

Appendix A

2013 Traffic Counts

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 9
Station ID: 9
Location 1: ROSLYN ST N/O 26TH AVE

Date	Time	SB
3/6/2013	12:00 AM	8
3/6/2013	12:15 AM	7
3/6/2013	12:30 AM	5
3/6/2013	12:45 AM	5
3/6/2013	01:00 AM	1
3/6/2013	01:15 AM	3
3/6/2013	01:30 AM	1
3/6/2013	01:45 AM	1
3/6/2013	02:00 AM	1
3/6/2013	02:15 AM	2
3/6/2013	02:30 AM	1
3/6/2013	02:45 AM	4
3/6/2013	03:00 AM	4
3/6/2013	03:15 AM	1
3/6/2013	03:30 AM	3
3/6/2013	03:45 AM	2
3/6/2013	04:00 AM	5
3/6/2013	04:15 AM	2
3/6/2013	04:30 AM	4
3/6/2013	04:45 AM	4
3/6/2013	05:00 AM	2
3/6/2013	05:15 AM	9
3/6/2013	05:30 AM	12
3/6/2013	05:45 AM	9
3/6/2013	06:00 AM	12
3/6/2013	06:15 AM	18
3/6/2013	06:30 AM	37
3/6/2013	06:45 AM	34
3/6/2013	07:00 AM	43
3/6/2013	07:15 AM	80
3/6/2013	07:30 AM	98
3/6/2013	07:45 AM	87
3/6/2013	08:00 AM	82
3/6/2013	08:15 AM	64
3/6/2013	08:30 AM	87
3/6/2013	08:45 AM	67
3/6/2013	09:00 AM	58
3/6/2013	09:15 AM	42
3/6/2013	09:30 AM	40
3/6/2013	09:45 AM	62
3/6/2013	10:00 AM	38
3/6/2013	10:15 AM	40
3/6/2013	10:30 AM	52
3/6/2013	10:45 AM	43
3/6/2013	11:00 AM	46
3/6/2013	11:15 AM	57
3/6/2013	11:30 AM	78
3/6/2013	11:45 AM	71
3/6/2013	12:00 PM	62

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 9
Station ID: 9
Location 1: ROSLYN ST N/O 26TH AVE

Date	Time	SB
3/6/2013	12:15 PM	68
3/6/2013	12:30 PM	64
3/6/2013	12:45 PM	74
3/6/2013	01:00 PM	75
3/6/2013	01:15 PM	81
3/6/2013	01:30 PM	59
3/6/2013	01:45 PM	72
3/6/2013	02:00 PM	66
3/6/2013	02:15 PM	76
3/6/2013	02:30 PM	78
3/6/2013	02:45 PM	88
3/6/2013	03:00 PM	82
3/6/2013	03:15 PM	75
3/6/2013	03:30 PM	96
3/6/2013	03:45 PM	105
3/6/2013	04:00 PM	118
3/6/2013	04:15 PM	116
3/6/2013	04:30 PM	144
3/6/2013	04:45 PM	108
3/6/2013	05:00 PM	154
3/6/2013	05:15 PM	146
3/6/2013	05:30 PM	140
3/6/2013	05:45 PM	130
3/6/2013	06:00 PM	118
3/6/2013	06:15 PM	106
3/6/2013	06:30 PM	95
3/6/2013	06:45 PM	94
3/6/2013	07:00 PM	87
3/6/2013	07:15 PM	81
3/6/2013	07:30 PM	61
3/6/2013	07:45 PM	52
3/6/2013	08:00 PM	47
3/6/2013	08:15 PM	64
3/6/2013	08:30 PM	71
3/6/2013	08:45 PM	49
3/6/2013	09:00 PM	39
3/6/2013	09:15 PM	31
3/6/2013	09:30 PM	24
3/6/2013	09:45 PM	23
3/6/2013	10:00 PM	21
3/6/2013	10:15 PM	23
3/6/2013	10:30 PM	25
3/6/2013	10:45 PM	12
3/6/2013	11:00 PM	12
3/6/2013	11:15 PM	8
3/6/2013	11:30 PM	9
3/6/2013	11:45 PM	6

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 10
Station ID: 10
Location 1: SYRACUSE ST N/O 26TH AVE

Date	Time	NB
3/6/2013	12:00 AM	5
3/6/2013	12:15 AM	1
3/6/2013	12:30 AM	1
3/6/2013	12:45 AM	2
3/6/2013	01:00 AM	2
3/6/2013	01:15 AM	0
3/6/2013	01:30 AM	0
3/6/2013	01:45 AM	1
3/6/2013	02:00 AM	0
3/6/2013	02:15 AM	1
3/6/2013	02:30 AM	0
3/6/2013	02:45 AM	1
3/6/2013	03:00 AM	2
3/6/2013	03:15 AM	3
3/6/2013	03:30 AM	5
3/6/2013	03:45 AM	3
3/6/2013	04:00 AM	2
3/6/2013	04:15 AM	3
3/6/2013	04:30 AM	7
3/6/2013	04:45 AM	8
3/6/2013	05:00 AM	11
3/6/2013	05:15 AM	12
3/6/2013	05:30 AM	15
3/6/2013	05:45 AM	18
3/6/2013	06:00 AM	17
3/6/2013	06:15 AM	30
3/6/2013	06:30 AM	30
3/6/2013	06:45 AM	34
3/6/2013	07:00 AM	49
3/6/2013	07:15 AM	48
3/6/2013	07:30 AM	94
3/6/2013	07:45 AM	88
3/6/2013	08:00 AM	68
3/6/2013	08:15 AM	71
3/6/2013	08:30 AM	65
3/6/2013	08:45 AM	51
3/6/2013	09:00 AM	43
3/6/2013	09:15 AM	43
3/6/2013	09:30 AM	32
3/6/2013	09:45 AM	46
3/6/2013	10:00 AM	31
3/6/2013	10:15 AM	42
3/6/2013	10:30 AM	38
3/6/2013	10:45 AM	32
3/6/2013	11:00 AM	31
3/6/2013	11:15 AM	39
3/6/2013	11:30 AM	36
3/6/2013	11:45 AM	58
3/6/2013	12:00 PM	56

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 10
Station ID: 10
Location 1: SYRACUSE ST N/O 26TH AVE

Date	Time	NB
3/6/2013	12:15 PM	48
3/6/2013	12:30 PM	58
3/6/2013	12:45 PM	45
3/6/2013	01:00 PM	61
3/6/2013	01:15 PM	54
3/6/2013	01:30 PM	46
3/6/2013	01:45 PM	66
3/6/2013	02:00 PM	45
3/6/2013	02:15 PM	54
3/6/2013	02:30 PM	50
3/6/2013	02:45 PM	62
3/6/2013	03:00 PM	58
3/6/2013	03:15 PM	84
3/6/2013	03:30 PM	62
3/6/2013	03:45 PM	82
3/6/2013	04:00 PM	72
3/6/2013	04:15 PM	84
3/6/2013	04:30 PM	84
3/6/2013	04:45 PM	112
3/6/2013	05:00 PM	113
3/6/2013	05:15 PM	121
3/6/2013	05:30 PM	104
3/6/2013	05:45 PM	110
3/6/2013	06:00 PM	96
3/6/2013	06:15 PM	78
3/6/2013	06:30 PM	64
3/6/2013	06:45 PM	54
3/6/2013	07:00 PM	45
3/6/2013	07:15 PM	38
3/6/2013	07:30 PM	48
3/6/2013	07:45 PM	40
3/6/2013	08:00 PM	28
3/6/2013	08:15 PM	25
3/6/2013	08:30 PM	25
3/6/2013	08:45 PM	36
3/6/2013	09:00 PM	18
3/6/2013	09:15 PM	19
3/6/2013	09:30 PM	16
3/6/2013	09:45 PM	26
3/6/2013	10:00 PM	13
3/6/2013	10:15 PM	9
3/6/2013	10:30 PM	10
3/6/2013	10:45 PM	9
3/6/2013	11:00 PM	4
3/6/2013	11:15 PM	5
3/6/2013	11:30 PM	2
3/6/2013	11:45 PM	3

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 11
Station ID: 11
Location 1: SYRACUSE ST S/O 26TH AVE

Date	Time	NB
3/6/2013	12:00 AM	6
3/6/2013	12:15 AM	1
3/6/2013	12:30 AM	1
3/6/2013	12:45 AM	3
3/6/2013	01:00 AM	3
3/6/2013	01:15 AM	0
3/6/2013	01:30 AM	0
3/6/2013	01:45 AM	1
3/6/2013	02:00 AM	0
3/6/2013	02:15 AM	1
3/6/2013	02:30 AM	0
3/6/2013	02:45 AM	1
3/6/2013	03:00 AM	3
3/6/2013	03:15 AM	4
3/6/2013	03:30 AM	6
3/6/2013	03:45 AM	4
3/6/2013	04:00 AM	3
3/6/2013	04:15 AM	4
3/6/2013	04:30 AM	8
3/6/2013	04:45 AM	10
3/6/2013	05:00 AM	13
3/6/2013	05:15 AM	14
3/6/2013	05:30 AM	18
3/6/2013	05:45 AM	22
3/6/2013	06:00 AM	21
3/6/2013	06:15 AM	37
3/6/2013	06:30 AM	37
3/6/2013	06:45 AM	41
3/6/2013	07:00 AM	59
3/6/2013	07:15 AM	58
3/6/2013	07:30 AM	114
3/6/2013	07:45 AM	107
3/6/2013	08:00 AM	83
3/6/2013	08:15 AM	86
3/6/2013	08:30 AM	79
3/6/2013	08:45 AM	62
3/6/2013	09:00 AM	52
3/6/2013	09:15 AM	52
3/6/2013	09:30 AM	39
3/6/2013	09:45 AM	56
3/6/2013	10:00 AM	38
3/6/2013	10:15 AM	51
3/6/2013	10:30 AM	46
3/6/2013	10:45 AM	39
3/6/2013	11:00 AM	38
3/6/2013	11:15 AM	48
3/6/2013	11:30 AM	44
3/6/2013	11:45 AM	70
3/6/2013	12:00 PM	68

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 11

Station ID: 11

Location 1: SYRACUSE ST S/O 26TH AVE

Date	Time	NB
3/6/2013	12:15 PM	58
3/6/2013	12:30 PM	70
3/6/2013	12:45 PM	55
3/6/2013	01:00 PM	74
3/6/2013	01:15 PM	66
3/6/2013	01:30 PM	56
3/6/2013	01:45 PM	80
3/6/2013	02:00 PM	55
3/6/2013	02:15 PM	66
3/6/2013	02:30 PM	61
3/6/2013	02:45 PM	76
3/6/2013	03:00 PM	70
3/6/2013	03:15 PM	102
3/6/2013	03:30 PM	76
3/6/2013	03:45 PM	100
3/6/2013	04:00 PM	87
3/6/2013	04:15 PM	102
3/6/2013	04:30 PM	102
3/6/2013	04:45 PM	136
3/6/2013	05:00 PM	138
3/6/2013	05:15 PM	147
3/6/2013	05:30 PM	126
3/6/2013	05:45 PM	134
3/6/2013	06:00 PM	117
3/6/2013	06:15 PM	94
3/6/2013	06:30 PM	77
3/6/2013	06:45 PM	66
3/6/2013	07:00 PM	55
3/6/2013	07:15 PM	46
3/6/2013	07:30 PM	58
3/6/2013	07:45 PM	49
3/6/2013	08:00 PM	34
3/6/2013	08:15 PM	31
3/6/2013	08:30 PM	31
3/6/2013	08:45 PM	44
3/6/2013	09:00 PM	22
3/6/2013	09:15 PM	23
3/6/2013	09:30 PM	20
3/6/2013	09:45 PM	31
3/6/2013	10:00 PM	16
3/6/2013	10:15 PM	11
3/6/2013	10:30 PM	13
3/6/2013	10:45 PM	11
3/6/2013	11:00 PM	4
3/6/2013	11:15 PM	6
3/6/2013	11:30 PM	3
3/6/2013	11:45 PM	4

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 12
Station ID: 12
Location 1: ROSLYN ST S/O 26TH AVE

Date	Time	SB
3/6/2013	12:00 AM	10
3/6/2013	12:15 AM	9
3/6/2013	12:30 AM	3
3/6/2013	12:45 AM	6
3/6/2013	01:00 AM	2
3/6/2013	01:15 AM	2
3/6/2013	01:30 AM	3
3/6/2013	01:45 AM	1
3/6/2013	02:00 AM	1
3/6/2013	02:15 AM	2
3/6/2013	02:30 AM	2
3/6/2013	02:45 AM	4
3/6/2013	03:00 AM	4
3/6/2013	03:15 AM	1
3/6/2013	03:30 AM	2
3/6/2013	03:45 AM	3
3/6/2013	04:00 AM	4
3/6/2013	04:15 AM	2
3/6/2013	04:30 AM	1
3/6/2013	04:45 AM	4
3/6/2013	05:00 AM	3
3/6/2013	05:15 AM	6
3/6/2013	05:30 AM	10
3/6/2013	05:45 AM	6
3/6/2013	06:00 AM	12
3/6/2013	06:15 AM	14
3/6/2013	06:30 AM	30
3/6/2013	06:45 AM	32
3/6/2013	07:00 AM	34
3/6/2013	07:15 AM	61
3/6/2013	07:30 AM	88
3/6/2013	07:45 AM	92
3/6/2013	08:00 AM	74
3/6/2013	08:15 AM	76
3/6/2013	08:30 AM	84
3/6/2013	08:45 AM	64
3/6/2013	09:00 AM	56
3/6/2013	09:15 AM	42
3/6/2013	09:30 AM	42
3/6/2013	09:45 AM	47
3/6/2013	10:00 AM	39
3/6/2013	10:15 AM	38
3/6/2013	10:30 AM	44
3/6/2013	10:45 AM	37
3/6/2013	11:00 AM	45
3/6/2013	11:15 AM	63
3/6/2013	11:30 AM	56
3/6/2013	11:45 AM	57
3/6/2013	12:00 PM	58

Volume
Start Date: 3/6/2013
Start Time: 12:00:00 AM
Site Code: 12
Station ID: 12
Location 1: ROSLYN ST S/O 26TH AVE

Date	Time	SB
3/6/2013	12:15 PM	63
3/6/2013	12:30 PM	73
3/6/2013	12:45 PM	70
3/6/2013	01:00 PM	72
3/6/2013	01:15 PM	74
3/6/2013	01:30 PM	71
3/6/2013	01:45 PM	62
3/6/2013	02:00 PM	62
3/6/2013	02:15 PM	61
3/6/2013	02:30 PM	82
3/6/2013	02:45 PM	80
3/6/2013	03:00 PM	72
3/6/2013	03:15 PM	71
3/6/2013	03:30 PM	83
3/6/2013	03:45 PM	91
3/6/2013	04:00 PM	116
3/6/2013	04:15 PM	107
3/6/2013	04:30 PM	133
3/6/2013	04:45 PM	118
3/6/2013	05:00 PM	148
3/6/2013	05:15 PM	142
3/6/2013	05:30 PM	130
3/6/2013	05:45 PM	142
3/6/2013	06:00 PM	101
3/6/2013	06:15 PM	108
3/6/2013	06:30 PM	89
3/6/2013	06:45 PM	88
3/6/2013	07:00 PM	71
3/6/2013	07:15 PM	64
3/6/2013	07:30 PM	62
3/6/2013	07:45 PM	48
3/6/2013	08:00 PM	44
3/6/2013	08:15 PM	58
3/6/2013	08:30 PM	64
3/6/2013	08:45 PM	43
3/6/2013	09:00 PM	40
3/6/2013	09:15 PM	32
3/6/2013	09:30 PM	34
3/6/2013	09:45 PM	26
3/6/2013	10:00 PM	19
3/6/2013	10:15 PM	25
3/6/2013	10:30 PM	25
3/6/2013	10:45 PM	13
3/6/2013	11:00 PM	12
3/6/2013	11:15 PM	10
3/6/2013	11:30 PM	6
3/6/2013	11:45 PM	8

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 13

Station ID: 13

Location 1: SYRACUSE ST N/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:00 AM	4	10
3/6/2013	12:15 AM	1	9
3/6/2013	12:30 AM	5	3
3/6/2013	12:45 AM	2	5
3/6/2013	01:00 AM	4	5
3/6/2013	01:15 AM	3	3
3/6/2013	01:30 AM	2	5
3/6/2013	01:45 AM	3	2
3/6/2013	02:00 AM	1	1
3/6/2013	02:15 AM	1	2
3/6/2013	02:30 AM	0	1
3/6/2013	02:45 AM	0	3
3/6/2013	03:00 AM	1	2
3/6/2013	03:15 AM	1	2
3/6/2013	03:30 AM	3	1
3/6/2013	03:45 AM	2	2
3/6/2013	04:00 AM	4	2
3/6/2013	04:15 AM	4	4
3/6/2013	04:30 AM	4	5
3/6/2013	04:45 AM	12	0
3/6/2013	05:00 AM	7	1
3/6/2013	05:15 AM	14	5
3/6/2013	05:30 AM	10	8
3/6/2013	05:45 AM	20	5
3/6/2013	06:00 AM	23	9
3/6/2013	06:15 AM	29	18
3/6/2013	06:30 AM	38	9
3/6/2013	06:45 AM	36	37
3/6/2013	07:00 AM	43	49
3/6/2013	07:15 AM	58	46
3/6/2013	07:30 AM	84	60
3/6/2013	07:45 AM	86	89
3/6/2013	08:00 AM	77	85
3/6/2013	08:15 AM	67	58
3/6/2013	08:30 AM	71	55
3/6/2013	08:45 AM	52	78
3/6/2013	09:00 AM	50	38
3/6/2013	09:15 AM	47	46
3/6/2013	09:30 AM	41	41
3/6/2013	09:45 AM	40	34
3/6/2013	10:00 AM	53	34
3/6/2013	10:15 AM	36	40
3/6/2013	10:30 AM	42	46
3/6/2013	10:45 AM	40	44
3/6/2013	11:00 AM	33	32
3/6/2013	11:15 AM	41	46
3/6/2013	11:30 AM	41	52
3/6/2013	11:45 AM	53	67
3/6/2013	12:00 PM	58	52

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 13
 Station ID: 13
 Location 1: SYRACUSE ST N/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:15 PM	49	57
3/6/2013	12:30 PM	58	58
3/6/2013	12:45 PM	43	64
3/6/2013	01:00 PM	72	66
3/6/2013	01:15 PM	57	69
3/6/2013	01:30 PM	49	62
3/6/2013	01:45 PM	54	54
3/6/2013	02:00 PM	53	60
3/6/2013	02:15 PM	69	58
3/6/2013	02:30 PM	56	61
3/6/2013	02:45 PM	66	74
3/6/2013	03:00 PM	56	86
3/6/2013	03:15 PM	98	90
3/6/2013	03:30 PM	88	72
3/6/2013	03:45 PM	99	92
3/6/2013	04:00 PM	92	102
3/6/2013	04:15 PM	92	92
3/6/2013	04:30 PM	104	120
3/6/2013	04:45 PM	104	112
3/6/2013	05:00 PM	124	116
3/6/2013	05:15 PM	149	134
3/6/2013	05:30 PM	124	139
3/6/2013	05:45 PM	126	129
3/6/2013	06:00 PM	104	118
3/6/2013	06:15 PM	92	99
3/6/2013	06:30 PM	66	92
3/6/2013	06:45 PM	51	71
3/6/2013	07:00 PM	62	75
3/6/2013	07:15 PM	51	71
3/6/2013	07:30 PM	48	60
3/6/2013	07:45 PM	49	49
3/6/2013	08:00 PM	36	45
3/6/2013	08:15 PM	38	40
3/6/2013	08:30 PM	28	47
3/6/2013	08:45 PM	30	58
3/6/2013	09:00 PM	24	35
3/6/2013	09:15 PM	29	30
3/6/2013	09:30 PM	25	33
3/6/2013	09:45 PM	32	27
3/6/2013	10:00 PM	17	18
3/6/2013	10:15 PM	20	21
3/6/2013	10:30 PM	8	26
3/6/2013	10:45 PM	11	21
3/6/2013	11:00 PM	5	10
3/6/2013	11:15 PM	8	13
3/6/2013	11:30 PM	3	3
3/6/2013	11:45 PM	7	11

4073 4291

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 14

Station ID: 14

Location 1: SYRACUSE ST S/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:00 AM	8	9
3/6/2013	12:15 AM	3	9
3/6/2013	12:30 AM	3	7
3/6/2013	12:45 AM	3	12
3/6/2013	01:00 AM	3	7
3/6/2013	01:15 AM	4	4
3/6/2013	01:30 AM	3	4
3/6/2013	01:45 AM	1	3
3/6/2013	02:00 AM	2	5
3/6/2013	02:15 AM	1	1
3/6/2013	02:30 AM	4	0
3/6/2013	02:45 AM	1	2
3/6/2013	03:00 AM	1	0
3/6/2013	03:15 AM	1	1
3/6/2013	03:30 AM	0	1
3/6/2013	03:45 AM	3	1
3/6/2013	04:00 AM	0	2
3/6/2013	04:15 AM	0	1
3/6/2013	04:30 AM	1	0
3/6/2013	04:45 AM	2	3
3/6/2013	05:00 AM	1	1
3/6/2013	05:15 AM	4	2
3/6/2013	05:30 AM	3	3
3/6/2013	05:45 AM	2	2
3/6/2013	06:00 AM	6	0
3/6/2013	06:15 AM	4	2
3/6/2013	06:30 AM	8	4
3/6/2013	06:45 AM	6	5
3/6/2013	07:00 AM	8	8
3/6/2013	07:15 AM	11	4
3/6/2013	07:30 AM	14	7
3/6/2013	07:45 AM	17	24
3/6/2013	08:00 AM	26	36
3/6/2013	08:15 AM	31	37
3/6/2013	08:30 AM	53	43
3/6/2013	08:45 AM	64	73
3/6/2013	09:00 AM	65	61
3/6/2013	09:15 AM	47	61
3/6/2013	09:30 AM	63	53
3/6/2013	09:45 AM	50	36
3/6/2013	10:00 AM	48	42
3/6/2013	10:15 AM	28	40
3/6/2013	10:30 AM	29	28
3/6/2013	10:45 AM	25	25
3/6/2013	11:00 AM	29	25
3/6/2013	11:15 AM	23	22
3/6/2013	11:30 AM	27	29
3/6/2013	11:45 AM	23	32
3/6/2013	12:00 PM	25	27

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 14

Station ID: 14

Location 1: SYRACUSE ST S/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:15 PM	25	24
3/6/2013	12:30 PM	42	36
3/6/2013	12:45 PM	15	24
3/6/2013	01:00 PM	38	28
3/6/2013	01:15 PM	39	31
3/6/2013	01:30 PM	35	32
3/6/2013	01:45 PM	32	46
3/6/2013	02:00 PM	38	39
3/6/2013	02:15 PM	43	42
3/6/2013	02:30 PM	28	44
3/6/2013	02:45 PM	30	39
3/6/2013	03:00 PM	52	36
3/6/2013	03:15 PM	37	35
3/6/2013	03:30 PM	41	54
3/6/2013	03:45 PM	53	49
3/6/2013	04:00 PM	44	72
3/6/2013	04:15 PM	45	52
3/6/2013	04:30 PM	65	68
3/6/2013	04:45 PM	53	55
3/6/2013	05:00 PM	62	56
3/6/2013	05:15 PM	62	68
3/6/2013	05:30 PM	62	74
3/6/2013	05:45 PM	66	84
3/6/2013	06:00 PM	75	72
3/6/2013	06:15 PM	73	89
3/6/2013	06:30 PM	76	83
3/6/2013	06:45 PM	82	71
3/6/2013	07:00 PM	69	79
3/6/2013	07:15 PM	62	56
3/6/2013	07:30 PM	47	62
3/6/2013	07:45 PM	41	50
3/6/2013	08:00 PM	29	56
3/6/2013	08:15 PM	33	45
3/6/2013	08:30 PM	29	39
3/6/2013	08:45 PM	24	28
3/6/2013	09:00 PM	31	28
3/6/2013	09:15 PM	32	26
3/6/2013	09:30 PM	23	38
3/6/2013	09:45 PM	11	29
3/6/2013	10:00 PM	19	18
3/6/2013	10:15 PM	10	16
3/6/2013	10:30 PM	19	12
3/6/2013	10:45 PM	17	15
3/6/2013	11:00 PM	14	17
3/6/2013	11:15 PM	8	14
3/6/2013	11:30 PM	8	11
3/6/2013	11:45 PM	9	13

2632

2859

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 15
 Station ID: 15
 Location 1: SYRACUSE ST N/O COLFAX AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	7	10
3/6/2013	12:15 AM	2	4
3/6/2013	12:30 AM	4	4
3/6/2013	12:45 AM	4	5
3/6/2013	01:00 AM	3	3
3/6/2013	01:15 AM	2	1
3/6/2013	01:30 AM	0	3
3/6/2013	01:45 AM	3	0
3/6/2013	02:00 AM	2	1
3/6/2013	02:15 AM	0	1
3/6/2013	02:30 AM	4	1
3/6/2013	02:45 AM	0	2
3/6/2013	03:00 AM	0	2
3/6/2013	03:15 AM	2	1
3/6/2013	03:30 AM	3	0
3/6/2013	03:45 AM	1	3
3/6/2013	04:00 AM	3	2
3/6/2013	04:15 AM	3	3
3/6/2013	04:30 AM	2	4
3/6/2013	04:45 AM	5	2
3/6/2013	05:00 AM	5	1
3/6/2013	05:15 AM	6	3
3/6/2013	05:30 AM	3	2
3/6/2013	05:45 AM	10	9
3/6/2013	06:00 AM	6	12
3/6/2013	06:15 AM	12	4
3/6/2013	06:30 AM	19	9
3/6/2013	06:45 AM	24	31
3/6/2013	07:00 AM	30	45
3/6/2013	07:15 AM	54	43
3/6/2013	07:30 AM	72	55
3/6/2013	07:45 AM	64	71
3/6/2013	08:00 AM	50	80
3/6/2013	08:15 AM	58	70
3/6/2013	08:30 AM	58	63
3/6/2013	08:45 AM	45	44
3/6/2013	09:00 AM	32	34
3/6/2013	09:15 AM	32	35
3/6/2013	09:30 AM	31	27
3/6/2013	09:45 AM	25	26
3/6/2013	10:00 AM	19	31
3/6/2013	10:15 AM	32	28
3/6/2013	10:30 AM	23	41
3/6/2013	10:45 AM	27	31
3/6/2013	11:00 AM	25	25
3/6/2013	11:15 AM	23	33
3/6/2013	11:30 AM	29	41
3/6/2013	11:45 AM	36	40
3/6/2013	12:00 PM	39	39

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 15
 Station ID: 15
 Location 1: SYRACUSE ST N/O COLFAX AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	36	35
3/6/2013	12:30 PM	35	52
3/6/2013	12:45 PM	36	32
3/6/2013	01:00 PM	37	54
3/6/2013	01:15 PM	35	47
3/6/2013	01:30 PM	34	42
3/6/2013	01:45 PM	37	48
3/6/2013	02:00 PM	41	34
3/6/2013	02:15 PM	45	47
3/6/2013	02:30 PM	48	62
3/6/2013	02:45 PM	49	58
3/6/2013	03:00 PM	43	55
3/6/2013	03:15 PM	68	67
3/6/2013	03:30 PM	48	72
3/6/2013	03:45 PM	72	67
3/6/2013	04:00 PM	57	67
3/6/2013	04:15 PM	64	74
3/6/2013	04:30 PM	79	86
3/6/2013	04:45 PM	79	76
3/6/2013	05:00 PM	78	90
3/6/2013	05:15 PM	82	90
3/6/2013	05:30 PM	68	87
3/6/2013	05:45 PM	83	93
3/6/2013	06:00 PM	77	80
3/6/2013	06:15 PM	65	69
3/6/2013	06:30 PM	51	59
3/6/2013	06:45 PM	46	52
3/6/2013	07:00 PM	39	47
3/6/2013	07:15 PM	34	33
3/6/2013	07:30 PM	27	44
3/6/2013	07:45 PM	30	30
3/6/2013	08:00 PM	24	26
3/6/2013	08:15 PM	18	48
3/6/2013	08:30 PM	20	35
3/6/2013	08:45 PM	24	26
3/6/2013	09:00 PM	16	21
3/6/2013	09:15 PM	15	16
3/6/2013	09:30 PM	13	12
3/6/2013	09:45 PM	15	19
3/6/2013	10:00 PM	12	12
3/6/2013	10:15 PM	14	10
3/6/2013	10:30 PM	11	19
3/6/2013	10:45 PM	9	7
3/6/2013	11:00 PM	7	8
3/6/2013	11:15 PM	6	8
3/6/2013	11:30 PM	4	4
3/6/2013	11:45 PM	2	4

2772 3149

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 16
 Station ID: 16
 Location 1: SYRACUSE ST S/O COLFAX AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	6	6
3/6/2013	12:15 AM	2	6
3/6/2013	12:30 AM	0	0
3/6/2013	12:45 AM	2	3
3/6/2013	01:00 AM	1	4
3/6/2013	01:15 AM	1	3
3/6/2013	01:30 AM	1	1
3/6/2013	01:45 AM	2	1
3/6/2013	02:00 AM	1	0
3/6/2013	02:15 AM	0	0
3/6/2013	02:30 AM	2	3
3/6/2013	02:45 AM	0	1
3/6/2013	03:00 AM	0	1
3/6/2013	03:15 AM	2	1
3/6/2013	03:30 AM	2	0
3/6/2013	03:45 AM	0	2
3/6/2013	04:00 AM	3	2
3/6/2013	04:15 AM	3	4
3/6/2013	04:30 AM	3	2
3/6/2013	04:45 AM	6	1
3/6/2013	05:00 AM	5	1
3/6/2013	05:15 AM	4	2
3/6/2013	05:30 AM	6	1
3/6/2013	05:45 AM	7	2
3/6/2013	06:00 AM	9	3
3/6/2013	06:15 AM	17	6
3/6/2013	06:30 AM	19	10
3/6/2013	06:45 AM	26	16
3/6/2013	07:00 AM	32	27
3/6/2013	07:15 AM	61	24
3/6/2013	07:30 AM	75	43
3/6/2013	07:45 AM	62	48
3/6/2013	08:00 AM	43	52
3/6/2013	08:15 AM	48	43
3/6/2013	08:30 AM	44	36
3/6/2013	08:45 AM	47	25
3/6/2013	09:00 AM	31	29
3/6/2013	09:15 AM	25	20
3/6/2013	09:30 AM	27	19
3/6/2013	09:45 AM	28	19
3/6/2013	10:00 AM	15	16
3/6/2013	10:15 AM	30	21
3/6/2013	10:30 AM	21	19
3/6/2013	10:45 AM	27	24
3/6/2013	11:00 AM	24	21
3/6/2013	11:15 AM	29	28
3/6/2013	11:30 AM	28	29
3/6/2013	11:45 AM	29	26
3/6/2013	12:00 PM	34	27

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 16
 Station ID: 16
 Location 1: SYRACUSE ST S/O COLFAX AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	32	25
3/6/2013	12:30 PM	32	25
3/6/2013	12:45 PM	29	29
3/6/2013	01:00 PM	31	28
3/6/2013	01:15 PM	36	36
3/6/2013	01:30 PM	26	30
3/6/2013	01:45 PM	27	24
3/6/2013	02:00 PM	35	30
3/6/2013	02:15 PM	33	32
3/6/2013	02:30 PM	35	38
3/6/2013	02:45 PM	36	51
3/6/2013	03:00 PM	47	42
3/6/2013	03:15 PM	52	35
3/6/2013	03:30 PM	48	46
3/6/2013	03:45 PM	53	56
3/6/2013	04:00 PM	56	47
3/6/2013	04:15 PM	59	45
3/6/2013	04:30 PM	54	52
3/6/2013	04:45 PM	69	49
3/6/2013	05:00 PM	49	52
3/6/2013	05:15 PM	60	59
3/6/2013	05:30 PM	62	55
3/6/2013	05:45 PM	65	43
3/6/2013	06:00 PM	57	45
3/6/2013	06:15 PM	52	33
3/6/2013	06:30 PM	39	33
3/6/2013	06:45 PM	45	38
3/6/2013	07:00 PM	34	31
3/6/2013	07:15 PM	31	24
3/6/2013	07:30 PM	23	24
3/6/2013	07:45 PM	25	21
3/6/2013	08:00 PM	24	20
3/6/2013	08:15 PM	18	32
3/6/2013	08:30 PM	11	22
3/6/2013	08:45 PM	16	18
3/6/2013	09:00 PM	12	17
3/6/2013	09:15 PM	18	15
3/6/2013	09:30 PM	17	9
3/6/2013	09:45 PM	10	15
3/6/2013	10:00 PM	11	5
3/6/2013	10:15 PM	6	12
3/6/2013	10:30 PM	11	14
3/6/2013	10:45 PM	7	6
3/6/2013	11:00 PM	4	9
3/6/2013	11:15 PM	2	6
3/6/2013	11:30 PM	3	9
3/6/2013	11:45 PM	3	3

2395 2068

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 17

Station ID: 17

Location 1: SYRACUSE ST N/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	2	17
3/6/2013	12:15 AM	3	6
3/6/2013	12:30 AM	1	0
3/6/2013	12:45 AM	4	2
3/6/2013	01:00 AM	1	0
3/6/2013	01:15 AM	3	5
3/6/2013	01:30 AM	4	1
3/6/2013	01:45 AM	3	1
3/6/2013	02:00 AM	3	2
3/6/2013	02:15 AM	0	2
3/6/2013	02:30 AM	2	0
3/6/2013	02:45 AM	0	0
3/6/2013	03:00 AM	0	3
3/6/2013	03:15 AM	0	1
3/6/2013	03:30 AM	1	0
3/6/2013	03:45 AM	0	3
3/6/2013	04:00 AM	2	0
3/6/2013	04:15 AM	3	3
3/6/2013	04:30 AM	2	2
3/6/2013	04:45 AM	3	3
3/6/2013	05:00 AM	4	2
3/6/2013	05:15 AM	6	2
3/6/2013	05:30 AM	5	5
3/6/2013	05:45 AM	5	3
3/6/2013	06:00 AM	6	6
3/6/2013	06:15 AM	13	6
3/6/2013	06:30 AM	12	11
3/6/2013	06:45 AM	20	21
3/6/2013	07:00 AM	24	31
3/6/2013	07:15 AM	52	39
3/6/2013	07:30 AM	65	52
3/6/2013	07:45 AM	62	70
3/6/2013	08:00 AM	41	68
3/6/2013	08:15 AM	53	63
3/6/2013	08:30 AM	36	56
3/6/2013	08:45 AM	35	45
3/6/2013	09:00 AM	34	30
3/6/2013	09:15 AM	24	27
3/6/2013	09:30 AM	24	22
3/6/2013	09:45 AM	26	24
3/6/2013	10:00 AM	22	22
3/6/2013	10:15 AM	25	25
3/6/2013	10:30 AM	21	20
3/6/2013	10:45 AM	27	28
3/6/2013	11:00 AM	27	22
3/6/2013	11:15 AM	26	23
3/6/2013	11:30 AM	22	33
3/6/2013	11:45 AM	36	33
3/6/2013	12:00 PM	35	20

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 17

Station ID: 17

Location 1: SYRACUSE ST N/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	37	23
3/6/2013	12:30 PM	32	39
3/6/2013	12:45 PM	31	33
3/6/2013	01:00 PM	33	30
3/6/2013	01:15 PM	23	34
3/6/2013	01:30 PM	36	32
3/6/2013	01:45 PM	20	33
3/6/2013	02:00 PM	26	28
3/6/2013	02:15 PM	27	35
3/6/2013	02:30 PM	35	50
3/6/2013	02:45 PM	33	57
3/6/2013	03:00 PM	49	39
3/6/2013	03:15 PM	49	61
3/6/2013	03:30 PM	45	64
3/6/2013	03:45 PM	57	70
3/6/2013	04:00 PM	61	57
3/6/2013	04:15 PM	61	69
3/6/2013	04:30 PM	64	64
3/6/2013	04:45 PM	80	56
3/6/2013	05:00 PM	68	74
3/6/2013	05:15 PM	59	77
3/6/2013	05:30 PM	54	63
3/6/2013	05:45 PM	65	80
3/6/2013	06:00 PM	68	59
3/6/2013	06:15 PM	51	45
3/6/2013	06:30 PM	43	41
3/6/2013	06:45 PM	36	32
3/6/2013	07:00 PM	44	31
3/6/2013	07:15 PM	33	18
3/6/2013	07:30 PM	34	30
3/6/2013	07:45 PM	30	29
3/6/2013	08:00 PM	24	14
3/6/2013	08:15 PM	23	27
3/6/2013	08:30 PM	21	30
3/6/2013	08:45 PM	16	21
3/6/2013	09:00 PM	19	15
3/6/2013	09:15 PM	16	16
3/6/2013	09:30 PM	13	9
3/6/2013	09:45 PM	10	19
3/6/2013	10:00 PM	13	7
3/6/2013	10:15 PM	10	14
3/6/2013	10:30 PM	10	14
3/6/2013	10:45 PM	8	6
3/6/2013	11:00 PM	6	3
3/6/2013	11:15 PM	8	10
3/6/2013	11:30 PM	5	3
3/6/2013	11:45 PM	3	3

2414

2524

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 18

Station ID: 18

Location 1: SYRACUSE ST S/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	0	0
3/6/2013	12:15 AM	0	0
3/6/2013	12:30 AM	0	0
3/6/2013	12:45 AM	0	1
3/6/2013	01:00 AM	0	0
3/6/2013	01:15 AM	0	1
3/6/2013	01:30 AM	1	0
3/6/2013	01:45 AM	1	1
3/6/2013	02:00 AM	0	0
3/6/2013	02:15 AM	0	0
3/6/2013	02:30 AM	0	0
3/6/2013	02:45 AM	0	0
3/6/2013	03:00 AM	0	0
3/6/2013	03:15 AM	0	1
3/6/2013	03:30 AM	0	0
3/6/2013	03:45 AM	0	0
3/6/2013	04:00 AM	0	0
3/6/2013	04:15 AM	2	0
3/6/2013	04:30 AM	1	2
3/6/2013	04:45 AM	0	0
3/6/2013	05:00 AM	1	0
3/6/2013	05:15 AM	1	0
3/6/2013	05:30 AM	2	0
3/6/2013	05:45 AM	1	0
3/6/2013	06:00 AM	1	1
3/6/2013	06:15 AM	7	1
3/6/2013	06:30 AM	2	3
3/6/2013	06:45 AM	5	8
3/6/2013	07:00 AM	7	5
3/6/2013	07:15 AM	17	10
3/6/2013	07:30 AM	19	16
3/6/2013	07:45 AM	17	33
3/6/2013	08:00 AM	17	26
3/6/2013	08:15 AM	14	31
3/6/2013	08:30 AM	9	18
3/6/2013	08:45 AM	8	8
3/6/2013	09:00 AM	5	9
3/6/2013	09:15 AM	5	4
3/6/2013	09:30 AM	6	8
3/6/2013	09:45 AM	8	7
3/6/2013	10:00 AM	6	6
3/6/2013	10:15 AM	5	6
3/6/2013	10:30 AM	1	6
3/6/2013	10:45 AM	3	9
3/6/2013	11:00 AM	3	6
3/6/2013	11:15 AM	11	9
3/6/2013	11:30 AM	8	8
3/6/2013	11:45 AM	7	7
3/6/2013	12:00 PM	10	5

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 18

Station ID: 18

Location 1: SYRACUSE ST S/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	6	5
3/6/2013	12:30 PM	5	9
3/6/2013	12:45 PM	6	10
3/6/2013	01:00 PM	7	10
3/6/2013	01:15 PM	7	10
3/6/2013	01:30 PM	8	10
3/6/2013	01:45 PM	7	6
3/6/2013	02:00 PM	4	8
3/6/2013	02:15 PM	10	8
3/6/2013	02:30 PM	8	14
3/6/2013	02:45 PM	4	18
3/6/2013	03:00 PM	14	11
3/6/2013	03:15 PM	9	16
3/6/2013	03:30 PM	16	21
3/6/2013	03:45 PM	10	15
3/6/2013	04:00 PM	9	16
3/6/2013	04:15 PM	15	20
3/6/2013	04:30 PM	20	29
3/6/2013	04:45 PM	20	21
3/6/2013	05:00 PM	15	26
3/6/2013	05:15 PM	10	33
3/6/2013	05:30 PM	16	22
3/6/2013	05:45 PM	16	18
3/6/2013	06:00 PM	14	16
3/6/2013	06:15 PM	13	16
3/6/2013	06:30 PM	5	11
3/6/2013	06:45 PM	4	11
3/6/2013	07:00 PM	7	8
3/6/2013	07:15 PM	9	2
3/6/2013	07:30 PM	1	6
3/6/2013	07:45 PM	6	7
3/6/2013	08:00 PM	5	6
3/6/2013	08:15 PM	1	13
3/6/2013	08:30 PM	1	3
3/6/2013	08:45 PM	2	6
3/6/2013	09:00 PM	2	2
3/6/2013	09:15 PM	1	1
3/6/2013	09:30 PM	1	2
3/6/2013	09:45 PM	1	4
3/6/2013	10:00 PM	0	0
3/6/2013	10:15 PM	4	4
3/6/2013	10:30 PM	1	3
3/6/2013	10:45 PM	0	1
3/6/2013	11:00 PM	1	0
3/6/2013	11:15 PM	0	3
3/6/2013	11:30 PM	0	0
3/6/2013	11:45 PM	1	0

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 19

Station ID: 19

Location 1: QUEBEC ST N/O 26TH AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	27	50
3/6/2013	12:15 AM	20	34
3/6/2013	12:30 AM	18	28
3/6/2013	12:45 AM	11	19
3/6/2013	01:00 AM	14	29
3/6/2013	01:15 AM	18	23
3/6/2013	01:30 AM	14	21
3/6/2013	01:45 AM	20	21
3/6/2013	02:00 AM	5	15
3/6/2013	02:15 AM	8	16
3/6/2013	02:30 AM	13	15
3/6/2013	02:45 AM	16	13
3/6/2013	03:00 AM	29	16
3/6/2013	03:15 AM	29	15
3/6/2013	03:30 AM	26	13
3/6/2013	03:45 AM	29	17
3/6/2013	04:00 AM	20	21
3/6/2013	04:15 AM	27	19
3/6/2013	04:30 AM	44	17
3/6/2013	04:45 AM	64	21
3/6/2013	05:00 AM	68	29
3/6/2013	05:15 AM	91	42
3/6/2013	05:30 AM	116	73
3/6/2013	05:45 AM	109	52
3/6/2013	06:00 AM	146	82
3/6/2013	06:15 AM	145	109
3/6/2013	06:30 AM	210	147
3/6/2013	06:45 AM	206	166
3/6/2013	07:00 AM	206	256
3/6/2013	07:15 AM	283	290
3/6/2013	07:30 AM	300	281
3/6/2013	07:45 AM	276	231
3/6/2013	08:00 AM	258	248
3/6/2013	08:15 AM	266	241
3/6/2013	08:30 AM	244	273
3/6/2013	08:45 AM	204	225
3/6/2013	09:00 AM	192	213
3/6/2013	09:15 AM	218	211
3/6/2013	09:30 AM	224	166
3/6/2013	09:45 AM	188	181
3/6/2013	10:00 AM	190	167
3/6/2013	10:15 AM	216	208
3/6/2013	10:30 AM	187	202
3/6/2013	10:45 AM	218	197
3/6/2013	11:00 AM	200	193
3/6/2013	11:15 AM	237	185
3/6/2013	11:30 AM	248	216
3/6/2013	11:45 AM	234	220
3/6/2013	12:00 PM	258	255

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 19

Station ID: 19

Location 1: QUEBEC ST N/O 26TH AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	231	220
3/6/2013	12:30 PM	234	208
3/6/2013	12:45 PM	230	195
3/6/2013	01:00 PM	222	227
3/6/2013	01:15 PM	258	218
3/6/2013	01:30 PM	248	191
3/6/2013	01:45 PM	250	229
3/6/2013	02:00 PM	240	214
3/6/2013	02:15 PM	218	253
3/6/2013	02:30 PM	222	287
3/6/2013	02:45 PM	275	271
3/6/2013	03:00 PM	250	289
3/6/2013	03:15 PM	285	265
3/6/2013	03:30 PM	276	273
3/6/2013	03:45 PM	273	293
3/6/2013	04:00 PM	290	301
3/6/2013	04:15 PM	260	300
3/6/2013	04:30 PM	283	329
3/6/2013	04:45 PM	270	337
3/6/2013	05:00 PM	278	369
3/6/2013	05:15 PM	297	314
3/6/2013	05:30 PM	270	335
3/6/2013	05:45 PM	264	279
3/6/2013	06:00 PM	244	230
3/6/2013	06:15 PM	258	267
3/6/2013	06:30 PM	232	256
3/6/2013	06:45 PM	197	247
3/6/2013	07:00 PM	189	190
3/6/2013	07:15 PM	180	170
3/6/2013	07:30 PM	142	153
3/6/2013	07:45 PM	159	143
3/6/2013	08:00 PM	145	132
3/6/2013	08:15 PM	130	129
3/6/2013	08:30 PM	120	111
3/6/2013	08:45 PM	136	124
3/6/2013	09:00 PM	114	143
3/6/2013	09:15 PM	126	142
3/6/2013	09:30 PM	86	123
3/6/2013	09:45 PM	82	101
3/6/2013	10:00 PM	84	103
3/6/2013	10:15 PM	48	94
3/6/2013	10:30 PM	42	92
3/6/2013	10:45 PM	54	65
3/6/2013	11:00 PM	36	70
3/6/2013	11:15 PM	34	52
3/6/2013	11:30 PM	22	46
3/6/2013	11:45 PM	32	33

15206

15195

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 20

Station ID: 20

Location 1: QUEBEC ST S/O 26TH AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	25	42
3/6/2013	12:15 AM	24	36
3/6/2013	12:30 AM	16	35
3/6/2013	12:45 AM	12	28
3/6/2013	01:00 AM	14	24
3/6/2013	01:15 AM	16	26
3/6/2013	01:30 AM	15	23
3/6/2013	01:45 AM	10	19
3/6/2013	02:00 AM	9	19
3/6/2013	02:15 AM	7	11
3/6/2013	02:30 AM	14	15
3/6/2013	02:45 AM	11	18
3/6/2013	03:00 AM	25	18
3/6/2013	03:15 AM	24	10
3/6/2013	03:30 AM	28	17
3/6/2013	03:45 AM	27	13
3/6/2013	04:00 AM	24	20
3/6/2013	04:15 AM	25	21
3/6/2013	04:30 AM	34	20
3/6/2013	04:45 AM	58	19
3/6/2013	05:00 AM	57	25
3/6/2013	05:15 AM	82	42
3/6/2013	05:30 AM	102	69
3/6/2013	05:45 AM	111	63
3/6/2013	06:00 AM	121	67
3/6/2013	06:15 AM	116	91
3/6/2013	06:30 AM	162	107
3/6/2013	06:45 AM	160	118
3/6/2013	07:00 AM	148	167
3/6/2013	07:15 AM	149	162
3/6/2013	07:30 AM	168	162
3/6/2013	07:45 AM	196	132
3/6/2013	08:00 AM	179	160
3/6/2013	08:15 AM	153	149
3/6/2013	08:30 AM	166	153
3/6/2013	08:45 AM	160	142
3/6/2013	09:00 AM	151	156
3/6/2013	09:15 AM	151	139
3/6/2013	09:30 AM	163	132
3/6/2013	09:45 AM	148	156
3/6/2013	10:00 AM	144	122
3/6/2013	10:15 AM	170	139
3/6/2013	10:30 AM	139	169
3/6/2013	10:45 AM	174	143
3/6/2013	11:00 AM	146	147
3/6/2013	11:15 AM	159	142
3/6/2013	11:30 AM	221	144
3/6/2013	11:45 AM	166	168
3/6/2013	12:00 PM	176	160

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 20

Station ID: 20

Location 1: QUEBEC ST S/O 26TH AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	159	124
3/6/2013	12:30 PM	176	130
3/6/2013	12:45 PM	180	164
3/6/2013	01:00 PM	148	149
3/6/2013	01:15 PM	171	144
3/6/2013	01:30 PM	179	136
3/6/2013	01:45 PM	190	129
3/6/2013	02:00 PM	166	146
3/6/2013	02:15 PM	176	143
3/6/2013	02:30 PM	157	200
3/6/2013	02:45 PM	185	161
3/6/2013	03:00 PM	150	160
3/6/2013	03:15 PM	179	140
3/6/2013	03:30 PM	173	155
3/6/2013	03:45 PM	169	141
3/6/2013	04:00 PM	186	182
3/6/2013	04:15 PM	164	161
3/6/2013	04:30 PM	166	179
3/6/2013	04:45 PM	161	155
3/6/2013	05:00 PM	150	158
3/6/2013	05:15 PM	140	153
3/6/2013	05:30 PM	144	175
3/6/2013	05:45 PM	147	164
3/6/2013	06:00 PM	160	168
3/6/2013	06:15 PM	176	147
3/6/2013	06:30 PM	150	173
3/6/2013	06:45 PM	127	177
3/6/2013	07:00 PM	162	161
3/6/2013	07:15 PM	148	158
3/6/2013	07:30 PM	160	130
3/6/2013	07:45 PM	113	133
3/6/2013	08:00 PM	133	110
3/6/2013	08:15 PM	118	152
3/6/2013	08:30 PM	113	101
3/6/2013	08:45 PM	125	138
3/6/2013	09:00 PM	115	124
3/6/2013	09:15 PM	108	147
3/6/2013	09:30 PM	89	128
3/6/2013	09:45 PM	79	106
3/6/2013	10:00 PM	69	103
3/6/2013	10:15 PM	59	80
3/6/2013	10:30 PM	41	92
3/6/2013	10:45 PM	41	72
3/6/2013	11:00 PM	40	74
3/6/2013	11:15 PM	38	56
3/6/2013	11:30 PM	22	51
3/6/2013	11:45 PM	31	34

10989

10524

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 21
 Station ID: 21
 Location 1: QUEBEC ST N/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:00 AM	24	42
3/6/2013	12:15 AM	21	38
3/6/2013	12:30 AM	15	30
3/6/2013	12:45 AM	13	19
3/6/2013	01:00 AM	12	26
3/6/2013	01:15 AM	15	23
3/6/2013	01:30 AM	11	18
3/6/2013	01:45 AM	16	16
3/6/2013	02:00 AM	4	18
3/6/2013	02:15 AM	10	16
3/6/2013	02:30 AM	10	13
3/6/2013	02:45 AM	17	13
3/6/2013	03:00 AM	27	15
3/6/2013	03:15 AM	23	15
3/6/2013	03:30 AM	27	16
3/6/2013	03:45 AM	23	14
3/6/2013	04:00 AM	19	22
3/6/2013	04:15 AM	31	19
3/6/2013	04:30 AM	36	17
3/6/2013	04:45 AM	58	22
3/6/2013	05:00 AM	62	27
3/6/2013	05:15 AM	81	45
3/6/2013	05:30 AM	109	80
3/6/2013	05:45 AM	92	56
3/6/2013	06:00 AM	123	70
3/6/2013	06:15 AM	124	86
3/6/2013	06:30 AM	158	108
3/6/2013	06:45 AM	156	117
3/6/2013	07:00 AM	125	126
3/6/2013	07:15 AM	104	92
3/6/2013	07:30 AM	133	93
3/6/2013	07:45 AM	127	97
3/6/2013	08:00 AM	114	103
3/6/2013	08:15 AM	139	104
3/6/2013	08:30 AM	115	93
3/6/2013	08:45 AM	122	127
3/6/2013	09:00 AM	122	113
3/6/2013	09:15 AM	107	115
3/6/2013	09:30 AM	129	134
3/6/2013	09:45 AM	139	125
3/6/2013	10:00 AM	120	126
3/6/2013	10:15 AM	133	134
3/6/2013	10:30 AM	119	121
3/6/2013	10:45 AM	121	120
3/6/2013	11:00 AM	105	111
3/6/2013	11:15 AM	138	115
3/6/2013	11:30 AM	153	121
3/6/2013	11:45 AM	137	110
3/6/2013	12:00 PM	119	128

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 21
 Station ID: 21
 Location 1: QUEBEC ST N/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:15 PM	99	123
3/6/2013	12:30 PM	120	126
3/6/2013	12:45 PM	147	123
3/6/2013	01:00 PM	146	125
3/6/2013	01:15 PM	141	111
3/6/2013	01:30 PM	155	122
3/6/2013	01:45 PM	115	119
3/6/2013	02:00 PM	138	107
3/6/2013	02:15 PM	115	135
3/6/2013	02:30 PM	86	112
3/6/2013	02:45 PM	87	105
3/6/2013	03:00 PM	106	131
3/6/2013	03:15 PM	107	96
3/6/2013	03:30 PM	121	110
3/6/2013	03:45 PM	90	90
3/6/2013	04:00 PM	118	106
3/6/2013	04:15 PM	79	90
3/6/2013	04:30 PM	69	89
3/6/2013	04:45 PM	89	83
3/6/2013	05:00 PM	63	65
3/6/2013	05:15 PM	67	65
3/6/2013	05:30 PM	62	68
3/6/2013	05:45 PM	102	100
3/6/2013	06:00 PM	94	107
3/6/2013	06:15 PM	133	121
3/6/2013	06:30 PM	108	118
3/6/2013	06:45 PM	116	144
3/6/2013	07:00 PM	118	129
3/6/2013	07:15 PM	131	125
3/6/2013	07:30 PM	110	133
3/6/2013	07:45 PM	122	119
3/6/2013	08:00 PM	121	98
3/6/2013	08:15 PM	102	110
3/6/2013	08:30 PM	101	98
3/6/2013	08:45 PM	110	101
3/6/2013	09:00 PM	100	109
3/6/2013	09:15 PM	88	118
3/6/2013	09:30 PM	92	109
3/6/2013	09:45 PM	71	88
3/6/2013	10:00 PM	71	79
3/6/2013	10:15 PM	44	84
3/6/2013	10:30 PM	35	89
3/6/2013	10:45 PM	43	62
3/6/2013	11:00 PM	35	63
3/6/2013	11:15 PM	28	46
3/6/2013	11:30 PM	24	55
3/6/2013	11:45 PM	27	23

8384 8138

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 22
 Station ID: 22
 Location 1: QUEBEC ST S/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:00 AM	19	33
3/6/2013	12:15 AM	19	32
3/6/2013	12:30 AM	16	33
3/6/2013	12:45 AM	13	22
3/6/2013	01:00 AM	15	14
3/6/2013	01:15 AM	15	22
3/6/2013	01:30 AM	11	16
3/6/2013	01:45 AM	11	16
3/6/2013	02:00 AM	7	7
3/6/2013	02:15 AM	6	10
3/6/2013	02:30 AM	9	11
3/6/2013	02:45 AM	11	11
3/6/2013	03:00 AM	17	13
3/6/2013	03:15 AM	21	8
3/6/2013	03:30 AM	19	11
3/6/2013	03:45 AM	22	11
3/6/2013	04:00 AM	15	14
3/6/2013	04:15 AM	18	18
3/6/2013	04:30 AM	24	16
3/6/2013	04:45 AM	47	12
3/6/2013	05:00 AM	45	24
3/6/2013	05:15 AM	62	29
3/6/2013	05:30 AM	89	51
3/6/2013	05:45 AM	76	57
3/6/2013	06:00 AM	93	63
3/6/2013	06:15 AM	94	84
3/6/2013	06:30 AM	117	87
3/6/2013	06:45 AM	134	111
3/6/2013	07:00 AM	134	130
3/6/2013	07:15 AM	77	109
3/6/2013	07:30 AM	99	98
3/6/2013	07:45 AM	101	111
3/6/2013	08:00 AM	133	109
3/6/2013	08:15 AM	101	114
3/6/2013	08:30 AM	112	123
3/6/2013	08:45 AM	123	122
3/6/2013	09:00 AM	91	112
3/6/2013	09:15 AM	115	117
3/6/2013	09:30 AM	107	97
3/6/2013	09:45 AM	117	121
3/6/2013	10:00 AM	100	104
3/6/2013	10:15 AM	97	109
3/6/2013	10:30 AM	115	109
3/6/2013	10:45 AM	107	80
3/6/2013	11:00 AM	108	122
3/6/2013	11:15 AM	114	89
3/6/2013	11:30 AM	122	90
3/6/2013	11:45 AM	123	106
3/6/2013	12:00 PM	112	110

Volume
 Start Date: 3/6/2013
 Start Time: 12:00:00 AM
 Site Code: 22
 Station ID: 22
 Location 1: QUEBEC ST S/O MONTVIEW BLVD

Date	Time	NB	SB
3/6/2013	12:15 PM	100	113
3/6/2013	12:30 PM	107	104
3/6/2013	12:45 PM	122	87
3/6/2013	01:00 PM	124	105
3/6/2013	01:15 PM	131	95
3/6/2013	01:30 PM	124	97
3/6/2013	01:45 PM	125	124
3/6/2013	02:00 PM	123	97
3/6/2013	02:15 PM	124	113
3/6/2013	02:30 PM	97	133
3/6/2013	02:45 PM	86	120
3/6/2013	03:00 PM	88	103
3/6/2013	03:15 PM	100	101
3/6/2013	03:30 PM	66	96
3/6/2013	03:45 PM	90	97
3/6/2013	04:00 PM	81	86
3/6/2013	04:15 PM	70	84
3/6/2013	04:30 PM	63	99
3/6/2013	04:45 PM	62	103
3/6/2013	05:00 PM	83	106
3/6/2013	05:15 PM	58	102
3/6/2013	05:30 PM	72	92
3/6/2013	05:45 PM	71	100
3/6/2013	06:00 PM	102	109
3/6/2013	06:15 PM	96	106
3/6/2013	06:30 PM	106	124
3/6/2013	06:45 PM	111	129
3/6/2013	07:00 PM	91	94
3/6/2013	07:15 PM	117	104
3/6/2013	07:30 PM	103	90
3/6/2013	07:45 PM	97	99
3/6/2013	08:00 PM	96	68
3/6/2013	08:15 PM	82	90
3/6/2013	08:30 PM	78	70
3/6/2013	08:45 PM	96	100
3/6/2013	09:00 PM	92	76
3/6/2013	09:15 PM	85	83
3/6/2013	09:30 PM	67	81
3/6/2013	09:45 PM	63	82
3/6/2013	10:00 PM	60	78
3/6/2013	10:15 PM	48	68
3/6/2013	10:30 PM	38	78
3/6/2013	10:45 PM	42	49
3/6/2013	11:00 PM	28	52
3/6/2013	11:15 PM	28	41
3/6/2013	11:30 PM	20	36
3/6/2013	11:45 PM	27	26

7293 7408

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 23

Station ID: 23

Location 1: QUEBEC ST N/O COLFAX AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	21	39
3/6/2013	12:15 AM	18	31
3/6/2013	12:30 AM	20	23
3/6/2013	12:45 AM	14	16
3/6/2013	01:00 AM	9	20
3/6/2013	01:15 AM	9	20
3/6/2013	01:30 AM	11	15
3/6/2013	01:45 AM	13	11
3/6/2013	02:00 AM	4	8
3/6/2013	02:15 AM	7	11
3/6/2013	02:30 AM	8	12
3/6/2013	02:45 AM	12	6
3/6/2013	03:00 AM	17	11
3/6/2013	03:15 AM	16	10
3/6/2013	03:30 AM	26	11
3/6/2013	03:45 AM	11	14
3/6/2013	04:00 AM	18	17
3/6/2013	04:15 AM	18	14
3/6/2013	04:30 AM	36	17
3/6/2013	04:45 AM	44	20
3/6/2013	05:00 AM	53	24
3/6/2013	05:15 AM	82	31
3/6/2013	05:30 AM	86	62
3/6/2013	05:45 AM	90	41
3/6/2013	06:00 AM	71	58
3/6/2013	06:15 AM	124	73
3/6/2013	06:30 AM	104	101
3/6/2013	06:45 AM	110	89
3/6/2013	07:00 AM	113	104
3/6/2013	07:15 AM	81	92
3/6/2013	07:30 AM	79	56
3/6/2013	07:45 AM	81	68
3/6/2013	08:00 AM	122	127
3/6/2013	08:15 AM	77	98
3/6/2013	08:30 AM	71	80
3/6/2013	08:45 AM	94	103
3/6/2013	09:00 AM	134	118
3/6/2013	09:15 AM	130	115
3/6/2013	09:30 AM	127	115
3/6/2013	09:45 AM	101	112
3/6/2013	10:00 AM	102	95
3/6/2013	10:15 AM	123	132
3/6/2013	10:30 AM	121	127
3/6/2013	10:45 AM	106	111
3/6/2013	11:00 AM	119	114
3/6/2013	11:15 AM	142	110
3/6/2013	11:30 AM	148	112
3/6/2013	11:45 AM	112	93
3/6/2013	12:00 PM	104	98

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 23

Station ID: 23

Location 1: QUEBEC ST N/O COLFAX AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	119	141
3/6/2013	12:30 PM	123	127
3/6/2013	12:45 PM	125	119
3/6/2013	01:00 PM	143	112
3/6/2013	01:15 PM	137	108
3/6/2013	01:30 PM	126	114
3/6/2013	01:45 PM	111	100
3/6/2013	02:00 PM	113	118
3/6/2013	02:15 PM	104	109
3/6/2013	02:30 PM	80	83
3/6/2013	02:45 PM	86	79
3/6/2013	03:00 PM	84	111
3/6/2013	03:15 PM	94	98
3/6/2013	03:30 PM	83	92
3/6/2013	03:45 PM	101	119
3/6/2013	04:00 PM	76	102
3/6/2013	04:15 PM	84	99
3/6/2013	04:30 PM	76	87
3/6/2013	04:45 PM	64	76
3/6/2013	05:00 PM	76	99
3/6/2013	05:15 PM	54	79
3/6/2013	05:30 PM	70	95
3/6/2013	05:45 PM	75	100
3/6/2013	06:00 PM	138	116
3/6/2013	06:15 PM	117	115
3/6/2013	06:30 PM	88	108
3/6/2013	06:45 PM	96	97
3/6/2013	07:00 PM	116	112
3/6/2013	07:15 PM	101	103
3/6/2013	07:30 PM	103	106
3/6/2013	07:45 PM	94	104
3/6/2013	08:00 PM	93	84
3/6/2013	08:15 PM	83	76
3/6/2013	08:30 PM	87	94
3/6/2013	08:45 PM	84	78
3/6/2013	09:00 PM	88	85
3/6/2013	09:15 PM	72	84
3/6/2013	09:30 PM	75	68
3/6/2013	09:45 PM	63	74
3/6/2013	10:00 PM	54	71
3/6/2013	10:15 PM	39	71
3/6/2013	10:30 PM	30	60
3/6/2013	10:45 PM	41	56
3/6/2013	11:00 PM	25	55
3/6/2013	11:15 PM	22	36
3/6/2013	11:30 PM	21	32
3/6/2013	11:45 PM	21	33

7294

7270

Volume

Start Date: 3/7/2013

Start Time: 12:00:00 AM

Site Code: 24

Station ID: 24

Location 1: QUEBEC ST S/O COLFAX AVE

Date	Time	NB	SB
3/7/2013	12:00 AM	24	45
3/7/2013	12:15 AM	21	36
3/7/2013	12:30 AM	23	26
3/7/2013	12:45 AM	16	18
3/7/2013	01:00 AM	10	23
3/7/2013	01:15 AM	10	23
3/7/2013	01:30 AM	13	17
3/7/2013	01:45 AM	15	13
3/7/2013	02:00 AM	5	9
3/7/2013	02:15 AM	8	13
3/7/2013	02:30 AM	9	14
3/7/2013	02:45 AM	14	7
3/7/2013	03:00 AM	20	13
3/7/2013	03:15 AM	18	11
3/7/2013	03:30 AM	30	13
3/7/2013	03:45 AM	13	16
3/7/2013	04:00 AM	21	20
3/7/2013	04:15 AM	21	16
3/7/2013	04:30 AM	41	20
3/7/2013	04:45 AM	51	23
3/7/2013	05:00 AM	61	28
3/7/2013	05:15 AM	94	36
3/7/2013	05:30 AM	99	71
3/7/2013	05:45 AM	103	47
3/7/2013	06:00 AM	82	67
3/7/2013	06:15 AM	143	84
3/7/2013	06:30 AM	120	116
3/7/2013	06:45 AM	126	102
3/7/2013	07:00 AM	130	120
3/7/2013	07:15 AM	93	106
3/7/2013	07:30 AM	91	64
3/7/2013	07:45 AM	93	78
3/7/2013	08:00 AM	140	146
3/7/2013	08:15 AM	89	113
3/7/2013	08:30 AM	82	92
3/7/2013	08:45 AM	108	118
3/7/2013	09:00 AM	154	136
3/7/2013	09:15 AM	149	132
3/7/2013	09:30 AM	146	132
3/7/2013	09:45 AM	116	129
3/7/2013	10:00 AM	117	109
3/7/2013	10:15 AM	141	152
3/7/2013	10:30 AM	139	146
3/7/2013	10:45 AM	122	128
3/7/2013	11:00 AM	137	131
3/7/2013	11:15 AM	163	126
3/7/2013	11:30 AM	170	129
3/7/2013	11:45 AM	129	107
3/7/2013	12:00 PM	120	113

Volume
 Start Date: 3/7/2013
 Start Time: 12:00:00 AM
 Site Code: 24
 Station ID: 24
 Location 1: QUEBEC ST S/O COLFAX AVE

Date	Time	NB	SB
3/7/2013	12:15 PM	137	162
3/7/2013	12:30 PM	141	146
3/7/2013	12:45 PM	144	137
3/7/2013	01:00 PM	164	129
3/7/2013	01:15 PM	158	124
3/7/2013	01:30 PM	145	131
3/7/2013	01:45 PM	128	115
3/7/2013	02:00 PM	130	136
3/7/2013	02:15 PM	120	125
3/7/2013	02:30 PM	92	95
3/7/2013	02:45 PM	99	91
3/7/2013	03:00 PM	97	128
3/7/2013	03:15 PM	108	113
3/7/2013	03:30 PM	95	106
3/7/2013	03:45 PM	116	137
3/7/2013	04:00 PM	87	117
3/7/2013	04:15 PM	97	114
3/7/2013	04:30 PM	87	100
3/7/2013	04:45 PM	74	87
3/7/2013	05:00 PM	87	114
3/7/2013	05:15 PM	62	91
3/7/2013	05:30 PM	80	109
3/7/2013	05:45 PM	86	115
3/7/2013	06:00 PM	159	133
3/7/2013	06:15 PM	135	132
3/7/2013	06:30 PM	101	124
3/7/2013	06:45 PM	110	112
3/7/2013	07:00 PM	133	129
3/7/2013	07:15 PM	116	118
3/7/2013	07:30 PM	118	122
3/7/2013	07:45 PM	108	120
3/7/2013	08:00 PM	107	97
3/7/2013	08:15 PM	95	87
3/7/2013	08:30 PM	100	108
3/7/2013	08:45 PM	97	90
3/7/2013	09:00 PM	101	98
3/7/2013	09:15 PM	83	97
3/7/2013	09:30 PM	86	78
3/7/2013	09:45 PM	72	85
3/7/2013	10:00 PM	62	82
3/7/2013	10:15 PM	45	82
3/7/2013	10:30 PM	34	69
3/7/2013	10:45 PM	47	64
3/7/2013	11:00 PM	29	63
3/7/2013	11:15 PM	25	41
3/7/2013	11:30 PM	24	37
3/7/2013	11:45 PM	24	38

8385 8362

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 25

Station ID: 25

Location 1: QUEBEC ST N/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	17	37
3/6/2013	12:15 AM	20	20
3/6/2013	12:30 AM	10	22
3/6/2013	12:45 AM	8	15
3/6/2013	01:00 AM	10	17
3/6/2013	01:15 AM	11	18
3/6/2013	01:30 AM	13	9
3/6/2013	01:45 AM	13	12
3/6/2013	02:00 AM	6	7
3/6/2013	02:15 AM	7	10
3/6/2013	02:30 AM	7	11
3/6/2013	02:45 AM	7	12
3/6/2013	03:00 AM	17	15
3/6/2013	03:15 AM	7	6
3/6/2013	03:30 AM	13	14
3/6/2013	03:45 AM	18	7
3/6/2013	04:00 AM	7	14
3/6/2013	04:15 AM	12	16
3/6/2013	04:30 AM	17	15
3/6/2013	04:45 AM	31	14
3/6/2013	05:00 AM	48	25
3/6/2013	05:15 AM	53	30
3/6/2013	05:30 AM	66	43
3/6/2013	05:45 AM	81	65
3/6/2013	06:00 AM	86	56
3/6/2013	06:15 AM	98	75
3/6/2013	06:30 AM	143	95
3/6/2013	06:45 AM	122	126
3/6/2013	07:00 AM	150	130
3/6/2013	07:15 AM	160	145
3/6/2013	07:30 AM	118	146
3/6/2013	07:45 AM	129	150
3/6/2013	08:00 AM	150	149
3/6/2013	08:15 AM	144	154
3/6/2013	08:30 AM	145	138
3/6/2013	08:45 AM	133	153
3/6/2013	09:00 AM	136	115
3/6/2013	09:15 AM	155	124
3/6/2013	09:30 AM	146	117
3/6/2013	09:45 AM	98	99
3/6/2013	10:00 AM	75	82
3/6/2013	10:15 AM	119	89
3/6/2013	10:30 AM	106	86
3/6/2013	10:45 AM	102	92
3/6/2013	11:00 AM	127	108
3/6/2013	11:15 AM	134	85
3/6/2013	11:30 AM	145	113
3/6/2013	11:45 AM	139	121
3/6/2013	12:00 PM	146	116

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 25

Station ID: 25

Location 1: QUEBEC ST N/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	122	132
3/6/2013	12:30 PM	132	125
3/6/2013	12:45 PM	107	121
3/6/2013	01:00 PM	158	106
3/6/2013	01:15 PM	151	105
3/6/2013	01:30 PM	143	112
3/6/2013	01:45 PM	142	125
3/6/2013	02:00 PM	136	144
3/6/2013	02:15 PM	133	129
3/6/2013	02:30 PM	122	141
3/6/2013	02:45 PM	156	147
3/6/2013	03:00 PM	100	142
3/6/2013	03:15 PM	123	145
3/6/2013	03:30 PM	133	137
3/6/2013	03:45 PM	107	130
3/6/2013	04:00 PM	144	159
3/6/2013	04:15 PM	148	152
3/6/2013	04:30 PM	133	151
3/6/2013	04:45 PM	98	109
3/6/2013	05:00 PM	127	137
3/6/2013	05:15 PM	122	156
3/6/2013	05:30 PM	111	159
3/6/2013	05:45 PM	142	169
3/6/2013	06:00 PM	143	127
3/6/2013	06:15 PM	135	153
3/6/2013	06:30 PM	126	146
3/6/2013	06:45 PM	129	136
3/6/2013	07:00 PM	132	125
3/6/2013	07:15 PM	127	111
3/6/2013	07:30 PM	99	122
3/6/2013	07:45 PM	95	106
3/6/2013	08:00 PM	105	100
3/6/2013	08:15 PM	89	96
3/6/2013	08:30 PM	90	80
3/6/2013	08:45 PM	92	102
3/6/2013	09:00 PM	80	83
3/6/2013	09:15 PM	76	80
3/6/2013	09:30 PM	89	66
3/6/2013	09:45 PM	57	73
3/6/2013	10:00 PM	68	81
3/6/2013	10:15 PM	47	54
3/6/2013	10:30 PM	30	55
3/6/2013	10:45 PM	34	44
3/6/2013	11:00 PM	22	47
3/6/2013	11:15 PM	28	41
3/6/2013	11:30 PM	25	27
3/6/2013	11:45 PM	25	22

8638

8528

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 26

Station ID: 26

Location 1: QUEBEC ST S/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:00 AM	23	35
3/6/2013	12:15 AM	14	20
3/6/2013	12:30 AM	20	27
3/6/2013	12:45 AM	8	18
3/6/2013	01:00 AM	12	12
3/6/2013	01:15 AM	15	16
3/6/2013	01:30 AM	12	14
3/6/2013	01:45 AM	16	8
3/6/2013	02:00 AM	7	11
3/6/2013	02:15 AM	9	14
3/6/2013	02:30 AM	5	10
3/6/2013	02:45 AM	8	15
3/6/2013	03:00 AM	16	12
3/6/2013	03:15 AM	7	7
3/6/2013	03:30 AM	19	14
3/6/2013	03:45 AM	11	6
3/6/2013	04:00 AM	8	11
3/6/2013	04:15 AM	13	22
3/6/2013	04:30 AM	16	24
3/6/2013	04:45 AM	30	20
3/6/2013	05:00 AM	51	25
3/6/2013	05:15 AM	52	43
3/6/2013	05:30 AM	71	65
3/6/2013	05:45 AM	73	79
3/6/2013	06:00 AM	86	72
3/6/2013	06:15 AM	111	109
3/6/2013	06:30 AM	135	145
3/6/2013	06:45 AM	138	140
3/6/2013	07:00 AM	153	175
3/6/2013	07:15 AM	176	180
3/6/2013	07:30 AM	155	181
3/6/2013	07:45 AM	106	180
3/6/2013	08:00 AM	160	173
3/6/2013	08:15 AM	158	166
3/6/2013	08:30 AM	154	165
3/6/2013	08:45 AM	106	145
3/6/2013	09:00 AM	156	128
3/6/2013	09:15 AM	146	153
3/6/2013	09:30 AM	146	155
3/6/2013	09:45 AM	134	121
3/6/2013	10:00 AM	113	119
3/6/2013	10:15 AM	135	81
3/6/2013	10:30 AM	117	98
3/6/2013	10:45 AM	121	94
3/6/2013	11:00 AM	123	89
3/6/2013	11:15 AM	123	100
3/6/2013	11:30 AM	154	135
3/6/2013	11:45 AM	147	122
3/6/2013	12:00 PM	144	148

Volume

Start Date: 3/6/2013

Start Time: 12:00:00 AM

Site Code: 26

Station ID: 26

Location 1: QUEBEC ST S/O 11TH AVE

Date	Time	NB	SB
3/6/2013	12:15 PM	144	146
3/6/2013	12:30 PM	139	155
3/6/2013	12:45 PM	147	138
3/6/2013	01:00 PM	170	115
3/6/2013	01:15 PM	169	112
3/6/2013	01:30 PM	149	136
3/6/2013	01:45 PM	145	148
3/6/2013	02:00 PM	155	145
3/6/2013	02:15 PM	149	139
3/6/2013	02:30 PM	162	175
3/6/2013	02:45 PM	173	183
3/6/2013	03:00 PM	147	165
3/6/2013	03:15 PM	137	161
3/6/2013	03:30 PM	161	143
3/6/2013	03:45 PM	143	153
3/6/2013	04:00 PM	136	141
3/6/2013	04:15 PM	165	161
3/6/2013	04:30 PM	142	133
3/6/2013	04:45 PM	143	150
3/6/2013	05:00 PM	148	150
3/6/2013	05:15 PM	149	185
3/6/2013	05:30 PM	133	167
3/6/2013	05:45 PM	143	156
3/6/2013	06:00 PM	148	141
3/6/2013	06:15 PM	145	140
3/6/2013	06:30 PM	148	139
3/6/2013	06:45 PM	129	154
3/6/2013	07:00 PM	146	134
3/6/2013	07:15 PM	140	122
3/6/2013	07:30 PM	110	127
3/6/2013	07:45 PM	109	111
3/6/2013	08:00 PM	99	97
3/6/2013	08:15 PM	104	102
3/6/2013	08:30 PM	101	98
3/6/2013	08:45 PM	94	98
3/6/2013	09:00 PM	86	77
3/6/2013	09:15 PM	89	82
3/6/2013	09:30 PM	87	82
3/6/2013	09:45 PM	64	90
3/6/2013	10:00 PM	81	76
3/6/2013	10:15 PM	56	63
3/6/2013	10:30 PM	38	57
3/6/2013	10:45 PM	53	44
3/6/2013	11:00 PM	29	48
3/6/2013	11:15 PM	32	36
3/6/2013	11:30 PM	32	24
3/6/2013	11:45 PM	30	22

9512

9523

Appendix B

2012 Synchro Outputs:

Level of Service & Intersection Capacity Utilization

for

PM Peak Existing

PM Peak Reconfigure Quebec: 2 Lanes

PM Peak Reconfigure Quebec: 4 Lanes

PM Peak Directional Priority

HCM Signalized Intersection Capacity Analysis
 1704: Quebec St & E 6th Ave

PM Existing: 4-17-2013

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	271	332	48	175	28	257	849	57	32	984	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	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	0.99		1.00	0.99	
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)	1754	1863	1583	1770	1863	1545	1769	3499		1765	3500	
Flt Permitted	0.50	1.00	1.00	0.27	1.00	1.00	0.16	1.00		0.30	1.00	
Satd. Flow (perm)	921	1863	1583	507	1863	1545	293	3499		552	3500	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	111	288	353	51	186	30	273	903	61	34	1047	73
RTOR Reduction (vph)	0	0	201	0	0	24	0	3	0	0	4	0
Lane Group Flow (vph)	111	288	152	51	186	6	273	961	0	34	1116	0
Confl. Peds. (#/hr)	9					9	6		5	5		6
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8			4		1	6				2
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	23.3	23.3	23.3	23.3	23.3	23.3	83.7	83.7		64.2	64.2	
Effective Green, g (s)	23.3	23.3	23.3	23.3	23.3	23.3	83.7	83.7		64.2	64.2	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.70	0.70		0.54	0.54	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.2		0.2	0.2	
Lane Grp Cap (vph)	178	361	307	98	361	299	358	2440		295	1872	
v/s Ratio Prot		c0.15			0.10		c0.08	0.27				0.32
v/s Ratio Perm	0.12		0.10	0.10		0.00	c0.45			0.06		
v/c Ratio	0.62	0.80	0.49	0.52	0.52	0.02	0.76	0.39		0.12	0.60	
Uniform Delay, d1	44.3	46.1	43.1	43.3	43.3	39.1	13.8	7.6		13.8	19.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.10	0.98	
Incremental Delay, d2	4.8	10.9	0.5	2.3	0.5	0.0	8.4	0.5		0.1	0.1	
Delay (s)	49.2	57.0	43.5	45.6	43.8	39.1	22.1	8.0		15.3	18.7	
Level of Service	D	E	D	D	D	D	C	A		B	B	
Approach Delay (s)		49.5			43.6			11.2			18.6	
Approach LOS		D			D			B			B	

Intersection Summary

HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 1740: Quebec St & E 8th Ave

PM Existing: 4-17-2013

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	102	186	40	54	10	97	904	18	10	931	95
Ideal Flow (vphpl)	1300	1600	1900	1300	1600	1900	1300	1600	1900	1300	1600	1900
Lane Width	10	10	12	10	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1115	1292		1122	1423		1130	1459		1130	1444	
Flt Permitted	0.71	1.00		0.29	1.00		0.11	1.00		0.17	1.00	
Satd. Flow (perm)	838	1292		339	1423		136	1459		204	1444	
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	106	194	42	56	10	101	942	19	10	970	99
RTOR Reduction (vph)	0	57	0	0	6	0	0	1	0	0	3	0
Lane Group Flow (vph)	81	243	0	42	60	0	101	960	0	10	1066	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.6	25.6		25.6	25.6		82.4	82.4		82.4	82.4	
Effective Green, g (s)	25.6	25.6		25.6	25.6		82.4	82.4		82.4	82.4	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.69	0.69		0.69	0.69	
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)	178	275		72	303		93	1001		140	991	
v/s Ratio Prot		c0.19			0.04			0.66			0.74	
v/s Ratio Perm	0.10			0.12			c0.74			0.05		
v/c Ratio	0.46	0.88		0.58	0.20		1.09	0.96		0.07	1.08	
Uniform Delay, d1	41.1	45.8		42.4	38.8		18.8	17.3		6.2	18.8	
Progression Factor	1.00	1.00		1.00	1.00		0.80	0.80		0.89	1.09	
Incremental Delay, d2	1.8	26.8		11.5	0.3		115.7	19.4		0.5	43.4	
Delay (s)	43.0	72.6		53.9	39.1		130.7	33.3		6.0	63.9	
Level of Service	D	E		D	D		F	C		A	E	
Approach Delay (s)		66.3			44.9			42.6			63.4	
Approach LOS		E			D			D			E	

Intersection Summary

HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.0%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2219: Quebec St & E Colfax Ave

PM Existing: 4-17-2013
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1900	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	10	10	11	10
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		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)	1583	3502		1565	3449		1126	1312		1130	1327	988
Flt Permitted	0.09	1.00		0.21	1.00		0.34	1.00		0.17	1.00	1.00
Satd. Flow (perm)	147	3502		343	3449		398	1312		202	1327	988
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)	85	920	44	54	961	122	38	497	34	117	603	62
RTOR Reduction (vph)	0	3	0	0	8	0	0	2	0	0	0	32
Lane Group Flow (vph)	85	961	0	54	1075	0	38	529	0	117	603	30
Confl. Peds. (#/hr)	21		22	22		21	9		13	13		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	49.3	49.3		39.3	39.3		44.0	44.0		58.7	58.7	58.7
Effective Green, g (s)	49.3	49.3		39.3	39.3		44.0	44.0		58.7	58.7	58.7
Actuated g/C Ratio	0.41	0.41		0.33	0.33		0.37	0.37		0.49	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	2.0	0.2		0.2	0.2		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	108	1438		112	1129		145	481		166	649	483
v/s Ratio Prot	0.03	c0.27			c0.31			c0.40		0.05	c0.45	
v/s Ratio Perm	0.30			0.16			0.10			0.29		0.03
v/c Ratio	0.79	0.67		0.48	0.95		0.26	1.10		0.70	0.93	0.06
Uniform Delay, d1	28.6	28.7		32.2	39.4		26.6	38.0		22.8	28.7	16.2
Progression Factor	1.00	1.00		1.00	1.00		0.71	0.61		0.83	0.99	1.75
Incremental Delay, d2	28.5	2.5		14.1	17.5		0.2	63.4		1.0	2.6	0.0
Delay (s)	57.0	31.2		46.3	56.9		19.1	86.7		20.0	31.1	28.2
Level of Service	E	C		D	E		B	F		C	C	C
Approach Delay (s)		33.3			56.4			82.2			29.2	
Approach LOS		C			E			F			C	

Intersection Summary

HCM 2000 Control Delay	47.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

PM Existing: 4-17-2013

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.93	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
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)	1211	1569	1013	1211	1569	1005	1208	1563		1211	1744	
Flt Permitted	0.22	1.00	1.00	0.21	1.00	1.00	0.24	1.00		0.18	1.00	
Satd. Flow (perm)	286	1569	1013	273	1569	1005	300	1563		225	1744	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	405	11	20	398	128	11	644	12	182	814	56
RTOR Reduction (vph)	0	0	8	0	0	60	0	1	0	0	2	0
Lane Group Flow (vph)	47	405	3	20	398	68	11	655	0	182	868	0
Confl. Peds. (#/hr)	15		13	13		15	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	32.7	32.7	32.7	32.7	32.7	32.7	56.9	56.9		75.3	75.3	
Effective Green, g (s)	32.7	32.7	32.7	32.7	32.7	32.7	56.9	56.9		75.3	75.3	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.47	0.47		0.63	0.63	
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	
Lane Grp Cap (vph)	77	427	276	74	427	273	142	741		243	1094	
v/s Ratio Prot		c0.26			0.25			c0.42		0.08	c0.50	
v/s Ratio Perm	0.16		0.00	0.07		0.07	0.04			0.39		
v/c Ratio	0.61	0.95	0.01	0.27	0.93	0.25	0.08	0.88		0.75	0.79	
Uniform Delay, d1	38.1	42.8	31.8	34.3	42.6	34.1	17.2	28.6		18.1	16.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.42	1.10		1.76	1.54	
Incremental Delay, d2	9.7	30.1	0.0	0.7	26.9	0.2	0.6	9.1		9.8	5.5	
Delay (s)	47.7	72.9	31.9	35.0	69.5	34.3	25.1	40.5		41.6	31.1	
Level of Service	D	E	C	C	E	C	C	D		D	C	
Approach Delay (s)		69.4			59.9			40.2			32.9	
Approach LOS		E			E			D			C	

Intersection Summary

HCM 2000 Control Delay	46.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

PM Existing: 4-17-2013

2838: Quebec St & E 11th Ave

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↑	↕	↕	↕	↕
Volume (vph)	10	37	10	205	88	62	16	631	274	61	749	10
Ideal Flow (vphpl)	1900	1500	1900	1300	1500	1900	1300	1400	1300	1300	1400	1900
Lane Width	12	10	12	10	10	12	10	10	10	10	10	12
Total Lost time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frbp, ped/bikes		0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.98		1.00	0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1320		1116	1268		1130	1281	973	1130	1278	
Flt Permitted		0.95		0.78	1.00		0.23	1.00	1.00	0.31	1.00	
Satd. Flow (perm)		1262		912	1268		278	1281	973	372	1278	
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)	10	39	10	214	92	65	17	657	285	64	780	10
RTOR Reduction (vph)	0	6	0	0	21	0	0	0	61	0	0	0
Lane Group Flow (vph)	0	53	0	214	136	0	17	657	224	64	790	0
Confl. Peds. (#/hr)	6		5	5		6	5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm		NA
Protected Phases		8			4			6				2
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)		31.3		31.3	31.3		76.7	76.7	76.7	76.7		76.7
Effective Green, g (s)		31.3		31.3	31.3		76.7	76.7	76.7	76.7		76.7
Actuated g/C Ratio		0.26		0.26	0.26		0.64	0.64	0.64	0.64		0.64
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)		2.0		2.0	2.0		0.2	0.2	0.2	0.2		0.2
Lane Grp Cap (vph)		329		237	330		177	818	621	237		816
v/s Ratio Prot					0.11			0.51				c0.62
v/s Ratio Perm		0.04		c0.23			0.06		0.23	0.17		
v/c Ratio		0.16		0.90	0.41		0.10	0.80	0.36	0.27		0.97
Uniform Delay, d1		34.2		42.9	36.7		8.3	16.1	10.1	9.4		20.5
Progression Factor		1.00		1.00	1.00		0.45	0.80	0.62	0.22		0.36
Incremental Delay, d2		0.1		33.0	0.3		0.4	3.5	0.7	0.3		4.5
Delay (s)		34.3		75.9	37.0		4.2	16.4	6.9	2.3		11.9
Level of Service		C		E	D		A	B	A	A		B
Approach Delay (s)		34.3			59.4			13.3				11.2
Approach LOS		C			E			B				B

Intersection Summary

HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2839: Quebec St & E 13th Ave

PM Existing: 4-17-2013
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↑			↕	
Volume (vph)	0	0	0	53	371	10	83	595	0	0	769	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900	1300	1400	1900	1900	1400	1900
Lane Width	12	12	12	12	10	12	10	10	12	12	10	12
Total Lost time (s)					6.0		6.0	6.0			6.0	
Lane Util. Factor					0.95		1.00	1.00			1.00	
Frt					1.00		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3100		1130	1281			1272	
Flt Permitted					0.99		0.13	1.00			1.00	
Satd. Flow (perm)					3100		154	1281			1272	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	59	412	11	92	661	0	0	854	46
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	0	480	0	92	661	0	0	898	0
Turn Type				Perm	NA		pm+pt	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4			6					
Actuated Green, G (s)					21.7		86.3	86.3			72.3	
Effective Green, g (s)					21.7		86.3	86.3			72.3	
Actuated g/C Ratio					0.18		0.72	0.72			0.60	
Clearance Time (s)					6.0		6.0	6.0			6.0	
Vehicle Extension (s)					2.0		2.0	0.2			0.2	
Lane Grp Cap (vph)					560		175	921			766	
v/s Ratio Prot							0.03	c0.52			c0.71	
v/s Ratio Perm					0.15		0.34					
v/c Ratio					0.86		0.53	0.72			1.17	
Uniform Delay, d1					47.7		17.5	9.8			23.9	
Progression Factor					1.00		1.15	1.13			0.68	
Incremental Delay, d2					11.9		7.2	3.2			83.9	
Delay (s)					59.6		27.4	14.2			100.0	
Level of Service					E		C	B			F	
Approach Delay (s)		0.0			59.6			15.8			100.0	
Approach LOS		A			E			B			F	

Intersection Summary

HCM 2000 Control Delay	61.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

PM Existing: 4-17-2013

2840: Quebec St & E 14th Ave

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕			↕	
Volume (vph)	20	512	144	0	0	0	0	533	67	10	709	0
Ideal Flow (vphpl)	1900	1700	1900	1900	1900	1900	1900	1400	1900	1900	1400	1900
Lane Width	12	10	12	12	12	12	12	10	12	12	10	12
Total Lost time (s)		6.0						6.0			6.0	
Lane Util. Factor		0.95						1.00			1.00	
Frbp, ped/bikes		1.00						1.00			1.00	
Flpb, ped/bikes		1.00						1.00			1.00	
Frt		0.97						0.98			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		2857						1259			1280	
Flt Permitted		1.00						1.00			0.99	
Satd. Flow (perm)		2857						1259			1270	
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)	21	533	150	0	0	0	0	555	70	10	739	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	684	0	0	0	0	0	621	0	0	749	0
Confl. Peds. (#/hr)									5	5		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						6			2	
Permitted Phases	4									2		
Actuated Green, G (s)		29.0						79.0			79.0	
Effective Green, g (s)		29.0						79.0			79.0	
Actuated g/C Ratio		0.24						0.66			0.66	
Clearance Time (s)		6.0						6.0			6.0	
Vehicle Extension (s)		2.0						0.2			0.2	
Lane Grp Cap (vph)		690						828			836	
v/s Ratio Prot								0.49				
v/s Ratio Perm		0.24									c0.59	
v/c Ratio		0.99						0.75			0.90	
Uniform Delay, d1		45.4						13.8			17.1	
Progression Factor		1.00						0.15			0.55	
Incremental Delay, d2		31.7						4.3			8.6	
Delay (s)		77.1						6.4			18.0	
Level of Service		E						A			B	
Approach Delay (s)		77.1			0.0			6.4			18.0	
Approach LOS		E			A			A			B	

Intersection Summary

HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

PM Existing: 4-17-2013

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↔		↖	↗		↖	↗	
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	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	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	0.99			0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1130	1357			1361		1130	1368		1130	1359	
Flt Permitted	0.36	1.00			0.78		0.14	1.00		0.28	1.00	
Satd. Flow (perm)	426	1357			1063		166	1368		335	1359	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	51	480	39	11	356	21	21	636	11	40	817	45
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	0	0	2	0
Lane Group Flow (vph)	51	516	0	0	386	0	21	647	0	40	860	0
Confl. Peds. (#/hr)							5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	39.0	39.0			39.0		69.0	69.0		69.0	69.0	
Effective Green, g (s)	39.0	39.0			39.0		69.0	69.0		69.0	69.0	
Actuated g/C Ratio	0.32	0.32			0.32		0.58	0.58		0.58	0.58	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	138	441			345		95	786		192	781	
v/s Ratio Prot		c0.38						0.47			c0.63	
v/s Ratio Perm	0.12				0.36		0.13			0.12		
v/c Ratio	0.37	1.17			1.12		0.22	0.82		0.21	1.10	
Uniform Delay, d1	31.1	40.5			40.5		12.4	20.6		12.3	25.5	
Progression Factor	1.00	1.00			1.00		0.51	0.61		0.81	0.58	
Incremental Delay, d2	0.6	98.6			84.5		0.5	0.9		1.7	58.8	
Delay (s)	31.7	139.1			125.0		6.9	13.5		11.6	73.5	
Level of Service	C	F			F		A	B		B	E	
Approach Delay (s)		129.5			125.0			13.3			70.8	
Approach LOS		F			F			B			E	

Intersection Summary

HCM 2000 Control Delay	77.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2843: Quebec St & E 23rd Ave/E 23rd Ave

PM Existing: 4-17-2013

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	135	16	10	90	32	12	862	10	51	1047	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.98	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1740	1828		1753	1775		1765	1859		1770	3493	
Flt Permitted	0.54	1.00		0.42	1.00		0.22	1.00		0.26	1.00	
Satd. Flow (perm)	980	1828		781	1775		414	1859		483	3493	
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)	84	141	17	10	94	33	12	898	10	53	1091	81
RTOR Reduction (vph)	0	4	0	0	12	0	0	0	0	0	3	0
Lane Group Flow (vph)	84	154	0	10	115	0	12	908	0	53	1169	0
Confl. Peds. (#/hr)	11		7	7		11	5		6	6		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	14.5	14.5		14.5	14.5		94.5	94.5		94.5	94.5	
Effective Green, g (s)	14.5	14.5		14.5	14.5		94.5	94.5		94.5	94.5	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.79	0.79		0.79	0.79	
Clearance Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	118	220		94	214		326	1463		380	2750	
v/s Ratio Prot		0.08			0.06			c0.49			0.33	
v/s Ratio Perm	c0.09			0.01			0.03			0.11		
v/c Ratio	0.71	0.70		0.11	0.54		0.04	0.62		0.14	0.43	
Uniform Delay, d1	50.7	50.6		47.0	49.6		2.8	5.3		3.0	4.1	
Progression Factor	1.00	1.00		1.00	1.00		0.33	0.20		0.89	0.81	
Incremental Delay, d2	15.5	7.6		0.2	1.3		0.1	1.4		0.7	0.4	
Delay (s)	66.2	58.2		47.2	50.9		1.1	2.5		3.4	3.7	
Level of Service	E	E		D	D		A	A		A	A	
Approach Delay (s)		61.0			50.6			2.4			3.7	
Approach LOS		E			D			A			A	

Intersection Summary

HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

PM Existing: 4-17-2013

2844: Quebec St & E 26th Ave

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↕		↖	↗	
Volume (vph)	76	49	10	71	103	39	11	629	14	33	1153	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	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	1.00	
Flpb, ped/bikes	0.98	1.00		0.99	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1738	1807		1751	1863	1583	1766	3525		1758	3512	
Flt Permitted	0.64	1.00		0.72	1.00	1.00	0.19	1.00		0.39	1.00	
Satd. Flow (perm)	1174	1807		1318	1863	1583	354	3525		714	3512	
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)	82	53	11	76	111	42	12	676	15	35	1240	53
RTOR Reduction (vph)	0	7	0	0	0	37	0	1	0	0	2	0
Lane Group Flow (vph)	82	57	0	76	111	5	12	690	0	35	1291	0
Confl. Peds. (#/hr)	13		7	7			5		5	5		5
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	14.6	14.6		14.6	14.6	14.6	93.4	93.4		93.4	93.4	
Effective Green, g (s)	14.6	14.6		14.6	14.6	14.6	93.4	93.4		93.4	93.4	
Actuated g/C Ratio	0.12	0.12		0.12	0.12	0.12	0.78	0.78		0.78	0.78	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	142	219		160	226	192	275	2743		555	2733	
v/s Ratio Prot		0.03			0.06			0.20			c0.37	
v/s Ratio Perm	c0.07			0.06		0.00	0.03			0.05		
v/c Ratio	0.58	0.26		0.47	0.49	0.03	0.04	0.25		0.06	0.47	
Uniform Delay, d1	49.8	47.8		49.1	49.2	46.4	3.1	3.7		3.1	4.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.61	0.51		1.00	1.00	
Incremental Delay, d2	3.5	0.2		0.8	0.6	0.0	0.2	0.2		0.2	0.6	
Delay (s)	53.3	48.0		49.9	49.8	46.5	2.1	2.0		3.3	5.3	
Level of Service	D	D		D	D	D	A	A		A	A	
Approach Delay (s)		51.0			49.3			2.0			5.2	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 1704: Quebec St & E 6th Ave

Reconfigure Quebec - 2 Lanes PM Peak

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	271	332	48	175	28	257	849	57	32	984	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	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	0.99		1.00	0.99	
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)	1754	1863	1583	1770	1863	1545	1769	3499		1765	3500	
Flt Permitted	0.49	1.00	1.00	0.26	1.00	1.00	0.15	1.00		0.30	1.00	
Satd. Flow (perm)	907	1863	1583	480	1863	1545	281	3499		552	3500	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	111	288	353	51	186	30	273	903	61	34	1047	73
RTOR Reduction (vph)	0	0	287	0	0	24	0	4	0	0	3	0
Lane Group Flow (vph)	111	288	66	51	186	6	273	960	0	34	1117	0
Confl. Peds. (#/hr)	9					9	6		5	5		6
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	22.5	22.5	22.5	22.5	22.5	22.5	84.5	84.5		62.2	62.2	
Effective Green, g (s)	22.5	22.5	22.5	22.5	22.5	22.5	84.5	84.5		62.2	62.2	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.70	0.70		0.52	0.52	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.2		0.2	0.2	
Lane Grp Cap (vph)	170	349	296	90	349	289	387	2463		286	1814	
v/s Ratio Prot		c0.15			0.10		c0.09	0.27			0.32	
v/s Ratio Perm	0.12		0.04	0.11		0.00	c0.41			0.06		
v/c Ratio	0.65	0.83	0.22	0.57	0.53	0.02	0.71	0.39		0.12	0.62	
Uniform Delay, d1	45.1	46.9	41.3	44.3	44.0	39.8	14.0	7.2		14.8	20.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.45	0.48	
Incremental Delay, d2	6.7	14.0	0.1	4.8	0.8	0.0	4.7	0.5		0.7	1.3	
Delay (s)	51.8	60.8	41.5	49.1	44.8	39.8	18.7	7.7		7.3	11.1	
Level of Service	D	E	D	D	D	D	B	A		A	B	
Approach Delay (s)		50.4			45.1			10.1			11.0	
Approach LOS		D			D			B			B	

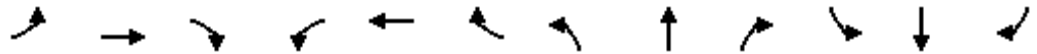
Intersection Summary

HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1740: Quebec St & E 8th Ave

Reconfigure Quebec - 2 Lanes PM Peak

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	102	186	40	54	10	97	904	18	10	931	95
Ideal Flow (vphpl)	1300	1600	1900	1300	1600	1900	1300	1600	1900	1300	1600	1900
Lane Width	10	10	12	10	10	12	10	10	12	10	10	12
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0		4.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1124	1464	1550	1121	1426		1130	2772		1126	2743	
Flt Permitted	0.71	1.00	1.00	0.67	1.00		0.21	1.00		0.30	1.00	
Satd. Flow (perm)	844	1464	1550	795	1426		244	2772		353	2743	
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	106	194	42	56	10	101	942	19	10	970	99
RTOR Reduction (vph)	0	0	161	0	5	0	0	1	0	0	5	0
Lane Group Flow (vph)	81	106	33	42	61	0	101	960	0	10	1064	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	3	8			4		1	6			2	
Permitted Phases	8		8	4			6			2		
Actuated Green, G (s)	22.2	20.2	20.2	10.9	10.9		87.8	87.8		75.0	75.0	
Effective Green, g (s)	22.2	20.2	20.2	10.9	10.9		87.8	87.8		75.0	75.0	
Actuated g/C Ratio	0.18	0.17	0.17	0.09	0.09		0.73	0.73		0.62	0.62	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0		4.0	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)	168	246	260	72	129		243	2028		220	1714	
v/s Ratio Prot	c0.02	0.07			0.04		0.03	c0.35			c0.39	
v/s Ratio Perm	c0.07		0.02	0.05			0.27			0.03		
v/c Ratio	0.48	0.43	0.13	0.58	0.47		0.42	0.47		0.05	0.62	
Uniform Delay, d1	44.1	44.7	42.4	52.4	51.8		6.8	6.6		8.7	13.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.84	0.88		0.54	0.52	
Incremental Delay, d2	2.2	1.2	0.2	11.5	2.7		1.1	0.7		0.3	1.5	
Delay (s)	46.3	46.0	42.6	63.8	54.5		13.6	6.6		5.0	8.6	
Level of Service	D	D	D	E	D		B	A		A	A	
Approach Delay (s)		44.3			58.1			7.2			8.6	
Approach LOS		D			E			A			A	

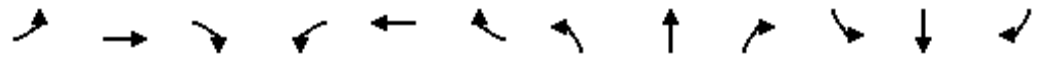
Intersection Summary

HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2219: Quebec St & E Colfax Ave

Reconfigure Quebec - 2 Lanes PM Peak

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1900	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	10	10	11	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	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	0.99		1.00	0.99	
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)	1583	3539	1506	1569	3539	1508	1125	2492		1129	2480	
Flt Permitted	0.17	1.00	1.00	0.28	1.00	1.00	0.40	1.00		0.24	1.00	
Satd. Flow (perm)	275	3539	1506	464	3539	1508	473	2492		280	2480	
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)	85	920	44	54	961	122	38	497	34	117	603	62
RTOR Reduction (vph)	0	0	21	0	0	68	0	5	0	0	7	0
Lane Group Flow (vph)	85	920	23	54	961	54	38	526	0	117	658	0
Confl. Peds. (#/hr)	21		22	22		21	9		13	13		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	62.9	62.9	62.9	52.9	52.9	52.9	28.8	28.8		45.1	45.1	
Effective Green, g (s)	62.9	62.9	62.9	52.9	52.9	52.9	28.8	28.8		45.1	45.1	
Actuated g/C Ratio	0.52	0.52	0.52	0.44	0.44	0.44	0.24	0.24		0.38	0.38	
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)	2.0	0.2	0.2	0.2	0.2	0.2	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	187	1855	789	204	1560	664	113	598		178	932	
v/s Ratio Prot	0.02	c0.26			c0.27			c0.21		0.06	c0.27	
v/s Ratio Perm	0.22		0.02	0.12		0.04	0.08			0.19		
v/c Ratio	0.45	0.50	0.03	0.26	0.62	0.08	0.34	0.88		0.66	0.71	
Uniform Delay, d1	17.8	18.4	13.8	21.2	25.8	19.5	37.7	43.9		27.6	31.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.90		0.97	0.71	
Incremental Delay, d2	0.6	1.0	0.1	3.1	1.8	0.2	0.4	10.0		4.8	1.5	
Delay (s)	18.5	19.3	13.9	24.4	27.6	19.7	34.7	49.5		31.5	24.2	
Level of Service	B	B	B	C	C	B	C	D		C	C	
Approach Delay (s)		19.0			26.6			48.5			25.3	
Approach LOS		B			C			D			C	

Intersection Summary

HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

Reconfigure Quebec - 2 Lanes PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	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	1.00		1.00	0.99	
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)	1202	1569	1056	1203	1569	1053	1208	2971		1210	3315	
Flt Permitted	0.33	1.00	1.00	0.32	1.00	1.00	0.33	1.00		0.27	1.00	
Satd. Flow (perm)	413	1569	1056	400	1569	1053	415	2971		341	3315	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	405	11	20	398	128	11	644	12	182	814	56
RTOR Reduction (vph)	0	0	8	0	0	93	0	2	0	0	8	0
Lane Group Flow (vph)	47	405	3	20	398	35	11	654	0	182	862	0
Confl. Peds. (#/hr)	15		13	13		15	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	16.6	16.6	16.6	16.6	16.6	16.6	21.4	21.4		31.4	31.4	
Effective Green, g (s)	16.6	16.6	16.6	16.6	16.6	16.6	21.4	21.4		31.4	31.4	
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.36	0.36		0.52	0.52	
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	
Lane Grp Cap (vph)	114	434	292	110	434	291	148	1059		236	1734	
v/s Ratio Prot		c0.26			0.25			0.22		c0.05	0.26	
v/s Ratio Perm	0.11		0.00	0.05		0.03	0.03			c0.35		
v/c Ratio	0.41	0.93	0.01	0.18	0.92	0.12	0.07	0.62		0.77	0.50	
Uniform Delay, d1	17.7	21.2	15.7	16.5	21.0	16.2	12.8	15.9		10.6	9.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.52	0.48		0.92	0.45	
Incremental Delay, d2	0.9	26.8	0.0	0.3	23.6	0.1	0.9	2.4		12.0	0.9	
Delay (s)	18.6	47.9	15.7	16.8	44.6	16.3	7.5	10.0		21.8	5.0	
Level of Service	B	D	B	B	D	B	A	B		C	A	
Approach Delay (s)		44.2			36.9			10.0			7.9	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2838: Quebec St & E 11th Ave

Reconfigure Quebec - 2 Lanes PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗	↖	↖	↕		↖	↕	
Volume (vph)	10	37	10	205	88	62	16	631	274	61	749	10
Ideal Flow (vphpl)	1900	1500	1900	1300	1500	1900	1300	1400	1300	1300	1400	1900
Lane Width	12	10	12	10	10	12	10	10	10	10	10	12
Total Lost time (s)		6.0		4.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98		1.00	1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1323		1124	1373	1549	1125	2297		1126	2428	
Flt Permitted		0.92		0.77	1.00	1.00	0.32	1.00		0.26	1.00	
Satd. Flow (perm)		1232		913	1373	1549	377	2297		308	2428	
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)	10	39	10	214	92	65	17	657	285	64	780	10
RTOR Reduction (vph)	0	6	0	0	0	47	0	30	0	0	1	0
Lane Group Flow (vph)	0	53	0	214	92	18	17	912	0	64	789	0
Confl. Peds. (#/hr)	6		5	5		6	5		5	5		5
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8		7	4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		10.0		34.6	32.6	32.6	75.4	75.4		75.4	75.4	
Effective Green, g (s)		10.0		34.6	32.6	32.6	75.4	75.4		75.4	75.4	
Actuated g/C Ratio		0.08		0.29	0.27	0.27	0.63	0.63		0.63	0.63	
Clearance Time (s)		6.0		4.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		2.0		3.0	2.0	2.0	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		102		295	372	420	236	1443		193	1525	
v/s Ratio Prot				c0.11	0.07			c0.40			0.33	
v/s Ratio Perm		0.04		c0.10		0.01	0.05			0.21		
v/c Ratio		0.52		0.73	0.25	0.04	0.07	0.63		0.33	0.52	
Uniform Delay, d1		52.7		37.9	34.1	32.2	8.7	13.7		10.5	12.3	
Progression Factor		1.00		1.00	1.00	1.00	0.83	0.88		0.70	0.69	
Incremental Delay, d2		1.8		8.6	0.1	0.0	0.5	1.9		2.3	0.6	
Delay (s)		54.5		46.4	34.2	32.2	7.8	14.0		9.7	9.2	
Level of Service		D		D	C	C	A	B		A	A	
Approach Delay (s)		54.5			40.9			13.9			9.2	
Approach LOS		D			D			B			A	

Intersection Summary

HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2839: Quebec St & E 13th Ave

Reconfigure Quebec - 2 Lanes PM Peak

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↕		↘	↕			↕	↘
Volume (vph)	0	0	0	53	371	10	83	595	0	0	769	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900	1300	1400	1900	1900	1400	1900
Lane Width	12	12	12	12	10	12	10	10	12	12	10	12
Total Lost time (s)				6.0	6.0		6.0	6.0			6.0	6.0
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frt				1.00	1.00		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	3117		1130	1281			1281	1583
Flt Permitted				0.95	1.00		0.27	1.00			1.00	1.00
Satd. Flow (perm)				1770	3117		316	1281			1281	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	59	412	11	92	661	0	0	854	46
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	7
Lane Group Flow (vph)	0	0	0	59	421	0	92	661	0	0	854	39
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					4			6			2	
Permitted Phases				4			6					2
Actuated Green, G (s)				17.7	17.7		90.3	90.3			90.3	90.3
Effective Green, g (s)				17.7	17.7		90.3	90.3			90.3	90.3
Actuated g/C Ratio				0.15	0.15		0.75	0.75			0.75	0.75
Clearance Time (s)				6.0	6.0		6.0	6.0			6.0	6.0
Vehicle Extension (s)				2.0	2.0		0.2	0.2			0.2	0.2
Lane Grp Cap (vph)				261	459		237	963			963	1191
v/s Ratio Prot					c0.14			0.52			c0.67	
v/s Ratio Perm				0.03			0.29					0.02
v/c Ratio				0.23	0.92		0.39	0.69			0.89	0.03
Uniform Delay, d1				45.1	50.4		5.2	7.6			11.0	3.8
Progression Factor				1.00	1.00		0.33	0.85			0.74	1.34
Incremental Delay, d2				0.2	22.7		4.0	3.3			8.3	0.0
Delay (s)				45.3	73.2		5.7	9.8			16.4	5.1
Level of Service				D	E		A	A			B	A
Approach Delay (s)		0.0			69.8			9.3			15.8	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2840: Quebec St & E 14th Ave

Reconfigure Quebec - 2 Lanes PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↗	↗					↖		↖	↖	
Volume (vph)	20	512	144	0	0	0	0	533	67	10	709	0
Ideal Flow (vphpl)	1900	1700	1900	1900	1900	1900	1900	1400	1900	1900	1400	1900
Lane Width	12	10	12	12	12	12	12	10	12	12	10	12
Total Lost time (s)		6.0	6.0					6.0		6.0	6.0	
Lane Util. Factor		0.95	1.00					1.00		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		1.00	0.85					0.98		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		2950	1583					1259		1765	1281	
Flt Permitted		1.00	1.00					1.00		0.36	1.00	
Satd. Flow (perm)		2950	1583					1259		665	1281	
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)	21	533	150	0	0	0	0	555	70	10	739	0
RTOR Reduction (vph)	0	0	109	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	554	41	0	0	0	0	621	0	10	739	0
Confl. Peds. (#/hr)									5	5		
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		4						6			2	
Permitted Phases	4		4							2		
Actuated Green, G (s)		24.8	24.8					83.2		83.2	83.2	
Effective Green, g (s)		24.8	24.8					83.2		83.2	83.2	
Actuated g/C Ratio		0.21	0.21					0.69		0.69	0.69	
Clearance Time (s)		6.0	6.0					6.0		6.0	6.0	
Vehicle Extension (s)		2.0	2.0					0.2		0.2	0.2	
Lane Grp Cap (vph)		609	327					872		461	888	
v/s Ratio Prot								0.49			c0.58	
v/s Ratio Perm		0.19	0.03							0.02		
v/c Ratio		0.91	0.12					0.71		0.02	0.83	
Uniform Delay, d1		46.5	38.8					11.2		5.7	13.3	
Progression Factor		1.00	1.00					0.13		0.41	1.23	
Incremental Delay, d2		17.2	0.1					3.6		0.1	7.8	
Delay (s)		63.7	38.8					5.0		2.4	24.2	
Level of Service		E	D					A		A	C	
Approach Delay (s)		58.4			0.0			5.0			24.0	
Approach LOS		E			A			A			C	

Intersection Summary

HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

Reconfigure Quebec - 2 Lanes PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		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	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1130	2578		1770	1361		1127	2600		1128	2584	
Flt Permitted	0.40	1.00		0.43	1.00		0.28	1.00		0.39	1.00	
Satd. Flow (perm)	474	2578		796	1361		331	2600		462	2584	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	51	480	39	11	356	21	21	636	11	40	817	45
RTOR Reduction (vph)	0	10	0	0	3	0	0	2	0	0	6	0
Lane Group Flow (vph)	51	509	0	11	374	0	21	645	0	40	856	0
Confl. Peds. (#/hr)							5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	18.9	18.9		18.9	18.9		29.1	29.1		29.1	29.1	
Effective Green, g (s)	18.9	18.9		18.9	18.9		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.49	0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	149	812		250	428		160	1261		224	1253	
v/s Ratio Prot		0.20			c0.27			0.25			c0.33	
v/s Ratio Perm	0.11			0.01			0.06			0.09		
v/c Ratio	0.34	0.63		0.04	0.87		0.13	0.51		0.18	0.68	
Uniform Delay, d1	15.8	17.5		14.3	19.4		8.5	10.6		8.7	11.9	
Progression Factor	1.00	1.00		1.00	1.00		0.75	0.59		0.22	0.30	
Incremental Delay, d2	0.5	1.1		0.0	17.0		1.3	1.2		1.6	2.8	
Delay (s)	16.3	18.6		14.3	36.5		7.7	7.4		3.5	6.3	
Level of Service	B	B		B	D		A	A		A	A	
Approach Delay (s)		18.4			35.8			7.4			6.2	
Approach LOS		B			D			A			A	

Intersection Summary

HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2843: Quebec St & E 23rd Ave/E 23rd Ave

Reconfigure Quebec - 2 Lanes PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	135	16	10	90	32	12	862	10	51	1047	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1753	1829		1760	1780		1767	1859		1767	3496	
Flt Permitted	0.68	1.00		0.66	1.00		0.21	1.00		0.21	1.00	
Satd. Flow (perm)	1247	1829		1217	1780		399	1859		389	3496	
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)	84	141	17	10	94	33	12	898	10	53	1091	81
RTOR Reduction (vph)	0	8	0	0	25	0	0	0	0	0	6	0
Lane Group Flow (vph)	84	150	0	10	102	0	12	908	0	53	1166	0
Confl. Peds. (#/hr)	11		7	7		11	5		6	6		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	9.1	9.1		9.1	9.1		39.9	39.9		39.9	39.9	
Effective Green, g (s)	9.1	9.1		9.1	9.1		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.66	0.66		0.66	0.66	
Clearance Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	189	277		184	269		265	1236		258	2324	
v/s Ratio Prot		c0.08			0.06			c0.49			0.33	
v/s Ratio Perm	0.07			0.01			0.03			0.14		
v/c Ratio	0.44	0.54		0.05	0.38		0.05	0.73		0.21	0.50	
Uniform Delay, d1	23.2	23.5		21.8	22.9		3.5	6.6		3.9	5.1	
Progression Factor	1.00	1.00		1.00	1.00		0.41	0.70		0.35	0.36	
Incremental Delay, d2	0.6	1.0		0.0	0.3		0.3	3.4		1.6	0.7	
Delay (s)	23.8	24.5		21.8	23.2		1.7	8.1		2.9	2.5	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		24.3			23.1			8.0			2.5	
Approach LOS		C			C			A			A	

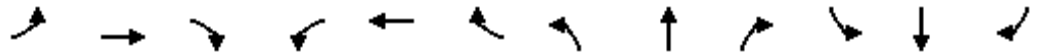
Intersection Summary

HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2844: Quebec St & E 26th Ave

Reconfigure Quebec - 2 Lanes PM Peak

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	49	10	71	103	39	11	629	14	33	1153	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	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	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	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	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1753	1809		1760	1863	1583	1767	3525		1764	3513	
Flt Permitted	0.69	1.00		0.72	1.00	1.00	0.18	1.00		0.39	1.00	
Satd. Flow (perm)	1265	1809		1325	1863	1583	343	3525		722	3513	
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)	82	53	11	76	111	42	12	676	15	35	1240	53
RTOR Reduction (vph)	0	10	0	0	0	37	0	2	0	0	4	0
Lane Group Flow (vph)	82	54	0	76	111	5	12	689	0	35	1289	0
Confl. Peds. (#/hr)	13		7	7			5		5	5		5
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	7.1	7.1		7.1	7.1	7.1	40.9	40.9		40.9	40.9	
Effective Green, g (s)	7.1	7.1		7.1	7.1	7.1	40.9	40.9		40.9	40.9	
Actuated g/C Ratio	0.12	0.12		0.12	0.12	0.12	0.68	0.68		0.68	0.68	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	149	214		156	220	187	233	2402		492	2394	
v/s Ratio Prot		0.03			0.06			0.20			c0.37	
v/s Ratio Perm	c0.06			0.06		0.00	0.03			0.05		
v/c Ratio	0.55	0.25		0.49	0.50	0.03	0.05	0.29		0.07	0.54	
Uniform Delay, d1	24.9	24.0		24.7	24.8	23.4	3.2	3.8		3.2	4.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.36	0.34		1.00	1.00	
Incremental Delay, d2	2.5	0.2		0.9	0.7	0.0	0.3	0.2		0.3	0.9	
Delay (s)	27.4	24.3		25.6	25.5	23.4	1.5	1.5		3.5	5.7	
Level of Service	C	C		C	C	C	A	A		A	A	
Approach Delay (s)		26.0			25.1			1.5			5.6	
Approach LOS		C			C			A			A	

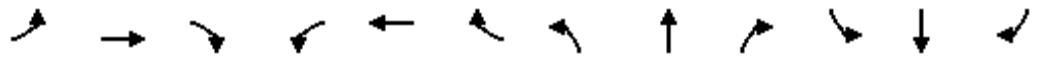
Intersection Summary

HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 1704: Quebec St & E 6th Ave

Reconfigure Quebec- 4 Lanes

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	271	332	48	175	28	257	849	57	32	984	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	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	0.99		1.00	0.99	
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)	1756	1863	1553	1763	1863	1548	1770	3500		1767	3500	
Flt Permitted	0.55	1.00	1.00	0.33	1.00	1.00	0.13	1.00		0.23	1.00	
Satd. Flow (perm)	1009	1863	1553	604	1863	1548	248	3500		433	3500	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	117	304	373	54	197	31	289	954	64	36	1106	78
RTOR Reduction (vph)	0	0	242	0	0	24	0	5	0	0	5	0
Lane Group Flow (vph)	117	304	131	54	197	7	289	1013	0	36	1179	0
Confl. Peds. (#/hr)	10		7	7		10	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	19.3	19.3	19.3	19.3	19.3	19.3	57.7	57.7		38.7	38.7	
Effective Green, g (s)	19.3	19.3	19.3	19.3	19.3	19.3	57.7	57.7		38.7	38.7	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.64	0.64		0.43	0.43	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.2		0.2	0.2	
Lane Grp Cap (vph)	216	399	333	129	399	331	361	2243		186	1505	
v/s Ratio Prot		c0.16			0.11		c0.11	0.29			0.34	
v/s Ratio Perm	0.12		0.08	0.09		0.00	c0.41			0.08		
v/c Ratio	0.54	0.76	0.39	0.42	0.49	0.02	0.80	0.45		0.19	0.78	
Uniform Delay, d1	31.4	33.2	30.3	30.5	31.1	27.9	24.5	8.2		15.9	22.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.38	0.50	
Incremental Delay, d2	1.5	7.6	0.3	0.8	0.4	0.0	11.4	0.7		1.7	3.0	
Delay (s)	32.9	40.7	30.6	31.3	31.4	27.9	35.9	8.8		7.7	14.2	
Level of Service	C	D	C	C	C	C	D	A		A	B	
Approach Delay (s)		34.8			31.0			14.8			14.0	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 1740: Quebec St & E 8th Ave

Reconfigure Quebec- 4 Lanes

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	102	186	40	54	10	97	904	18	10	931	95
Ideal Flow (vphpl)	1300	1600	1900	1300	1600	1900	1300	1600	1900	1300	1600	1900
Lane Width	10	10	12	10	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		4.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1130	1464	1554	1124	1429		1130	2772		1128	2743	
Flt Permitted	0.71	1.00	1.00	0.68	1.00		0.17	1.00		0.23	1.00	
Satd. Flow (perm)	842	1464	1554	804	1429		208	2772		275	2743	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	92	120	219	47	64	12	114	1064	21	12	1095	112
RTOR Reduction (vph)	0	0	165	0	8	0	0	1	0	0	7	0
Lane Group Flow (vph)	92	120	54	47	68	0	114	1084	0	12	1200	0
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4			6			2		
Actuated Green, G (s)	14.5	14.5	14.5	14.5	14.5		65.5	63.5		52.3	52.3	
Effective Green, g (s)	14.5	14.5	14.5	14.5	14.5		65.5	63.5		52.3	52.3	
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.73	0.71		0.58	0.58	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	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)	135	235	250	129	230		225	1955		159	1593	
v/s Ratio Prot		0.08			0.05		0.04	c0.39			c0.44	
v/s Ratio Perm	c0.11		0.03	0.06			0.33			0.04		
v/c Ratio	0.68	0.51	0.21	0.36	0.29		0.51	0.55		0.08	0.75	
Uniform Delay, d1	35.6	34.5	32.8	33.6	33.2		14.4	6.4		8.3	14.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.08	0.91		0.84	1.05	
Incremental Delay, d2	13.3	1.9	0.4	1.7	0.7		1.7	1.1		0.7	2.6	
Delay (s)	48.8	36.4	33.2	35.4	34.0		17.2	6.9		7.7	17.4	
Level of Service	D	D	C	D	C		B	A		A	B	
Approach Delay (s)		37.4			34.5			7.9			17.3	
Approach LOS		D			C			A			B	

Intersection Summary

HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2219: Quebec St & E Colfax Ave

Reconfigure Quebec- 4 Lanes
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↗	↖	↖	↗↗	↖	↖	↗↗		↖	↗↗	
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1300	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	12	10	11	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
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)	1583	3539	1546	1579	3539	1497	1128	2494		1130	2482	
Flt Permitted	0.12	1.00	1.00	0.26	1.00	1.00	0.39	1.00		0.25	1.00	
Satd. Flow (perm)	206	3539	1546	438	3539	1497	460	2494		303	2482	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	89	962	46	56	1004	127	39	519	36	122	630	65
RTOR Reduction (vph)	0	0	24	0	0	78	0	6	0	0	10	0
Lane Group Flow (vph)	89	962	22	56	1004	49	39	549	0	122	685	0
Confl. Peds. (#/hr)	34		9	9		34	5		5	5		5
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	43.0	43.0	43.0	34.6	34.6	34.6	24.0	24.0		35.0	35.0	
Effective Green, g (s)	43.0	43.0	43.0	34.6	34.6	34.6	24.0	24.0		35.0	35.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.38	0.38	0.38	0.27	0.27		0.39	0.39	
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)	2.0	0.2	0.2	0.2	0.2	0.2	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	135	1690	738	168	1360	575	122	665		163	965	
v/s Ratio Prot	0.02	c0.27			c0.28			c0.22		0.04	c0.28	
v/s Ratio Perm	0.30		0.01	0.13		0.03	0.08			0.25		
v/c Ratio	0.66	0.57	0.03	0.33	0.74	0.08	0.32	0.83		0.75	0.71	
Uniform Delay, d1	18.8	16.9	12.4	19.6	23.8	17.6	26.5	31.0		22.7	23.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.08		0.33	0.34	
Incremental Delay, d2	8.6	1.4	0.1	5.3	3.6	0.3	0.5	7.1		10.7	1.4	
Delay (s)	27.3	18.3	12.5	24.8	27.4	17.9	28.0	40.7		18.1	9.3	
Level of Service	C	B	B	C	C	B	C	D		B	A	
Approach Delay (s)		18.8			26.3			39.9			10.6	
Approach LOS		B			C			D			B	

Intersection Summary		
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.83	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 24.0
Intersection Capacity Utilization	84.7%	ICU Level of Service E
Analysis Period (min)	15	
Description: Denver		
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

Reconfigure Quebec- 4 Lanes
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	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	1.00		1.00	0.99	
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)	1198	1569	1052	1201	1569	1047	1208	2972		1211	3315	
Flt Permitted	0.33	1.00	1.00	0.32	1.00	1.00	0.26	1.00		0.35	1.00	
Satd. Flow (perm)	422	1569	1052	408	1569	1047	332	2972		450	3315	
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)	47	410	11	20	402	129	11	651	12	184	823	57
RTOR Reduction (vph)	0	0	8	0	0	92	0	2	0	0	8	0
Lane Group Flow (vph)	47	410	3	20	402	37	11	661	0	184	872	0
Confl. Peds. (#/hr)	21		16	16		21	5					5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	17.3	17.3	17.3	17.3	17.3	17.3	21.7	21.7		30.7	30.7	
Effective Green, g (s)	17.3	17.3	17.3	17.3	17.3	17.3	21.7	21.7		30.7	30.7	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.36	0.36		0.51	0.51	
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	
Lane Grp Cap (vph)	121	452	303	117	452	301	120	1074		268	1696	
v/s Ratio Prot		c0.26			0.26			0.22		0.03	c0.26	
v/s Ratio Perm	0.11		0.00	0.05		0.04	0.03			c0.32		
v/c Ratio	0.39	0.91	0.01	0.17	0.89	0.12	0.09	0.62		0.69	0.51	
Uniform Delay, d1	17.1	20.6	15.2	16.0	20.4	15.8	12.6	15.7		13.8	9.7	
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	0.8	21.2	0.0	0.3	18.3	0.1	1.5	2.6		5.7	1.1	
Delay (s)	17.9	41.7	15.2	16.2	38.8	15.8	14.2	18.4		19.5	10.8	
Level of Service	B	D	B	B	D	B	B	B		B	B	
Approach Delay (s)		38.7			32.6			18.3			12.3	
Approach LOS		D			C			B			B	

Intersection Summary

HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2838: Quebec St & E 11th Ave

Reconfigure Quebec- 4 Lanes
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↑	↗	↖	↕		↖	↗	
Volume (vph)	10	37	10	205	88	62	16	631	274	61	749	10
Ideal Flow (vphpl)	1900	1500	1900	1300	1500	1900	1300	1400	1300	1300	1400	1900
Lane Width	12	10	12	10	10	12	10	10	10	10	10	12
Total Lost time (s)		6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98		1.00	1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1322		1124	1373	1555	1130	2323		1130	2429	
Flt Permitted		0.95		0.71	1.00	1.00	0.27	1.00		0.21	1.00	
Satd. Flow (perm)		1270		844	1373	1555	322	2323		247	2429	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	43	12	238	102	72	19	734	319	71	871	12
RTOR Reduction (vph)	0	8	0	0	0	50	0	49	0	0	1	0
Lane Group Flow (vph)	0	59	0	238	102	22	19	1004	0	71	882	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6				2
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		28.1		28.1	28.1	28.1	49.9	49.9		49.9	49.9	
Effective Green, g (s)		28.1		28.1	28.1	28.1	49.9	49.9		49.9	49.9	
Actuated g/C Ratio		0.31		0.31	0.31	0.31	0.55	0.55		0.55	0.55	
Clearance Time (s)		6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		2.0		2.0	2.0	2.0	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		396		263	428	485	178	1287		136	1346	
v/s Ratio Prot					0.07			c0.43				0.36
v/s Ratio Perm		0.05		c0.28		0.01	0.06			0.29		
v/c Ratio		0.15		0.90	0.24	0.05	0.11	0.78		0.52	0.66	
Uniform Delay, d1		22.3		29.7	23.0	21.6	9.5	15.7		12.6	14.0	
Progression Factor		1.00		1.00	1.00	1.00	0.35	0.44		0.27	0.22	
Incremental Delay, d2		0.1		31.0	0.1	0.0	1.0	4.0		10.7	2.0	
Delay (s)		22.4		60.7	23.1	21.6	4.3	10.9		14.1	5.1	
Level of Service		C		E	C	C	A	B		B	A	
Approach Delay (s)		22.4			44.5			10.8			5.7	
Approach LOS		C			D			B			A	

Intersection Summary

HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2839: Quebec St & E 13th Ave

Reconfigure Quebec- 4 Lanes
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↕			↕			↕	
Volume (vph)	0	0	0	53	371	10	83	595	0	0	769	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900	1300	1400	1900	1900	1400	1900
Lane Width	12	10	12	12	10	12	10	10	12	12	10	12
Total Lost time (s)				6.0	6.0			6.0			6.0	
Lane Util. Factor				1.00	0.95			0.95			0.95	
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			1.00			0.99	
Flt Protected				0.95	1.00			0.99			1.00	
Satd. Flow (prot)				1770	3115			2419			2416	
Flt Permitted				0.95	1.00			0.67			1.00	
Satd. Flow (perm)				1770	3115			1636			2416	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	62	436	12	98	700	0	0	905	48
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	0	0	62	446	0	0	798	0	0	949	0
Confl. Peds. (#/hr)						5						
Turn Type				Perm	NA		pm+pt	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4			6					
Actuated Green, G (s)				16.1	16.1			61.9			53.9	
Effective Green, g (s)				16.1	16.1			61.9			53.9	
Actuated g/C Ratio				0.18	0.18			0.69			0.60	
Clearance Time (s)				6.0	6.0			6.0			6.0	
Vehicle Extension (s)				2.0	2.0			0.2			0.2	
Lane Grp Cap (vph)				316	557			1142			1446	
v/s Ratio Prot					c0.14			c0.02			0.39	
v/s Ratio Perm				0.04				c0.46				
v/c Ratio				0.20	0.80			0.70			0.66	
Uniform Delay, d1				31.4	35.4			8.4			11.9	
Progression Factor				1.00	1.00			0.24			0.18	
Incremental Delay, d2				0.1	7.4			2.4			2.0	
Delay (s)				31.6	42.8			4.5			4.1	
Level of Service				C	D			A			A	
Approach Delay (s)		0.0			41.4			4.5			4.1	
Approach LOS		A			D			A			A	

Intersection Summary

HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2840: Quebec St & E 14th Ave

Reconfigure Quebec- 4 Lanes
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗					↕↕			↕↕	
Volume (vph)	20	512	144	0	0	0	0	533	67	10	709	0
Ideal Flow (vphpl)	1900	1700	1900	1900	1900	1900	1900	1400	1900	1900	1400	1900
Lane Width	12	10	12	12	12	12	12	10	12	12	10	12
Total Lost time (s)		6.0	6.0					6.0			6.0	
Lane Util. Factor		0.95	1.00					0.95			0.95	
Frbp, ped/bikes		1.00	1.00					1.00			1.00	
Flpb, ped/bikes		1.00	1.00					1.00			1.00	
Frt		1.00	0.85					0.98			1.00	
Flt Protected		1.00	1.00					1.00			1.00	
Satd. Flow (prot)		2949	1583					2393			2432	
Flt Permitted		1.00	1.00					1.00			0.94	
Satd. Flow (perm)		2949	1583					2393			2299	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	23	589	166	0	0	0	0	613	77	11	815	0
RTOR Reduction (vph)	0	0	115	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	612	51	0	0	0	0	681	0	0	826	0
Confl. Peds. (#/hr)	5											5
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		4						6			2	
Permitted Phases	4		4							2		
Actuated Green, G (s)		23.0	23.0					55.0			55.0	
Effective Green, g (s)		23.0	23.0					55.0			55.0	
Actuated g/C Ratio		0.26	0.26					0.61			0.61	
Clearance Time (s)		6.0	6.0					6.0			6.0	
Vehicle Extension (s)		2.0	2.0					0.2			0.2	
Lane Grp Cap (vph)		753	404					1462			1404	
v/s Ratio Prot								0.28				
v/s Ratio Perm		0.21	0.03								c0.36	
v/c Ratio		0.81	0.13					0.47			0.59	
Uniform Delay, d1		31.5	25.8					9.5			10.6	
Progression Factor		1.00	1.00					0.84			0.28	
Incremental Delay, d2		6.3	0.1					0.8			1.6	
Delay (s)		37.8	25.8					8.7			4.6	
Level of Service		D	C					A			A	
Approach Delay (s)		35.3			0.0			8.7			4.6	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

Reconfigure Quebec- 4 Lanes
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		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	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1014	2320		1593	1223		1014	2340		1014	2325	
Flt Permitted	0.36	1.00		0.39	1.00		0.26	1.00		0.36	1.00	
Satd. Flow (perm)	389	2320		649	1223		277	2340		387	2325	
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)	52	490	40	11	364	22	22	650	11	41	835	46
RTOR Reduction (vph)	0	7	0	0	3	0	0	1	0	0	4	0
Lane Group Flow (vph)	52	523	0	11	383	0	22	660	0	41	877	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	31.5	31.5		31.5	31.5		46.5	46.5		46.5	46.5	
Effective Green, g (s)	31.5	31.5		31.5	31.5		46.5	46.5		46.5	46.5	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	136	812		227	428		143	1209		199	1201	
v/s Ratio Prot		0.23			c0.31			0.28			c0.38	
v/s Ratio Perm	0.13			0.02			0.08			0.11		
v/c Ratio	0.38	0.64		0.05	0.90		0.15	0.55		0.21	0.73	
Uniform Delay, d1	21.9	24.5		19.3	27.7		11.4	14.6		11.8	16.9	
Progression Factor	1.00	1.00		1.00	1.00		0.35	0.40		1.00	1.00	
Incremental Delay, d2	0.7	1.3		0.0	20.3		1.9	1.5		2.3	3.9	
Delay (s)	22.6	25.9		19.4	47.9		5.8	7.4		14.1	20.8	
Level of Service	C	C		B	D		A	A		B	C	
Approach Delay (s)		25.6			47.2			7.3			20.5	
Approach LOS		C			D			A			C	

Intersection Summary

HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2843: Quebec St & E 23rd Ave/E 23rd Ave

Reconfigure Quebec- 4 Lanes
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	135	16	10	90	32	12	862	10	51	1047	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1755	1830		1760	1778		1767	3532		1764	3494	
Flt Permitted	0.59	1.00		0.48	1.00		0.19	1.00		0.27	1.00	
Satd. Flow (perm)	1084	1830		893	1778		348	3532		501	3494	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	93	155	18	11	103	37	14	991	11	59	1203	90
RTOR Reduction (vph)	0	5	0	0	16	0	0	1	0	0	4	0
Lane Group Flow (vph)	93	168	0	11	124	0	14	1001	0	59	1289	0
Confl. Peds. (#/hr)	7		5	5		7	5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	12.6	12.6		12.6	12.6		66.4	66.4		66.4	66.4	
Effective Green, g (s)	12.6	12.6		12.6	12.6		66.4	66.4		66.4	66.4	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.74	0.74		0.74	0.74	
Clearance Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	151	256		125	248		256	2605		369	2577	
v/s Ratio Prot		c0.09			0.07			0.28			c0.37	
v/s Ratio Perm	0.09			0.01			0.04			0.12		
v/c Ratio	0.62	0.66		0.09	0.50		0.05	0.38		0.16	0.50	
Uniform Delay, d1	36.4	36.6		33.7	35.8		3.2	4.3		3.5	4.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.90	0.82	
Incremental Delay, d2	5.2	4.6		0.1	0.6		0.4	0.4		0.8	0.6	
Delay (s)	41.6	41.2		33.8	36.4		3.6	4.8		4.0	4.6	
Level of Service	D	D		C	D		A	A		A	A	
Approach Delay (s)		41.3			36.2			4.7			4.6	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2844: Quebec St & E 26th Ave

Reconfigure Quebec- 4 Lanes
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↕		↖	↗	
Volume (vph)	76	49	10	71	103	39	11	629	14	33	1153	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	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	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	1.00	1.00		0.99	1.00	
Frft	1.00	0.97		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1757	1809		1760	1863	1583	1770	3525		1761	3518	
Flt Permitted	0.68	1.00		0.72	1.00	1.00	0.18	1.00		0.39	1.00	
Satd. Flow (perm)	1266	1809		1325	1863	1583	342	3525		714	3518	
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)	83	53	11	77	112	42	12	684	15	36	1253	53
RTOR Reduction (vph)	0	10	0	0	0	37	0	1	0	0	2	0
Lane Group Flow (vph)	83	54	0	77	112	5	12	698	0	36	1304	0
Confl. Peds. (#/hr)	7		5	5					5	5		
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	11.7	11.7		11.7	11.7	11.7	66.3	66.3		66.3	66.3	
Effective Green, g (s)	11.7	11.7		11.7	11.7	11.7	66.3	66.3		66.3	66.3	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.13	0.74	0.74		0.74	0.74	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	164	235		172	242	205	251	2596		525	2591	
v/s Ratio Prot		0.03			0.06			0.20			c0.37	
v/s Ratio Perm	c0.07			0.06		0.00	0.04			0.05		
v/c Ratio	0.51	0.23		0.45	0.46	0.03	0.05	0.27		0.07	0.50	
Uniform Delay, d1	36.5	35.1		36.2	36.2	34.2	3.2	3.9		3.3	5.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.95	0.90		1.00	1.00	
Incremental Delay, d2	0.9	0.2		0.7	0.5	0.0	0.3	0.2		0.3	0.7	
Delay (s)	37.4	35.3		36.8	36.8	34.2	3.4	3.7		3.5	5.7	
Level of Service	D	D		D	D	C	A	A		A	A	
Approach Delay (s)		36.5			36.3			3.7			5.6	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Syracuse & E 26th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕				
Volume (vph)	62	49	0	0	123	27	7	385	9	0	0	0
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				
Lane Util. Factor		1.00			1.00			0.95				
Frt		1.00			0.98			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1812			1818			3524				
Flt Permitted		0.74			1.00			1.00				
Satd. Flow (perm)		1376			1818			3524				
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)	67	53	0	0	134	29	8	418	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	120	0	0	139	0	0	433	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		7.5			7.5			24.5				
Effective Green, g (s)		7.5			7.5			24.5				
Actuated g/C Ratio		0.19			0.19			0.61				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		258			340			2158				
v/s Ratio Prot					0.08							
v/s Ratio Perm		c0.09						0.12				
v/c Ratio		0.47			0.41			0.20				
Uniform Delay, d1		14.5			14.3			3.4				
Progression Factor		1.01			1.00			1.00				
Incremental Delay, d2		1.3			0.8			0.2				
Delay (s)		15.9			15.1			3.6				
Level of Service		B			B			A				
Approach Delay (s)		15.9			15.1			3.6			0.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: Syracuse & E 17th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (vph)	27	256	21	6	206	12	4	116	2	14	278	15
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	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.99			0.99		1.00	1.00			0.99	
Flt Protected		1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1837			1847		1770	1858			1847	
Flt Permitted		0.96			0.99		0.59	1.00			0.99	
Satd. Flow (perm)		1766			1826		1102	1858			1830	
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)	29	278	23	7	224	13	4	126	2	15	302	16
RTOR Reduction (vph)	0	8	0	0	6	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	322	0	0	238	0	4	127	0	0	329	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.1			12.1		19.9	19.9			19.9	
Effective Green, g (s)		12.1			12.1		19.9	19.9			19.9	
Actuated g/C Ratio		0.30			0.30		0.50	0.50			0.50	
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)		534			552		548	924			910	
v/s Ratio Prot								0.07				
v/s Ratio Perm		c0.18			0.13		0.00				c0.18	
v/c Ratio		0.60			0.43		0.01	0.14			0.36	
Uniform Delay, d1		11.9			11.2		5.1	5.4			6.2	
Progression Factor		0.97			1.00		0.81	0.75			0.23	
Incremental Delay, d2		0.2			0.5		0.0	0.3			1.0	
Delay (s)		11.7			11.7		4.1	4.4			2.4	
Level of Service		B			B		A	A			A	
Approach Delay (s)		11.7			11.7			4.3			2.4	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: Syracuse & E 14th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↑	↗		↕	
Volume (vph)	8	213	60	0	0	0	0	79	10	3	201	0
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	
Lane Util. Factor		0.95						1.00	1.00		1.00	
Frt		0.97						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		3421						1863	1583		1861	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		3421						1863	1583		1859	
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)	9	232	65	0	0	0	0	86	11	3	218	0
RTOR Reduction (vph)	0	52	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	254	0	0	0	0	0	86	7	0	221	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4								2	6		
Actuated Green, G (s)		8.2						23.8	23.8		23.8	
Effective Green, g (s)		8.2						23.8	23.8		23.8	
Actuated g/C Ratio		0.20						0.60	0.60		0.60	
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)		701						1108	941		1106	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.07							0.00		c0.12	
v/c Ratio		0.36						0.08	0.01		0.20	
Uniform Delay, d1		13.7						3.4	3.3		3.7	
Progression Factor		0.76						0.58	0.56		0.37	
Incremental Delay, d2		0.1						0.1	0.0		0.4	
Delay (s)		10.5						2.1	1.8		1.8	
Level of Service		B						A	A		A	
Approach Delay (s)		10.5			0.0			2.1			1.8	
Approach LOS		B			A			A			A	

Intersection Summary

HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
7: Syracuse & E 13th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↑			↕	
Volume (vph)	0	0	0	40	279	8	12	86	0	0	194	10
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	
Lane Util. Factor					0.95		1.00	1.00			1.00	
Frt					1.00		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3505		1770	1863			1850	
Flt Permitted					0.99		0.62	1.00			1.00	
Satd. Flow (perm)					3505		1154	1863			1850	
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	43	303	9	13	93	0	0	211	11
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	0	349	0	13	93	0	0	219	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8			2					
Actuated Green, G (s)					9.2		22.8	22.8			22.8	
Effective Green, g (s)					9.2		22.8	22.8			22.8	
Actuated g/C Ratio					0.23		0.57	0.57			0.57	
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)					806		657	1061			1054	
v/s Ratio Prot								0.05			c0.12	
v/s Ratio Perm					0.10		0.01					
v/c Ratio					0.43		0.02	0.09			0.21	
Uniform Delay, d1					13.2		3.7	3.9			4.2	
Progression Factor					1.00		1.00	1.00			0.94	
Incremental Delay, d2					0.4		0.1	0.2			0.4	
Delay (s)					13.5		3.8	4.1			4.4	
Level of Service					B		A	A			A	
Approach Delay (s)		0.0			13.5			4.0			4.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
10: Syracuse & E 11th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕		↖	↗	
Volume (vph)	32	117	32	155	66	47	0	18	8	18	219	3
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	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94			0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	1802		1770	1747			1785		1770	1859	
Flt Permitted	0.68	1.00		0.65	1.00			1.00		0.74	1.00	
Satd. Flow (perm)	1263	1802		1219	1747			1785		1375	1859	
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)	35	127	35	168	72	51	0	20	9	20	238	3
RTOR Reduction (vph)	0	26	0	0	38	0	0	4	0	0	1	0
Lane Group Flow (vph)	35	136	0	168	85	0	0	25	0	20	240	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.8	8.8		8.8	8.8			19.1		19.1	19.1	
Effective Green, g (s)	8.8	8.8		8.8	8.8			19.1		19.1	19.1	
Actuated g/C Ratio	0.25	0.25		0.25	0.25			0.53		0.53	0.53	
Clearance Time (s)	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	
Lane Grp Cap (vph)	309	441		298	428			949		731	989	
v/s Ratio Prot		0.08			0.05			0.01			c0.13	
v/s Ratio Perm	0.03			c0.14						0.01		
v/c Ratio	0.11	0.31		0.56	0.20			0.03		0.03	0.24	
Uniform Delay, d1	10.5	11.1		11.9	10.7			4.0		4.0	4.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		2.4	0.2			0.1		0.1	0.6	
Delay (s)	10.7	11.5		14.3	11.0			4.0		4.1	5.1	
Level of Service	B	B		B	B			A		A	A	
Approach Delay (s)		11.3			12.9			4.0			5.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 11: Syracuse & E Colfax Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗		↖	↗	
Volume (vph)	64	697	33	38	686	87	5	66	5	42	218	22
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	0.99		1.00	0.99	
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)	1770	3539	1583	1770	3539	1583	1770	1845		1770	1837	
Flt Permitted	0.29	1.00	1.00	0.29	1.00	1.00	0.60	1.00		0.71	1.00	
Satd. Flow (perm)	544	3539	1583	544	3539	1583	1114	1845		1317	1837	
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)	70	758	36	41	746	95	5	72	5	46	237	24
RTOR Reduction (vph)	0	0	24	0	0	62	0	3	0	0	8	0
Lane Group Flow (vph)	70	758	12	41	746	33	5	74	0	46	253	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	13.7	13.7	13.7	13.7	13.7	13.7	18.3	18.3		18.3	18.3	
Effective Green, g (s)	13.7	13.7	13.7	13.7	13.7	13.7	18.3	18.3		18.3	18.3	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.46	0.46		0.46	0.46	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	186	1212	542	186	1212	542	509	844		602	840	
v/s Ratio Prot		c0.21			0.21			0.04			c0.14	
v/s Ratio Perm	0.13		0.01	0.08		0.02	0.00			0.03		
v/c Ratio	0.38	0.63	0.02	0.22	0.62	0.06	0.01	0.09		0.08	0.30	
Uniform Delay, d1	9.9	11.0	8.7	9.4	11.0	8.8	5.9	6.1		6.1	6.8	
Progression Factor	0.75	0.84	0.60	1.00	1.00	1.00	1.04	0.92		0.61	0.80	
Incremental Delay, d2	0.9	0.7	0.0	0.6	0.9	0.0	0.0	0.2		0.2	0.9	
Delay (s)	8.3	10.0	5.2	10.0	11.9	8.9	6.2	5.8		4.0	6.3	
Level of Service	A	A	A	A	B	A	A	A		A	A	
Approach Delay (s)		9.6			11.5			5.9			6.0	
Approach LOS		A			B			A			A	

Intersection Summary		
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.44	A
Actuated Cycle Length (s)	40.0	Sum of lost time (s)
Intersection Capacity Utilization	45.4%	8.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		A

HCM Signalized Intersection Capacity Analysis
12: Syracuse & Montview Blvd

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	323	8	13	258	83	2	112	2	89	398	28
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	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1856		1770	1863	1583	1770	1858		1770	1863	1583
Flt Permitted	0.54	1.00		0.42	1.00	1.00	0.45	1.00		0.68	1.00	1.00
Satd. Flow (perm)	999	1856		779	1863	1583	832	1858		1262	1863	1583
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)	40	351	9	14	280	90	2	122	2	97	433	30
RTOR Reduction (vph)	0	3	0	0	0	62	0	1	0	0	0	15
Lane Group Flow (vph)	40	357	0	14	280	28	2	123	0	97	433	15
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	12.4	12.4		12.4	12.4	12.4	19.6	19.6		19.6	19.6	19.6
Effective Green, g (s)	12.4	12.4		12.4	12.4	12.4	19.6	19.6		19.6	19.6	19.6
Actuated g/C Ratio	0.31	0.31		0.31	0.31	0.31	0.49	0.49		0.49	0.49	0.49
Clearance Time (s)	4.0	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	3.0
Lane Grp Cap (vph)	309	575		241	577	490	407	910		618	912	775
v/s Ratio Prot		c0.19			0.15			0.07			c0.23	
v/s Ratio Perm	0.04			0.02		0.02	0.00			0.08		0.01
v/c Ratio	0.13	0.62		0.06	0.49	0.06	0.00	0.14		0.16	0.47	0.02
Uniform Delay, d1	9.9	11.8		9.7	11.2	9.7	5.2	5.6		5.6	6.8	5.3
Progression Factor	0.96	0.89		1.00	1.00	1.00	1.33	1.42		0.60	0.70	0.24
Incremental Delay, d2	0.1	0.8		0.1	0.6	0.0	0.0	0.3		0.5	1.8	0.0
Delay (s)	9.6	11.4		9.8	11.9	9.7	7.0	8.2		3.9	6.5	1.3
Level of Service	A	B		A	B	A	A	A		A	A	A
Approach Delay (s)		11.2			11.3			8.2			5.8	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
13: Syracuse & E 23rd Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Volume (vph)	49	82	10	8	68	24	3	214	2	22	443	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1832		1770	1790		1770	3535		1770	3502	
Flt Permitted	0.78	1.00		0.78	1.00		0.46	1.00		0.61	1.00	
Satd. Flow (perm)	1461	1832		1461	1790		858	3535		1128	3502	
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)	53	89	11	9	74	26	3	233	2	24	482	36
RTOR Reduction (vph)	0	10	0	0	23	0	0	1	0	0	8	0
Lane Group Flow (vph)	53	90	0	9	77	0	3	234	0	24	510	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	5.1	5.1		5.1	5.1		26.9	26.9		26.9	26.9	
Effective Green, g (s)	5.1	5.1		5.1	5.1		26.9	26.9		26.9	26.9	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.67	0.67		0.67	0.67	
Clearance Time (s)	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	
Lane Grp Cap (vph)	186	233		186	228		577	2377		758	2355	
v/s Ratio Prot		c0.05			0.04			0.07			c0.15	
v/s Ratio Perm	0.04			0.01			0.00			0.02		
v/c Ratio	0.28	0.39		0.05	0.34		0.01	0.10		0.03	0.22	
Uniform Delay, d1	15.8	16.0		15.3	15.9		2.2	2.3		2.2	2.5	
Progression Factor	0.56	0.55		1.00	1.00		0.78	0.69		1.00	1.00	
Incremental Delay, d2	0.8	1.0		0.1	0.9		0.0	0.1		0.1	0.2	
Delay (s)	9.7	9.9		15.4	16.8		1.7	1.7		2.3	2.7	
Level of Service	A	A		B	B		A	A		A	A	
Approach Delay (s)		9.8			16.7			1.7			2.7	
Approach LOS		A			B			A			A	

Intersection Summary

HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 19: Roslyn & E 26th Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Volume (vph)	0	103	8	50	100	0	0	0	0	8	281	3
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	
Lane Util. Factor		1.00			1.00						0.95	
Frt		0.99			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1844			1832						3529	
Flt Permitted		1.00			0.85						1.00	
Satd. Flow (perm)		1844			1582						3529	
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	112	9	54	109	0	0	0	0	9	305	3
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	114	0	0	163	0	0	0	0	0	316	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		8.1			8.1						23.9	
Effective Green, g (s)		8.1			8.1						23.9	
Actuated g/C Ratio		0.20			0.20						0.60	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		373			320						2108	
v/s Ratio Prot		0.06										
v/s Ratio Perm					c0.10						0.09	
v/c Ratio		0.31			0.51						0.15	
Uniform Delay, d1		13.6			14.2						3.6	
Progression Factor		0.70			0.71						1.00	
Incremental Delay, d2		0.5			1.3						0.2	
Delay (s)		9.9			11.3						3.7	
Level of Service		A			B						A	
Approach Delay (s)		9.9			11.3			0.0			3.7	
Approach LOS		A			B			A			A	

Intersection Summary

HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
25: Quebec & PM Peak/11th Ave Only

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↑	↕	↕	↕	↕
Volume (vph)	10	37	10	205	88	62	16	631	274	61	749	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frt		0.98		1.00	0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802		1770	1748		1770	1863	1583	1770	3532	
Flt Permitted		0.94		0.72	1.00		0.31	1.00	1.00	0.28	1.00	
Satd. Flow (perm)		1718		1335	1748		578	1863	1583	524	3532	
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)	11	40	11	223	96	67	17	686	298	66	814	11
RTOR Reduction (vph)	0	8	0	0	50	0	0	0	125	0	2	0
Lane Group Flow (vph)	0	54	0	223	113	0	17	686	173	66	823	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		12.7		12.7	12.7		28.8	28.8	28.8	28.8	28.8	
Effective Green, g (s)		12.7		12.7	12.7		28.8	28.8	28.8	28.8	28.8	
Actuated g/C Ratio		0.26		0.26	0.26		0.58	0.58	0.58	0.58	0.58	
Clearance Time (s)		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	
Lane Grp Cap (vph)		440		342	448		336	1083	921	304	2054	
v/s Ratio Prot					0.06			c0.37			0.23	
v/s Ratio Perm		0.03		c0.17			0.03		0.11	0.13		
v/c Ratio		0.12		0.65	0.25		0.05	0.63	0.19	0.22	0.40	
Uniform Delay, d1		14.1		16.4	14.6		4.5	6.9	4.9	5.0	5.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1		4.4	0.3		0.3	2.8	0.5	1.6	0.6	
Delay (s)		14.2		20.8	14.9		4.7	9.7	5.3	6.6	6.2	
Level of Service		B		C	B		A	A	A	A	A	
Approach Delay (s)		14.2			18.3			8.3			6.3	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	49.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 1704: Quebec St & E 6th Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	271	332	48	175	28	257	849	57	32	984	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	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	0.99		1.00	0.99	
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)	1758	1863	1554	1763	1863	1550	1769	3500		1767	3501	
Flt Permitted	0.58	1.00	1.00	0.37	1.00	1.00	0.16	1.00		0.24	1.00	
Satd. Flow (perm)	1070	1863	1554	682	1863	1550	301	3500		440	3501	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	117	304	373	54	197	31	289	954	64	36	1106	78
RTOR Reduction (vph)	0	0	116	0	0	24	0	5	0	0	6	0
Lane Group Flow (vph)	117	304	257	54	197	7	289	1013	0	36	1178	0
Confl. Peds. (#/hr)	10		7	7		10	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	18.2	18.2	18.2	18.2	18.2	18.2	48.8	48.8		38.8	38.8	
Effective Green, g (s)	18.2	18.2	18.2	18.2	18.2	18.2	48.8	48.8		38.8	38.8	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.2		0.2	0.2	
Lane Grp Cap (vph)	243	423	353	155	423	352	238	2135		213	1697	
v/s Ratio Prot		0.16			0.11		c0.05	0.29			0.34	
v/s Ratio Perm	0.11		c0.17	0.08		0.00	c0.69			0.08		
v/c Ratio	0.48	0.72	0.73	0.35	0.47	0.02	1.21	0.47		0.17	0.69	
Uniform Delay, d1	26.8	28.5	28.6	25.9	26.7	24.0	22.7	8.6		11.6	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.88	0.97	
Incremental Delay, d2	0.5	4.8	6.2	0.5	0.3	0.0	128.6	0.8		1.4	1.9	
Delay (s)	27.4	33.4	34.9	26.4	27.0	24.0	151.3	9.3		11.6	17.5	
Level of Service	C	C	C	C	C	C	F	A		B	B	
Approach Delay (s)		33.2			26.6			40.7			17.3	
Approach LOS		C			C			D			B	

Intersection Summary

HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 1740: Quebec St & E 8th Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	102	186	40	54	10	97	904	18	10	931	95
Ideal Flow (vphpl)	1300	1600	1900	1300	1600	1900	1300	1600	1900	1300	1600	1900
Lane Width	10	10	12	10	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1130	1464	1555	1124	1429		1130	2772		1128	2743	
Flt Permitted	0.71	1.00	1.00	0.68	1.00		0.20	1.00		0.23	1.00	
Satd. Flow (perm)	842	1464	1555	805	1429		236	2772		278	2743	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	92	120	219	47	64	12	114	1064	21	12	1095	112
RTOR Reduction (vph)	0	0	80	0	9	0	0	1	0	0	8	0
Lane Group Flow (vph)	92	120	139	47	67	0	114	1084	0	12	1199	0
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4			6			2		
Actuated Green, G (s)	13.7	13.7	13.7	13.7	13.7		54.3	54.3		54.3	54.3	
Effective Green, g (s)	13.7	13.7	13.7	13.7	13.7		54.3	54.3		54.3	54.3	
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17		0.68	0.68		0.68	0.68	
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)	144	250	266	137	244		160	1881		188	1861	
v/s Ratio Prot		0.08			0.05			0.39			0.44	
v/s Ratio Perm	c0.11		0.09	0.06			c0.48			0.04		
v/c Ratio	0.64	0.48	0.52	0.34	0.27		0.71	0.58		0.06	0.64	
Uniform Delay, d1	30.8	29.9	30.2	29.2	28.8		8.0	6.8		4.3	7.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.49	0.37		0.64	0.67	
Incremental Delay, d2	9.0	1.5	1.8	1.5	0.6		22.1	1.2		0.5	1.3	
Delay (s)	39.8	31.4	32.0	30.7	29.4		26.0	3.7		3.3	6.3	
Level of Service	D	C	C	C	C		C	A		A	A	
Approach Delay (s)		33.5			29.9			5.9			6.2	
Approach LOS		C			C			A			A	

Intersection Summary

HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2219: Quebec St & E Colfax Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑	↗	↘	↑↑	↗
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1300	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	12	10	11	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.92	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	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1583	3539	1548	1580	3539	1451	1128	1327	1066	1130	2521	995
Flt Permitted	0.14	1.00	1.00	0.22	1.00	1.00	0.41	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	235	3539	1548	363	3539	1451	490	1327	1066	245	2521	995
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	89	962	46	56	1004	127	39	519	36	122	630	65
RTOR Reduction (vph)	0	0	29	0	0	91	0	0	23	0	0	34
Lane Group Flow (vph)	89	962	17	56	1004	36	39	519	14	122	630	31
Confl. Peds. (#/hr)	34		9	9		34	5		5	5		5
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Actuated Green, G (s)	30.0	30.0	30.0	22.4	22.4	22.4	30.0	30.0	30.0	38.0	38.0	38.0
Effective Green, g (s)	30.0	30.0	30.0	22.4	22.4	22.4	30.0	30.0	30.0	38.0	38.0	38.0
Actuated g/C Ratio	0.38	0.38	0.38	0.28	0.28	0.28	0.38	0.38	0.38	0.48	0.48	0.48
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	6.0
Vehicle Extension (s)	2.0	0.2	0.2	0.2	0.2	0.2	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	115	1327	580	101	990	406	183	497	399	138	1197	472
v/s Ratio Prot	0.02	c0.27			c0.28			c0.39		0.02	c0.25	
v/s Ratio Perm	0.27		0.01	0.15		0.02	0.08		0.01	0.40		0.03
v/c Ratio	0.77	0.72	0.03	0.55	1.01	0.09	0.21	1.04	0.03	0.88	0.53	0.07
Uniform Delay, d1	27.7	21.5	15.8	24.5	28.8	21.3	17.0	25.0	15.8	24.5	14.7	11.4
Progression Factor	1.00	1.00	1.00	0.79	0.80	4.46	1.10	1.18	1.00	0.31	0.08	0.02
Incremental Delay, d2	25.0	3.5	0.1	19.4	31.6	0.4	0.1	36.0	0.0	33.7	0.1	0.0
Delay (s)	52.7	24.9	15.9	38.8	54.6	95.3	18.7	65.5	15.8	41.4	1.3	0.2
Level of Service	D	C	B	D	D	F	B	E	B	D	A	A
Approach Delay (s)		26.8			58.3			59.4			7.2	
Approach LOS		C			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.98	1.00	1.00	0.99	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	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1187	1569	1046	1200	1569	1009	1208	1564		1211	3353	1537
Flt Permitted	0.27	1.00	1.00	0.25	1.00	1.00	0.29	1.00		0.20	1.00	1.00
Satd. Flow (perm)	333	1569	1046	322	1569	1009	374	1564		255	3353	1537
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)	47	410	11	20	402	129	11	651	12	184	823	57
RTOR Reduction (vph)	0	0	8	0	0	89	0	1	0	0	0	24
Lane Group Flow (vph)	47	410	3	20	402	40	11	662	0	184	823	33
Confl. Peds. (#/hr)	21		16	16		21	5					5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		2
Actuated Green, G (s)	21.8	21.8	21.8	21.8	21.8	21.8	34.2	34.2		46.2	46.2	46.2
Effective Green, g (s)	21.8	21.8	21.8	21.8	21.8	21.8	34.2	34.2		46.2	46.2	46.2
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.43	0.43		0.58	0.58	0.58
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	0.2
Lane Grp Cap (vph)	90	427	285	87	427	274	159	668		218	1936	887
v/s Ratio Prot		c0.26			0.26			c0.42		c0.06	0.25	
v/s Ratio Perm	0.14		0.00	0.06		0.04	0.03			0.42		0.02
v/c Ratio	0.52	0.96	0.01	0.23	0.94	0.14	0.07	0.99		0.84	0.43	0.04
Uniform Delay, d1	24.7	28.7	21.2	22.6	28.5	22.0	13.5	22.8		25.7	9.5	7.3
Progression Factor	1.00	1.00	1.00	1.09	1.01	1.44	0.27	0.36		0.88	0.54	0.50
Incremental Delay, d2	2.5	33.1	0.0	0.5	28.7	0.1	0.1	8.7		21.9	0.6	0.1
Delay (s)	27.2	61.8	21.2	25.2	57.4	31.7	3.8	17.0		44.6	5.8	3.7
Level of Service	C	E	C	C	E	C	A	B		D	A	A
Approach Delay (s)		57.4			50.2			16.7			12.4	
Approach LOS		E			D			B			B	

Intersection Summary

HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2838: Quebec St & E 11th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗		↖	↑	↗	↖	↕	↗
Volume (vph)	10	37	10	205	88	62	16	631	274	61	749	10
Ideal Flow (vphpl)	1900	1500	1900	1300	1500	1900	1300	1400	1300	1300	1400	1900
Lane Width	12	10	12	10	10	12	10	10	10	10	10	12
Total Lost time (s)		6.0		4.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.95	
Frbp, ped/bikes		1.00		1.00	0.99		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		0.98		1.00	0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1322		1127	1272		1130	1281	1011	1130	2429	
Flt Permitted		0.90		0.66	1.00		0.29	1.00	1.00	0.27	1.00	
Satd. Flow (perm)		1199		787	1272		350	1281	1011	327	2429	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	43	12	238	102	72	19	734	319	71	871	12
RTOR Reduction (vph)	0	11	0	0	40	0	0	0	119	0	1	0
Lane Group Flow (vph)	0	56	0	238	134	0	19	734	200	71	882	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		8		7	4			6			2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)		9.2		17.8	17.8		50.2	50.2	50.2	50.2	50.2	
Effective Green, g (s)		9.2		17.8	17.8		50.2	50.2	50.2	50.2	50.2	
Actuated g/C Ratio		0.11		0.22	0.22		0.63	0.63	0.63	0.63	0.63	
Clearance Time (s)		6.0		4.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		2.0		3.0	2.0		0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)		137		194	283		219	803	634	205	1524	
v/s Ratio Prot				c0.07	0.11			c0.57			0.36	
v/s Ratio Perm		0.05		c0.20			0.05		0.20	0.22		
v/c Ratio		0.41		1.23	0.47		0.09	0.91	0.32	0.35	0.58	
Uniform Delay, d1		32.9		31.7	27.0		5.9	13.0	6.9	7.1	8.7	
Progression Factor		1.00		1.00	1.00		0.33	0.62	0.46	0.44	0.38	
Incremental Delay, d2		0.7		138.9	0.5		0.7	14.5	1.1	3.1	1.1	
Delay (s)		33.6		170.7	27.5		2.6	22.6	4.3	6.2	4.4	
Level of Service		C		F	C		A	C	A	A	A	
Approach Delay (s)		33.6			110.2			16.8			4.5	
Approach LOS		C			F			B			A	

Intersection Summary

HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2839: Quebec St & E 13th Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↑			↕↕	↕
Volume (vph)	0	0	0	53	371	10	83	595	0	0	769	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900	1300	1400	1900	1900	1400	1900
Lane Width	12	10	12	12	10	12	10	10	12	12	10	12
Total Lost time (s)					6.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			0.95	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					1.00		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					3097		1130	1281			2434	1583
Flt Permitted					0.99		0.22	1.00			1.00	1.00
Satd. Flow (perm)					3097		264	1281			2434	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	62	436	12	98	700	0	0	905	48
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	0	0	0	508	0	98	700	0	0	905	25
Confl. Peds. (#/hr)						5						
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					4		1	6			2	
Permitted Phases				4			6					2
Actuated Green, G (s)					15.8		52.2	52.2			41.2	41.2
Effective Green, g (s)					15.8		52.2	52.2			41.2	41.2
Actuated g/C Ratio					0.20		0.65	0.65			0.52	0.52
Clearance Time (s)					6.0		6.0	6.0			6.0	6.0
Vehicle Extension (s)					2.0		2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					611		226	835			1253	815
v/s Ratio Prot							0.03	c0.55			0.37	
v/s Ratio Perm					0.16		0.26					0.02
v/c Ratio					0.83		0.43	0.84			0.72	0.03
Uniform Delay, d1					30.8		6.9	10.7			15.0	9.6
Progression Factor					0.77		0.94	0.53			0.28	1.00
Incremental Delay, d2					8.9		3.2	5.4			2.8	0.1
Delay (s)					32.6		9.6	11.1			7.0	9.6
Level of Service					C		A	B			A	A
Approach Delay (s)		0.0			32.6			11.0			7.2	
Approach LOS		A			C			B			A	

Intersection Summary

HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

Directional Priority PM Peak

2840: Quebec St & E 14th Ave

12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↔		↕	↕↕	
Volume (vph)	20	512	144	0	0	0	0	533	67	10	709	0
Ideal Flow (vphpl)	1900	1700	1900	1900	1900	1900	1900	1400	1900	1900	1400	1900
Lane Width	12	10	12	12	12	12	12	10	12	12	10	12
Total Lost time (s)		6.0						6.0		6.0	6.0	
Lane Util. Factor		0.95						1.00		1.00	0.95	
Frbp, ped/bikes		1.00						1.00		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		0.97						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		2856						1262		1770	2434	
Flt Permitted		1.00						1.00		0.27	1.00	
Satd. Flow (perm)		2856						1262		505	2434	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	23	589	166	0	0	0	0	613	77	11	815	0
RTOR Reduction (vph)	0	31	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	747	0	0	0	0	0	684	0	11	815	0
Confl. Peds. (#/hr)	5											5
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		4						6			2	
Permitted Phases	4									2		
Actuated Green, G (s)		21.9						46.1		46.1	46.1	
Effective Green, g (s)		21.9						46.1		46.1	46.1	
Actuated g/C Ratio		0.27						0.58		0.58	0.58	
Clearance Time (s)		6.0						6.0		6.0	6.0	
Vehicle Extension (s)		2.0						0.2		0.2	0.2	
Lane Grp Cap (vph)		781						727		291	1402	
v/s Ratio Prot								c0.54			0.33	
v/s Ratio Perm		0.26								0.02		
v/c Ratio		0.96						0.94		0.04	0.58	
Uniform Delay, d1		28.6						15.7		7.3	10.8	
Progression Factor		1.00						0.53		1.15	1.58	
Incremental Delay, d2		21.9						13.6		0.2	1.6	
Delay (s)		50.5						21.9		8.7	18.7	
Level of Service		D						C		A	B	
Approach Delay (s)		50.5			0.0			21.9			18.6	
Approach LOS		D			A			C			B	

Intersection Summary

HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↑↑	↗
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	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	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1012	1235	1425	1593	1223		1014	1232		1017	2347	1380
Flt Permitted	0.39	1.00	1.00	0.27	1.00		0.27	1.00		0.22	1.00	1.00
Satd. Flow (perm)	413	1235	1425	446	1223		293	1232		241	2347	1380
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)	52	490	40	11	364	22	22	650	11	41	835	46
RTOR Reduction (vph)	0	0	26	0	3	0	0	1	0	0	0	24
Lane Group Flow (vph)	52	490	15	11	383	0	22	660	0	41	835	22
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4			6			2		2
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0		39.0	39.0		39.0	39.0	39.0
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0		39.0	39.0		39.0	39.0	39.0
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36		0.49	0.49		0.49	0.49	0.49
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)	2.0	2.0	2.0	2.0	2.0		0.2	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	149	447	516	161	443		142	600		117	1144	672
v/s Ratio Prot		c0.40			0.31			c0.54			0.36	
v/s Ratio Perm	0.13		0.01	0.02			0.07			0.17		0.02
v/c Ratio	0.35	1.10	0.03	0.07	0.87		0.15	1.10		0.35	0.73	0.03
Uniform Delay, d1	18.6	25.5	16.4	16.7	23.7		11.4	20.5		12.7	16.3	10.7
Progression Factor	1.00	1.00	1.00	0.85	0.81		0.39	0.47		0.22	0.35	0.00
Incremental Delay, d2	0.5	71.2	0.0	0.1	15.4		1.1	57.7		7.6	3.9	0.1
Delay (s)	19.1	96.7	16.4	14.3	34.7		5.5	67.2		10.4	9.6	0.1
Level of Service	B	F	B	B	C		A	E		B	A	A
Approach Delay (s)		84.2			34.2			65.2			9.1	
Approach LOS		F			C			E			A	

Intersection Summary

HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2843: Quebec St & E 23rd Ave/E 23rd Ave

Directional Priority PM Peak
12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	135	16	10	90	32	12	862	10	51	1047	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00	1.00	0.99	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	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1863	1554	1760	1863	1550	1766	1859		1770	3539	1533
Flt Permitted	0.69	1.00	1.00	0.58	1.00	1.00	0.21	1.00		0.18	1.00	1.00
Satd. Flow (perm)	1276	1863	1554	1066	1863	1550	388	1859		343	3539	1533
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	93	155	18	11	103	37	14	991	11	59	1203	90
RTOR Reduction (vph)	0	0	15	0	0	32	0	0	0	0	0	25
Lane Group Flow (vph)	93	155	3	11	103	5	14	1002	0	59	1203	65
Confl. Peds. (#/hr)	7		5	5		7	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4		4	6			2		2
Actuated Green, G (s)	11.5	11.5	11.5	11.5	11.5	11.5	57.5	57.5		57.5	57.5	57.5
Effective Green, g (s)	11.5	11.5	11.5	11.5	11.5	11.5	57.5	57.5		57.5	57.5	57.5
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.72	0.72		0.72	0.72	0.72
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	183	267	223	153	267	222	278	1336		246	2543	1101
v/s Ratio Prot		c0.08			0.06			c0.54			0.34	
v/s Ratio Perm	0.07		0.00	0.01		0.00	0.04			0.17		0.04
v/c Ratio	0.51	0.58	0.01	0.07	0.39	0.02	0.05	0.75		0.24	0.47	0.06
Uniform Delay, d1	31.6	32.0	29.4	29.6	31.0	29.4	3.3	6.9		3.8	4.8	3.3
Progression Factor	1.00	1.00	1.00	0.93	0.92	0.89	0.56	1.01		0.40	0.69	0.17
Incremental Delay, d2	0.8	2.1	0.0	0.1	0.3	0.0	0.2	2.8		2.1	0.6	0.1
Delay (s)	32.4	34.1	29.4	27.8	29.0	26.3	2.1	9.7		3.6	3.9	0.7
Level of Service	C	C	C	C	C	C	A	A		A	A	A
Approach Delay (s)		33.2			28.3			9.6			3.6	
Approach LOS		C			C			A			A	

Intersection Summary

HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2844: Quebec St & E 26th Ave

Directional Priority PM Peak
 12/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	49	10	71	103	39	11	629	14	33	1153	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	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	1.00	
Flpb, ped/bikes	0.99	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	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1758	1809		1761	1863	1583	1770	3525		1762	3518	
Flt Permitted	0.68	1.00		0.72	1.00	1.00	0.18	1.00		0.39	1.00	
Satd. Flow (perm)	1267	1809		1326	1863	1583	341	3525		716	3518	
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)	83	53	11	77	112	42	12	684	15	36	1253	53
RTOR Reduction (vph)	0	10	0	0	0	37	0	1	0	0	2	0
Lane Group Flow (vph)	83	54	0	77	112	5	12	698	0	36	1304	0
Confl. Peds. (#/hr)	7		5	5					5	5		
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	10.2	10.2		10.2	10.2	10.2	57.8	57.8		57.8	57.8	
Effective Green, g (s)	10.2	10.2		10.2	10.2	10.2	57.8	57.8		57.8	57.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.13	0.72	0.72		0.72	0.72	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	161	230		169	237	201	246	2546		517	2541	
v/s Ratio Prot		0.03			0.06			0.20			c0.37	
v/s Ratio Perm	c0.07			0.06		0.00	0.04			0.05		
v/c Ratio	0.52	0.24		0.46	0.47	0.03	0.05	0.27		0.07	0.51	
Uniform Delay, d1	32.6	31.4		32.3	32.4	30.6	3.2	3.8		3.2	4.9	
Progression Factor	1.00	1.00		0.94	0.93	1.10	1.07	1.37		1.00	1.00	
Incremental Delay, d2	1.2	0.2		0.7	0.5	0.0	0.3	0.2		0.3	0.7	
Delay (s)	33.8	31.6		31.2	30.8	33.6	3.7	5.5		3.5	5.6	
Level of Service	C	C		C	C	C	A	A		A	A	
Approach Delay (s)		32.8			31.5			5.4			5.6	
Approach LOS		C			C			A			A	

Intersection Summary

HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

Appendix C

2042 Synchro Outputs:

Intersection Capacity Utilization

for

PM Peak Existing

PM Peak Reconfigure Quebec: 2 Lanes

PM Peak Reconfigure Quebec: 4 Lanes

PM Peak Directional Priority

HCM Signalized Intersection Capacity Analysis
2219: Quebec St & E Colfax Ave

Existing 2042 PM Peak
2/27/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1900	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	10	10	11	10
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		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)	1583	3502		1583	3449		1128	1312		1130	1327	988
Flt Permitted	0.09	1.00		0.11	1.00		0.14	1.00		0.07	1.00	1.00
Satd. Flow (perm)	155	3502		180	3449		162	1312		88	1327	988
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
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	115	1243	60	73	1298	164	51	671	46	158	814	84
RTOR Reduction (vph)	0	3	0	0	8	0	0	2	0	0	0	40
Lane Group Flow (vph)	115	1300	0	73	1454	0	51	715	0	158	814	44
Confl. Peds. (#/hr)	21		22	22		21	9		13	13		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	47.0	47.0		37.0	37.0		48.0	48.0		61.0	61.0	61.0
Effective Green, g (s)	47.0	47.0		37.0	37.0		48.0	48.0		61.0	61.0	61.0
Actuated g/C Ratio	0.39	0.39		0.31	0.31		0.40	0.40		0.51	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	2.0	0.2		0.2	0.2		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	108	1371		55	1063		64	524		105	674	502
v/s Ratio Prot	0.04	c0.37			c0.42			0.55		0.09	c0.61	
v/s Ratio Perm	0.38			0.41			0.31			c0.67		0.04
v/c Ratio	1.06	0.95		1.33	1.37		0.80	1.36		1.50	1.21	0.09
Uniform Delay, d1	37.0	35.3		41.5	41.5		31.7	36.0		31.7	29.5	15.2
Progression Factor	1.00	1.00		1.00	1.00		0.88	0.87		2.07	0.26	0.08
Incremental Delay, d2	105.1	14.7		231.7	171.5		5.8	165.3		231.7	94.8	0.0
Delay (s)	142.1	50.0		273.2	213.0		33.7	196.5		297.2	102.4	1.2
Level of Service	F	D		F	F		C	F		F	F	A
Approach Delay (s)		57.5			215.8			185.7			123.5	
Approach LOS		E			F			F			F	

Intersection Summary

HCM 2000 Control Delay	143.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	126.4%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2631: Quebec St & Montview Blvd

Existing 2042 PM Peak
 2/27/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.93	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
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)	1211	1569	1013	1211	1569	1005	1211	1563		1211	1744	
Flt Permitted	0.11	1.00	1.00	0.11	1.00	1.00	0.08	1.00		0.07	1.00	
Satd. Flow (perm)	142	1569	1013	134	1569	1005	100	1563		89	1744	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	63	547	14	27	537	172	14	869	16	246	1099	76
RTOR Reduction (vph)	0	0	10	0	0	56	0	1	0	0	2	0
Lane Group Flow (vph)	63	547	4	27	537	116	14	884	0	246	1173	0
Confl. Peds. (#/hr)	15		13	13		15	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	38.0	38.0	38.0	38.0	38.0	38.0	51.0	51.0		70.0	70.0	
Effective Green, g (s)	38.0	38.0	38.0	38.0	38.0	38.0	51.0	51.0		70.0	70.0	
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.42	0.42		0.58	0.58	
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	
Lane Grp Cap (vph)	44	496	320	42	496	318	42	664		173	1017	
v/s Ratio Prot		0.35			0.34			0.57		c0.15	0.67	
v/s Ratio Perm	c0.44		0.00	0.20		0.12	0.14			c0.67		
v/c Ratio	1.43	1.10	0.01	0.64	1.08	0.36	0.33	1.33		1.42	1.15	
Uniform Delay, d1	41.0	41.0	28.1	35.2	41.0	31.7	23.1	34.5		49.2	25.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.38	1.35		1.15	1.39	
Incremental Delay, d2	286.4	71.5	0.0	22.5	64.6	0.3	1.9	150.4		211.6	77.2	
Delay (s)	327.4	112.5	28.1	57.6	105.6	31.9	33.7	196.9		268.1	111.9	
Level of Service	F	F	C	E	F	C	C	F		F	F	
Approach Delay (s)		132.3			86.6			194.4			138.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	140.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	130.9%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

Existing 2042 PM Peak
 2/27/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	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	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	0.99			0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1130	1357			1360		1130	1368		1130	1359	
Flt Permitted	0.32	1.00			0.59		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	380	1357			804		78	1368		78	1359	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	69	648	53	14	481	29	29	859	14	55	1103	60
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	0	0	1	0
Lane Group Flow (vph)	69	699	0	0	522	0	29	873	0	55	1162	0
Confl. Peds. (#/hr)							5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	47.0	47.0			47.0		61.0	61.0		61.0	61.0	
Effective Green, g (s)	47.0	47.0			47.0		61.0	61.0		61.0	61.0	
Actuated g/C Ratio	0.39	0.39			0.39		0.51	0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	148	531			314		39	695		39	690	
v/s Ratio Prot		0.51						0.64			c0.85	
v/s Ratio Perm	0.18				c0.65		0.37			0.71		
v/c Ratio	0.47	1.32			1.66		0.74	1.26		1.41	1.68	
Uniform Delay, d1	27.2	36.5			36.5		23.3	29.5		29.5	29.5	
Progression Factor	1.00	1.00			1.00		1.07	1.07		0.50	0.51	
Incremental Delay, d2	0.8	155.0			312.1		11.0	116.1		197.9	308.1	
Delay (s)	28.0	191.5			348.6		36.0	147.5		212.8	323.1	
Level of Service	C	F			F		D	F		F	F	
Approach Delay (s)		176.8			348.6			143.9			318.2	
Approach LOS		F			F			F			F	

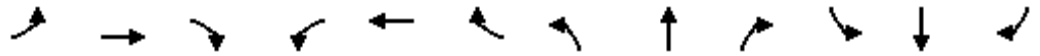
Intersection Summary

HCM 2000 Control Delay	244.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	139.3%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2219: Quebec St & E Colfax Ave

Reconfigure Quebec - 2 Lanes PM Peak

2042



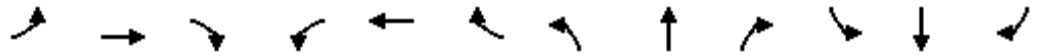
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑		↘	↑↑	
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1900	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	10	10	11	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.96	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
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)	1583	3539	1511	1577	3539	1513	1127	2492		1130	2480	
Flt Permitted	0.09	1.00	1.00	0.14	1.00	1.00	0.29	1.00		0.17	1.00	
Satd. Flow (perm)	142	3539	1511	227	3539	1513	343	2492		205	2480	
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
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	115	1243	60	73	1298	164	51	671	46	158	814	84
RTOR Reduction (vph)	0	0	32	0	0	93	0	4	0	0	7	0
Lane Group Flow (vph)	115	1243	28	73	1298	71	51	713	0	158	891	0
Confl. Peds. (#/hr)	21		22	22		21	9		13	13		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	52.0	52.0	52.0	41.0	41.0	41.0	32.0	32.0		46.0	46.0	
Effective Green, g (s)	52.0	52.0	52.0	41.0	41.0	41.0	32.0	32.0		46.0	46.0	
Actuated g/C Ratio	0.47	0.47	0.47	0.37	0.37	0.37	0.29	0.29		0.42	0.42	
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)	2.0	0.2	0.2	0.2	0.2	0.2	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	132	1672	714	84	1319	563	99	724		153	1037	
v/s Ratio Prot	0.04	c0.35			c0.37			0.29		0.08	c0.36	
v/s Ratio Perm	0.37		0.02	0.32		0.05	0.15			c0.36		
v/c Ratio	0.87	0.74	0.04	0.87	0.98	0.13	0.52	0.98		1.03	0.86	
Uniform Delay, d1	25.3	23.6	15.6	32.0	34.2	22.7	32.5	38.8		28.4	29.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.08		1.00	1.00	
Incremental Delay, d2	41.3	3.0	0.1	66.7	21.3	0.5	0.4	12.4		81.7	7.0	
Delay (s)	66.6	26.6	15.7	98.7	55.4	23.2	35.9	54.2		110.1	36.0	
Level of Service	E	C	B	F	E	C	D	D		F	D	
Approach Delay (s)		29.4			54.0			53.0			47.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

Reconfigure Quebec - 2 Lanes PM Peak

2042



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
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)	1211	1569	1044	1211	1569	1039	1209	2971		1210	3313	
Flt Permitted	0.18	1.00	1.00	0.17	1.00	1.00	0.11	1.00		0.17	1.00	
Satd. Flow (perm)	229	1569	1044	215	1569	1039	139	2971		222	3313	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	63	547	14	27	537	172	14	869	16	246	1099	76
RTOR Reduction (vph)	0	0	9	0	0	57	0	1	0	0	5	0
Lane Group Flow (vph)	63	547	5	27	537	115	14	884	0	246	1170	0
Confl. Peds. (#/hr)	15		13	13		15	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	39.3	39.3	39.3	39.3	39.3	39.3	36.7	36.7		58.7	58.7	
Effective Green, g (s)	39.3	39.3	39.3	39.3	39.3	39.3	36.7	36.7		58.7	58.7	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.33	0.33		0.53	0.53	
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	
Lane Grp Cap (vph)	81	560	372	76	560	371	46	991		262	1767	
v/s Ratio Prot		c0.35			0.34			0.30		c0.14	0.35	
v/s Ratio Perm	0.27		0.00	0.13		0.11	0.10			c0.37		
v/c Ratio	0.78	0.98	0.01	0.36	0.96	0.31	0.30	0.89		0.94	0.66	
Uniform Delay, d1	31.5	34.9	22.8	26.0	34.6	25.5	27.2	34.8		34.0	18.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.82	0.83	
Incremental Delay, d2	33.7	31.7	0.0	1.0	27.5	0.2	16.3	12.0		33.5	1.6	
Delay (s)	65.2	66.6	22.8	27.1	62.0	25.7	43.5	46.8		61.3	17.0	
Level of Service	E	E	C	C	E	C	D	D		E	B	
Approach Delay (s)		65.5			52.3			46.7			24.7	
Approach LOS		E			D			D			C	

Intersection Summary

HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2841: Quebec St & E17th Ave/E 17th Ave

Reconfigure Quebec - 2 Lanes PM Peak
2042



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		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	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1130	2578		1770	1361		1130	2601		1128	2583	
Flt Permitted	0.26	1.00		0.29	1.00		0.14	1.00		0.25	1.00	
Satd. Flow (perm)	304	2578		545	1361		170	2601		298	2583	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	69	648	53	14	481	29	29	859	14	55	1103	60
RTOR Reduction (vph)	0	7	0	0	2	0	0	1	0	0	4	0
Lane Group Flow (vph)	69	694	0	14	508	0	29	872	0	55	1159	0
Confl. Peds. (#/hr)							5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	34.5	34.5		34.5	34.5		43.5	43.5		43.5	43.5	
Effective Green, g (s)	34.5	34.5		34.5	34.5		43.5	43.5		43.5	43.5	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.48	0.48		0.48	0.48	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	116	988		208	521		82	1257		144	1248	
v/s Ratio Prot		0.27			c0.37			0.34			c0.45	
v/s Ratio Perm	0.23			0.03			0.17			0.18		
v/c Ratio	0.59	0.70		0.07	0.97		0.35	0.69		0.38	0.93	
Uniform Delay, d1	22.2	23.4		17.6	27.3		14.5	18.1		14.7	21.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.4	1.9		0.0	32.5		11.6	3.2		7.5	13.3	
Delay (s)	27.5	25.3		17.6	59.8		26.0	21.2		22.3	35.1	
Level of Service	C	C		B	E		C	C		C	D	
Approach Delay (s)		25.5			58.7			21.4			34.5	
Approach LOS		C			E			C			C	

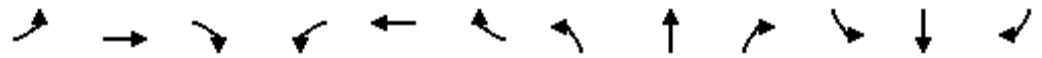
Intersection Summary

HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2219: Quebec St & E Colfax Ave

Reconfigure Quebec- 4 Lanes PM Peak

2042



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑	↗	↙	↑↑	↗	↙	↑↑		↙	↑↑	
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1300	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	12	10	11	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.94	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
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)	1583	3539	1544	1581	3539	1489	1129	2493		1130	2482	
Flt Permitted	0.09	1.00	1.00	0.11	1.00	1.00	0.26	1.00		0.17	1.00	
Satd. Flow (perm)	155	3539	1544	182	3539	1489	314	2493		198	2482	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	120	1298	62	76	1356	171	53	701	49	165	851	88
RTOR Reduction (vph)	0	0	33	0	0	103	0	5	0	0	8	0
Lane Group Flow (vph)	120	1298	29	76	1356	68	53	745	0	165	931	0
Confl. Peds. (#/hr)	34		9	9		34	5		5	5		5
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	46.0	46.0	46.0	37.0	37.0	37.0	30.0	30.0		42.0	42.0	
Effective Green, g (s)	46.0	46.0	46.0	37.0	37.0	37.0	30.0	30.0		42.0	42.0	
Actuated g/C Ratio	0.46	0.46	0.46	0.37	0.37	0.37	0.30	0.30		0.42	0.42	
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)	2.0	0.2	0.2	0.2	0.2	0.2	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	114	1627	710	67	1309	550	94	747		139	1042	
v/s Ratio Prot	0.03	c0.37			0.38			0.30		0.07	c0.38	
v/s Ratio Perm	0.45		0.02	c0.42		0.05	0.17			c0.43		
v/c Ratio	1.05	0.80	0.04	1.13	1.04	0.12	0.56	1.00		1.19	0.89	
Uniform Delay, d1	30.3	23.0	14.9	31.5	31.5	20.8	29.5	35.0		26.8	26.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.85		0.94	0.13	
Incremental Delay, d2	99.1	4.2	0.1	151.2	34.7	0.5	3.3	27.3		91.0	1.0	
Delay (s)	129.4	27.2	15.0	182.7	66.2	21.3	27.5	57.0		116.2	4.5	
Level of Service	F	C	B	F	E	C	C	E		F	A	
Approach Delay (s)		35.0			66.9			55.1			21.2	
Approach LOS		C			E			E			C	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

Reconfigure Quebec- 4 Lanes PM Peak
2042



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
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)	1211	1569	1040	1211	1569	1031	1209	2972		1211	3313	
Flt Permitted	0.18	1.00	1.00	0.17	1.00	1.00	0.13	1.00		0.16	1.00	
Satd. Flow (perm)	234	1569	1040	220	1569	1031	164	2972		204	3313	
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
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	64	553	15	28	543	174	15	878	16	248	1110	77
RTOR Reduction (vph)	0	0	10	0	0	63	0	1	0	0	5	0
Lane Group Flow (vph)	64	553	5	28	543	111	15	893	0	248	1182	0
Confl. Peds. (#/hr)	21		16	16		21	5					5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)	36.0	36.0	36.0	36.0	36.0	36.0	31.0	31.0		52.0	52.0	
Effective Green, g (s)	36.0	36.0	36.0	36.0	36.0	36.0	31.0	31.0		52.0	52.0	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.31	0.31		0.52	0.52	
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	
Lane Grp Cap (vph)	84	564	374	79	564	371	50	921		257	1722	
v/s Ratio Prot		c0.35			0.35			0.30		c0.14	0.36	
v/s Ratio Perm	0.27		0.01	0.13		0.11	0.09			c0.36		
v/c Ratio	0.76	0.98	0.01	0.35	0.96	0.30	0.30	0.97		0.96	0.69	
Uniform Delay, d1	28.2	31.7	20.6	23.5	31.3	23.0	26.2	34.0		32.2	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.84		0.88	0.72	
Incremental Delay, d2	30.0	32.7	0.0	1.0	28.4	0.2	7.9	15.3		37.8	1.6	
Delay (s)	58.2	64.4	20.6	24.5	59.8	23.1	28.3	43.9		66.1	14.5	
Level of Service	E	E	C	C	E	C	C	D		E	B	
Approach Delay (s)		62.7			49.9			43.6			23.4	
Approach LOS		E			D			D			C	

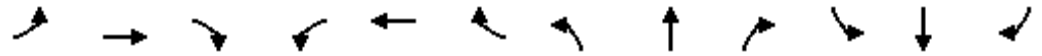
Intersection Summary

HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

Reconfigure Quebec- 4 Lanes PM Peak

2042



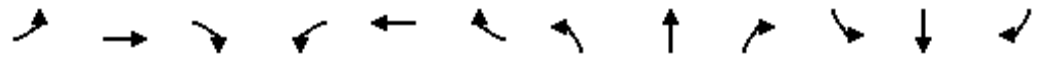
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		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	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1017	2321		1593	1224		1017	2340		1015	2325	
Flt Permitted	0.28	1.00		0.30	1.00		0.11	1.00		0.22	1.00	
Satd. Flow (perm)	305	2321		504	1224		121	2340		237	2325	
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
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	70	662	54	15	492	29	29	878	15	56	1127	62
RTOR Reduction (vph)	0	6	0	0	2	0	0	1	0	0	4	0
Lane Group Flow (vph)	70	710	0	15	519	0	29	892	0	56	1185	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	43.3	43.3		43.3	43.3		44.7	44.7		44.7	44.7	
Effective Green, g (s)	43.3	43.3		43.3	43.3		44.7	44.7		44.7	44.7	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.45	0.45		0.45	0.45	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	132	1004		218	529		54	1045		105	1039	
v/s Ratio Prot		0.31			c0.42			0.38			c0.51	
v/s Ratio Perm	0.23			0.03			0.24			0.24		
v/c Ratio	0.53	0.71		0.07	0.98		0.54	0.85		0.53	1.14	
Uniform Delay, d1	20.9	23.2		16.6	27.9		20.1	24.7		20.1	27.6	
Progression Factor	1.00	1.00		1.00	1.00		0.70	0.74		0.23	0.25	
Incremental Delay, d2	2.0	1.9		0.0	33.9		16.3	4.3		14.4	72.9	
Delay (s)	22.9	25.0		16.6	61.9		30.4	22.5		19.0	79.8	
Level of Service	C	C		B	E		C	C		B	E	
Approach Delay (s)		24.9			60.6			22.8			77.1	
Approach LOS		C			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	48.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	117.1%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2219: Quebec St & E Colfax Ave

Directional Priority -2042 PM Peak

2/27/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	856	41	50	894	113	35	462	32	109	561	58
Ideal Flow (vphpl)	1700	1900	1900	1700	1900	1900	1300	1400	1300	1300	1400	1300
Lane Width	12	12	12	12	12	12	10	11	12	10	11	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.88	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	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1583	3539	1540	1583	3539	1401	1128	1327	1064	1130	2521	993
Flt Permitted	0.09	1.00	1.00	0.10	1.00	1.00	0.32	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	142	3539	1540	163	3539	1401	376	1327	1064	90	2521	993
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	120	1298	62	76	1356	171	53	701	49	165	851	88
RTOR Reduction (vph)	0	0	37	0	0	90	0	0	30	0	0	42
Lane Group Flow (vph)	120	1298	25	76	1356	81	53	701	19	165	851	46
Confl. Peds. (#/hr)	34		9	9		34	5		5	5		5
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6			2			4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8
Actuated Green, G (s)	49.0	49.0	49.0	41.0	41.0	41.0	47.0	47.0	47.0	59.0	59.0	59.0
Effective Green, g (s)	49.0	49.0	49.0	41.0	41.0	41.0	47.0	47.0	47.0	59.0	59.0	59.0
Actuated g/C Ratio	0.41	0.41	0.41	0.34	0.34	0.34	0.39	0.39	0.39	0.49	0.49	0.49
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	6.0
Vehicle Extension (s)	2.0	0.2	0.2	0.2	0.2	0.2	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	82	1445	628	55	1209	478	147	519	416	96	1239	488
v/s Ratio Prot	0.02	c0.37			0.38			0.53		c0.09	0.34	
v/s Ratio Perm	c0.57		0.02	0.47		0.06	0.14		0.02	c0.76		0.05
v/c Ratio	1.46	0.90	0.04	1.38	1.12	0.17	0.36	1.35	0.05	1.72	0.69	0.09
Uniform Delay, d1	43.2	33.2	21.4	39.5	39.5	27.6	25.9	36.5	22.6	29.2	23.4	16.3
Progression Factor	1.00	1.00	1.00	0.84	0.81	1.02	0.64	0.65	1.00	1.60	0.26	0.24
Incremental Delay, d2	263.4	9.2	0.1	249.9	65.7	0.7	0.0	159.0	0.0	343.1	0.6	0.0
Delay (s)	306.6	42.3	21.5	283.0	97.9	28.9	16.5	182.8	22.6	389.8	6.6	3.9
Level of Service	F	D	C	F	F	C	B	F	C	F	A	A
Approach Delay (s)		62.9			99.3			162.1			63.7	
Approach LOS		E			F			F			E	

Intersection Summary

HCM 2000 Control Delay	90.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	120.9%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2631: Quebec St & Montview Blvd

Directional Priority -2042 PM Peak
2/27/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	381	10	19	374	120	10	605	11	171	765	53
Ideal Flow (vphpl)	1300	1600	1300	1300	1600	1300	1300	1600	1900	1300	1800	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1211	1569	1034	1211	1569	983	1207	1564		1211	3353	1530
Flt Permitted	0.11	1.00	1.00	0.11	1.00	1.00	0.26	1.00		0.07	1.00	1.00
Satd. Flow (perm)	134	1569	1034	134	1569	983	326	1564		88	3353	1530
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
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	64	553	15	28	543	174	15	878	16	248	1110	77
RTOR Reduction (vph)	0	0	10	0	0	56	0	1	0	0	0	20
Lane Group Flow (vph)	64	553	5	28	543	118	15	893	0	248	1110	57
Confl. Peds. (#/hr)	21		16	16		21	5					5
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases		8			4			6		5	2	
Permitted Phases	8		8	4		4	6			2		2
Actuated Green, G (s)	38.0	38.0	38.0	38.0	38.0	38.0	52.0	52.0		70.0	70.0	70.0
Effective Green, g (s)	38.0	38.0	38.0	38.0	38.0	38.0	52.0	52.0		70.0	70.0	70.0
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.43	0.43		0.58	0.58	0.58
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)	2.0	2.0	2.0	2.0	2.0	2.0	0.2	0.2		2.0	0.2	0.2
Lane Grp Cap (vph)	42	496	327	42	496	311	141	677		163	1955	892
v/s Ratio Prot		0.35			0.35			0.57		c0.15	0.33	
v/s Ratio Perm	c0.48		0.00	0.21		0.12	0.05			c0.73		0.04
v/c Ratio	1.52	1.11	0.01	0.67	1.09	0.38	0.11	1.32		1.52	0.57	0.06
Uniform Delay, d1	41.0	41.0	28.1	35.5	41.0	31.8	20.2	34.0		38.9	15.6	10.8
Progression Factor	1.00	1.00	1.00	1.26	1.26	1.50	1.62	1.36		1.00	1.49	1.98
Incremental Delay, d2	325.9	75.7	0.0	26.2	68.2	0.3	0.1	144.8		258.5	1.0	0.1
Delay (s)	366.9	116.7	28.2	70.9	119.8	48.1	32.8	191.2		297.3	24.2	21.6
Level of Service	F	F	C	E	F	D	C	F		F	C	C
Approach Delay (s)		140.0			101.2			188.6			71.3	
Approach LOS		F			F			F			E	

Intersection Summary

HCM 2000 Control Delay	117.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	127.2%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 2841: Quebec St & E17th Ave/E 17th Ave

Directional Priority -2042 PM Peak

2/27/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	451	37	10	335	20	20	598	10	38	768	42
Ideal Flow (vphpl)	1300	1500	1900	1900	1500	1900	1300	1500	1900	1300	1500	1900
Lane Width	10	10	12	12	10	12	10	10	12	10	10	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1017	1235	1425	1593	1222		1017	1231		1017	2347	1372
Flt Permitted	0.21	1.00	1.00	0.09	1.00		0.16	1.00		0.07	1.00	1.00
Satd. Flow (perm)	229	1235	1425	149	1222		176	1231		73	2347	1372
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
Growth Factor (vph)	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
Adj. Flow (vph)	70	662	54	15	492	29	29	878	15	56	1127	62
RTOR Reduction (vph)	0	0	18	0	2	0	0	0	0	0	0	18
Lane Group Flow (vph)	70	662	37	15	519	0	29	893	0	56	1127	44
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4			6			2		2
Actuated Green, G (s)	45.0	45.0	45.0	45.0	45.0		63.0	63.0		63.0	63.0	63.0
Effective Green, g (s)	45.0	45.0	45.0	45.0	45.0		63.0	63.0		63.0	63.0	63.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38		0.52	0.52		0.52	0.52	0.52
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)	2.0	2.0	2.0	2.0	2.0		0.2	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	85	463	534	55	458		92	646		38	1232	720
v/s Ratio Prot		c0.54			0.42			0.72			0.48	
v/s Ratio Perm	0.31		0.03	0.10			0.16			c0.77		0.03
v/c Ratio	0.82	1.43	0.07	0.27	1.13		0.32	1.38		1.47	0.91	0.06
Uniform Delay, d1	33.9	37.5	24.1	26.1	37.5		16.2	28.5		28.5	26.0	14.0
Progression Factor	1.00	1.00	1.00	1.05	1.08		0.80	0.99		0.60	0.56	0.26
Incremental Delay, d2	43.2	205.6	0.0	1.0	83.6		0.8	172.6		302.8	10.6	0.1
Delay (s)	77.2	243.1	24.1	28.5	123.9		13.8	200.9		319.8	25.2	3.7
Level of Service	E	F	C	C	F		B	F		F	C	A
Approach Delay (s)		213.3			121.2			195.0			37.4	
Approach LOS		F			F			F			D	

Intersection Summary

HCM 2000 Control Delay	131.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	133.5%	ICU Level of Service	H
Analysis Period (min)	15		
Description: Denver			
c Critical Lane Group			