

I- Existing (2008) 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
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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
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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
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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 for Street Name (170, Bany), 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).

Table with columns for Volume Module (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume) and values for 170 and Bany.

Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. for 170 and Bany.

Table with columns for Capacity Analysis Module (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ) and values for 170 and Bany.

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 for Street Name (170 th, Oak St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Prot+Permit, Permitted), Rights (Include), and Lanes (1 0 1 0 1).

Table with columns for Volume Module (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume) and values for 170 th and Oak St.

Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. for 170 th and Oak St.

Table with columns for Capacity Analysis Module (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ) and values for 170 th and Oak St.

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 #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), 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 each approach and movement.

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

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 each approach and movement.

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 #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), 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 each approach and movement.

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

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 each approach and movement.

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

Street Name: 173rd Ave 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: AddLane Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 18 114 182 94 79 151 128 926 12 126 1335 188
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: 18 114 182 94 79 151 128 926 12 126 1335 188
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.76 0.76 0.76
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 18 114 182 94 79 151 128 926 12 96 1015 143
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 18 114 182 94 79 151 128 926 12 96 1015 143
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: 18 114 182 94 79 151 128 926 12 96 1015 143

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.91 0.96 0.76 0.93 0.88 0.87 0.92 0.96 0.96 0.92 0.99 0.99
Lanes: 1.00 1.00 1.00 1.00 0.34 0.66 1.00 0.99 0.01 1.00 0.88 0.12
Final Sat.: 1736 1828 1439 1769 571 1091 1753 1794 23 1753 1644 231

Capacity Analysis Module:
Vol/Sat: 0.01 0.06 0.13 0.05 0.14 0.14 0.07 0.52 0.52 0.05 0.62 0.62
Crit Moves: **** **** **** ****
Green/Cycle: 0.01 0.13 0.13 0.05 0.17 0.17 0.07 0.63 0.63 0.07 0.62 0.62
Volume/Cap: 0.82 0.49 0.99 0.99 0.82 0.82 0.99 0.82 0.82 0.82 0.99 0.99
Delay/Veh: 176.5 54.4 120.6 151.2 69.5 69.5 136.8 23.3 23.3 94.9 48.6 48.6
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: 176.5 54.4 120.6 151.2 69.5 69.5 136.8 23.3 23.3 94.9 48.6 48.6
LOS by Move: F D F F E E F C C F D D
HCM2kAvgQ: 2 5 11 7 11 11 9 30 30 6 53 53

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

Street Name: 173th 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 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 0 1 0

Volume Module:
Base Vol: 290 17 145 27 13 38 17 590 275 217 770 5
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: 290 17 145 27 13 38 17 590 275 217 770 5
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
PHF Volume: 302 18 151 28 14 40 18 615 286 226 802 5
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 302 18 151 28 14 40 18 615 286 226 802 5
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: 302 18 151 28 14 40 18 615 286 226 802 5

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.86 0.86 0.95 0.89 0.89 0.94 0.99 0.84 0.94 0.99 0.99
Lanes: 1.00 0.10 0.90 1.00 0.25 0.75 1.00 1.00 1.00 1.00 0.99 0.01
Final Sat.: 1787 171 1458 1805 430 1257 1787 1881 1599 1787 1867 12

Capacity Analysis Module:
Vol/Sat: 0.17 0.10 0.10 0.02 0.03 0.03 0.01 0.33 0.18 0.13 0.43 0.43
Crit Moves: **** **** **** ****
Green/Cycle: 0.21 0.22 0.22 0.03 0.04 0.04 0.01 0.41 0.41 0.16 0.55 0.55
Volume/Cap: 0.81 0.48 0.48 0.48 0.81 0.81 0.78 0.81 0.44 0.81 0.78 0.78
Delay/Veh: 44.0 30.1 30.1 46.4 90.1 90.1 136.3 28.6 18.8 50.1 19.0 19.0
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: 44.0 30.1 30.1 46.4 90.1 90.1 136.3 28.6 18.8 50.1 19.0 19.0
LOS by Move: D C C D F F F C B D B B
HCM2kAvgQ: 10 4 4 1 3 3 2 16 6 8 18 18

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

Beaverton TSP Update
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Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #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.

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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 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), and Min. Green (0).

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 #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), and Min. Green (0).

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 #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

Street Name:	158th Ave				Cornell 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:	2	0	0	0	2	0	0	0	0	0

Volume Module:	158th Ave		Cornell Rd	
Base Vol:	624	0	776	0
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	624	0	776	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92
PHF Volume:	678	0	843	0
Reduct Vol:	0	0	0	0
Reduced Vol:	678	0	843	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
FinalVolume:	678	0	843	0

Saturation Flow Module:	158th Ave		Cornell Rd	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.74	1.00
Lanes:	2.00	0.00	2.00	0.00
Final Sat.:	3467	0	2814	0

Capacity Analysis Module:	158th Ave		Cornell Rd	
Vol/Sat:	0.20	0.00	0.30	0.00
Crit Moves:	****		****	
Green/Cycle:	0.33	0.00	0.33	0.00
Volume/Cap:	0.59	0.00	0.90	0.00
Delay/Veh:	34.0	0.0	49.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	0.0	49.8	0.0
LOS by Move:	C	A	D	A
HCM2kAvgQ:	11	0	20	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 #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

Street Name:	Bethany Blvd				Corenll Rd						
Approach:	North Bound		South Bound		East Bound		West Bound				
Movement:	L	T	R	L	T	R	L	T	R		
Control:	Protected		Prot+Permit		Protected		Protected				
Rights:	Include		Include		Include		Include				
Min. Green:	0	0	0	0	0	0	0	0	0		
Lanes:	1	0	0	1	0	1	0	1	1	0	1

Volume Module:	Bethany Blvd		Corenll Rd	
Base Vol:	34	57	67	339
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	34	57	67	339
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94
PHF Volume:	36	61	71	361
Reduct Vol:	0	0	0	0
Reduced Vol:	36	61	71	361
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
FinalVolume:	36	61	71	361

Saturation Flow Module:	Bethany Blvd		Corenll Rd	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.94	0.91	0.91	0.93
Lanes:	1.00	0.46	0.54	1.00
Final Sat.:	1787	795	934	1769

Capacity Analysis Module:	Bethany Blvd		Corenll Rd	
Vol/Sat:	0.02	0.08	0.08	0.20
Crit Moves:	****		****	
Green/Cycle:	0.05	0.09	0.09	0.39
Volume/Cap:	0.42	0.81	0.81	0.67
Delay/Veh:	42.5	62.2	62.2	23.2
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	62.2	62.2	23.2
LOS by Move:	D	E	E	C
HCM2kAvgQ:	1	6	6	9

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 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
PM Peak Hour

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

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

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

Table with columns for Street Name (Murray Blvd, Millikan Way), 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 #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

Table with columns for Street Name (Murray Blvd, Tualatin Valley Hwy), 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 #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

Street Name: Murray Blvd Farmington 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 1 0 1 1 0

Volume Module:
Base Vol: 261 820 105 169 962 63 110 549 201 224 932 144
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: 261 820 105 169 962 63 110 549 201 224 932 144
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: 266 837 107 172 982 64 112 560 205 229 951 147
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 266 837 107 172 982 64 112 560 205 229 951 147
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: 266 837 107 172 982 64 112 560 205 229 951 147

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.96 0.96 0.93 0.97 0.97 0.93 0.94 0.94 0.93 0.96 0.96
Lanes: 1.00 1.77 0.23 1.00 1.88 0.12 1.00 1.46 0.54 1.00 1.73 0.27
Final Sat.: 1769 3245 416 1769 3464 227 1769 2614 957 1769 3160 488

Capacity Analysis Module:
Vol/Sat: 0.15 0.26 0.26 0.10 0.28 0.28 0.06 0.21 0.21 0.13 0.30 0.30
Crit Moves: ****
Green/Cycle: 0.16 0.34 0.34 0.13 0.31 0.31 0.07 0.25 0.25 0.15 0.33 0.33
Volume/Cap: 0.92 0.75 0.75 0.75 0.92 0.92 0.92 0.87 0.87 0.87 0.92 0.92
Delay/Veh: 82.4 37.7 37.7 63.7 52.2 52.2 113.1 52.5 52.5 75.0 50.5 50.5
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: 82.4 37.7 37.7 63.7 52.2 52.2 113.1 52.5 52.5 75.0 50.5 50.5
LOS by Move: F D D E D D F D D E D D
HCM2kAvgQ: 13 17 17 8 23 23 7 16 16 11 23 23

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

Street Name: Murray Blvd 6th 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 Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 0 1 0

Volume Module:
Base Vol: 55 1116 30 21 1334 22 4 15 32 158 94 55
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 55 1116 30 21 1334 22 4 15 32 158 94 55
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 58 1175 32 22 1404 23 4 16 34 166 99 58
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 58 1175 32 22 1404 23 4 16 34 166 99 58
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: 58 1175 32 22 1404 23 4 16 34 166 99 58

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.88 0.87 0.94 0.94 0.94
Lanes: 1.00 1.95 0.05 1.00 1.97 0.03 1.00 0.32 0.68 1.00 0.63 0.37
Final Sat.: 1769 3431 92 1769 3473 57 1769 531 1133 1787 1121 656

Capacity Analysis Module:
Vol/Sat: 0.03 0.34 0.34 0.01 0.40 0.40 0.00 0.03 0.03 0.09 0.09 0.09
Crit Moves: ****
Green/Cycle: 0.04 0.57 0.57 0.02 0.54 0.54 0.00 0.04 0.04 0.13 0.16 0.16
Volume/Cap: 0.74 0.60 0.60 0.60 0.74 0.74 0.55 0.74 0.74 0.74 0.55 0.55
Delay/Veh: 62.1 9.8 9.8 56.7 12.9 12.9 96.4 66.6 66.6 40.0 27.3 27.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 62.1 9.8 9.8 56.7 12.9 12.9 96.4 66.6 66.6 40.0 27.3 27.3
LOS by Move: E A A E B B F E E D C C
HCM2kAvgQ: 3 9 9 1 13 13 1 3 3 5 4 4

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

Table with columns for Street Name (125th Av, Brockman Blvd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Protected, 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 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 #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

Table with columns for Street Name (Hwy 217 SB Ramp, Hall Blvd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Split Phase, 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 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 #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

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for Nimbus Av and Hall Blvd.

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. Rows for Nimbus Av and Hall Blvd.

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows for Nimbus Av and Hall Blvd.

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

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

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Lanes. Rows for Greenway Blvd and Hall Blvd.

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. Rows for Greenway Blvd and Hall Blvd.

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows for Greenway Blvd and Hall Blvd.

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

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 #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

Table with columns for Street Name (Hall Blvd, Denney Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Include), and Min. Green (0, 0, 0).

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 #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

Table with columns for Street Name (Hwy 217 SB Ramp, Denney Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), and Min. Green (0, 0, 0).

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 #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]

Street Name: 88th Av Garden Home

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

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include

Lanes: 0 0 1! 0 0 0 0 0 0 0 0 0 0 1 0 0 0

Volume Module:

Base Vol:	3	0	11	0	0	0	1	602	18	15	488	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:	3	0	11	0	0	0	1	602	18	15	488	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:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	3	0	12	0	0	0	1	662	20	16	536	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	0	12	0	0	0	1	662	20	16	536	0

Critical Gap Module:
Critical Gp: 6.4 6.5 6.2 xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Cnflct Vol: 1243 1243 671 xxxxx xxxxx xxxxx 536 xxxxx xxxxx 681 xxxxx xxxxx
Potent Cap.: 195 176 460 xxxxx xxxxx xxxxx 1042 xxxxx xxxxx 921 xxxxx xxxxx
Move Cap.: 192 173 460 xxxxx xxxxx xxxxx 1042 xxxxx xxxxx 921 xxxxx xxxxx
Volume/Cap: 0.02 0.00 0.03 xxxxx xxxxx xxxxx 0.00 xxxxx xxxxx 0.02 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.1 xxxxx xxxxx
Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 8.5 xxxxx xxxxx 9.0 xxxxx xxxxx
LOS by Move: * * * * * A * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 354 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx
Shrd ConDel: xxxxx 15.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.0 xxxxx xxxxx
Shared LOS: * C * * * * * A * * * * *
ApproachDel: 15.6 xxxxxxx xxxxxxx xxxxxxx
ApproachLOS: C * * * *

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

Street Name: Oleson Rd Garden Home Rd

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

Control: Prot+Permit Prot+Permit Prot+Permit Prot+Permit
Rights: Include Include Include Include

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

Volume Module:

Base Vol:	121	311	301	100	323	121	147	405	101	271	382	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	121	311	301	100	323	121	147	405	101	271	382	59
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:	130	334	324	108	347	130	158	435	109	291	411	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	130	334	324	108	347	130	158	435	109	291	411	63
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:	130	334	324	108	347	130	158	435	109	291	411	63

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.98 0.82 0.94 0.95 0.95 0.94 0.99 0.83 0.94 0.97 0.97
Lanes: 1.00 1.00 1.00 1.00 0.73 0.27 1.00 1.00 1.00 1.00 0.87 0.13
Final Sat.: 1769 1862 1564 1785 1312 491 1787 1881 1575 1786 1597 247

Capacity Analysis Module:
Vol/Sat: 0.07 0.18 0.21 0.06 0.26 0.26 0.09 0.23 0.07 0.16 0.26 0.26
Crit Moves: **** * * * * *
Green/Cycle: 0.39 0.30 0.30 0.43 0.31 0.31 0.38 0.27 0.27 0.49 0.34 0.34
Volume/Cap: 0.55 0.59 0.68 0.31 0.86 0.86 0.46 0.86 0.26 0.71 0.76 0.76
Delay/Veh: 26.8 32.8 36.2 20.2 47.8 47.8 23.9 51.1 30.6 29.7 36.1 36.1
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: 26.8 32.8 36.2 20.2 47.8 47.8 23.9 51.1 30.6 29.7 36.1 36.1
LOS by Move: C C D C D D C D C C D D
HCM2kAvgQ: 4 10 10 3 18 17 4 16 3 9 15 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 #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

Street Name:	Oleson Rd				Vermont St				
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit		Prot+Permit		Permitted		Permitted		
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	0

Volume Module:	Oleson Rd		Vermont St	
Base Vol:	8	7	13	13
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	8	7	13	13
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.99	0.99	0.99	0.99
PHF Volume:	8	7	13	13
Reduct Vol:	0	0	0	0
Reduced Vol:	8	7	13	13
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Volume:	8	7	13	13

Saturation Flow Module:	Oleson Rd		Vermont St	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.94	0.86
Lanes:	1.00	0.35	0.65	0.91
Final Sat.:	1805	599	1113	1476

Capacity Analysis Module:	Oleson Rd		Vermont St	
Vol/Sat:	0.00	0.01	0.01	0.01
Crit Moves:	****	****	****	****
Green/Cycle:	0.04	0.03	0.03	0.03
Volume/Cap:	0.11	0.44	0.44	0.35
Delay/Veh:	28.4	35.2	35.2	14.6
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	35.2	35.2	14.6
LOS by Move:	C	D	D	B
HCM2kAvgQ:	0	1	1	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 #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

Street Name:	Laurelwood Av				Scholls Ferry Rd				
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit		Prot+Permit		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:	Laurelwood Av		Scholls Ferry Rd	
Base Vol:	51	22	51	33
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bse:	51	22	51	33
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97
PHF Volume:	51	22	51	33
Reduct Vol:	0	0	0	0
Reduced Vol:	51	22	51	33
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Volume:	51	22	51	33

Saturation Flow Module:	Laurelwood Av		Scholls Ferry Rd	
Sat/Lane:	1900	1900	1900	1900
Adjustment:	0.95	0.96	0.84	0.98
Lanes:	0.70	0.30	1.00	0.51
Final Sat.:	1269	548	1599	953

Capacity Analysis Module:	Laurelwood Av		Scholls Ferry Rd	
Vol/Sat:	0.04	0.04	0.03	0.04
Crit Moves:	****	****	****	****
Green/Cycle:	0.14	0.09	0.09	0.23
Volume/Cap:	0.33	0.47	0.37	0.17
Delay/Veh:	27.7	32.5	31.7	26.5
User DelAdj:	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.7	32.5	31.7	26.5
LOS by Move:	C	C	C	D
HCM2kAvgQ:	2	2	2	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 #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 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 PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 87th Ave & Canyon Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.526
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 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 PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Walker Rd & Hwy 217 SB Ramp

Cycle (sec): 60 Critical Vol./Cap. (X): 0.746
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 57 Level of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Hwy 217 SB Ramp and Walker 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 #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

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, and Lanes for Hwy 217 NB Ramp and Walker 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
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Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #44 Cedar Hills & Butner Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 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	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	0.89	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
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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
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
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
Reduct Vol:	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

Critical Gap Module:

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

Capacity Module:

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

Level of Service Module:

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

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

Beaverton TSP Update
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Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #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								
Control:	Permitted		Permitted		Split Phase		Split Phase										
Rights:	Include		Include		Include		Include										
Min. Green:	0	0	0	0	0	0	0	0	0								
Lanes:	0	0	1	1	0	0	1	1	0	0	0	0	2	0	0	0	1

Volume Module:	Cedar Hills Blvd		Hwy 26 WB Ramps									
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:	Cedar Hills Blvd		Hwy 26 WB Ramps									
Sat/Lane:	1900	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:	Cedar Hills Blvd		Hwy 26 WB Ramps									
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										
Control:	Protected		Protected		Protected		Protected												
Rights:	Include		Include		Include		Include												
Min. Green:	0	0	0	0	0	0	0	0	0										
Lanes:	2	0	1	0	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0

Volume Module:	Cedar Hills Blvd		Barnes Rd									
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:	Cedar Hills Blvd		Barnes Rd									
Sat/Lane:	1900	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:	Cedar Hills Blvd		Barnes Rd									
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	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

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 0 1 0 1 1 0

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.

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 #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.

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 #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 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, Lanes, and Volume Module. Rows include Western Ave and Allen Blvd with various approach and movement details.

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

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

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

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

Beaverton TSP Update 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, Lanes, and Volume Module. Rows include Sorrento/Hart and Hart with various approach and movement details.

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

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

Table with columns for Capacity Analysis Module, 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.

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 Scholls and Allen streets.

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

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

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.

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 Murray and Hart streets.























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

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

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

3: Walker Rd & Cedar Hills Blvd

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
Grade (%)		0%			0%			2%				-2%
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	*0.85		1.00	*0.85		1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		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	3101		1787	3111		1769	3539	1562	1805	3610	1591
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	3101		1787	3111		1769	3539	1562	1805	3610	1591
Volume (vph)	160	563	121	304	545	82	194	830	327	126	794	103
Peak-hour factor, PHF	0.75	0.90	0.85	0.95	0.93	0.70	0.96	0.85	0.80	0.85	0.98	0.80
Adj. Flow (vph)	213	626	142	320	586	117	202	976	409	148	810	129
RTOR Reduction (vph)	0	14	0	0	12	0	0	0	232	0	0	91
Lane Group Flow (vph)	213	754	0	320	691	0	202	976	177	148	810	38
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)	15.0	30.2		20.8	36.0		16.7	40.0	40.0	11.0	34.3	34.3
Effective Green, g (s)	16.5	31.7		22.3	37.5		18.2	41.5	41.5	12.5	35.8	35.8
Actuated g/C Ratio	0.14	0.26		0.19	0.31		0.15	0.35	0.35	0.10	0.30	0.30
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)	246	819		332	972		268	1224	540	188	1077	475
v/s Ratio Prot	0.12	c0.24		c0.18	0.22		c0.11	c0.28		c0.08	0.22	
v/s Ratio Perm									0.11			0.02
v/c Ratio	0.87	0.92		0.96	0.71		0.75	0.80	0.33	0.79	0.75	0.08
Uniform Delay, d1	50.7	42.9		48.5	36.5		48.8	35.5	29.0	52.5	38.1	30.3
Progression Factor	1.00	1.00		1.00	1.00		1.16	0.67	0.60	1.00	1.00	1.00
Incremental Delay, d2	25.0	15.5		39.3	2.3		8.5	4.5	1.3	17.9	4.9	0.3
Delay (s)	75.7	58.4		87.7	38.8		65.2	28.2	18.7	70.4	42.9	30.6
Level of Service	E	E		F	D		E	C	B	E	D	C
Approach Delay (s)		62.2			54.1			30.4			45.2	
Approach LOS		E			D			C			D	
Intersection Summary												
HCM Average Control Delay			45.7			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			82.5%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

10: Jenkins Rd & Cedar Hills Blvd

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
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	
Fr _t	1.00	1.00	0.85		0.95		1.00	1.00		1.00	0.98	
Fl _t Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1704	1566		1759		1769	3524		1805	3506	
Fl _t Permitted	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1698	1704	1566		1759		1769	3524		1805	3506	
Volume (vph)	565	5	225	17	10	15	159	827	18	12	1074	188
Peak-hour factor, PHF	0.93	0.70	0.90	0.70	0.70	0.70	0.85	0.90	0.70	0.75	0.95	0.90
Adj. Flow (vph)	608	7	250	24	14	21	187	919	26	16	1131	209
RTOR Reduction (vph)	0	0	150	0	18	0	0	1	0	0	11	0
Lane Group Flow (vph)	304	311	100	0	41	0	187	944	0	16	1329	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)	27.6	27.6	45.4		8.1		17.8	64.7		2.6	49.5	
Effective Green, g (s)	28.6	28.6	47.9		9.1		19.3	66.2		4.1	51.0	
Actuated g/C Ratio	0.24	0.24	0.40		0.08		0.16	0.55		0.03	0.42	
Clearance Time (s)	4.0	4.0	4.5		4.0		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	405	406	664		133		285	1944		62	1490	
v/s Ratio Prot	0.18	c0.18	0.02		c0.02		c0.11	0.27		0.01	c0.38	
v/s Ratio Perm			0.04									
v/c Ratio	0.75	0.77	0.15		0.30		0.66	0.49		0.26	0.89	
Uniform Delay, d ₁	42.4	42.6	23.0		52.5		47.2	16.5		56.5	31.9	
Progression Factor	1.00	1.00	1.00		1.00		1.32	0.89		1.17	0.70	
Incremental Delay, d ₂	7.6	8.4	0.1		1.3		5.0	0.8		1.8	7.1	
Delay (s)	50.0	51.0	23.1		53.8		67.5	15.5		67.9	29.6	
Level of Service	D	D	C		D		E	B		E	C	
Approach Delay (s)		42.6			53.8			24.1			30.0	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM Average Control Delay			31.6				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			77.0%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

14: Hall Blvd & Cedar Hills Blvd

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)	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	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		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)	1787	3425		1787	1881	1546	1770	3468		1787	3437	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3425		1787	1881	1546	1770	3468		1787	3437	
Volume (vph)	134	265	74	55	225	520	64	350	32	400	725	156
Peak-hour factor, PHF	0.94	0.92	0.90	0.87	0.80	0.93	0.90	0.83	0.70	0.90	0.90	0.86
Adj. Flow (vph)	143	288	82	63	281	559	71	422	46	444	806	181
RTOR Reduction (vph)	0	21	0	0	0	90	0	7	0	0	15	0
Lane Group Flow (vph)	143	349	0	63	281	469	71	461	0	444	972	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)	12.3	24.3		8.3	19.8	53.5	12.4	36.7		33.7	58.0	
Effective Green, g (s)	13.3	25.3		9.3	21.3	56.5	13.9	38.2		35.2	59.5	
Actuated g/C Ratio	0.11	0.21		0.08	0.18	0.47	0.12	0.32		0.29	0.50	
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)	198	722		138	334	767	205	1104		524	1704	
v/s Ratio Prot	c0.08	0.10		0.04	c0.15	0.18	0.04	c0.13		c0.25	c0.28	
v/s Ratio Perm						0.12						
v/c Ratio	0.72	0.48		0.46	0.84	0.61	0.35	0.42		0.85	0.57	
Uniform Delay, d1	51.6	41.6		52.9	47.7	23.6	48.9	32.2		39.9	21.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.73	0.27	
Incremental Delay, d2	12.2	0.5		2.4	17.1	1.4	1.0	1.2		10.8	1.2	
Delay (s)	63.8	42.1		55.3	64.9	25.0	49.9	33.3		39.9	6.9	
Level of Service	E	D		E	E	C	D	C		D	A	
Approach Delay (s)		48.2			39.5			35.5			17.2	
Approach LOS		D			D			D			B	

Intersection Summary

HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

8: Beard & 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
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.95		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	1787		1770	1774		1770	3508		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	1787		1770	1774		1770	3508		1770	3539	1583
Volume (vph)	82	162	61	164	351	164	81	790	50	170	1146	106
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)	89	176	66	178	382	178	88	859	54	185	1246	115
RTOR Reduction (vph)	0	10	0	0	13	0	0	3	0	0	0	33
Lane Group Flow (vph)	89	232	0	178	547	0	88	910	0	185	1246	82
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	10.0	30.0		17.0	37.0		11.0	39.1		23.9	52.0	52.0
Effective Green, g (s)	11.0	31.0		18.0	38.0		12.0	40.1		24.9	53.0	53.0
Actuated g/C Ratio	0.08	0.24		0.14	0.29		0.09	0.31		0.19	0.41	0.41
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)	150	426		245	519		163	1082		339	1443	645
v/s Ratio Prot	0.05	c0.13		0.10	c0.31		0.05	c0.26		0.10	c0.35	
v/s Ratio Perm												0.05
v/c Ratio	0.59	0.54		0.73	1.05		0.54	0.84		0.55	0.86	0.13
Uniform Delay, d1	57.3	43.3		53.6	46.0		56.4	42.0		47.4	35.2	24.1
Progression Factor	1.00	1.00		1.00	1.00		0.90	0.77		1.00	1.00	1.00
Incremental Delay, d2	6.2	1.4		10.2	54.6		3.3	7.6		1.8	7.1	0.4
Delay (s)	63.5	44.8		63.9	100.6		54.1	39.8		49.2	42.3	24.5
Level of Service	E	D		E	F		D	D		D	D	C
Approach Delay (s)		49.8			91.8			41.1			41.8	
Approach LOS		D			F			D			D	
Intersection Summary												
HCM Average Control Delay			52.5			HCM Level of Service		D				
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)		8.0				
Intersection Capacity Utilization			82.5%			ICU Level of Service		E				
Analysis Period (min)			15									
c Critical Lane Group												
























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	0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1610	3340	1583
Flt Permitted	0.14	1.00	1.00	0.25	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	262	3539	1583	462	3539	1583	1770	1863	1583	1610	3340	1583
Volume (vph)	352	518	56	57	816	459	87	219	19	392	356	491
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)	383	563	61	62	887	499	95	238	21	426	387	534
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	122
Lane Group Flow (vph)	383	563	61	62	887	499	95	238	8	262	551	412
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)	66.3	66.3	144.0	40.5	40.5	144.0	20.6	20.6	20.6	26.7	26.7	58.9
Effective Green, g (s)	68.3	68.3	144.0	42.5	42.5	144.0	22.6	22.6	22.6	28.7	28.7	62.9
Actuated g/C Ratio	0.47	0.47	1.00	0.30	0.30	1.00	0.16	0.16	0.16	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	
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)	482	1679	1583	213	1044	1583	278	292	248	321	666	691
v/s Ratio Prot	c0.19	0.16		0.02	c0.25		0.05	c0.13		0.16	c0.16	0.26
v/s Ratio Perm	0.19		0.04	0.07		0.32			0.00			
v/c Ratio	0.79	0.34	0.04	0.29	0.85	0.32	0.34	0.82	0.03	0.82	0.83	0.60
Uniform Delay, d1	43.4	23.7	0.0	37.9	47.7	0.0	54.1	58.7	51.4	55.1	55.3	30.9
Progression Factor	1.00	1.00	1.00	0.90	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.5	0.0	0.7	7.6	0.5	0.7	15.9	0.0	14.7	8.3	1.4
Delay (s)	52.2	24.2	0.0	34.9	48.3	0.5	54.8	74.6	51.5	69.8	63.6	32.3
Level of Service	D	C	A	C	D	A	D	E	D	E	E	C
Approach Delay (s)		33.4			31.2			67.9			52.4	
Approach LOS		C			C			E			D	

Intersection Summary		
HCM Average Control Delay	41.7	HCM Level of Service D
HCM Volume to Capacity ratio	0.80	
Actuated Cycle Length (s)	144.0	Sum of lost time (s) 12.0
Intersection Capacity Utilization	81.1%	ICU Level of Service D
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	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3513		1770	3539	1583	1770	1618		1770	1623	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.69	1.00		0.74	1.00	
Satd. Flow (perm)	1770	3513		1770	3539	1583	1285	1618		1381	1623	
Volume (vph)	54	832	43	36	1271	129	11	3	19	87	8	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	904	47	39	1382	140	12	3	21	95	9	54
RTOR Reduction (vph)	0	2	0	0	0	27	0	19	0	0	48	0
Lane Group Flow (vph)	59	949	0	39	1382	113	12	5	0	95	15	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)	8.9	102.3		8.9	102.3	102.3	14.8	14.8		14.8	14.8	
Effective Green, g (s)	10.9	104.3		10.9	104.3	104.3	16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.08	0.72		0.08	0.72	0.72	0.12	0.12		0.12	0.12	
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)	134	2544		134	2563	1147	150	189		161	189	
v/s Ratio Prot	c0.03	0.27		0.02	c0.39			0.00			0.01	
v/s Ratio Perm					0.07	0.01					c0.07	
v/c Ratio	0.44	0.37		0.29	0.54	0.10	0.08	0.03		0.59	0.08	
Uniform Delay, d1	63.6	7.5		62.9	9.0	5.9	56.7	56.4		60.3	56.7	
Progression Factor	0.78	0.46		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.4		1.2	0.8	0.2	0.2	0.1		5.7	0.2	
Delay (s)	51.6	3.8		64.1	9.8	6.1	56.9	56.4		66.0	56.9	
Level of Service	D	A		E	A	A	E	E		E	E	
Approach Delay (s)	6.6		10.8		56.6		62.4					
Approach LOS	A		B		E		E					
Intersection Summary												
HCM Average Control Delay	12.8		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.54											
Actuated Cycle Length (s)	144.0		Sum of lost time (s)		12.0							
Intersection Capacity Utilization	60.0%		ICU Level of Service		B							
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	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)	3520		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3520		1770	3539	1770	1583
Volume (vph)	904	34	251	1477	29	169
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	983	37	273	1605	32	184
RTOR Reduction (vph)	3	0	0	0	0	158
Lane Group Flow (vph)	1017	0	273	1605	32	26
Turn Type			Prot			Perm
Protected Phases	2		7	6	8	
Permitted Phases						8
Actuated Green, G (s)	28.8		15.5	50.3	11.1	11.1
Effective Green, g (s)	30.8		17.5	52.3	13.1	13.1
Actuated g/C Ratio	0.33		0.19	0.57	0.14	0.14
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)	1178		337	2012	252	225
v/s Ratio Prot	c0.29		0.15	c0.45	c0.02	
v/s Ratio Perm						0.02
v/c Ratio	0.86		0.81	0.80	0.13	0.12
Uniform Delay, d1	28.6		35.7	15.7	34.5	34.4
Progression Factor	1.00		1.36	0.40	1.00	1.00
Incremental Delay, d2	8.5		7.3	1.7	0.2	0.2
Delay (s)	37.1		55.6	7.9	34.7	34.6
Level of Service	D		E	A	C	C
Approach Delay (s)	37.1			14.9	34.6	
Approach LOS	D			B	C	
Intersection Summary						
HCM Average Control Delay			23.5		HCM Level of Service	C
HCM Volume to Capacity ratio			0.71			
Actuated Cycle Length (s)			92.0		Sum of lost time (s)	30.6
Intersection Capacity Utilization			53.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

15: Scholls Ferry Rd & 135th

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	0.95		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		1.00	
Satd. Flow (prot)	1770	3489		1770	3539	1583		1782	1583		1766	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00		1.00	
Satd. Flow (perm)	1770	3489		1770	3539	1583		1782	1583		1766	
Volume (vph)	11	961	101	142	1623	10	96	10	91	1	15	9
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)	12	1045	110	154	1764	11	104	11	99	1	16	10
RTOR Reduction (vph)	0	7	0	0	0	2	0	0	85	0	9	0
Lane Group Flow (vph)	12	1148	0	154	1764	9	0	115	14	0	18	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)	12.6	28.8		12.6	50.3	50.3		11.1	11.1		11.1	
Effective Green, g (s)	14.6	30.8		14.6	52.3	52.3		13.1	13.1		13.1	
Actuated g/C Ratio	0.16	0.33		0.16	0.57	0.57		0.14	0.14		0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	281	1168		281	2012	900		254	225		251	
v/s Ratio Prot	0.01	c0.33		c0.09	c0.50			c0.06			0.01	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.04	0.98		0.55	0.88	0.01		0.45	0.06		0.07	
Uniform Delay, d1	32.8	30.3		35.7	17.1	8.6		36.2	34.1		34.2	
Progression Factor	0.42	0.60		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	16.1		2.2	5.8	0.0		1.3	0.1		0.1	
Delay (s)	13.8	34.4		37.8	22.8	8.6		37.4	34.3		34.3	
Level of Service	B	C		D	C	A		D	C		C	
Approach Delay (s)		34.2			24.0			36.0			34.3	
Approach LOS		C			C			D			C	

Intersection Summary


























HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.

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	0.91	
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	3513		1770	3539	1583	1770	1863	1583	1770	1696	
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	3513		1770	3539	1583	1770	1863	1583	1770	1696	
Volume (vph)	120	909	47	67	1534	170	161	160	65	150	100	149
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)	130	988	51	73	1667	185	175	174	71	163	109	162
RTOR Reduction (vph)	0	3	0	0	0	45	0	0	50	0	45	0
Lane Group Flow (vph)	130	1036	0	73	1667	140	175	174	21	163	226	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)	8.6	61.6		6.4	59.4	59.4	11.5	14.4	14.4	13.6	16.5	
Effective Green, g (s)	10.6	63.6		8.4	61.4	61.4	13.5	16.4	16.4	15.6	18.5	
Actuated g/C Ratio	0.09	0.53		0.07	0.51	0.51	0.11	0.14	0.14	0.13	0.15	
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)	156	1862		124	1811	810	199	255	216	230	261	
v/s Ratio Prot	c0.07	0.29		0.04	c0.47		c0.10	0.09	0.01	0.09	c0.13	
v/s Ratio Perm						0.09						
v/c Ratio	0.83	0.56		0.59	0.92	0.17	0.88	0.68	0.10	0.71	0.87	
Uniform Delay, d1	53.8	18.8		54.1	27.0	15.7	52.4	49.3	45.3	50.0	49.5	
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	30.0	1.2		7.0	8.2	0.1	32.6	7.3	0.2	9.6	24.6	
Delay (s)	83.8	20.0		61.1	35.2	15.8	85.1	56.6	45.5	59.6	74.2	
Level of Service	F	C		E	D	B	F	E	D	E	E	
Approach Delay (s)		27.1			34.3			66.6			68.7	
Approach LOS		C			C			E			E	
Intersection Summary												
HCM Average Control Delay			39.4				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			85.7%			ICU Level of Service			E			
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	0.95	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	3539	1583		1781	1583		1846	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.72	1.00		0.94	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1348	1583		1758	1583
Volume (vph)	2	899	128	305	1579	40	212	19	166	5	21	11
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)	2	977	139	332	1716	43	230	21	180	5	23	12
RTOR Reduction (vph)	0	0	49	0	0	7	0	0	105	0	0	9
Lane Group Flow (vph)	2	977	90	332	1716	36	0	251	75	0	28	3
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	54.1	54.1	28.3	77.6	77.6		24.6	24.6		24.6	24.6
Effective Green, g (s)	6.8	56.1	56.1	30.3	79.6	79.6		26.6	26.6		26.6	26.6
Actuated g/C Ratio	0.05	0.45	0.45	0.24	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	1588	710	429	2254	1008		287	337		374	337
v/s Ratio Prot	0.00	0.28		c0.19	c0.48							
v/s Ratio Perm			0.06			0.02		c0.19	0.05		0.02	0.00
v/c Ratio	0.02	0.62	0.13	0.77	0.76	0.04		0.87	0.22		0.07	0.01
Uniform Delay, d1	55.9	26.2	20.1	44.2	16.0	8.4		47.6	40.7		39.4	38.8
Progression Factor	1.00	1.00	1.00	1.00	1.51	1.74		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	1.8	0.4	4.6	1.3	0.0		24.2	0.3		0.1	0.0
Delay (s)	56.0	28.0	20.5	48.7	25.6	14.7		71.8	41.0		39.4	38.8
Level of Service	E	C	C	D	C	B		E	D		D	D
Approach Delay (s)		27.1			29.0			58.9			39.3	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM Average Control Delay			32.1	HCM Level of Service				C				
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			125.0	Sum of lost time (s)				8.0				
Intersection Capacity Utilization			76.4%	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	
Lane Util. Factor	1.00	0.95			0.95	1.00	1.00			1.00	1.00	
Frt	1.00	1.00			1.00	0.85	1.00			1.00	0.85	
Flt Protected	0.95	1.00			1.00	1.00	0.95			0.95	1.00	
Satd. Flow (prot)	1770	3539			3539	1583	1770			1770	1593	
Flt Permitted	0.95	1.00			1.00	1.00	0.74			0.76	1.00	
Satd. Flow (perm)	1770	3539			3539	1583	1374			1410	1593	
Volume (vph)	38	1031	1	0	1896	292	1	0	0	127	1	27
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)	41	1121	1	0	2061	317	1	0	0	138	1	29
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	25	0
Lane Group Flow (vph)	41	1122	0	0	2061	282	1	0	0	138	5	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)	6.7	96.1			83.4	83.4	16.9			16.9	16.9	
Effective Green, g (s)	8.7	98.1			85.4	85.4	18.9			18.9	18.9	
Actuated g/C Ratio	0.07	0.78			0.68	0.68	0.15			0.15	0.15	
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)	123	2777			2418	1082	208			213	241	
v/s Ratio Prot	0.02	c0.32			c0.58						0.00	
v/s Ratio Perm						0.18	0.00			c0.10		
v/c Ratio	0.33	0.40			0.85	0.26	0.00			0.65	0.02	
Uniform Delay, d1	55.4	4.2			15.0	7.6	45.1			49.9	45.2	
Progression Factor	1.20	0.62			1.94	2.31	1.00			1.00	1.00	
Incremental Delay, d2	1.4	0.4			0.4	0.1	0.0			6.6	0.0	
Delay (s)	67.7	3.0			29.5	17.7	45.1			56.5	45.2	
Level of Service	E	A			C	B	D			E	D	
Approach Delay (s)		5.3			27.9			45.1			54.5	
Approach LOS		A			C			D			D	
Intersection Summary												
HCM Average Control Delay			22.0				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			125.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			72.8%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											

29: Scholls Ferry Rd & Nimbus

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
Lane Util. Factor	1.00	0.95	1.00	1.00	*1.00	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3725	1583		1795	1583	1681	1697	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3725	1583		1795	1583	1681	1697	1583
Volume (vph)	95	1097	51	63	1759	7	117	39	150	365	29	434
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)	100	1155	54	66	1852	7	123	41	158	384	31	457
RTOR Reduction (vph)	0	0	22	0	0	2	0	0	134	0	0	128
Lane Group Flow (vph)	100	1155	32	66	1852	5	0	164	24	202	213	329
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)	6.5	58.1	58.1	6.4	58.0	58.0		14.5	14.5	22.0	22.0	22.0
Effective Green, g (s)	8.5	60.1	60.1	8.4	60.0	60.0		16.5	16.5	24.0	24.0	24.0
Actuated g/C Ratio	0.07	0.48	0.48	0.07	0.48	0.48		0.13	0.13	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	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	120	1702	761	119	1788	760		237	209	323	326	304
v/s Ratio Prot	c0.06	0.33		0.04	c0.50			c0.09		0.12	0.13	
v/s Ratio Perm			0.02			0.00			0.02			c0.21
v/c Ratio	0.83	0.68	0.04	0.55	1.04	0.01		0.69	0.12	0.63	0.65	1.08
Uniform Delay, d1	57.6	25.0	17.2	56.5	32.5	17.0		51.8	47.8	46.4	46.7	50.5
Progression Factor	1.36	0.38	0.14	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.6	2.0	0.1	5.5	31.2	0.0		8.4	0.2	3.7	4.6	75.7
Delay (s)	113.1	11.5	2.5	62.0	63.7	17.0		60.3	48.1	50.1	51.3	126.2
Level of Service	F	B	A	E	E	B		E	D	D	D	F
Approach Delay (s)		18.9			63.4			54.3			90.3	
Approach LOS		B			E			D			F	
Intersection Summary												
HCM Average Control Delay			54.9			HCM Level of Service			D			
HCM Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			125.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			94.0%			ICU Level of Service			F			
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	0.95	1.00
Frt	1.00	0.93		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)	1770	1734		1770	1712		1770	5025		1770	3539	1583
Flt Permitted	0.55	1.00		0.53	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1021	1734		981	1712		1770	5025		1770	3539	1583
Volume (vph)	178	77	66	57	62	73	42	1446	124	52	1578	63
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)	193	84	72	62	67	79	46	1572	135	57	1715	68
RTOR Reduction (vph)	0	28	0	0	38	0	0	6	0	0	0	6
Lane Group Flow (vph)	193	128	0	62	108	0	46	1701	0	57	1715	62
Turn Type	Perm		Perm			Prot			Prot		Perm	
Protected Phases	8		4			5			2		1	
Permitted Phases	8		4								6	
Actuated Green, G (s)	25.1	25.1		25.1	25.1		7.1	74.9		8.0	75.8	75.8
Effective Green, g (s)	25.1	25.1		25.1	25.1		7.1	74.9		8.0	75.8	75.8
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.06	0.62		0.07	0.63	0.63
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)	214	363		205	358		105	3136		118	2235	1000
v/s Ratio Prot		0.07			0.06		0.03	0.34		c0.03	c0.48	
v/s Ratio Perm	c0.19			0.06								0.04
v/c Ratio	0.90	0.35		0.30	0.30		0.44	0.54		0.48	0.77	0.06
Uniform Delay, d1	46.2	40.5		40.1	40.1		54.5	12.8		54.0	15.8	8.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.98	0.84	1.13
Incremental Delay, d2	35.8	0.6		0.8	0.5		2.9	0.7		2.2	1.8	0.1
Delay (s)	82.1	41.1		40.9	40.5		57.4	13.5		54.9	15.1	9.7
Level of Service	F	D		D	D		E	B		D	B	A
Approach Delay (s)		63.8			40.6			14.6			16.1	
Approach LOS		E			D			B			B	
Intersection Summary												
HCM Average Control Delay			20.7	HCM Level of Service				C				
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				8.0				
Intersection Capacity Utilization			71.2%	ICU Level of Service				C				
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)	597	326	947	0	0	793
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	649	354	1029	0	0	862
RTOR Reduction (vph)	0	69	0	0	0	0
Lane Group Flow (vph)	649	285	1029	0	0	862
Turn Type		Prot				
Protected Phases	4	4	6			2
Permitted Phases						
Actuated Green, G (s)	15.0	15.0	19.0			19.0
Effective Green, g (s)	15.0	15.0	19.0			19.0
Actuated g/C Ratio	0.36	0.36	0.45			0.45
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)	1226	565	1601			1601
v/s Ratio Prot	c0.19	0.18	c0.29			0.24
v/s Ratio Perm						
v/c Ratio	0.53	0.50	0.64			0.54
Uniform Delay, d1	10.7	10.6	8.9			8.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.4	0.7	0.9			0.4
Delay (s)	11.1	11.3	9.8			8.7
Level of Service	B	B	A			A
Approach Delay (s)	11.2		9.8			8.7
Approach LOS	B		A			A
Intersection Summary						
HCM Average Control Delay			9.9		HCM Level of Service	A
HCM Volume to Capacity ratio			0.59			
Actuated Cycle Length (s)			42.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			68.7%		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	3423		1770	3362		1770	3415	
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	3423		1770	3362		1770	3415	
Volume (vph)	151	732	376	256	745	210	280	381	190	215	389	119
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)	164	796	409	278	810	228	304	414	207	234	423	129
RTOR Reduction (vph)	0	0	57	0	29	0	0	68	0	0	32	0
Lane Group Flow (vph)	164	796	352	278	1009	0	304	553	0	234	520	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)	9.9	22.2	39.0	15.7	28.0		16.8	21.5		14.3	19.0	
Effective Green, g (s)	9.9	22.2	39.0	15.7	28.0		16.8	21.5		14.3	19.0	
Actuated g/C Ratio	0.11	0.25	0.43	0.18	0.31		0.19	0.24		0.16	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)	195	876	759	310	1068		332	806		282	723	
v/s Ratio Prot	0.09	0.22	0.09	c0.16	c0.29		c0.17	c0.16		0.13	0.15	
v/s Ratio Perm			0.14									
v/c Ratio	0.84	0.91	0.46	0.90	0.94		0.92	0.69		0.83	0.72	
Uniform Delay, d1	39.1	32.8	18.0	36.2	30.1		35.8	31.0		36.5	32.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.5	13.0	0.5	26.5	15.9		28.7	4.7		17.9	6.1	
Delay (s)	65.6	45.8	18.4	62.7	46.0		64.4	35.7		54.5	39.0	
Level of Service	E	D	B	E	D		E	D		D	D	
Approach Delay (s)		40.0			49.5			45.2			43.6	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control Delay			44.6			HCM Level of Service			D			
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			89.7	Sum of lost time (s)			8.0					
Intersection Capacity Utilization			79.1%	ICU Level of Service			D					
Analysis Period (min)			15									
c Critical Lane Group												























42: 217 NB ON Ramp & Scholls Ferry Rd

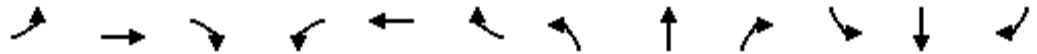
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.94	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1770	1863	1583	1770	3539			3339	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1770	1863	1583	1770	3539			3339	
Volume (vph)	0	0	0	220	225	155	375	725	0	0	704	428
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	239	245	168	408	788	0	0	765	465
RTOR Reduction (vph)	0	0	0	0	0	134	0	0	0	0	99	0
Lane Group Flow (vph)	0	0	0	239	245	34	408	788	0	0	1131	0
Turn Type				Perm		Perm	Prot					
Protected Phases					4		1	6				2
Permitted Phases				4		4						
Actuated Green, G (s)				16.3	16.3	16.3	21.0	55.7			30.7	
Effective Green, g (s)				16.3	16.3	16.3	21.0	55.7			30.7	
Actuated g/C Ratio				0.20	0.20	0.20	0.26	0.70			0.38	
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)				361	380	323	465	2464			1281	
v/s Ratio Prot					0.13		c0.23	0.22			c0.34	
v/s Ratio Perm				c0.14		0.02						
v/c Ratio				0.66	0.64	0.11	0.88	0.32			0.88	
Uniform Delay, d1				29.3	29.2	25.9	28.3	4.7			23.0	
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2				4.5	3.7	0.1	16.8	0.3			7.5	
Delay (s)				33.8	32.9	26.1	45.1	5.1			30.5	
Level of Service				C	C	C	D	A			C	
Approach Delay (s)		0.0			31.5			18.7			30.5	
Approach LOS		A			C			B			C	
Intersection Summary												
HCM Average Control Delay			26.1				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			76.1%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												

48: Hwy 217 SB Ramps & Scholls Ferry Rd

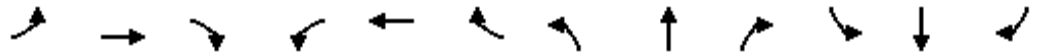
HCM Signalized Intersection Capacity Analysis

													
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					0.91	0.91	1.00	0.95		
Frt		1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1775	1583					3390	1441	1770	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1775	1583					3390	1441	1770	3539		
Volume (vph)	72	1	445	0	0	0	0	875	694	142	1248	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)	78	1	484	0	0	0	0	951	754	154	1357	0	
RTOR Reduction (vph)	0	0	22	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	79	462	0	0	0	0	951	754	154	1357	0	
Turn Type	Perm		Perm							Free	Prot		
Protected Phases		4						2			1	6	
Permitted Phases	4		4						Free				
Actuated Green, G (s)		38.2	38.2					55.2	120.0	14.6	73.8		
Effective Green, g (s)		38.2	38.2					55.2	120.0	14.6	73.8		
Actuated g/C Ratio		0.32	0.32					0.46	1.00	0.12	0.61		
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)		565	504					1559	1441	215	2176		
v/s Ratio Prot								0.28		c0.09	c0.38		
v/s Ratio Perm		0.04	c0.29						0.52				
v/c Ratio		0.14	0.92					0.61	0.52	0.72	0.62		
Uniform Delay, d1		29.2	39.4					24.3	0.0	50.7	14.4		
Progression Factor		1.00	1.00					1.25	1.00	1.00	1.00		
Incremental Delay, d2		0.1	21.3					1.5	1.2	10.8	1.4		
Delay (s)		29.3	60.6					31.9	1.2	61.5	15.8		
Level of Service		C	E					C	A	E	B		
Approach Delay (s)		56.2			0.0			18.3			20.4		
Approach LOS		E			A			B			C		
Intersection Summary													
HCM Average Control Delay			24.8									HCM Level of Service	C
HCM Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			68.7%									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)	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	0.95	1.00			
Satd. Flow (prot)	1641	3282			3539	1546	1633	1638	1538			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1641	3282			3539	1546	1633	1638	1538			
Volume (vph)	212	418	0	0	1021	365	289	1	157	0	0	0
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.86	0.86	0.86	0.90	0.90	0.90
Adj. Flow (vph)	233	459	0	0	1160	415	336	1	183	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	208	0	0	143	0	0	0
Lane Group Flow (vph)	233	459	0	0	1160	208	168	169	40	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	5%	5%	5%	0%	0%	0%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	16.9	67.4			46.5	46.5	19.6	19.6	19.6			
Effective Green, g (s)	17.9	68.4			47.5	47.5	20.6	20.6	20.6			
Actuated g/C Ratio	0.19	0.72			0.50	0.50	0.22	0.22	0.22			
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)	309	2363			1770	773	354	355	334			
v/s Ratio Prot	c0.14	0.14			c0.33		0.10	c0.10				
v/s Ratio Perm						0.13			0.03			
v/c Ratio	0.75	0.19			0.66	0.27	0.47	0.48	0.12			
Uniform Delay, d1	36.5	4.3			17.7	13.7	32.5	32.5	29.9			
Progression Factor	1.17	0.46			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	8.0	0.2			1.9	0.9	0.7	0.7	0.1			
Delay (s)	50.7	2.1			19.6	14.6	33.2	33.2	30.0			
Level of Service	D	A			B	B	C	C	C			
Approach Delay (s)		18.5			18.3			32.1			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM Average Control Delay			20.9				HCM Level of Service		C			
HCM Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			95.0				Sum of lost time (s)		9.0			
Intersection Capacity Utilization			61.7%				ICU Level of Service		B			
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)	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		0.95		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.96	1.00
Satd. Flow (prot)		3337		1787	3574						1735	1538
Flt Permitted		1.00		0.95	1.00						0.96	1.00
Satd. Flow (perm)		3337		1787	3574						1735	1538
Volume (vph)	0	458	214	383	927	0	0	0	0	172	28	282
Peak-hour factor, PHF	0.91	0.91	0.91	0.93	0.93	0.93	0.90	0.90	0.90	0.84	0.84	0.84
Adj. Flow (vph)	0	503	235	412	997	0	0	0	0	205	33	336
RTOR Reduction (vph)	0	55	0	0	0	0	0	0	0	0	0	84
Lane Group Flow (vph)	0	683	0	412	997	0	0	0	0	0	238	252
Confl. Peds. (#/hr)						4						
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	0%	0%	0%	5%	5%	5%
Turn Type				Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases												4
Actuated Green, G (s)		31.9		24.0	59.9						27.1	27.1
Effective Green, g (s)		32.9		25.0	60.9						28.1	28.1
Actuated g/C Ratio		0.35		0.26	0.64						0.30	0.30
Clearance Time (s)		4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)		4.0		2.5	6.0						2.5	2.5
Lane Grp Cap (vph)		1156		470	2291						513	455
v/s Ratio Prot		c0.20		c0.23	0.28						0.14	
v/s Ratio Perm												c0.16
v/c Ratio		0.59		0.88	0.44						0.46	0.55
Uniform Delay, d1		25.5		33.5	8.5						27.3	28.2
Progression Factor		1.00		0.73	0.24						1.00	1.00
Incremental Delay, d2		2.2		13.9	0.5						0.5	1.2
Delay (s)		27.7		38.3	2.5						27.8	29.3
Level of Service		C		D	A						C	C
Approach Delay (s)		27.7			13.0			0.0			28.7	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM Average Control Delay			20.3			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			95.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			61.7%			ICU Level of Service				B		
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)	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	0.99		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	0.99		1.00	0.99		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3410		1787	3513		1787	1795		1770	1751	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	3410		1787	3513		1787	1795		1770	1751	
Volume (vph)	74	572	57	97	1041	102	54	149	46	126	180	77
Peak-hour factor, PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.80	0.80	0.80	0.91	0.91	0.91
Adj. Flow (vph)	83	643	64	103	1107	109	68	186	58	138	198	85
RTOR Reduction (vph)	0	7	0	0	6	0	0	12	0	0	16	0
Lane Group Flow (vph)	83	700	0	103	1210	0	68	232	0	138	267	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)	7.1	48.7		8.0	49.6		4.8	17.7		9.6	22.5	
Effective Green, g (s)	8.1	49.7		9.0	50.6		5.8	18.7		10.6	23.5	
Actuated g/C Ratio	0.08	0.50		0.09	0.51		0.06	0.19		0.11	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	4.5		2.5	4.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	141	1695		161	1778		104	336		188	411	
v/s Ratio Prot	c0.05	0.21		0.06	c0.34		0.04	0.13		c0.08	c0.15	
v/s Ratio Perm												
v/c Ratio	0.59	0.41		0.64	0.68		0.65	0.69		0.73	0.65	
Uniform Delay, d1	44.3	15.9		43.9	18.6		46.1	37.9		43.3	34.5	
Progression Factor	0.90	0.37		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	0.5		7.1	2.1		12.4	5.3		13.1	3.1	
Delay (s)	43.8	6.4		51.0	20.7		58.5	43.3		56.4	37.7	
Level of Service	D	A		D	C		E	D		E	D	
Approach Delay (s)		10.4			23.1			46.6			43.8	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM Average Control Delay			25.2			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			70.6%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Allen Blvd

31: Allen Blvd & Hall Blvd

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	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	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3414		1787	3508		1787	3504		1787	3493	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3414		1787	3508		1787	3504		1787	3493	
Volume (vph)	116	561	145	153	1027	100	274	675	71	125	721	100
Peak-hour factor, PHF	0.88	0.88	0.88	0.84	0.84	0.84	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	132	638	165	182	1223	119	315	776	82	133	767	106
RTOR Reduction (vph)	0	23	0	0	8	0	0	8	0	0	11	0
Lane Group Flow (vph)	132	780	0	182	1334	0	315	850	0	133	862	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	34.1		10.9	36.0		16.0	30.2		8.8	23.0	
Effective Green, g (s)	10.0	35.1		11.9	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	1198		213	1298		304	1093		175	838	
v/s Ratio Prot	0.07	c0.23		0.10	c0.38		c0.18	0.24		0.07	c0.25	
v/s Ratio Perm												
v/c Ratio	0.75	0.65		0.85	1.03		1.04	0.78		0.76	1.03	
Uniform Delay, d1	43.8	27.3		43.2	31.5		41.5	31.2		44.0	38.0	
Progression Factor	1.02	1.05		0.98	0.65		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.4	2.7		23.3	30.5		61.3	3.2		16.8	38.8	
Delay (s)	59.3	31.4		65.9	51.1		102.8	34.5		60.8	76.8	
Level of Service	E	C		E	D		F	C		E	E	
Approach Delay (s)		35.3			52.9			52.8			74.6	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM Average Control Delay			54.0			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			89.8%			ICU Level of Service				E		
Analysis Period (min)			15									

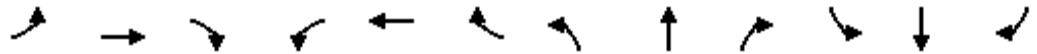
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	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	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1644	3204		1613	3209		1676	1707		1613	1698	1416
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1644	3204		1613	3209		1676	1707		1613	1698	1416
Volume (vph)	78	1071	126	116	1437	45	100	127	29	149	232	94
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)	81	1116	131	121	1497	47	104	132	30	155	242	98
RTOR Reduction (vph)	0	7	0	0	2	0	0	8	0	0	0	50
Lane Group Flow (vph)	81	1240	0	121	1542	0	104	154	0	155	242	48
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)	8.2	61.0		10.0	62.8		9.2	13.0		14.5	18.3	26.5
Effective Green, g (s)	9.2	62.5		11.0	64.3		10.2	14.0		15.5	19.3	28.5
Actuated g/C Ratio	0.08	0.54		0.10	0.56		0.09	0.12		0.13	0.17	0.25
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)	132	1741		154	1794		149	208		217	285	388
v/s Ratio Prot	0.05	c0.39		0.08	c0.48		0.06	c0.09		0.10	c0.14	0.01
v/s Ratio Perm												0.02
v/c Ratio	0.61	0.71		0.79	0.86		0.70	0.74		0.71	0.85	0.12
Uniform Delay, d1	51.2	19.6		50.8	21.5		50.9	48.7		47.6	46.4	33.6
Progression Factor	1.00	1.00		0.79	0.54		0.81	0.80		1.00	1.00	1.00
Incremental Delay, d2	5.8	2.5		15.9	4.1		10.3	11.0		8.9	19.6	0.1
Delay (s)	57.0	22.1		56.0	15.8		51.6	49.8		56.6	66.1	33.6
Level of Service	E	C		E	B		D	D		E	E	C
Approach Delay (s)		24.2			18.7			50.5			56.7	
Approach LOS		C			B			D			E	
Intersection Summary												
HCM Average Control Delay			27.9			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			82.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

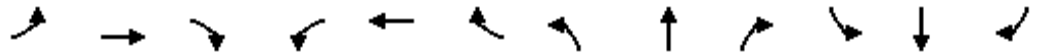


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑	↑		↑↑			↑↑	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0			3.0	3.0		3.0			3.0	
Lane Util. Factor		0.95			0.95	1.00		0.95			0.95	
Frbp, ped/bikes		1.00			1.00	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			0.96	
Flt Protected		1.00			1.00	1.00		0.99			0.99	
Satd. Flow (prot)		3250			3257	1427		3232			3111	
Flt Permitted		1.00			1.00	1.00		0.99			0.99	
Satd. Flow (perm)		3250			3257	1427		3232			3111	
Volume (vph)	0	1300	90	0	1159	112	119	374	88	107	232	121
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	1429	99	0	1274	123	131	411	97	118	255	133
RTOR Reduction (vph)	0	4	0	0	0	32	0	12	0	0	33	0
Lane Group Flow (vph)	0	1524	0	0	1274	91	0	627	0	0	473	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)		63.4			63.4	63.4		19.0			19.6	
Effective Green, g (s)		64.9			64.9	64.9		20.0			21.1	
Actuated g/C Ratio		0.56			0.56	0.56		0.17			0.18	
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)		1834			1838	805		562			571	
v/s Ratio Prot		c0.47			0.39			c0.19			c0.15	
v/s Ratio Perm						0.06						
v/c Ratio		0.83			0.69	0.11		1.11			0.83	
Uniform Delay, d1		20.6			17.9	11.7		47.5			45.2	
Progression Factor		0.71			0.35	0.26		1.00			1.00	
Incremental Delay, d2		3.7			1.7	0.2		73.4			9.2	
Delay (s)		18.2			8.0	3.3		121.1			54.4	
Level of Service		B			A	A		F			D	
Approach Delay (s)		18.2			7.5			121.1			54.4	
Approach LOS		B			A			F			D	
Intersection Summary												
HCM Average Control Delay			35.2				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			82.7%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												



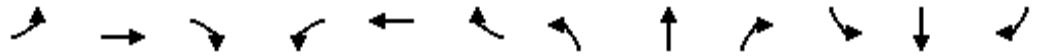
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑					↖	↑↑	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		3.0		3.0	3.0					3.0	3.0	
Lane Util. Factor		0.95		1.00	0.95					0.91	0.91	
Frbp, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					1.00	1.00	
Frt		0.99		1.00	1.00					1.00	0.99	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3221		1613	3226					1523	3174	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3221		1613	3226					1523	3174	
Volume (vph)	0	1115	71	133	1418	0	0	0	0	199	473	34
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	1174	75	140	1493	0	0	0	0	209	498	36
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	1246	0	140	1493	0	0	0	0	209	529	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)		64.6		15.0	83.6					22.9	22.9	
Effective Green, g (s)		66.1		16.0	85.1					23.9	23.9	
Actuated g/C Ratio		0.57		0.14	0.74					0.21	0.21	
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)		1851		224	2387					317	660	
v/s Ratio Prot		c0.39		0.09	c0.46							
v/s Ratio Perm										0.14	0.17	
v/c Ratio		0.67		0.62	0.63					0.66	0.80	
Uniform Delay, d1		17.0		46.7	7.2					41.8	43.3	
Progression Factor		1.79		0.74	0.32					1.00	1.00	
Incremental Delay, d2		1.0		2.7	0.8					4.1	6.7	
Delay (s)		31.3		37.4	3.1					45.9	50.0	
Level of Service		C		D	A					D	D	
Approach Delay (s)		31.3			6.0			0.0			48.9	
Approach LOS		C			A			A			D	
Intersection Summary												
HCM Average Control Delay			23.5			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			6.0			
Intersection Capacity Utilization			70.3%			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				
Lane Util. Factor	1.00	0.95			0.95			0.91				
Frbp, ped/bikes	1.00	1.00			1.00			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.99			0.98				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1629	3257			3141			4619				
Flt Permitted	0.95	1.00			1.00			0.99				
Satd. Flow (perm)	1629	3257			3141			4619				
Volume (vph)	40	1168	0	0	1329	66	208	468	81	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)	43	1256	0	0	1429	71	224	503	87	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	13	0	0	0	0
Lane Group Flow (vph)	43	1256	0	0	1497	0	0	801	0	0	0	0
Confl. 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)	6.8	78.5			67.7			28.0				
Effective Green, g (s)	7.8	80.0			69.2			29.0				
Actuated g/C Ratio	0.07	0.70			0.60			0.25				
Clearance Time (s)	4.0	4.5			4.5			4.0				
Vehicle Extension (s)	2.3	4.3			4.3			2.3				
Lane Grp Cap (vph)	110	2266			1890			1165				
v/s Ratio Prot	0.03	c0.39			c0.48							
v/s Ratio Perm								0.17				
v/c Ratio	0.39	0.55			0.79			0.69				
Uniform Delay, d1	51.3	8.7			17.4			38.9				
Progression Factor	1.27	0.20			0.80			1.07				
Incremental Delay, d2	1.0	0.7			2.6			0.6				
Delay (s)	66.2	2.5			16.6			42.4				
Level of Service	E	A			B			D				
Approach Delay (s)		4.6			16.6			42.4			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.3%	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
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	0.99		1.00	0.99		1.00	0.94		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	3238		1613	3207		1500	1462		1462	1538	1283
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.69	1.00	1.00
Satd. Flow (perm)	1629	3238		1613	3207		1146	1462		1069	1538	1283
Volume (vph)	67	1278	45	25	1459	51	84	33	21	41	46	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)	71	1345	47	26	1536	54	88	35	22	43	48	74
RTOR Reduction (vph)	0	1	0	0	2	0	0	20	0	0	0	67
Lane Group Flow (vph)	71	1391	0	26	1588	0	88	37	0	43	48	7
Confl. Peds. (#/hr)			1			3			20			4
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	14%	14%	14%	17%	17%	17%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	14.3	89.7		2.5	77.9		10.3	10.3		10.3	10.3	10.3
Effective Green, g (s)	15.3	91.2		3.5	79.4		11.3	11.3		11.3	11.3	11.3
Actuated g/C Ratio	0.13	0.79		0.03	0.69		0.10	0.10		0.10	0.10	0.10
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	0.5	4.3		0.5	4.3		0.5	0.5		0.5	0.5	0.5
Lane Grp Cap (vph)	217	2568		49	2214		113	144		105	151	126
v/s Ratio Prot	0.04	c0.43		0.02	c0.50			0.03			0.03	
v/s Ratio Perm							c0.08			0.04		0.01
v/c Ratio	0.33	0.54		0.53	0.72		0.78	0.26		0.41	0.32	0.06
Uniform Delay, d1	45.2	4.3		54.9	10.9		50.6	48.0		48.7	48.3	47.0
Progression Factor	0.70	0.62		1.22	0.64		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.7		4.4	1.6		25.8	0.3		0.9	0.4	0.1
Delay (s)	32.0	3.4		71.5	8.6		76.5	48.3		49.7	48.7	47.1
Level of Service	C	A		E	A		E	D		D	D	D
Approach Delay (s)		4.8			9.6			65.4			48.2	
Approach LOS		A			A			E			D	

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.7%	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	
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	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1613	3192		1629	3257	1424	1644	1541		3190	1580	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1613	3192		1629	3257	1424	1644	1541		3190	1580	
Volume (vph)	73	1027	28	63	1269	198	75	63	112	225	55	61
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)	76	1070	29	66	1322	206	78	66	117	234	57	64
RTOR Reduction (vph)	0	1	0	0	0	45	0	65	0	0	41	0
Lane Group Flow (vph)	76	1098	0	66	1322	161	78	118	0	234	80	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)	8.3	66.6		7.8	66.1	66.1	12.9	11.5		12.6	11.2	
Effective Green, g (s)	9.3	68.1		8.8	67.6	67.6	13.9	12.5		13.6	12.2	
Actuated g/C Ratio	0.08	0.59		0.08	0.59	0.59	0.12	0.11		0.12	0.11	
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)	130	1890		125	1915	837	199	168		377	168	
v/s Ratio Prot	c0.05	0.34		0.04	c0.41		0.05	c0.08		c0.07	0.05	
v/s Ratio Perm						0.11						
v/c Ratio	0.58	0.58		0.53	0.69	0.19	0.39	0.70		0.62	0.48	
Uniform Delay, d1	51.0	14.6		51.1	16.4	11.0	46.7	49.5		48.2	48.4	
Progression Factor	1.08	1.20		1.10	0.74	0.88	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.3	1.1		1.9	1.5	0.4	0.5	10.3		2.3	0.8	
Delay (s)	59.5	18.6		58.2	13.6	10.0	47.1	59.8		50.5	49.2	
Level of Service	E	B		E	B	B	D	E		D	D	
Approach Delay (s)		21.2			15.0			56.0			50.1	
Approach LOS		C			B			E			D	
Intersection Summary												
HCM Average Control Delay			24.0				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			75.4%			ICU Level of Service				D		
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
Lane Util. Factor		0.95	1.00	1.00	0.95						0.91	0.91
Frbp, ped/bikes		1.00	0.98	1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						0.96	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3257	1433	1629	3257						3015	1352
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3257	1433	1629	3293						3015	1352
Volume (vph)	0	1049	512	153	1325	0	0	0	0	155	311	463
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	1093	533	159	1380	0	0	0	0	161	324	482
RTOR Reduction (vph)	0	0	155	0	0	0	0	0	0	0	33	41
Lane Group Flow (vph)	0	1093	378	159	1380	0	0	0	0	0	632	261
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)		57.0	57.0	16.0	77.5						28.5	28.5
Effective Green, g (s)		58.5	58.5	17.5	79.0						30.0	30.0
Actuated g/C Ratio		0.51	0.51	0.15	0.69						0.26	0.26
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)		1657	729	248	2237						787	353
v/s Ratio Prot		c0.34		c0.10	0.42							
v/s Ratio Perm			0.26								0.21	0.19
v/c Ratio		0.66	0.52	0.64	0.62						0.80	0.74
Uniform Delay, d1		20.9	18.9	45.8	9.8						39.7	38.9
Progression Factor		0.32	0.12	1.18	0.09						1.00	1.00
Incremental Delay, d2		1.5	1.9	4.1	0.8						5.7	7.5
Delay (s)		8.1	4.1	58.0	1.7						45.4	46.4
Level of Service		A	A	E	A						D	D
Approach Delay (s)		6.8			7.5			0.0			45.7	
Approach LOS		A			A			A			D	
Intersection Summary												
HCM Average Control Delay			16.2			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				9.0		
Intersection Capacity Utilization			72.9%			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			
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)	288	916	0	0	940	224	538	390	218	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)	300	954	0	0	979	233	560	406	227	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	108	0	0	126	0	0	0
Lane Group Flow (vph)	300	954	0	0	979	125	311	655	101	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	c0.19	0.30			c0.31							
v/s Ratio Perm						0.09	0.21	0.22	0.07			
v/c Ratio	0.79	0.45			0.75	0.21	0.79	0.80	0.26			
Uniform Delay, d1	40.7	8.6			29.0	22.0	38.9	39.1	33.0			
Progression Factor	0.75	0.33			0.79	0.59	0.99	0.98	1.23			
Incremental Delay, d2	7.2	0.5			3.4	0.7	6.6	3.8	0.1			
Delay (s)	37.7	3.3			26.2	13.7	45.0	42.1	40.6			
Level of Service	D	A			C	B	D	D	D			
Approach Delay (s)		11.5			23.8			42.5			0.0	
Approach LOS		B			C			D			A	
Intersection Summary												
HCM Average Control Delay			25.7				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)				9.0	
Intersection Capacity Utilization			72.9%				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	3270		1660	3320	1432	1644	1731	1443	1660	1748	1441
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.36	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1855	3270		2182	3320	1432	618	1731	1443	689	1748	1441
Volume (vph)	88	753	49	188	1100	235	91	131	155	168	173	77
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)	91	776	51	194	1134	242	94	135	160	173	178	79
RTOR Reduction (vph)	0	4	0	0	0	58	0	0	140	0	0	68
Lane Group Flow (vph)	91	823	0	194	1134	184	94	135	20	173	178	11
Confl. Peds. (#/hr)			5			7			5			13
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0	0	0	0	0
Turn Type	Prot			Prot		Perm pm+pt		Perm pm+pt		Perm		Perm
Protected Phases	5	2		1	6		3	8		8	4	4
Permitted Phases						6	8		8	4		4
Actuated Green, G (s)	9.2	62.9		13.1	66.8	66.8	21.6	13.5	13.5	24.4	14.9	14.9
Effective Green, g (s)	10.2	63.9		14.1	67.8	67.8	23.6	14.5	14.5	26.4	15.9	15.9
Actuated g/C Ratio	0.09	0.56		0.12	0.59	0.59	0.21	0.13	0.13	0.23	0.14	0.14
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)	147	1817		204	1957	844	208	218	182	247	242	199
v/s Ratio Prot	c0.05	0.25		c0.12	c0.34		0.04	0.08		c0.06	c0.10	
v/s Ratio Perm						0.13	0.06		0.01	0.10		0.01
v/c Ratio	0.62	0.45		0.95	0.58	0.22	0.45	0.62	0.11	0.70	0.74	0.05
Uniform Delay, d1	50.5	15.2		50.1	14.7	11.1	38.7	47.6	44.5	38.3	47.5	43.0
Progression Factor	1.04	0.45		0.91	0.72	0.55	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.6		41.1	1.0	0.4	0.6	3.7	0.1	7.1	9.6	0.0
Delay (s)	56.7	7.4		86.8	11.6	6.5	39.3	51.3	44.6	45.4	57.1	43.1
Level of Service	E	A		F	B	A	D	D	D	D	E	D
Approach Delay (s)		12.3			20.1			45.7			49.8	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM Average Control Delay			24.8									HCM Level of Service C
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			115.0									Sum of lost time (s) 15.0
Intersection Capacity Utilization			69.7%									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	
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	1564		1629	1651	
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	1651	
Volume (vph)	35	773	95	157	1225	108	37	134	119	106	183	59
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)	39	859	106	174	1361	120	41	149	132	118	203	66
RTOR Reduction (vph)	0	0	0	0	0	0	0	28	0	0	10	0
Lane Group Flow (vph)	39	859	106	174	1361	120	41	253	0	118	259	0
Confl. Peds. (#/hr)			2			3			16			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Free	Prot		Free	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free						
Actuated Green, G (s)	7.2	46.9	115.0	14.9	54.6	115.0	4.3	23.1		10.1	28.9	
Effective Green, g (s)	9.2	48.9	115.0	16.9	56.6	115.0	6.3	25.1		12.1	30.9	
Actuated g/C Ratio	0.08	0.43	1.00	0.15	0.49	1.00	0.05	0.22		0.11	0.27	
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)	133	1412	1454	244	1634	1454	89	341		171	444	
v/s Ratio Prot	0.02	c0.26		0.10	c0.41		0.03	c0.16		c0.07	0.16	
v/s Ratio Perm			0.07			0.08						
v/c Ratio	0.29	0.61	0.07	0.71	0.83	0.08	0.46	0.74		0.69	0.58	
Uniform Delay, d1	49.8	25.6	0.0	46.7	25.1	0.0	52.7	41.9		49.6	36.5	
Progression Factor	0.81	0.74	1.00	0.77	0.84	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	1.8	0.1	7.3	4.7	0.1	1.4	7.8		9.3	1.5	
Delay (s)	40.9	20.7	0.1	43.4	25.9	0.1	54.1	49.7		58.9	37.9	
Level of Service	D	C	A	D	C	A	D	D		E	D	
Approach Delay (s)		19.3			25.9			50.2			44.3	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM Average Control Delay			28.4				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)				9.0	
Intersection Capacity Utilization			78.1%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												



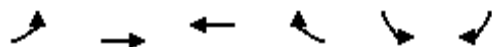
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↖↗		↘	↘
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1660	3314	3239		1676	1500
Flt Permitted	0.18	1.00	1.00		0.95	1.00
Satd. Flow (perm)	310	3314	3239		1676	1500
Volume (vph)	97	1200	1200	45	75	137
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	99	1224	1224	46	77	140
RTOR Reduction (vph)	0	0	2	0	0	127
Lane Group Flow (vph)	99	1224	1268	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)	418	2836	2321		154	138
v/s Ratio Prot	0.03	c0.37	c0.39		c0.05	
v/s Ratio Perm	0.18					0.01
v/c Ratio	0.24	0.43	0.55		0.50	0.09
Uniform Delay, d1	6.3	1.9	7.6		49.7	47.8
Progression Factor	0.54	0.56	0.17		1.00	1.00
Incremental Delay, d2	1.2	0.4	0.7		1.5	0.2
Delay (s)	4.6	1.5	2.0		51.2	48.0
Level of Service	A	A	A		D	D
Approach Delay (s)		1.7	2.0		49.1	
Approach LOS		A	A		D	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

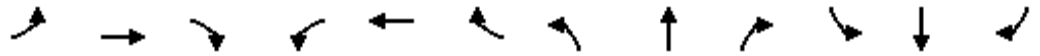
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.91	0.91	1.00			
Frbp, ped/bikes	1.00	1.00			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	3110	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)	228	1048	0	0	1032	341	476	518	214	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)	251	1152	0	0	1134	375	523	569	235	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	66	0	0	73	0	0	0
Lane Group Flow (vph)	251	1152	0	0	1134	309	329	763	162	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)	18.5	75.2			52.2	52.2	30.8	30.8	30.8			
Effective Green, g (s)	20.0	76.7			53.7	53.7	32.3	32.3	32.3			
Actuated g/C Ratio	0.17	0.67			0.47	0.47	0.28	0.28	0.28			
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)	291	2236			1535	673	420	973	413			
v/s Ratio Prot	c0.15	0.34			c0.34							
v/s Ratio Perm						0.21	0.22	c0.22	0.11			
v/c Ratio	0.86	0.52			0.74	0.46	0.78	0.78	0.39			
Uniform Delay, d1	46.2	9.7			24.9	20.8	38.1	38.1	33.4			
Progression Factor	1.26	0.19			0.56	0.31	1.00	1.00	1.00			
Incremental Delay, d2	17.4	0.6			2.9	2.0	8.8	4.0	0.4			
Delay (s)	75.6	2.5			16.8	8.5	46.9	42.1	33.8			
Level of Service	E	A			B	A	D	D	C			
Approach Delay (s)		15.6			14.7			41.8			0.0	
Approach LOS		B			B			D			A	
Intersection Summary												
HCM Average Control Delay			23.5									HCM Level of Service C
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			115.0									Sum of lost time (s) 9.0
Intersection Capacity Utilization			73.3%									ICU Level of Service D
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
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						0.98	1.00
Satd. Flow (prot)		3320	1465	1660	3320						3153	1421
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3320	1465	2790	3320						3153	1421
Volume (vph)	0	936	358	190	1318	0	0	0	0	340	393	356
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	955	365	194	1345	0	0	0	0	347	401	363
RTOR Reduction (vph)	0	0	129	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	955	236	194	1345	0	0	0	0	0	748	314
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)		50.0	50.0	21.5	76.0						30.0	30.0
Effective Green, g (s)		51.5	51.5	23.0	77.5						31.5	31.5
Actuated g/C Ratio		0.45	0.45	0.20	0.67						0.27	0.27
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)		1487	656	332	2237						864	389
v/s Ratio Prot		c0.29		0.12	c0.41							
v/s Ratio Perm			0.16								0.24	0.22
v/c Ratio		0.64	0.36	0.58	0.60						0.87	0.81
Uniform Delay, d1		24.6	20.9	41.7	10.3						39.7	38.9
Progression Factor		0.62	0.25	0.81	0.46						1.00	1.00
Incremental Delay, d2		2.0	1.4	1.3	0.8						7.2	9.0
Delay (s)		17.2	6.7	35.0	5.5						46.9	48.1
Level of Service		B	A	D	A						D	D
Approach Delay (s)		14.3			9.2			0.0			47.3	
Approach LOS		B			A			A			D	
Intersection Summary												
HCM Average Control Delay			21.5			HCM Level of Service					C	
HCM Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)				6.0		
Intersection Capacity Utilization			73.3%			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	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	3141	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1676	3353	3288	1438	3141	
Volume (vph)	140	790	1088	137	340	161
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	832	1145	144	358	169
RTOR Reduction (vph)	0	0	0	45	52	0
Lane Group Flow (vph)	147	832	1145	99	475	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)	13.3	82.9	65.6	65.6	23.6	
Effective Green, g (s)	14.3	84.4	67.1	67.1	24.6	
Actuated g/C Ratio	0.12	0.73	0.58	0.58	0.21	
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)	208	2461	1918	839	672	
v/s Ratio Prot	c0.09	0.25	c0.35		c0.15	
v/s Ratio Perm				0.07		
v/c Ratio	0.71	0.34	0.60	0.12	0.71	
Uniform Delay, d1	48.3	5.4	15.3	10.7	41.9	
Progression Factor	1.10	0.78	0.60	0.22	0.66	
Incremental Delay, d2	9.0	0.4	1.2	0.3	2.5	
Delay (s)	62.2	4.6	10.4	2.6	30.2	
Level of Service	E	A	B	A	C	
Approach Delay (s)		13.2	9.5		30.2	
Approach LOS		B	A		C	
Intersection Summary						
HCM Average Control Delay			14.7		HCM Level of Service	B
HCM Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			65.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑		↘	↑↑				
Ideal Flow (vphpl)	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	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1660	3320			3166		1615	3158				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	1660	3320			3166		1615	3158				
Volume (vph)	132	694	0	0	1000	100	244	712	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)	136	715	0	0	1031	103	252	734	155	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	16	0	0	0	0
Lane Group Flow (vph)	136	715	0	0	1127	0	252	873	0	0	0	0
Confl. Peds. (#/hr)						3	5		8			
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	5%	5%	5%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	2	0	0	0	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	5	2			6			8				
Permitted Phases							8					
Actuated Green, G (s)	10.7	75.0			60.3		32.0	32.0				
Effective Green, g (s)	11.7	76.0			61.3		33.0	33.0				
Actuated g/C Ratio	0.10	0.66			0.53		0.29	0.29				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	0.5	4.6			4.6		2.3	2.3				
Lane Grp Cap (vph)	169	2194			1688		463	906				
v/s Ratio Prot	c0.08	0.22			c0.36			c0.28				
v/s Ratio Perm							0.16					
v/c Ratio	0.80	0.33			0.67		0.54	0.96				
Uniform Delay, d1	50.5	8.4			19.5		34.6	40.4				
Progression Factor	1.13	0.69			0.91		1.00	1.00				
Incremental Delay, d2	17.7	0.3			1.3		0.9	21.4				
Delay (s)	74.6	6.1			19.1		35.5	61.8				
Level of Service	E	A			B		D	E				
Approach Delay (s)		17.1			19.1			56.0			0.0	
Approach LOS		B			B			E			A	
Intersection Summary												
HCM Average Control Delay			32.0				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			115.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			76.3%				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		0.98	
Satd. Flow (prot)	1693	3379	3263		3046	
Flt Permitted	0.18	1.00	1.00		0.98	
Satd. Flow (perm)	316	3379	3263		3046	
Volume (vph)	106	674	1045	117	259	257
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	110	702	1089	122	270	268
RTOR Reduction (vph)	0	0	6	0	160	0
Lane Group Flow (vph)	110	702	1205	0	378	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)	88.6	88.6	78.0		17.9	
Effective Green, g (s)	90.1	90.1	79.5		18.9	
Actuated g/C Ratio	0.78	0.78	0.69		0.16	
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)	339	2647	2256		501	
v/s Ratio Prot	c0.02	0.21	c0.37		c0.12	
v/s Ratio Perm	0.23					
v/c Ratio	0.32	0.27	0.53		0.75	
Uniform Delay, d1	5.1	3.4	8.7		45.8	
Progression Factor	1.00	1.00	0.32		0.51	
Incremental Delay, d2	0.3	0.2	0.9		4.0	
Delay (s)	5.5	3.6	3.7		27.3	
Level of Service	A	A	A		C	
Approach Delay (s)		3.9	3.7		27.3	
Approach LOS		A	A		C	

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.2%	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	
Lane Util. Factor		0.95		1.00	0.95						0.95	
Frbp, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						0.98	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3143		1613	3220						3188	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3143		1613	3220						3188	
Volume (vph)	0	700	278	99	1000	0	0	0	0	89	540	124
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	722	287	102	1031	0	0	0	0	92	557	128
RTOR Reduction (vph)	0	36	0	0	0	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	973	0	102	1031	0	0	0	0	0	763	0
Confl. Peds. (#/hr)			8									
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	2%	2%	2%	4%	4%	4%
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	0	0
Turn Type				Prot							Split	
Protected Phases		2		1	6						4	4
Permitted Phases												
Actuated Green, G (s)		52.2		11.0	67.2						39.8	
Effective Green, g (s)		53.2		12.0	68.2						40.8	
Actuated g/C Ratio		0.46		0.10	0.59						0.35	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		4.6		2.3	4.6						3.5	
Lane Grp Cap (vph)		1454		168	1910						1131	
v/s Ratio Prot		c0.31		0.06	c0.32						c0.24	
v/s Ratio Perm												
v/c Ratio		0.67		0.61	0.54						0.67	
Uniform Delay, d1		24.1		49.2	14.0						31.5	
Progression Factor		0.80		0.79	0.54						0.18	
Incremental Delay, d2		2.2		3.7	0.8						1.1	
Delay (s)		21.4		42.5	8.4						6.9	
Level of Service		C		D	A						A	
Approach Delay (s)		21.4			11.4			0.0			6.9	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM Average Control Delay			13.7			HCM Level of Service					B	
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)			6.0			
Intersection Capacity Utilization			68.5%			ICU Level of Service					C	
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)	3218		1660	3307	1644	1435
Flt Permitted	1.00		0.08	1.00	0.95	1.00
Satd. Flow (perm)	3218		138	3307	1644	1435
Volume (vph)	1081	234	263	1225	293	343
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1175	254	286	1332	318	373
RTOR Reduction (vph)	15	0	0	0	0	250
Lane Group Flow (vph)	1414	0	286	1332	318	123
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)	61.0		82.5	82.5	24.0	24.0
Effective Green, g (s)	62.5		84.0	84.0	25.0	25.0
Actuated g/C Ratio	0.54		0.73	0.73	0.22	0.22
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)	1749		346	2416	357	312
v/s Ratio Prot	0.44		c0.13	0.40	c0.19	
v/s Ratio Perm			c0.47			0.09
v/c Ratio	0.81		0.83	0.55	0.89	0.39
Uniform Delay, d1	21.4		31.9	7.0	43.7	38.5
Progression Factor	0.81		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4		14.4	0.9	22.8	0.5
Delay (s)	20.7		46.3	7.9	66.5	39.0
Level of Service	C		D	A	E	D
Approach Delay (s)	20.7			14.7	51.7	
Approach LOS	C			B	D	
Intersection Summary						
HCM Average Control Delay			23.8		HCM Level of Service	C
HCM Volume to Capacity ratio			0.84			
Actuated Cycle Length (s)			115.0		Sum of lost time (s)	6.0
Intersection Capacity Utilization			82.7%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						