		0.09	0.77			0.14	0.14		0.14	
Clearance Time (s)		4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)		3.5		2.0	3.5			2.0	2.0		2.0	
Lane Grp Cap (vph)		1999		155	2750			203	214		199	
v/s Ratio Prot				c0.07	c0.42							
v/s Ratio Perm		0.31						c0.05	0.01		0.04	
v/c Ratio		0.49		0.81	0.55			0.38	0.04		0.27	
Uniform Delay, d1		6.0		27.2	2.9			23.9	22.8		23.5	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.2		25.5	0.3			0.4	0.0		0.3	
Delay (s)		6.2		52.7	3.1			24.3	22.8		23.8	
Level of Service		A		D	A			C	C		C	
Approach Delay (s)		6.2		6.9				23.6			23.8	
Approach LOS		A		A				C			C	
Intersection Summary												
HCM Average Control Delay			7.9			HCM Level of Service			A			
HCM Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			60.6			Sum of lost time (s)			6.0			
Intersection Capacity Utilization			87.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
28: Allen Blvd & Lombard Ave

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	0.97		1.00	0.99		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3334		1787	3537		1787	1763		1770	1777	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	3334		1787	3537		1787	1763		1770	1777	
Volume (vph)	80	700	180	160	1390	80	30	220	110	160	310	90
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)	87	761	196	168	1463	84	33	239	120	174	337	98
RTOR Reduction (vph)	0	23	0	0	4	0	0	18	0	0	10	0
Lane Group Flow (vph)	87	934	0	168	1543	0	33	341	0	174	425	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)	5.9	40.3		10.9	45.3		3.6	22.8		10.0	29.2	
Effective Green, g (s)	6.9	41.3		11.9	46.3		4.6	23.8		11.0	30.2	
Actuated g/C Ratio	0.07	0.41		0.12	0.46		0.05	0.24		0.11	0.30	
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)	120	1377		213	1638		82	420		195	537	
v/s Ratio Prot	0.05	c0.28		0.09	c0.44		0.02	0.19		c0.10	c0.24	
v/s Ratio Perm												
v/c Ratio	0.72	0.68		0.79	0.94		0.40	0.81		0.89	0.79	
Uniform Delay, d1	45.6	23.9		42.8	25.6		46.4	36.0		43.9	32.0	
Progression Factor	1.01	0.40		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	1.3		16.8	12.2		2.3	11.0		36.1	7.5	
Delay (s)	54.9	10.8		59.7	37.7		48.7	47.0		80.0	39.5	
Level of Service	D	B		E	D		D	D		E	D	
Approach Delay (s)		14.5			39.9			47.2			51.1	
Approach LOS		B			D			D			D	
Intersection Summary												
HCM Average Control Delay			35.4			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			86.8%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

31: Allen Blvd & Hall Blvd

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	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	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3421		1787	3522		1787	3503		1787	3519	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3421		1787	3522		1787	3503		1787	3519	
Volume (vph)	130	800	190	210	1300	90	320	830	90	130	880	80
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)	141	870	207	228	1413	98	348	902	98	137	926	84
RTOR Reduction (vph)	0	21	0	0	5	0	0	8	0	0	7	0
Lane Group Flow (vph)	141	1056	0	228	1506	0	348	992	0	137	1003	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	30.2		8.8	23.0	
Effective Green, g (s)	10.0	35.0		12.0	37.0		17.0	31.2		9.8	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)	177	1197		214	1303		304	1093		175	845	
v/s Ratio Prot	0.08	c0.31		0.13	c0.43		c0.19	0.28		0.08	c0.29	
v/s Ratio Perm												
v/c Ratio	0.80	0.88		1.07	1.16		1.14	0.91		0.78	1.19	
Uniform Delay, d1	44.0	30.6		44.0	31.5		41.5	33.0		44.1	38.0	
Progression Factor	1.04	1.05		1.10	0.49		1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.9	9.1		64.9	75.5		96.7	10.6		19.4	96.1	
Delay (s)	65.7	41.2		113.1	90.9		138.2	43.6		63.5	134.1	
Level of Service	E	D		F	F		F	D		E	F	
Approach Delay (s)		44.0			93.8			68.0			125.6	
Approach LOS		D			F			E			F	
Intersection Summary												
HCM Average Control Delay			83.0			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			104.1%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

34: Allen Blvd & Main St

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕			↕	↘		↕	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1787	3554		1787	3532			1822	1586		1813	1575
Flt Permitted	0.08	1.00		0.23	1.00			0.73	1.00		0.76	1.00
Satd. Flow (perm)	153	3554		436	3532			1379	1586		1434	1575
Volume (vph)	40	1000	30	20	1580	100	60	10	60	30	10	70
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)	43	1087	33	22	1717	109	65	11	65	33	11	76
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	58	0	0	68
Lane Group Flow (vph)	43	1119	0	22	1823	0	0	76	7	0	44	8
Confl. Peds. (#/hr)			7			8			4			2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt			pm+pt			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	79.9	76.0		76.9	74.5			9.6	9.6		9.6	9.6
Effective Green, g (s)	81.9	77.0		78.9	75.5			10.6	10.6		10.6	10.6
Actuated g/C Ratio	0.82	0.77		0.79	0.76			0.11	0.11		0.11	0.11
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	2.5		2.5	2.5
Lane Grp Cap (vph)	205	2737		390	2667			146	168		152	167
v/s Ratio Prot	c0.01	0.31		0.00	c0.52							
v/s Ratio Perm	0.16			0.04				c0.06	0.00		0.03	0.01
v/c Ratio	0.21	0.41		0.06	0.68			0.52	0.04		0.29	0.05
Uniform Delay, d1	6.0	3.9		2.5	6.2			42.3	40.1		41.2	40.2
Progression Factor	2.05	1.11		0.12	0.27			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.4		0.0	0.1			2.5	0.1		0.8	0.1
Delay (s)	12.6	4.7		0.3	1.8			44.8	40.2		42.0	40.3
Level of Service	B	A		A	A			D	D		D	D
Approach Delay (s)		5.0			1.8			42.7			40.9	
Approach LOS		A			A			D			D	

Intersection Summary

HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

43: Allen Blvd & Erickson Av

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
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			0.99			0.97			0.96	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3549			3541			1807			1772	
Flt Permitted		0.72			0.95			0.88			0.82	
Satd. Flow (perm)		2557			3355			1603			1475	
Volume (vph)	60	900	10	10	1500	60	20	40	20	90	58	70
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)	63	947	11	11	1579	63	21	42	21	95	61	74
RTOR Reduction (vph)	0	1	0	0	2	0	0	12	0	0	18	0
Lane Group Flow (vph)	0	1020	0	0	1651	0	0	72	0	0	212	0
Confl. Peds. (#/hr)			2			4			1			2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		74.9			74.9			17.1			17.1	
Effective Green, g (s)		75.9			75.9			18.1			18.1	
Actuated g/C Ratio		0.76			0.76			0.18			0.18	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		2.5			2.5			2.5			2.5	
Lane Grp Cap (vph)		1941			2546			290			267	
v/s Ratio Prot												
v/s Ratio Perm		0.40			c0.49			0.04			c0.14	
v/c Ratio		0.53			0.65			0.25			0.79	
Uniform Delay, d1		4.8			5.7			35.1			39.2	
Progression Factor		1.97			0.16			1.00			1.00	
Incremental Delay, d2		1.0			1.0			0.3			14.5	
Delay (s)		10.5			1.9			35.4			53.6	
Level of Service		B			A			D			D	
Approach Delay (s)		10.5			1.9			35.4			53.6	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM Average Control Delay			9.8					HCM Level of Service			A	
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			100.0					Sum of lost time (s)			6.0	
Intersection Capacity Utilization			96.2%					ICU Level of Service			F	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

46: Allen Blvd & Menlo Dr

12/19/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	12	12	14	12	12	16	12
Total Lost time (s)	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	
Frbp, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.97			0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1770	3399		1787	3412			1898			1872	
Flt Permitted	0.11	1.00		0.29	1.00			0.64			0.92	
Satd. Flow (perm)	201	3399		549	3412			1243			1751	
Volume (vph)	50	850	20	20	1400	70	20	10	10	60	20	180
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)	53	895	21	21	1474	74	21	11	11	63	21	189
RTOR Reduction (vph)	0	1	0	0	2	0	0	9	0	0	91	0
Lane Group Flow (vph)	53	915	0	21	1546	0	0	34	0	0	182	0
Confl. Peds. (#/hr)			7			2			9			13
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	1	0	0	2	0	0	0	0	0	0	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	76.5	71.3		70.9	68.5			14.3			14.3	
Effective Green, g (s)	78.5	72.3		72.9	69.5			15.3			15.3	
Actuated g/C Ratio	0.78	0.72		0.73	0.70			0.15			0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0			2.5			2.5	
Lane Grp Cap (vph)	255	2457		442	2371			190			268	
v/s Ratio Prot	c0.01	0.27		0.00	c0.45							
v/s Ratio Perm	0.15			0.03				0.03			c0.10	
v/c Ratio	0.21	0.37		0.05	0.65			0.18			0.68	
Uniform Delay, d1	6.2	5.2		3.8	8.5			36.9			40.0	
Progression Factor	2.97	0.76		0.42	0.28			1.00			1.00	
Incremental Delay, d2	0.1	0.4		0.0	1.1			0.3			6.0	
Delay (s)	18.4	4.4		1.6	3.5			37.2			46.1	
Level of Service	B	A		A	A			D			D	
Approach Delay (s)		5.2			3.5			37.2			46.1	
Approach LOS		A			A			D			D	

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
50: Allen Blvd & Wilson Av

12/19/2008

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	11	12	12
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	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3343		1787	3455	1787	1571
Flt Permitted	1.00		0.23	1.00	0.95	1.00
Satd. Flow (perm)	3343		438	3455	1787	1571
Volume (vph)	850	100	200	1400	70	90
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	924	109	217	1522	76	98
RTOR Reduction (vph)	5	0	0	0	0	88
Lane Group Flow (vph)	1028	0	217	1522	76	10
Confl. Peds. (#/hr)		20			5	4
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Turn Type			pm+pt			Perm
Protected Phases	2		1	6	8	
Permitted Phases			6			8
Actuated Green, G (s)	71.1		82.7	82.7	9.3	9.3
Effective Green, g (s)	72.1		83.7	83.7	10.3	10.3
Actuated g/C Ratio	0.72		0.84	0.84	0.10	0.10
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2410		483	2892	184	162
v/s Ratio Prot	0.31		0.04	c0.44	c0.04	
v/s Ratio Perm			0.34			0.01
v/c Ratio	0.43		0.45	0.53	0.41	0.06
Uniform Delay, d1	5.6		2.8	2.4	42.0	40.5
Progression Factor	1.00		2.79	0.33	1.00	1.00
Incremental Delay, d2	0.6		0.2	0.5	0.5	0.1
Delay (s)	6.2		7.9	1.3	42.6	40.5
Level of Service	A		A	A	D	D
Approach Delay (s)	6.2			2.1	41.4	
Approach LOS	A			A	D	
Intersection Summary						
HCM Average Control Delay			5.9		HCM Level of Service	A
HCM Volume to Capacity ratio			0.51			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	6.0
Intersection Capacity Utilization			54.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Summary of All Intervals

Run Number	1	10	2	3	4	5	6	7
Start Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
End Time	6:10	6:10	6:10	6:10	6:10	6:10	6:10	6:10
Total Time (min)	70	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3	3
# of Recorded Intvls	2	2	2	2	2	2	2	2
Vehs Entered	7069	7097	7022	7223	7246	7043	6930	6942
Vehs Exited	6855	6991	6814	6963	6996	6891	6754	6743
Starting Vehs	310	374	308	319	289	343	362	352
Ending Vehs	524	480	516	579	539	495	538	551
Denied Entry Before	149	166	107	124	129	134	134	146
Denied Entry After	1932	1870	1937	1756	1843	1828	2021	1994
Travel Distance (mi)	2937	2995	2947	3020	3004	2992	2890	2934
Travel Time (hr)	1495.0	1457.8	1456.1	1365.4	1358.9	1325.3	1572.8	1557.2
Total Delay (hr)	1387.1	1347.9	1347.5	1254.7	1248.5	1215.1	1466.4	1449.3
Total Stops	22544	21089	19229	19947	19164	18235	22302	22191
Fuel Used (gal)	1040.7	1019.1	1023.1	964.8	961.3	940.4	1084.9	1073.8

Interval #0 Information Seeding

Start Time	5:00
End Time	5:10
Total Time (min)	10
Volumes adjusted by Growth Factors, Anti PHF.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:10
End Time	5:25
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	1966	1947	1819	1964	1960	1840	1869	1958
Vehs Exited	1777	1814	1684	1844	1833	1770	1725	1770
Starting Vehs	310	374	308	319	289	343	362	352
Ending Vehs	499	507	443	439	416	413	506	540
Denied Entry Before	149	166	107	124	129	134	134	146
Denied Entry After	591	522	618	556	556	529	550	568
Travel Distance (mi)	777	798	734	793	804	784	751	789
Travel Time (hr)	193.1	194.5	179.8	180.8	175.5	174.3	193.1	197.8
Total Delay (hr)	164.7	165.2	152.6	151.6	145.7	145.4	165.4	168.8
Total Stops	4765	5039	4094	4221	4115	4247	5102	5080
Fuel Used (gal)	154.0	151.6	142.7	145.2	143.4	141.8	149.4	156.2

Interval #2 Information Recording

Start Time	5:25
End Time	6:10
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	5103	5150	5203	5259	5286	5203	5061	4984
Vehs Exited	5078	5177	5130	5119	5163	5121	5029	4973
Starting Vehs	499	507	443	439	416	413	506	540
Ending Vehs	524	480	516	579	539	495	538	551
Denied Entry Before	591	522	618	556	556	529	550	568
Denied Entry After	1932	1870	1937	1756	1843	1828	2021	1994
Travel Distance (mi)	2160	2197	2213	2227	2200	2208	2139	2145
Travel Time (hr)	1301.9	1263.3	1276.3	1184.6	1183.4	1150.9	1379.7	1359.4
Total Delay (hr)	1222.4	1182.7	1194.9	1103.1	1102.8	1069.7	1301.0	1280.5
Total Stops	17779	16050	15135	15726	15049	13988	17200	17111
Fuel Used (gal)	886.7	867.5	880.3	819.7	817.9	798.6	935.5	917.6

2: Fairfield St & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.2	0.1	0.0	0.1	0.1	0.0	0.3	2.7	0.1	0.1	0.4	0.0
Delay / Veh (s)	64.6	45.1	16.5	62.2	43.9	17.4	80.0	31.4	35.5	55.3	4.5	3.2
Travel Dist (mi)	0.6	0.2	0.4	0.4	0.4	0.4	3.5	68.0	1.9	1.2	40.3	1.2
Travel Time (hr)	0.2	0.1	0.1	0.1	0.1	0.0	0.5	5.2	0.2	0.2	1.8	0.1
Avg Speed (mph)	3	3	7	4	5	9	7	13	12	7	22	21

2: Fairfield St & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	4.2
Delay / Veh (s)	21.4
Travel Dist (mi)	118.4
Travel Time (hr)	8.4
Avg Speed (mph)	14

2: Fairfield St & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.7	0.2	0.1	0.2	0.3	0.2	1.9	28.4	0.7	0.5	1.1	0.0
Delay / Veh (s)	72.2	49.4	17.1	59.5	54.9	52.1	161.4	123.3	120.8	56.6	4.3	3.7
Travel Dist (mi)	1.7	0.7	0.8	0.8	1.4	1.2	9.5	176.1	4.9	4.0	116.5	2.8
Travel Time (hr)	0.8	0.2	0.1	0.2	0.3	0.3	2.2	34.6	0.9	0.6	5.2	0.1
Avg Speed (mph)	2	3	7	4	4	4	4	5	5	6	22	20

2: Fairfield St & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	34.2
Delay / Veh (s)	63.4
Travel Dist (mi)	320.3
Travel Time (hr)	45.8
Avg Speed (mph)	7

2: Fairfield St & Cedar Hills Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.9	0.3	0.1	0.3	0.3	0.3	2.2	31.1	0.8	0.6	1.4	0.0
Delay / Veh (s)	70.3	48.3	16.2	60.3	52.1	44.2	137.6	98.0	98.1	56.3	4.3	3.7
Travel Dist (mi)	2.3	0.9	1.1	1.2	1.8	1.6	13.0	244.1	6.7	5.1	156.7	4.0
Travel Time (hr)	1.0	0.3	0.2	0.3	0.4	0.3	2.7	39.8	1.1	0.8	7.0	0.2
Avg Speed (mph)	2	3	7	4	4	5	5	6	6	7	22	21

2: Fairfield St & Cedar Hills Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	38.4
Delay / Veh (s)	52.2
Travel Dist (mi)	438.7
Travel Time (hr)	54.2
Avg Speed (mph)	8

3: Walker Rd & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	7.6	52.7	8.6	5.0	5.4	0.6	3.6	6.4	1.4	2.8	8.0	0.7
Delay / Veh (s)	1189.5	1142.4	1241.0	251.9	99.8	85.5	176.9	100.5	98.2	228.3	155.2	42.9
Travel Dist (mi)	2.1	15.2	2.3	8.7	23.7	2.9	6.2	19.3	4.2	6.4	26.6	8.3
Travel Time (hr)	7.7	53.2	8.7	5.4	6.3	0.7	3.8	7.1	1.5	3.0	8.9	1.0
Avg Speed (mph)	2	2	2	2	7	7	2	6	8	2	3	11

3: Walker Rd & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	102.7
Delay / Veh (s)	323.3
Travel Dist (mi)	125.8
Travel Time (hr)	107.4
Avg Speed (mph)	4

3: Walker Rd & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	56.8	406.2	71.9	33.3	53.2	6.3	20.5	50.7	11.4	19.1	78.0	13.2
Delay / Veh (s)	2922.8	2867.0	2755.3	560.6	361.4	342.1	354.1	294.7	287.7	615.5	533.5	359.4
Travel Dist (mi)	6.4	47.1	8.7	24.8	62.3	7.7	18.0	53.6	12.2	17.0	79.8	20.0
Travel Time (hr)	57.1	407.8	72.3	34.3	55.4	6.6	21.2	52.6	12.0	19.8	80.8	14.0
Avg Speed (mph)	2	2	2	2	6	7	2	6	8	2	2	8

3: Walker Rd & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	820.6
Delay / Veh (s)	916.9
Travel Dist (mi)	357.5
Travel Time (hr)	833.7
Avg Speed (mph)	3

3: Walker Rd & Cedar Hills Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	64.4	458.8	80.6	38.4	58.6	6.8	24.0	57.1	12.8	21.9	85.9	13.8
Delay / Veh (s)	2494.1	2443.5	2457.8	484.6	290.8	273.7	309.2	242.1	239.8	506.3	435.1	265.1
Travel Dist (mi)	8.5	62.3	11.0	33.4	85.9	10.6	24.2	72.9	16.4	23.4	106.4	28.3
Travel Time (hr)	64.8	461.1	81.1	39.6	61.7	7.3	25.0	59.6	13.5	22.8	89.7	15.0
Avg Speed (mph)	2	2	2	2	6	7	2	6	8	2	3	8

3: Walker Rd & Cedar Hills Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	923.3
Delay / Veh (s)	761.3
Travel Dist (mi)	483.3
Travel Time (hr)	941.1
Avg Speed (mph)	3

10: Jenkins Rd & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	4.9	0.1	1.8	0.1	0.0	0.1	1.5	8.5	0.1	0.0	6.7	1.3
Delay / Veh (s)	135.4	113.6	79.6	58.6	46.8	39.3	111.5	120.0	121.9	83.0	101.6	100.7
Travel Dist (mi)	5.3	0.1	3.3	0.3	0.2	0.3	6.5	33.3	0.6	0.2	22.8	4.4
Travel Time (hr)	5.2	0.1	2.0	0.1	0.1	0.1	1.8	9.6	0.2	0.1	7.5	1.4
Avg Speed (mph)	2	2	8	3	3	3	5	5	4	3	4	4

10: Jenkins Rd & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	25.1
Delay / Veh (s)	110.1
Travel Dist (mi)	77.2
Travel Time (hr)	28.0
Avg Speed (mph)	4

10: Jenkins Rd & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	25.4	0.5	10.6	0.2	0.1	0.2	13.4	75.5	1.3	0.5	44.3	8.2
Delay / Veh (s)	231.1	204.2	170.9	47.9	55.6	45.2	409.1	424.1	384.2	236.6	230.3	218.6
Travel Dist (mi)	15.9	0.4	8.9	0.8	0.4	0.7	16.2	87.5	1.7	0.6	67.7	13.3
Travel Time (hr)	26.1	0.5	11.1	0.3	0.2	0.2	14.0	78.5	1.4	0.5	46.7	8.8
Avg Speed (mph)	2	2	8	3	3	3	4	3	3	3	5	4

10: Jenkins Rd & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	180.1
Delay / Veh (s)	285.8
Travel Dist (mi)	214.0
Travel Time (hr)	188.2
Avg Speed (mph)	4

10: Jenkins Rd & Cedar Hills Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	30.3	0.6	12.4	0.3	0.2	0.2	15.0	84.0	1.4	0.5	51.0	9.5
Delay / Veh (s)	207.3	181.5	146.1	50.6	53.2	43.3	318.7	337.8	318.6	227.8	197.6	189.1
Travel Dist (mi)	21.2	0.5	12.2	1.1	0.6	1.0	22.7	120.8	2.3	0.8	90.4	17.7
Travel Time (hr)	31.2	0.6	13.1	0.4	0.2	0.3	15.8	88.1	1.5	0.5	54.2	10.2
Avg Speed (mph)	2	2	8	3	3	3	4	3	3	3	5	4

10: Jenkins Rd & Cedar Hills Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	205.3
Delay / Veh (s)	239.2
Travel Dist (mi)	291.1
Travel Time (hr)	216.2
Avg Speed (mph)	4

14: Hall Blvd & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	1.2	1.7	0.7	1.6	4.8	3.0	0.4	2.7	0.2	1.6	1.1	0.1
Delay / Veh (s)	125.6	71.9	73.0	252.7	239.1	84.8	68.7	52.5	42.5	60.7	17.9	15.5
Travel Dist (mi)	2.7	7.0	2.8	3.0	9.7	17.6	3.8	39.3	4.2	20.0	46.3	4.5
Travel Time (hr)	1.3	2.0	0.8	1.7	5.1	3.7	0.5	4.1	0.4	2.3	2.7	0.3
Avg Speed (mph)	2	3	3	2	2	8	8	10	11	9	17	17

14: Hall Blvd & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	19.1
Delay / Veh (s)	73.1
Travel Dist (mi)	160.8
Travel Time (hr)	25.0
Avg Speed (mph)	7

14: Hall Blvd & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	3.9	4.5	1.3	10.9	30.1	47.0	2.0	15.0	1.4	4.1	2.7	0.2
Delay / Veh (s)	150.8	69.9	60.3	623.1	598.1	519.0	124.0	105.5	89.6	50.8	15.0	12.8
Travel Dist (mi)	7.5	19.0	6.3	9.0	25.7	45.5	12.0	107.7	12.3	59.2	135.9	13.1
Travel Time (hr)	4.2	5.4	1.6	11.2	31.0	48.8	2.4	18.8	1.9	6.2	7.4	0.7
Avg Speed (mph)	2	4	4	2	2	4	5	6	7	10	19	18

14: Hall Blvd & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	123.1
Delay / Veh (s)	169.8
Travel Dist (mi)	453.1
Travel Time (hr)	139.6
Avg Speed (mph)	6

14: Hall Blvd & Cedar Hills Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	5.0	6.3	2.0	12.5	34.9	50.0	2.3	17.7	1.7	5.7	3.8	0.3
Delay / Veh (s)	144.0	70.5	64.2	524.1	494.0	397.9	110.2	91.5	77.5	53.3	15.7	13.5
Travel Dist (mi)	10.2	26.0	9.1	11.9	35.3	63.1	15.9	147.0	16.5	79.2	182.2	17.5
Travel Time (hr)	5.5	7.4	2.5	13.0	36.1	52.5	2.9	22.8	2.3	8.6	10.1	1.0
Avg Speed (mph)	2	4	4	2	2	4	6	7	7	9	18	18

14: Hall Blvd & Cedar Hills Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	142.2
Delay / Veh (s)	144.2
Travel Dist (mi)	614.0
Travel Time (hr)	164.5
Avg Speed (mph)	6

35: Mall B & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.4	0.2	0.2	0.4	0.2	0.3	0.4	4.3	0.2	0.1	2.4	0.0
Delay / Veh (s)	63.2	70.5	43.2	65.0	71.2	71.7	104.3	44.9	42.9	87.5	34.2	8.6
Travel Dist (mi)	1.2	0.4	0.8	0.9	0.5	0.7	1.5	32.5	2.0	0.5	22.3	1.0
Travel Time (hr)	0.5	0.2	0.2	0.4	0.3	0.3	0.5	5.5	0.3	0.2	3.2	0.1
Avg Speed (mph)	3	2	3	3	2	2	3	6	6	3	7	14

35: Mall B & Cedar Hills Blvd Performance by movement Interval #1 5:10

Movement	All
Total Delay (hr)	9.2
Delay / Veh (s)	44.4
Travel Dist (mi)	64.3
Travel Time (hr)	11.6
Avg Speed (mph)	6

35: Mall B & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	4.7	1.2	1.9	2.7	2.0	1.8	1.3	14.8	0.7	0.4	6.1	0.1
Delay / Veh (s)	234.9	192.7	202.2	161.7	196.4	151.6	118.0	56.4	50.8	76.1	27.6	8.8
Travel Dist (mi)	3.3	1.1	1.6	2.7	1.6	1.9	4.1	91.8	4.9	1.6	68.1	2.5
Travel Time (hr)	4.8	1.3	2.0	2.8	2.0	1.9	1.5	18.1	0.9	0.4	8.6	0.2
Avg Speed (mph)	1	2	2	2	1	2	3	5	5	4	8	14

35: Mall B & Cedar Hills Blvd Performance by movement Interval #2 5:25

Movement	All
Total Delay (hr)	37.6
Delay / Veh (s)	63.4
Travel Dist (mi)	185.1
Travel Time (hr)	44.6
Avg Speed (mph)	5

35: Mall B & Cedar Hills Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	5.1	1.4	2.1	3.1	2.2	2.1	1.7	19.1	0.9	0.5	8.5	0.1
Delay / Veh (s)	190.7	161.2	154.4	135.8	165.1	130.6	114.5	53.3	48.5	82.4	29.2	8.8
Travel Dist (mi)	4.5	1.5	2.3	3.6	2.2	2.6	5.6	124.3	6.9	2.1	90.4	3.5
Travel Time (hr)	5.3	1.4	2.2	3.2	2.3	2.2	2.0	23.6	1.2	0.6	11.8	0.3
Avg Speed (mph)	1	2	2	2	2	2	3	5	6	3	8	14

35: Mall B & Cedar Hills Blvd Performance by movement Entire Run

Movement	All
Total Delay (hr)	46.8
Delay / Veh (s)	58.5
Travel Dist (mi)	249.5
Travel Time (hr)	56.3
Avg Speed (mph)	5

Total Network Performance By Interval

Interval Start	5:10	5:25	All
Total Delay (hr)	161.3	1198.3	1359.5
Delay / Veh (s)	315.2	839.4	701.2
Travel Dist (mi)	775.7	2188.6	2964.3
Travel Time (hr)	189.8	1278.7	1468.5
Avg Speed (mph)	7	6	6

Intersection: 2: Fairfield St & Cedar Hills Blvd, Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	82	92	61	80	129	529	497	79	103	101
Average Queue (ft)	45	35	22	37	66	265	249	33	47	46
95th Queue (ft)	92	92	64	82	135	798	762	86	115	110
Link Distance (ft)		253		395		1116	1116		652	652
Upstream Blk Time (%)						2	1			
Queuing Penalty (veh)						15	9			
Storage Bay Dist (ft)	60		60		150			150		
Storage Blk Time (%)	19	7	6	7	0	18		0	0	
Queuing Penalty (veh)	9	4	3	1	1	13		2	0	

Intersection: 2: Fairfield St & Cedar Hills Blvd, Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	90	151	74	130	178	1158	1162	109	119	120
Average Queue (ft)	50	43	18	51	82	814	801	41	34	36
95th Queue (ft)	93	116	51	109	182	1472	1477	87	94	97
Link Distance (ft)		253		395		1116	1116		652	652
Upstream Blk Time (%)		0				11	13			
Queuing Penalty (veh)		0				76	91			
Storage Bay Dist (ft)	60		60		150			150		
Storage Blk Time (%)	20	6	2	16	0	54		0	0	
Queuing Penalty (veh)	9	3	1	2	2	37		1	0	

Intersection: 2: Fairfield St & Cedar Hills Blvd, All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	90	156	77	130	178	1158	1162	115	135	136
Average Queue (ft)	49	41	19	47	78	682	668	39	37	39
95th Queue (ft)	93	111	55	104	172	1421	1417	87	100	101
Link Distance (ft)		253		395		1116	1116		652	652
Upstream Blk Time (%)		0				9	10			
Queuing Penalty (veh)		0				61	71			
Storage Bay Dist (ft)	60		60		150			150		
Storage Blk Time (%)	20	6	3	14	0	45		0	0	
Queuing Penalty (veh)	9	3	1	2	1	31		1	0	

Intersection: 3: Walker Rd & Cedar Hills Blvd, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	191	493	494	330	612	607	205	450	449	243	171	813
Average Queue (ft)	125	490	492	319	579	540	203	410	401	148	160	673
95th Queue (ft)	226	503	498	373	750	762	208	464	471	284	195	934
Link Distance (ft)		474	474		612	612		390	390			794
Upstream Blk Time (%)		62	68		32	5		30	14			23
Queuing Penalty (veh)		0	0		0	0		238	111			0
Storage Bay Dist (ft)	175			300			175			220	140	
Storage Blk Time (%)	4	71		66	5		65	14	28	0	45	55
Queuing Penalty (veh)	31	146		287	17		393	49	76	0	193	107

Intersection: 3: Walker Rd & Cedar Hills Blvd, Interval #1

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	811	810
Average Queue (ft)	641	376
95th Queue (ft)	914	883
Link Distance (ft)	794	794
Upstream Blk Time (%)	9	4
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Walker Rd & Cedar Hills Blvd, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	204	493	494	332	637	632	208	479	473	255	172	818
Average Queue (ft)	115	490	491	327	628	587	202	423	397	122	155	812
95th Queue (ft)	212	500	497	338	662	736	210	472	495	254	202	817
Link Distance (ft)		474	474		612	612		390	390			794
Upstream Blk Time (%)		60	65		55	7		40	13			65
Queuing Penalty (veh)		0	0		0	0		311	101			0
Storage Bay Dist (ft)	175			300			175			220	140	
Storage Blk Time (%)	3	69		80	4		69	12	24	0	49	53
Queuing Penalty (veh)	22	127		326	14		374	42	58	0	207	92

Intersection: 3: Walker Rd & Cedar Hills Blvd, Interval #2

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	816	813
Average Queue (ft)	801	713
95th Queue (ft)	861	976
Link Distance (ft)	794	794
Upstream Blk Time (%)	34	6
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Walker Rd & Cedar Hills Blvd, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	204	493	494	332	638	634	208	479	474	256	173	818
Average Queue (ft)	117	490	491	325	616	575	202	420	398	128	156	778
95th Queue (ft)	216	501	498	354	712	749	210	471	490	262	201	940
Link Distance (ft)		474	474		612	612		390	390			794
Upstream Blk Time (%)		61	66		49	7		38	13			55
Queuing Penalty (veh)		0	0		0	0		293	103			0
Storage Bay Dist (ft)	175			300			175			220	140	
Storage Blk Time (%)	4	69		76	5		68	13	25	0	48	53
Queuing Penalty (veh)	24	132		316	15		378	44	63	0	203	96

Intersection: 3: Walker Rd & Cedar Hills Blvd, All Intervals

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	816	813
Average Queue (ft)	763	632
95th Queue (ft)	945	1045
Link Distance (ft)	794	794
Upstream Blk Time (%)	28	5
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Jenkins Rd & Cedar Hills Blvd, Interval #1

Movement	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	180	230	188	105	328	630	637	48	508	507
Average Queue (ft)	167	225	78	54	239	498	500	9	476	476
95th Queue (ft)	199	252	179	111	381	819	813	43	519	518
Link Distance (ft)		210	210	278		652	652		463	463
Upstream Blk Time (%)		49	1			15	14		22	24
Queuing Penalty (veh)		0	0			98	92		161	171
Storage Bay Dist (ft)	150				300			100		
Storage Blk Time (%)	39	52			1	42			62	
Queuing Penalty (veh)	123	160			7	101			7	

Intersection: 10: Jenkins Rd & Cedar Hills Blvd, Interval #2

Movement	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	182	234	201	114	330	714	715	63	529	509
Average Queue (ft)	170	226	88	53	260	652	651	13	462	464
95th Queue (ft)	193	244	181	103	418	793	794	46	534	532
Link Distance (ft)		210	210	278		652	652		463	463
Upstream Blk Time (%)		53	1			37	36		16	18
Queuing Penalty (veh)		0	0			222	212		102	114
Storage Bay Dist (ft)	150				300			100		
Storage Blk Time (%)	40	56			2	64			62	
Queuing Penalty (veh)	118	159			9	136			6	

Intersection: 10: Jenkins Rd & Cedar Hills Blvd, All Intervals

Movement	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	182	234	216	130	330	714	715	74	531	514
Average Queue (ft)	169	225	85	53	255	615	614	12	465	467
95th Queue (ft)	195	246	181	105	410	842	839	45	532	530
Link Distance (ft)		210	210	278		652	652		463	463
Upstream Blk Time (%)		52	1			32	30		17	19
Queuing Penalty (veh)		0	0			191	182		116	128
Storage Bay Dist (ft)	150				300			100		
Storage Blk Time (%)	40	55			2	58			62	
Queuing Penalty (veh)	120	159			9	127			6	

Intersection: 14: Hall Blvd & Cedar Hills Blvd, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	104	413	418	150	755	652	152	474	448	281	521	438
Average Queue (ft)	99	296	288	102	637	353	86	380	354	246	273	218
95th Queue (ft)	115	457	460	172	911	687	178	527	503	322	554	445
Link Distance (ft)		426	426		736	736		1110	1110		1116	1116
Upstream Blk Time (%)		4	5		30	7						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (ft)	75			120			150			250		
Storage Blk Time (%)	60	25		12	70		1	43		20	1	
Queuing Penalty (veh)	104	34		42	76		5	37		112	3	

Intersection: 14: Hall Blvd & Cedar Hills Blvd, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	104	408	405	150	757	758	181	865	822	279	584	477
Average Queue (ft)	96	261	245	93	739	614	89	501	474	242	232	183
95th Queue (ft)	120	425	410	174	830	933	188	944	902	311	487	371
Link Distance (ft)		426	426		736	736		1110	1110		1116	1116
Upstream Blk Time (%)		5	3		46	35		5	2			
Queuing Penalty (veh)		0	0		0	0		0	0			
Storage Bay Dist (ft)	75			120			150			250		
Storage Blk Time (%)	64	24		12	62		2	55		14	0	
Queuing Penalty (veh)	99	31		37	60		7	43		68	1	

Intersection: 14: Hall Blvd & Cedar Hills Blvd, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	104	435	439	150	758	758	181	865	822	281	615	545
Average Queue (ft)	97	269	255	95	714	551	88	472	445	243	242	191
95th Queue (ft)	119	434	425	174	886	923	185	873	834	314	505	391
Link Distance (ft)		426	426		736	736		1110	1110		1116	1116
Upstream Blk Time (%)		5	3		42	28		3	2			
Queuing Penalty (veh)		0	0		0	0		0	0			
Storage Bay Dist (ft)	75			120			150			250		
Storage Blk Time (%)	63	25		12	64		2	52		15	0	
Queuing Penalty (veh)	100	32		38	64		7	42		79	1	

Intersection: 35: Mall B & Cedar Hills Blvd, Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	90	205	104	191	104	532	535	95	392	400	153
Average Queue (ft)	71	113	71	122	62	471	478	36	278	269	41
95th Queue (ft)	108	230	125	245	119	603	612	100	460	451	161
Link Distance (ft)		236		236		463	463		390	390	
Upstream Blk Time (%)		3		10		21	24		3	3	
Queuing Penalty (veh)		0		0		199	222		20	21	
Storage Bay Dist (ft)	60		75		75			100			200
Storage Blk Time (%)	28	17	10	31	14	55		1	46	20	0
Queuing Penalty (veh)	24	18	12	27	98	43		9	15	10	0

Intersection: 35: Mall B & Cedar Hills Blvd, Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	90	255	104	249	104	537	547	119	437	445	229
Average Queue (ft)	76	159	69	160	64	489	499	32	245	245	42
95th Queue (ft)	109	299	128	281	118	534	545	87	454	459	163
Link Distance (ft)		236		236		463	463		390	390	
Upstream Blk Time (%)		28		20		28	29		2	3	
Queuing Penalty (veh)		0		0		237	245		17	20	
Storage Bay Dist (ft)	60		75		75			100			200
Storage Blk Time (%)	52	13	16	42	14	62		1	35	15	0
Queuing Penalty (veh)	41	13	18	32	100	44		4	10	7	0

Intersection: 35: Mall B & Cedar Hills Blvd, All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	90	255	104	249	104	546	552	125	448	447	230
Average Queue (ft)	75	148	70	151	64	485	494	33	253	251	41
95th Queue (ft)	109	286	127	275	119	561	573	90	457	458	163
Link Distance (ft)		236		236		463	463		390	390	
Upstream Blk Time (%)		22		18		26	28		3	3	
Queuing Penalty (veh)		0		0		227	239		18	20	
Storage Bay Dist (ft)	60		75		75			100			200
Storage Blk Time (%)	46	14	15	39	14	61		1	38	16	0
Queuing Penalty (veh)	37	14	16	31	100	43		6	11	7	0

Network Summary

Network wide Queuing Penalty, Interval #1: 3757

Network wide Queuing Penalty, Interval #2: 4108

Network wide Queuing Penalty, All Intervals: 4020

HCM Signalized Intersection Capacity Analysis

2: Fairfield St & Cedar Hills Blvd

1/16/2009























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			0%	
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	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.92		1.00	0.93		1.00	1.00		1.00	1.00	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1709		1770	1737		1752	3490		1770	3524	
Fl _t Permitted	0.72	1.00		0.72	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1339	1709		1339	1737		1752	3490		1770	3524	
Volume (vph)	50	20	25	15	25	20	70	1150	30	50	1350	40
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	22	27	16	27	22	76	1250	33	54	1467	43
RTOR Reduction (vph)	0	25	0	0	20	0	0	1	0	0	1	0
Lane Group Flow (vph)	54	24	0	16	29	0	76	1282	0	54	1509	0
Turn Type	Perm		Perm		Prot		Prot					
Protected Phases	4		8		5		2		1		6	
Permitted Phases	4		8									
Actuated Green, G (s)	8.8	8.8		8.8	8.8		9.2	90.2		8.0	89.0	
Effective Green, g (s)	9.8	9.8		9.8	9.8		10.7	91.7		9.5	90.5	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.09	0.76		0.08	0.75	
Clearance Time (s)	4.0	4.0		4.0	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)	109	140		109	142		156	2667		140	2658	
v/s Ratio Prot		0.01			0.02		c0.04	0.37		0.03	c0.43	
v/s Ratio Perm	c0.04		0.01									
v/c Ratio	0.50	0.17		0.15	0.20		0.49	0.48		0.39	0.57	
Uniform Delay, d ₁	52.7	51.3		51.2	51.5		52.0	5.3		52.5	6.3	
Progression Factor	1.00	1.00		1.00	1.00		1.23	0.73		1.00	0.37	
Incremental Delay, d ₂	3.5	0.6		0.6	0.7		1.5	0.4		0.7	0.4	
Delay (s)	56.2	51.9		51.8	52.2		65.6	4.2		53.0	2.7	
Level of Service	E	D		D	D		E	A		D	A	
Approach Delay (s)		54.2			52.1			7.6			4.4	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM Average Control Delay			8.5		HCM Level of Service				A			
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)				9.0			
Intersection Capacity Utilization			61.9%		ICU Level of Service				B			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Walker Rd & Cedar Hills Blvd






















1/16/2009

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.98
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)	1787	3121		1787	3140		1769	3539	1561	1805	3610	1590
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)	1787	3121		1787	3140		1769	3539	1561	1805	3610	1590
Volume (vph)	190	1350	230	330	830	100	350	1110	250	180	850	210
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)	207	1467	250	337	874	109	357	1207	272	196	850	228
RTOR Reduction (vph)	0	8	0	0	6	0	0	0	104	0	0	139
Lane Group Flow (vph)	207	1709	0	337	977	0	357	1207	168	196	850	89
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)	18.3	57.5		18.5	57.7		19.5	40.5	40.5	10.5	31.5	31.5
Effective Green, g (s)	19.8	59.0		20.0	59.2		21.0	42.0	42.0	12.0	33.0	33.0
Actuated g/C Ratio	0.14	0.41		0.14	0.41		0.14	0.29	0.29	0.08	0.23	0.23
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)	244	1270		246	1282		256	1025	452	149	822	362
v/s Ratio Prot	0.12	c0.55		c0.19	0.31		c0.20	c0.34		0.11	0.24	
v/s Ratio Perm									0.11			0.06
v/c Ratio	0.85	1.35		1.37	0.76		1.39	1.18	0.37	1.32	1.03	0.25
Uniform Delay, d1	61.1	43.0		62.5	36.9		62.0	51.5	41.0	66.5	56.0	45.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.2	160.8		190.2	2.6		199.6	90.2	2.3	181.4	40.5	1.6
Delay (s)	83.3	203.8		252.7	39.5		261.6	141.7	43.3	247.9	96.5	47.4
Level of Service	F	F		F	D		F	F	D	F	F	D
Approach Delay (s)		190.8			93.9			150.5			111.0	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			143.0			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.31									
Actuated Cycle Length (s)			145.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			119.2%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Jenkins Rd & Cedar Hills Blvd

























1/16/2009

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.99	
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	0.97	
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1705	1567		1746		1769	3529		1805	3493	
Flt Permitted	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1698	1705	1567		1746		1769	3529		1805	3493	
Volume (vph)	580	10	330	20	10	20	220	1140	20	10	1200	240
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)	611	11	359	22	11	22	239	1239	22	11	1224	261
RTOR Reduction (vph)	0	0	161	0	20	0	0	1	0	0	14	0
Lane Group Flow (vph)	306	316	198	0	35	0	239	1260	0	11	1471	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)	28.3	28.3	49.1		7.9		20.8	64.2		2.6	46.0	
Effective Green, g (s)	29.3	29.3	51.6		8.9		22.3	65.7		4.1	47.5	
Actuated g/C Ratio	0.24	0.24	0.43		0.07		0.19	0.55		0.03	0.40	
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)	415	416	713		129		329	1932		62	1383	
v/s Ratio Prot	0.18	c0.19	0.05		c0.02		c0.14	0.36		0.01	c0.42	
v/s Ratio Perm			0.07									
v/c Ratio	0.74	0.76	0.28		0.27		0.73	0.65		0.18	1.06	
Uniform Delay, d1	41.8	42.1	22.1		52.5		46.0	19.1		56.3	36.3	
Progression Factor	1.00	1.00	1.00		1.00		1.39	0.63		1.20	0.92	
Incremental Delay, d2	6.7	7.8	0.2		1.1		7.2	1.6		1.2	41.5	
Delay (s)	48.5	49.9	22.4		53.6		71.0	13.6		68.6	74.7	
Level of Service	D	D	C		D		E	B		E	E	
Approach Delay (s)		39.4			53.6			22.8			74.7	
Approach LOS		D			D			C			E	
Intersection Summary												
HCM Average Control Delay			46.5				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			86.1%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

14: Hall Blvd & Cedar Hills Blvd

1/16/2009

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	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	0.98		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)	1787	3402		1787	1881	1546	1770	3466		1787	3498	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3402		1787	1881	1546	1770	3466		1787	3498	
Volume (vph)	130	320	110	100	310	540	80	720	80	450	1030	110
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)	137	348	120	109	337	568	87	783	87	489	1120	120
RTOR Reduction (vph)	0	28	0	0	0	46	0	7	0	0	7	0
Lane Group Flow (vph)	137	440	0	109	337	522	87	863	0	489	1233	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)	12.1	21.0		12.0	20.4	55.2	12.4	35.2		34.8	57.6	
Effective Green, g (s)	13.1	22.0		13.0	21.9	58.2	13.9	36.7		36.3	59.1	
Actuated g/C Ratio	0.11	0.18		0.11	0.18	0.49	0.12	0.31		0.30	0.49	
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)	195	624		194	343	788	205	1060		541	1723	
v/s Ratio Prot	c0.08	0.13		0.06	c0.18	0.20	0.05	c0.25		c0.27	0.35	
v/s Ratio Perm						0.14						
v/c Ratio	0.70	0.71		0.56	0.98	0.66	0.42	0.81		0.90	0.72	
Uniform Delay, d1	51.6	46.0		50.8	48.9	23.4	49.3	38.5		40.2	23.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.76	0.38	
Incremental Delay, d2	10.9	3.6		3.7	43.6	2.1	1.4	6.9		16.9	2.3	
Delay (s)	62.5	49.6		54.5	92.5	25.5	50.7	45.4		47.6	11.4	
Level of Service	E	D		D	F	C	D	D		D	B	
Approach Delay (s)		52.5			50.9			45.9			21.7	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM Average Control Delay			38.3				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			84.4%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

35: Mall B & Cedar Hills Blvd

1/16/2009



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.92		1.00	0.99		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)	1805	1723		1805	1727		1769	3499		1787	3575	1540
Flt Permitted	0.36	1.00		0.70	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	689	1723		1331	1727		1769	3499		1787	3575	1540
Volume (vph)	100	30	50	80	50	60	72	1400	85	30	1200	45
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	33	54	87	54	65	78	1429	92	33	1304	49
RTOR Reduction (vph)	0	47	0	0	38	0	0	3	0	0	0	16
Lane Group Flow (vph)	109	40	0	87	81	0	78	1518	0	33	1304	33
Confl. Peds. (#/hr)							3		4			4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)	25.4	14.2		20.4	11.7		8.6	74.9		5.2	71.5	71.5
Effective Green, g (s)	27.4	15.2		22.4	12.7		10.1	76.4		6.7	73.0	73.0
Actuated g/C Ratio	0.23	0.13		0.19	0.11		0.08	0.64		0.06	0.61	0.61
Clearance Time (s)	4.0	4.0		4.0	4.0		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)	271	218		287	183		149	2228		100	2175	937
v/s Ratio Prot	c0.04	0.02		0.02	0.05		c0.04	c0.43		0.02	0.36	
v/s Ratio Perm	c0.05			0.03								0.02
v/c Ratio	0.40	0.18		0.30	0.44		0.52	0.68		0.33	0.60	0.04
Uniform Delay, d1	38.3	46.8		41.7	50.3		52.6	14.0		54.5	14.5	9.4
Progression Factor	1.00	1.00		1.00	1.00		0.92	0.65		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4		0.6	1.7		2.5	1.3		1.9	1.2	0.1
Delay (s)	39.2	47.3		42.3	52.0		50.8	10.4		56.4	15.7	9.5
Level of Service	D	D		D	D		D	B		E	B	A
Approach Delay (s)		42.8			47.9			12.3			16.5	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay			18.0			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			68.6%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Summary of All Intervals

Run Number	1	10	2	3	4	5	6	7
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3	3
# of Recorded Intvls	2	2	2	2	2	2	2	2
Vehs Entered	5754	5814	5640	5611	5666	5778	5589	5756
Vehs Exited	5594	5680	5515	5511	5533	5659	5519	5634
Starting Vehs	361	406	426	417	401	414	438	397
Ending Vehs	521	540	551	517	534	533	508	519
Denied Entry Before	88	63	68	97	41	82	62	52
Denied Entry After	1759	1507	1668	1711	1478	1583	1586	1483
Travel Distance (mi)	5182	5268	5130	5056	5147	5245	5106	5238
Travel Time (hr)	1428.7	1254.2	1399.8	1405.3	1235.8	1276.2	1264.0	1253.2
Total Delay (hr)	1277.7	1100.7	1251.8	1258.7	1086.6	1122.9	1115.3	1101.3
Total Stops	16354	16852	16500	16290	16229	16878	16302	16553
Fuel Used (gal)	1136.6	1037.3	1128.8	1125.2	1022.0	1052.8	1050.1	1033.0

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors, Anti PHF.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	1577	1625	1482	1602	1592	1538	1520	1614
Vehs Exited	1449	1488	1424	1473	1481	1466	1458	1483
Starting Vehs	361	406	426	417	401	414	438	397
Ending Vehs	489	543	484	546	512	486	500	528
Denied Entry Before	88	63	68	97	41	82	62	52
Denied Entry After	517	336	507	481	310	390	352	345
Travel Distance (mi)	1340	1401	1336	1365	1355	1322	1332	1379
Travel Time (hr)	185.3	163.5	191.1	197.0	158.2	176.5	174.9	171.7
Total Delay (hr)	146.1	122.4	152.5	157.2	118.1	137.7	136.0	131.3
Total Stops	3867	4013	4183	4219	3883	4168	4073	4196
Fuel Used (gal)	176.9	165.5	179.7	185.2	160.0	172.1	171.7	168.9

Interval #2 Information Recording

Start Time	5:15
End Time	6:00
Total Time (min)	45
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	10	2	3	4	5	6	7
Vehs Entered	4177	4189	4158	4009	4074	4240	4069	4142
Vehs Exited	4145	4192	4091	4038	4052	4193	4061	4151
Starting Vehs	489	543	484	546	512	486	500	528
Ending Vehs	521	540	551	517	534	533	508	519
Denied Entry Before	517	336	507	481	310	390	352	345
Denied Entry After	1759	1507	1668	1711	1478	1583	1586	1483
Travel Distance (mi)	3842	3866	3794	3691	3792	3923	3774	3859
Travel Time (hr)	1243.4	1090.6	1208.7	1208.3	1077.6	1099.7	1089.1	1081.5
Total Delay (hr)	1131.6	978.3	1099.3	1101.5	968.5	985.2	979.3	970.0
Total Stops	12487	12839	12317	12071	12346	12710	12229	12357
Fuel Used (gal)	959.7	871.8	949.1	939.9	862.0	880.7	878.3	864.2

8: Beard & Murray Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	3.1	5.0	1.8	63.6	115.8	46.6	2.0	7.7	0.4	29.3	197.8	38.2
Delay / Veh (s)	107.7	85.7	71.8	1801.9	1751.8	1747.6	78.3	37.1	33.3	628.3	594.2	582.3
Travel Dist (mi)	20.5	42.8	18.7	21.9	41.0	16.5	32.4	257.9	13.7	29.4	208.8	41.1
Travel Time (hr)	3.8	6.5	2.6	64.4	117.2	47.2	2.8	13.6	0.7	30.2	202.9	39.4
Avg Speed (mph)	6	7	7	2	3	3	11	19	19	5	6	7

8: Beard & Murray Performance by movement

Movement	All
Total Delay (hr)	511.2
Delay / Veh (s)	550.0
Travel Dist (mi)	744.7
Travel Time (hr)	531.4
Avg Speed (mph)	7

9: Weir & Murray Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	1.3	0.3	0.9	1.7	8.9	0.3	13.5
Delay / Veh (s)	64.1	13.0	59.7	6.9	23.6	21.6	19.4
Travel Dist (mi)	13.9	13.8	19.2	291.8	482.1	20.1	840.9
Travel Time (hr)	1.8	0.8	1.4	8.5	20.2	0.9	33.6
Avg Speed (mph)	8	17	13	35	24	23	25

10: Osprey & Murray Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.9	0.3	0.3	0.5	0.4	0.2	1.0	1.3	0.0	0.3	5.2	0.1
Delay / Veh (s)	62.3	53.4	20.7	62.0	52.1	16.2	68.7	5.7	4.1	65.0	13.7	11.6
Travel Dist (mi)	4.5	2.0	4.6	2.6	2.4	4.6	7.0	115.1	3.0	5.5	478.0	13.7
Travel Time (hr)	1.0	0.4	0.5	0.6	0.5	0.5	1.2	4.1	0.1	0.4	16.2	0.5
Avg Speed (mph)	5	5	9	5	5	10	6	28	24	13	30	28

10: Osprey & Murray Performance by movement

Movement	All
Total Delay (hr)	10.6
Delay / Veh (s)	14.7
Travel Dist (mi)	642.9
Travel Time (hr)	26.0
Avg Speed (mph)	25

11: Teal & Murray Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.9	0.3	0.4	0.4	0.8	0.4	0.6	3.4	0.1	0.2	6.4	0.2
Delay / Veh (s)	66.3	51.6	24.2	73.3	56.7	30.9	63.5	14.8	13.5	70.8	16.5	13.9
Travel Dist (mi)	4.6	2.0	5.0	1.8	4.3	4.6	5.1	131.6	2.2	1.6	188.9	7.9
Travel Time (hr)	1.1	0.4	0.6	0.5	0.9	0.6	0.7	7.1	0.1	0.3	10.8	0.5
Avg Speed (mph)	4	5	9	4	5	7	7	18	17	6	18	16

11: Teal & Murray Performance by movement

Movement	All
Total Delay (hr)	14.0
Delay / Veh (s)	19.6
Travel Dist (mi)	359.6
Travel Time (hr)	23.7
Avg Speed (mph)	15

12: Scholls Ferry Rd & Murray Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	111.6	106.2	3.7	7.6	150.3	62.6	54.1	93.1	5.4	6.4	10.5	3.3
Delay / Veh (s)	1477.6	777.4	667.4	555.6	568.8	531.9	1663.9	1676.5	1617.8	72.5	46.8	35.8
Travel Dist (mi)	100.5	185.2	7.5	19.5	381.5	166.6	23.1	39.8	2.4	50.6	107.5	52.9
Travel Time (hr)	115.2	112.6	4.0	8.2	163.4	68.5	54.7	94.1	5.5	7.9	13.0	5.0
Avg Speed (mph)	2	9	19	4	4	5	2	2	2	6	8	11

12: Scholls Ferry Rd & Murray Performance by movement

Movement	All
Total Delay (hr)	614.9
Delay / Veh (s)	554.4
Travel Dist (mi)	1137.1
Travel Time (hr)	652.1
Avg Speed (mph)	4

Total Network Performance

Total Delay (hr)	1170.8
Delay / Veh (s)	747.5
Travel Dist (mi)	5164.0
Travel Time (hr)	1320.9
Avg Speed (mph)	10

Intersection: 8: Beard & Murray

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	154	774	156	929	271	464	452	306	942	941	183
Average Queue (ft)	92	386	133	922	103	239	243	168	929	929	110
95th Queue (ft)	171	778	182	930	205	409	409	326	971	970	218
Link Distance (ft)		1060		906		1813	1813		919	919	
Upstream Blk Time (%)		1		67					21	22	
Queuing Penalty (veh)		0		0					0	0	
Storage Bay Dist (ft)	125		125		250			275			150
Storage Blk Time (%)	9	42	34	58		7		1	49	51	1
Queuing Penalty (veh)	26	42	195	128		9		7	107	154	8

Intersection: 9: Weir & Murray

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	129	161	154	235	214	454	444
Average Queue (ft)	74	47	60	66	68	326	327
95th Queue (ft)	130	111	122	177	172	461	465
Link Distance (ft)		974		1758	1758	1813	1813
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100		175				
Storage Blk Time (%)	8	0	0	0			
Queuing Penalty (veh)	6	0	0	0			

Intersection: 10: Osprey & Murray

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	102	166	105	143	124	180	175	96	399	417
Average Queue (ft)	50	56	32	56	54	49	49	20	133	135
95th Queue (ft)	99	123	80	109	106	126	129	63	337	342
Link Distance (ft)		474		474		653	653		1758	1758
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75		100		125			175		
Storage Blk Time (%)	8	6	0	3	1	1			3	
Queuing Penalty (veh)	5	3	0	1	4	1			1	

Queuing and Blocking Report
Baseline

12/19/2008

Intersection: 11: Teal & Murray

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	129	135	101	227	136	790	445	87	408	416
Average Queue (ft)	54	56	27	83	37	157	133	16	212	223
95th Queue (ft)	112	112	72	172	96	464	343	56	355	381
Link Distance (ft)		494		474		776	776		653	653
Upstream Blk Time (%)						0			0	0
Queuing Penalty (veh)						0			0	0
Storage Bay Dist (ft)	200		100		200			150		
Storage Blk Time (%)	0		0	9		4			16	
Queuing Penalty (veh)	0		0	2		2			2	

Intersection: 12: Scholls Ferry Rd & Murray

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	459	2007	2002	108	172	2147	2148	284	156	1081	129	183
Average Queue (ft)	452	1894	1399	9	47	2061	2066	212	114	1069	14	148
95th Queue (ft)	459	2388	2529	72	129	2474	2471	370	189	1120	69	208
Link Distance (ft)		1984	1984			2124	2124			1057		
Upstream Blk Time (%)		62	2			32	38			73		
Queuing Penalty (veh)		0	0			0	0			0		
Storage Bay Dist (ft)	425			150	150			250	125		125	150
Storage Blk Time (%)	83	0	16	0		61	53	1	22	75	0	12
Queuing Penalty (veh)	296	0	5	0		37	267	7	78	166	0	61

Intersection: 12: Scholls Ferry Rd & Murray























Movement	SB	SB	SB
Directions Served	LT	T	R
Maximum Queue (ft)	785	731	283
Average Queue (ft)	440	403	208
95th Queue (ft)	725	692	338
Link Distance (ft)	776	776	
Upstream Blk Time (%)	1	1	
Queuing Penalty (veh)	12	11	
Storage Bay Dist (ft)			250
Storage Blk Time (%)	43	19	4
Queuing Penalty (veh)	83	80	14

Network Summary

Network wide Queuing Penalty: 1822

Future 2035 Conditions
8: Beard & Murray

Baseline
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	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	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.95		1.00	0.96		1.00	0.99		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	1779		1770	1781		1770	3512		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1779		1770	1781		1770	3512		1770	3539	1583
Volume (vph)	100	210	90	220	410	170	120	930	50	220	1480	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)	105	221	95	232	432	179	126	979	53	232	1558	316
RTOR Reduction (vph)	0	12	0	0	11	0	0	3	0	0	0	73
Lane Group Flow (vph)	105	304	0	232	600	0	126	1029	0	232	1558	243
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	10.4	28.3		19.1	37.0		12.1	41.9		20.7	50.5	50.5
Effective Green, g (s)	11.4	29.3		20.1	38.0		13.1	42.9		21.7	51.5	51.5
Actuated g/C Ratio	0.09	0.23		0.15	0.29		0.10	0.33		0.17	0.40	0.40
Clearance Time (s)	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
Lane Grp Cap (vph)	155	401		274	521		178	1159		295	1402	627
v/s Ratio Prot	0.06	c0.17		0.13	c0.34		0.07	c0.29		0.13	c0.44	
v/s Ratio Perm												0.15
v/c Ratio	0.68	0.76		0.85	1.15		0.71	0.89		0.79	1.11	0.39
Uniform Delay, d1	57.5	47.1		53.5	46.0		56.6	41.3		51.9	39.2	28.0
Progression Factor	1.00	1.00		1.00	1.00		0.96	0.76		1.00	1.00	1.00
Incremental Delay, d2	11.1	8.0		20.8	88.2		11.4	9.7		12.9	60.7	1.8
Delay (s)	68.7	55.1		74.2	134.2		65.9	40.9		64.8	99.9	29.8
Level of Service	E	E		E	F		E	D		E	F	C
Approach Delay (s)		58.5			117.7			43.7			85.5	
Approach LOS		E			F			D			F	
Intersection Summary												
HCM Average Control Delay			78.3			HCM Level of Service		E				
HCM Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)		12.0				
Intersection Capacity Utilization			98.4%			ICU Level of Service		F				
Analysis Period (min)			15									
c Critical Lane Group												

























Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	3539	3518	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	3539	3518	
Volume (vph)	75	75	75	1085	1720	70
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	79	79	1142	1811	74
RTOR Reduction (vph)	0	72	0	0	2	0
Lane Group Flow (vph)	79	7	79	1142	1883	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.0	11.0	9.2	109.0	94.8	
Effective Green, g (s)	12.0	12.0	10.2	110.0	95.8	
Actuated g/C Ratio	0.09	0.09	0.08	0.85	0.74	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	163	146	139	2995	2592	
v/s Ratio Prot	c0.04		c0.04	0.32	c0.54	
v/s Ratio Perm		0.00				
v/c Ratio	0.48	0.05	0.57	0.38	0.73	
Uniform Delay, d1	56.1	53.8	57.8	2.3	9.7	
Progression Factor	1.00	1.00	0.80	2.34	1.94	
Incremental Delay, d2	2.3	0.1	4.7	0.3	0.2	
Delay (s)	58.3	53.9	50.7	5.7	19.0	
Level of Service	E	D	D	A	B	
Approach Delay (s)	56.1			8.6	19.0	
Approach LOS	E			A	B	

Intersection Summary

HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Future 2035 Conditions
10: Osprey & Murray

Baseline
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	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	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.91		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1663		1770	1689		1770	3526		1770	3526	
Flt Permitted	0.59	1.00		0.65	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1106	1663		1204	1689		1770	3526		1770	3526	
Volume (vph)	50	20	50	30	30	50	75	1185	30	20	1720	45
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)	53	21	53	32	32	53	79	1247	32	21	1811	47
RTOR Reduction (vph)	0	48	0	0	48	0	0	1	0	0	1	0
Lane Group Flow (vph)	53	26	0	32	37	0	79	1278	0	21	1857	0
Turn Type	Perm		Perm		Prot		Prot					
Protected Phases	4		8		5		2		1		6	
Permitted Phases	4		8									
Actuated Green, G (s)	11.0	11.0		11.0	11.0		9.9	98.8		5.2	94.1	
Effective Green, g (s)	12.0	12.0		12.0	12.0		10.9	99.8		6.2	95.1	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.08	0.77		0.05	0.73	
Clearance Time (s)	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	
Lane Grp Cap (vph)	102	154		111	156		148	2707		84	2579	
v/s Ratio Prot		0.02			0.02		0.04	c0.36		0.01	c0.53	
v/s Ratio Perm	c0.05		0.03									
v/c Ratio	0.52	0.17		0.29	0.24		0.53	0.47		0.25	0.72	
Uniform Delay, d1	56.3	54.4		55.0	54.7		57.1	5.5		59.7	9.9	
Progression Factor	1.00	1.00		1.00	1.00		1.31	0.51		1.09	1.13	
Incremental Delay, d2	4.4	0.5		1.4	0.8		3.2	0.5		1.1	1.2	
Delay (s)	60.7	54.9		56.5	55.5		77.8	3.3		66.1	12.5	
Level of Service	E	D		E	E		E	A		E	B	
Approach Delay (s)		57.3			55.8			7.7			13.1	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM Average Control Delay			14.0	HCM Level of Service				B				
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			130.0	Sum of lost time (s)				12.0				
Intersection Capacity Utilization			72.6%	ICU Level of Service				C				
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
11: Teal & Murray

Baseline
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	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	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.93		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1663		1770	1723		1770	3530		1770	3518	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1663		1770	1723		1770	3530		1770	3518	
Volume (vph)	50	20	50	20	50	50	50	1190	20	15	1720	70
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)	53	21	53	21	53	53	53	1253	21	16	1811	74
RTOR Reduction (vph)	0	47	0	0	29	0	0	1	0	0	2	0
Lane Group Flow (vph)	53	27	0	21	77	0	53	1273	0	16	1883	0
Turn Type	Prot		Prot		Prot		Prot		Prot			
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.7	14.9		4.8	12.0		9.8	87.1		3.2	80.5	
Effective Green, g (s)	8.7	15.9		5.8	13.0		10.8	88.1		4.2	81.5	
Actuated g/C Ratio	0.07	0.12		0.04	0.10		0.08	0.68		0.03	0.63	
Clearance Time (s)	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	
Lane Grp Cap (vph)	118	203		79	172		147	2392		57	2206	
v/s Ratio Prot	c0.03	c0.02		0.01	c0.04		0.03	c0.36		0.01	c0.54	
v/s Ratio Perm												
v/c Ratio	0.45	0.14		0.27	0.45		0.36	0.53		0.28	0.85	
Uniform Delay, d1	58.3	50.9		60.0	55.1		56.3	10.6		61.4	19.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.12	0.74	
Incremental Delay, d2	2.7	0.3		1.8	1.9		1.5	0.2		1.9	3.2	
Delay (s)	61.1	51.2		61.8	57.0		57.8	10.8		70.6	17.6	
Level of Service	E	D		E	E		E	B		E	B	
Approach Delay (s)		55.3			57.8			12.7			18.1	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM Average Control Delay			18.8			HCM Level of Service		B				
HCM Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)		16.0				
Intersection Capacity Utilization			65.9%			ICU Level of Service		C				
Analysis Period (min)			15									
c Critical Lane Group												

Future 2035 Conditions
12: Scholls Ferry Rd & Murray

Baseline
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	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	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1610	3374	1583	
Flt Permitted	0.11	1.00	1.00	0.14	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	198	3539	1583	253	3539	1583	1770	1863	1583	1610	3374	1583	
Volume (vph)	420	720	30	60	1150	500	200	340	20	390	620	420	
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)	442	758	32	63	1211	526	211	358	21	411	653	442	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	38	
Lane Group Flow (vph)	442	758	32	63	1211	526	211	358	13	343	721	404	
Turn Type	pm+pt		Free	pm+pt		Free	Split		Prot	Split		pt+ov	
Protected Phases	5	2		1	6		8	8	8	4	4	4 5	
Permitted Phases	2		Free	6		Free							
Actuated Green, G (s)	58.9	58.9	144.0	45.0	45.0	144.0	20.0	20.0	20.0	33.8	33.8	55.0	
Effective Green, g (s)	60.9	60.9	144.0	47.0	47.0	144.0	22.0	22.0	22.0	35.8	35.8	59.0	
Actuated g/C Ratio	0.42	0.42	1.00	0.33	0.33	1.00	0.15	0.15	0.15	0.25	0.25	0.41	
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)	337	1497	1583	181	1155	1583	270	285	242	400	839	649	
v/s Ratio Prot	c0.21	0.21		0.02	c0.34		0.12	c0.19	0.01	0.21	c0.21	0.25	
v/s Ratio Perm	c0.34		0.02	0.09		0.33							
v/c Ratio	1.31	0.51	0.02	0.35	1.05	0.33	0.78	1.26	0.05	0.86	0.86	0.62	
Uniform Delay, d1	57.0	30.5	0.0	36.0	48.5	0.0	58.7	61.0	52.1	51.7	51.7	33.7	
Progression Factor	1.00	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	159.9	1.2	0.0	1.2	40.1	0.6	13.7	140.6	0.1	16.4	8.8	1.9	
Delay (s)	216.9	31.7	0.0	37.2	88.6	0.6	72.3	201.6	52.2	68.1	60.4	35.5	
Level of Service	F	C	A	D	F	A	E	F	D	E	E	D	
Approach Delay (s)		97.3			61.1			150.1			54.9		
Approach LOS		F			E			F			D		
Intersection Summary													
HCM Average Control Delay			78.2			HCM Level of Service							E
HCM Volume to Capacity ratio			1.15										
Actuated Cycle Length (s)			144.0			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													