APPENDIX D
CAPACITY ANALYSIS WORKSHEETS

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	03/02/09	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 212
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	24	441			353	40
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	27	501	0	0	396	44
Percent Heavy Vehicles	3	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				31		28
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	47	0	43
Percent Heavy Vehicles	0	0	0	2	0	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	27						90	
C (m) (veh/h)	1115						375	
v/c	0.02						0.24	
95% queue length	0.07						0.92	
Control Delay (s/veh)	8.3						17.6	
LOS	A						C	
Approach Delay (s/veh)	--	--				17.6		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 214

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	97	557	1	0	203	23
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	105	605	1	0	247	28
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	41	0	64
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	45	0	70
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	105	0		4			115	
C (m) (veh/h)	1288	977		236			339	
v/c	0.08	0.00		0.02			0.34	
95% queue length	0.27	0.00		0.05			1.46	
Control Delay (s/veh)	8.0	8.7		20.5			21.0	
LOS	A	A		C			C	
Approach Delay (s/veh)	--	--	20.5			21.0		
Approach LOS	--	--	C			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 42
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	26	589			148	47
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	27	626	0	0	157	50
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				44		4
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	61	0	5
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	27					61		5
C (m) (veh/h)	1429					319		866
v/c	0.02					0.19		0.01
95% queue length	0.06					0.69		0.02
Control Delay (s/veh)	7.6					18.9		9.2
LOS	A					C		A
Approach Delay (s/veh)	--	--				18.2		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 47
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	4	566	40	20	169	7
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	4	595	42	21	179	7
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	16	4	20	1	1	4
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	22	5	28	1	1	5
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	4	21		55			7	
C (m) (veh/h)	1388	947		356			527	
v/c	0.00	0.02		0.15			0.01	
95% queue length	0.01	0.07		0.54			0.04	
Control Delay (s/veh)	7.6	8.9		17.0			11.9	
LOS	A	A		C			B	
Approach Delay (s/veh)	--	--	17.0			11.9		
Approach LOS	--	--	C			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Main St.
Agency/Co.	CHA	Jurisdiction	
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	1/19 afternoon		

Project Description 18882

East/West Street: Rte 28 | North/South Street: Main St.

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		666	14	16	145	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	686	14	19	172	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6		8			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	8	0	11	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		19		19				
C (m) (veh/h)		906		362				
v/c		0.02		0.05				
95% queue length		0.06		0.17				
Control Delay (s/veh)		9.1		15.5				
LOS		A		C				
Approach Delay (s/veh)	--	--	15.5					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 49A
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	92	33	33	123	3
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	112	40	43	161	3
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	210	12	614	1	0	1
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	244	13	713	4	0	4
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	43		970			8	
C (m) (veh/h)	1402	1435		808			143	
v/c	0.00	0.03		1.20			0.06	
95% queue length	0.00	0.09		31.72			0.18	
Control Delay (s/veh)	7.6	7.6		121.2			31.7	
LOS	A	A		F			D	
Approach Delay (s/veh)	--	--	121.2			31.7		
Approach LOS	--	--	F			D		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	CLD
Agency/Co.	CHA
Date Performed	03/02/09
Analysis Time Period	Saturday Peak

Site Information

Intersection	Rte 28 & Rte 38
Jurisdiction	Highmount, NY
Analysis Year	2008

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 38

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	63	108			235	104
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	68	117	0	0	264	116
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				57		41
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	73	0	52
Percent Heavy Vehicles	0	0	0	3	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	68						125	
C (m) (veh/h)	1178						532	
v/c	0.06						0.23	
95% queue length	0.18						0.91	
Control Delay (s/veh)	8.2						13.8	
LOS	A						B	
Approach Delay (s/veh)	--	--	13.8					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	CR 49A & Gunnison Rd
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Gunnison Rd/Belleayre Lower
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	625	2	1	80	1
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	811	2	1	121	1
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	2	0	1
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	8	0	4
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			12	
C (m) (veh/h)	1465	788		365			116	
v/c	0.00	0.00		0.69			0.10	
95% queue length	0.00	0.00		4.95			0.34	
Control Delay (s/veh)	7.5	9.6		34.2			39.6	
LOS	A	A		D			E	
Approach Delay (s/veh)	--	--	34.2			39.6		
Approach LOS	--	--	D			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/10/09	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		441	25	25	69	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	544	30	33	93	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	24		186			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	32	0	251	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		33		283				
C (m) (veh/h)		975		494				
v/c		0.03		0.57				
95% queue length		0.11		3.55				
Control Delay (s/veh)		8.8		21.6				
LOS		A		C				
Approach Delay (s/veh)	--	--	21.6					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	CR 49A & Upper Driveway
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/8/2008	Analysis Year	2008
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Upper Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		7	5	78	15	
Peak-Hour Factor, PHF	1.00	0.43	0.43	0.71	0.71	0.25
Hourly Flow Rate, HFR (veh/h)	0	16	11	109	21	0
Percent Heavy Vehicles	2	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	16		459			
Peak-Hour Factor, PHF	0.79	1.00	0.79	0.25	0.65	0.25
Hourly Flow Rate, HFR (veh/h)	20	0	581	0	0	0
Percent Heavy Vehicles	1	0	1	2	0	3
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		109		601				
C (m) (veh/h)		1574		1039				
v/c		0.07		0.58				
95% queue length		0.22		3.85				
Control Delay (s/veh)		7.5		13.1				
LOS		A		B				
Approach Delay (s/veh)	--	--	13.1					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	03/02/09	Analysis Year	2015 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 212

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	26	477			406	46
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	29	542	0	0	456	51
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				35		32
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	53	0	49
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	29						102	
C (m) (veh/h)	1068						330	
v/c	0.03						0.31	
95% queue length	0.08						1.28	
Control Delay (s/veh)	8.5						20.7	
LOS	A						C	
Approach Delay (s/veh)	--	--				20.7		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 214

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	103	592	1	0	233	26
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	111	643	1	0	284	31
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	47	0	74
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	51	0	81
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	111	0		4			132	
C (m) (veh/h)	1245	946		202			301	
v/c	0.09	0.00		0.02			0.44	
95% queue length	0.29	0.00		0.06			2.13	
Control Delay (s/veh)	8.2	8.8		23.2			26.0	
LOS	A	A		C			D	
Approach Delay (s/veh)	--	--	23.2			26.0		
Approach LOS	--	--	C			D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 42

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	27	620			170	54
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	28	659	0	0	180	57
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				51		5
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	71	0	7
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	28					71		7
C (m) (veh/h)	1402					293		837
v/c	0.02					0.24		0.01
95% queue length	0.06					0.93		0.03
Control Delay (s/veh)	7.6					21.2		9.3
LOS	A					C		A
Approach Delay (s/veh)	--	--				20.1		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: CR 47

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	591	41	23	194	8
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	5	622	43	24	206	8
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	18	5	23	1	1	5
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	25	7	32	1	1	6
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	5	24		64			8	
C (m) (veh/h)	1356	924		328			513	
v/c	0.00	0.03		0.20			0.02	
95% queue length	0.01	0.08		0.71			0.05	
Control Delay (s/veh)	7.7	9.0		18.6			12.1	
LOS	A	A		C			B	
Approach Delay (s/veh)	--	--	18.6			12.1		
Approach LOS	--	--	C			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Main St.
Agency/Co.	CHA	Jurisdiction	Highmount NY
Date Performed	9/23/2008	Analysis Year	2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Ski Center

East/West Street: Rte 28	North/South Street: Main St.
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		705	15	18	167	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	726	15	21	198	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7		9			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	10	0	12	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		21		22				
C (m) (veh/h)		875		329				
v/c		0.02		0.07				
95% queue length		0.07		0.21				
Control Delay (s/veh)		9.2		16.7				
LOS		A		C				
Approach Delay (s/veh)	--	--	16.7					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: CR 49A

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	106	38	38	141	3
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	129	46	50	185	3
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	219	13	640	1	0	1
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	254	15	744	4	0	4
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	50		1013			8	
C (m) (veh/h)	1374	1407		770			103	
v/c	0.00	0.04		1.32			0.08	
95% queue length	0.00	0.11		39.90			0.25	
Control Delay (s/veh)	7.6	7.7		169.1			42.9	
LOS	A	A		F			E	
Approach Delay (s/veh)	--	--	169.1			42.9		
Approach LOS	--	--	F			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 38
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	5/07/09	Analysis Year	2015 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 38
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	72	124			255	112
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	78	134	0	0	286	125
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				66		47
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	84	0	60
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	78						144	
C (m) (veh/h)	1137						497	
v/c	0.07						0.29	
95% queue length	0.22						1.19	
Control Delay (s/veh)	8.4						15.2	
LOS	A						C	
Approach Delay (s/veh)	--	--				15.2		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	CR 49A & Gunnison Rd
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	NO BUILD 2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Gunnison Rd/Belleayre Lower

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	626	2	1	80	1
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	812	2	1	121	1
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	2	0	1
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	8	0	4
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			12	
C (m) (veh/h)	1465	787		365			116	
v/c	0.00	0.00		0.69			0.10	
95% queue length	0.00	0.00		4.95			0.34	
Control Delay (s/veh)	7.5	9.6		34.2			39.6	
LOS	A	A		D			E	
Approach Delay (s/veh)	--	--	34.2			39.6		
Approach LOS	--	--	D			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/10/09	Analysis Year	No Build 2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		442	25	25	69	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	545	30	33	93	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	24		186			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	32	0	251	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		33		283				
C (m) (veh/h)		974		494				
v/c		0.03		0.57				
95% queue length		0.11		3.55				
Control Delay (s/veh)		8.8		21.6				
LOS		A		C				
Approach Delay (s/veh)	--	--	21.6					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	CR 49A & Upper Driveway
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Upper Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		8	5	78	15	
Peak-Hour Factor, PHF	1.00	0.43	0.43	0.71	0.71	0.25
Hourly Flow Rate, HFR (veh/h)	0	18	11	109	21	0
Percent Heavy Vehicles	2	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	16		459			
Peak-Hour Factor, PHF	0.79	1.00	0.79	0.25	0.65	0.25
Hourly Flow Rate, HFR (veh/h)	20	0	581	0	0	0
Percent Heavy Vehicles	1	0	1	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		109		601				
C (m) (veh/h)		1571		1036				
v/c		0.07		0.58				
95% queue length		0.22		3.87				
Control Delay (s/veh)		7.5		13.2				
LOS		A		B				
Approach Delay (s/veh)	--	--	13.2					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	03/02/09	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: Rte 212
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	58	852			472	46
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	65	968	0	0	530	51
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				35		37
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	53	0	56
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	65						109	
C (m) (veh/h)	1003						174	
v/c	0.06						0.63	
95% queue length	0.21						3.51	
Control Delay (s/veh)	8.8						55.2	
LOS	A						F	
Approach Delay (s/veh)	--	--				55.2		
Approach LOS	--	--				F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 214

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	134	999	1	0	304	26
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	145	1085	1	0	370	31
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	47	0	80
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	51	0	87
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	145	0		4			138	
C (m) (veh/h)	1158	646		68			118	
v/c	0.13	0.00		0.06			1.17	
95% queue length	0.43	0.00		0.18			8.55	
Control Delay (s/veh)	8.6	10.6		61.2			206.0	
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	61.2			206.0		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 42
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	58	1058			247	54
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	61	1125	0	0	262	57
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				51		11
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	71	0	15
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	61					71		15
C (m) (veh/h)	1308					122		754
v/c	0.05					0.58		0.02
95% queue length	0.15					2.88		0.06
Control Delay (s/veh)	7.9					69.2		9.9
LOS	A					F		A
Approach Delay (s/veh)	--	--				58.8		
Approach LOS	--	--				F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 47
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	1060	73	23	277	8
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	5	1115	76	24	294	8
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	23	5	23	1	1	5
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	32	7	32	1	1	6
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	5	24		71			8	
C (m) (veh/h)	1259	586		132			263	
v/c	0.00	0.04		0.54			0.03	
95% queue length	0.01	0.13		2.60			0.09	
Control Delay (s/veh)	7.9	11.4		60.3			19.1	
LOS	A	B		F			C	
Approach Delay (s/veh)	--	--	60.3			19.1		
Approach LOS	--	--	F			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & Main St.
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description 18882	
East/West Street: Rte 28	North/South Street: Main St.
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1206	15	18	255	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	1243	15	21	303	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7		9			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	10	0	12	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		21		22				
C (m) (veh/h)		560		146				
v/c		0.04		0.15				
95% queue length		0.12		0.52				
Control Delay (s/veh)		11.7		34.0				
LOS		B		D				
Approach Delay (s/veh)	--	--	34.0					
Approach LOS	--	--	D					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: CR 49A

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	106	55	126	141	3
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	129	67	165	185	3
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	312	13	1141	1	0	1
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	362	15	1326	4	0	4
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	165		1703			8	
C (m) (veh/h)	1374	1383		673			0	
v/c	0.00	0.12		2.53				
95% queue length	0.00	0.41		133.53				
Control Delay (s/veh)	7.6	8.0		707.8				
LOS	A	A		F			F	
Approach Delay (s/veh)	--	--	707.8					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 38
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	05/07/09	Analysis Year	2015 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 38

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	72	130			286	174
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	78	141	0	0	321	195
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				77		47
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	98	0	60
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	78						158	
C (m) (veh/h)	1040						439	
v/c	0.08						0.36	
95% queue length	0.24						1.61	
Control Delay (s/veh)	8.7						17.7	
LOS	A						C	
Approach Delay (s/veh)	--	--				17.7		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Van Loan
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/24/09	Analysis Year	Build 2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Van Loan
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	1354	2	25	156	3
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1574	2	37	236	4
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	0	112	3	0	0
Peak-Hour Factor, PHF	0.70	0.70	0.70	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	10	0	160	12	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	37		170			12	
C (m) (veh/h)	1327	418		123			0	
v/c	0.00	0.09		1.38				
95% queue length	0.00	0.29		11.45				
Control Delay (s/veh)	7.7	14.4		280.2				
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	280.2					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & North Parking
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/10/09	Analysis Year	Build 2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: North Parking

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1132	1	23	150	
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1470	1	34	227	0
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6		122			
Peak-Hour Factor, PHF	0.70	0.60	0.70	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	8	0	174	0	0	0
Percent Heavy Vehicles	5	0	5	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		34		182				
C (m) (veh/h)		458		149				
v/c		0.07		1.22				
95% queue length		0.24		10.58				
Control Delay (s/veh)		13.5		204.5				
LOS		B		F				
Approach Delay (s/veh)	--	--	204.5					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MJD	Intersection	CR 49A & Gunnison Rd
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	9/23/2008	Analysis Year	BUILD 2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Gunnison Rd/Belleayre Lower

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	992	2	1	154	1
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1288	2	1	233	1
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	2	0	1
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	8	0	4
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			12	
C (m) (veh/h)	1333	518		185			0	
v/c	0.00	0.00		1.36				
95% queue length	0.00	0.01		14.77				
Control Delay (s/veh)	7.7	12.0		242.2				
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	242.2					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/10/09	Analysis Year	Build 2015
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		876	24	2	166	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	1081	29	2	224	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	21		118			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	28	0	159	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		2		187				
C (m) (veh/h)		611		233				
v/c		0.00		0.80				
95% queue length		0.01		5.98				
Control Delay (s/veh)		10.9		62.9				
LOS		B		F				
Approach Delay (s/veh)	--	--	62.9					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	CLD
Agency/Co.	CHA
Date Performed	09/10/09
Analysis Time Period	Saturday Peak

Site Information

Intersection	CR 49A & Upper Discovery Park
Jurisdiction	Highmount, NY
Analysis Year	Build 2015

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Upper Discovery Parking

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		678	2	41	146	
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	880	2	62	221	0
Percent Heavy Vehicles	2	--	--	3	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	12		222			
Peak-Hour Factor, PHF	0.65	0.60	0.65	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	18	0	341	0	0	0
Percent Heavy Vehicles	5	0	5	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		62		359				
C (m) (veh/h)		763		326				
v/c		0.08		1.10				
95% queue length		0.26		13.85				
Control Delay (s/veh)		10.1		116.2				
LOS		B		F				
Approach Delay (s/veh)	--	--	116.2					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	03/02/09	Analysis Year	2015 Build Mitigation
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 214

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	134	999	1	0	304	26
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	145	1085	1	0	370	31
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	1
Configuration	L		TR	LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	47	0	80
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	51	0	87
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	LT		LTR		LT		R
v (veh/h)	145	0		4		51		87
C (m) (veh/h)	1158	646		83		60		672
v/c	0.13	0.00		0.05		0.85		0.13
95% queue length	0.43	0.00		0.15		3.85		0.44
Control Delay (s/veh)	8.6	10.6		50.6		186.5		11.2
LOS	A	B		F		F		B
Approach Delay (s/veh)	--	--	50.6			75.9		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1/09	Analysis Year	2025 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 212
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	29	522			471	53
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	32	593	0	0	529	59
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				41		37
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	63	0	56
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	32						119	
C (m) (veh/h)	997						278	
v/c	0.03						0.43	
95% queue length	0.10						2.04	
Control Delay (s/veh)	8.7						27.3	
LOS	A						D	
Approach Delay (s/veh)	--	--				27.3		
Approach LOS	--	--				D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: Rte 214
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	109	636	2	0	271	31
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	118	691	2	0	330	37
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	55	0	85
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	60	0	93
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	118	0		4			153	
C (m) (veh/h)	1192	907		165			255	
v/c	0.10	0.00		0.02			0.60	
95% queue length	0.33	0.00		0.07			3.53	
Control Delay (s/veh)	8.4	9.0		27.4			38.3	
LOS	A	A		D			E	
Approach Delay (s/veh)	--	--	27.4			38.3		
Approach LOS	--	--	D			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: Rte 42
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	28	659			197	63
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	29	701	0	0	209	67
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				59		5
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	83	0	7
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	29					83		7
C (m) (veh/h)	1368					263		802
v/c	0.02					0.32		0.01
95% queue length	0.06					1.31		0.03
Control Delay (s/veh)	7.7					24.9		9.5
LOS	A					C		A
Approach Delay (s/veh)	--	--				23.7		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 47
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	621	43	27	225	9
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	6	653	45	28	239	9
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	21	6	27	1	1	5
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	29	8	38	1	1	6
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	6	28		75			8	
C (m) (veh/h)	1318	898		299			468	
v/c	0.00	0.03		0.25			0.02	
95% queue length	0.01	0.10		0.97			0.05	
Control Delay (s/veh)	7.7	9.1		21.0			12.8	
LOS	A	A		C			B	
Approach Delay (s/veh)	--	--	21.0			12.8		
Approach LOS	--	--	C			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Main St.
Agency/Co.	CHA	Jurisdiction	Highmount NY
Date Performed	09/1 1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Ski Center

East/West Street: Rte 28 | North/South Street: Main St.

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		753	16	21	193	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	776	16	25	229	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	8		11			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	11	0	15	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		25		26				
C (m) (veh/h)		838		302				
v/c		0.03		0.09				
95% queue length		0.09		0.28				
Control Delay (s/veh)		9.4		18.0				
LOS		A		C				
Approach Delay (s/veh)	--	--	18.0					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: CR 49A
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	123	44	44	164	4
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	150	53	57	215	5
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	230	13	672	1	0	1
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	267	15	781	4	0	4
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	57		1063			8	
C (m) (veh/h)	1337	1375		726			62	
v/c	0.00	0.04		1.46			0.13	
95% queue length	0.00	0.13		50.08			0.42	
Control Delay (s/veh)	7.7	7.7		233.5			71.5	
LOS	A	A		F			F	
Approach Delay (s/veh)	--	--	233.5			71.5		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 38
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2025 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 38

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	84	144			279	123
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	91	156	0	0	313	138
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				77		54
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	98	0	69
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	91						167	
C (m) (veh/h)	1099						447	
v/c	0.08						0.37	
95% queue length	0.27						1.71	
Control Delay (s/veh)	8.6						17.8	
LOS	A						C	
Approach Delay (s/veh)	--	--	17.8					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Gunnison Rd
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: CR 49A	North/South Street: Gunnison Rd/Belleayre Lower
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	627	2	1	81	1
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	814	2	1	122	1
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	3	0	1
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	12	0	4
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			16	
C (m) (veh/h)	1464	786		364			105	
v/c	0.00	0.00		0.69			0.15	
95% queue length	0.00	0.00		4.98			0.52	
Control Delay (s/veh)	7.5	9.6		34.4			45.4	
LOS	A	A		D			E	
Approach Delay (s/veh)	--	--	34.4			45.4		
Approach LOS	--	--	D			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		443	25	25	70	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	546	30	33	94	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	24		186			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	32	0	251	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		33		283				
C (m) (veh/h)		973		493				
v/c		0.03		0.57				
95% queue length		0.11		3.56				
Control Delay (s/veh)		8.8		21.7				
LOS		A		C				
Approach Delay (s/veh)	--	--	21.7					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Upper Driveway
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1/09	Analysis Year	2025 No-Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Upper Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		9	5	78	16	
Peak-Hour Factor, PHF	1.00	0.43	0.43	0.71	0.71	0.25
Hourly Flow Rate, HFR (veh/h)	0	20	11	109	22	0
Percent Heavy Vehicles	2	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	16		459			
Peak-Hour Factor, PHF	0.79	1.00	0.79	0.25	0.65	0.25
Hourly Flow Rate, HFR (veh/h)	20	0	581	0	0	0
Percent Heavy Vehicles	1	0	1	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		109		601				
C (m) (veh/h)		1569		1034				
v/c		0.07		0.58				
95% queue length		0.22		3.89				
Control Delay (s/veh)		7.5		13.2				
LOS		A		B				
Approach Delay (s/veh)	--	--	13.2					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 7/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: Rte 212
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	61	897			537	53
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	69	1019	0	0	603	59
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				41		42
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	63	0	64
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	69						127	
C (m) (veh/h)	936						142	
v/c	0.07						0.89	
95% queue length	0.24						6.03	
Control Delay (s/veh)	9.2						110.4	
LOS	A						F	
Approach Delay (s/veh)	--	--	110.4					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 7/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center	
East/West Street: Rte 28	North/South Street: Rte 214
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	140	1043	1	0	342	31
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	152	1133	1	0	417	37
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	55	0	91
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	60	0	99
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	152	0		4			159	
C (m) (veh/h)	1107	620		52			92	
v/c	0.14	0.00		0.08			1.73	
95% queue length	0.48	0.00		0.24			12.97	
Control Delay (s/veh)	8.8	10.8		79.9			447.3	
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	79.9			447.3		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/17/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: Rte 42
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	59	1097			274	63
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	62	1167	0	0	291	67
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				59		11
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	83	0	15
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	62					83		15
C (m) (veh/h)	1276					108		722
v/c	0.05					0.77		0.02
95% queue length	0.15					4.23		0.06
Control Delay (s/veh)	8.0					105.6		10.1
LOS	A					F		B
Approach Delay (s/veh)	--	--				91.0		
Approach LOS	--	--				F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/17/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: CR 47
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	1090	75	27	308	9
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	5	1147	78	28	327	9
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	26	5	27	1	1	5
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	36	7	38	1	1	6
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	5	28		81			8	
C (m) (veh/h)	1223	569		121			232	
v/c	0.00	0.05		0.67			0.03	
95% queue length	0.01	0.15		3.55			0.11	
Control Delay (s/veh)	8.0	11.7		80.8			21.1	
LOS	A	B		F			C	
Approach Delay (s/veh)	--	--	80.8			21.1		
Approach LOS	--	--	F			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Main St.
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed09/1	7/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description 18882	
East/West Street: Rte 28	North/South Street: Main St.
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1254	16	21	281	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	1292	16	25	334	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	8		11			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	11	0	15	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		25		26				
C (m) (veh/h)		536		133				
v/c		0.05		0.20				
95% queue length		0.15		0.69				
Control Delay (s/veh)		12.0		38.5				
LOS		B		E				
Approach Delay (s/veh)	--	--	38.5					
Approach LOS	--	--	E					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 7/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: CR 49A
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	123	61	132	164	4
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	150	74	173	215	5
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	323	13	1173	1	0	1
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	375	15	1363	4	0	4
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	173		1753			8	
C (m) (veh/h)	1337	1351		628			0	
v/c	0.00	0.13		2.79				
95% queue length	0.00	0.44		145.15				
Control Delay (s/veh)	7.7	8.1		825.7				
LOS	A	A		F			F	
Approach Delay (s/veh)	--	--	825.7					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 38
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/17/09	Analysis Year	2025 BUILD
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 38
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	84	150			310	185
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	91	163	0	0	348	207
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				88		54
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	112	0	69
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	91						181	
C (m) (veh/h)	1005						395	
v/c	0.09						0.46	
95% queue length	0.30						2.33	
Control Delay (s/veh)	8.9						21.6	
LOS	A						C	
Approach Delay (s/veh)	--	--	21.6					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Van Loan
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/24/09	Analysis Year	Build 2025
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Van Loan

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	1397	2	25	168	3
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1624	2	37	254	4
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	0	112	3	0	0
Peak-Hour Factor, PHF	0.70	0.70	0.70	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	10	0	160	12	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	37		170			12	
C (m) (veh/h)	1307	400		114			0	
v/c	0.00	0.09		1.49				
95% queue length	0.00	0.30		12.22				
Control Delay (s/veh)	7.8	14.9		329.9				
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	329.9					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & North Parking
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: North Parking

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1133	1	23	151	
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1471	1	34	228	0
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6		122			
Peak-Hour Factor, PHF	0.70	0.60	0.70	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	8	0	174	0	0	0
Percent Heavy Vehicles	5	0	5	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		34		182				
C (m) (veh/h)		458		148				
v/c		0.07		1.23				
95% queue length		0.24		10.66				
Control Delay (s/veh)		13.5		208.0				
LOS		B		F				
Approach Delay (s/veh)	--	--	208.0					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Gunnison Rd
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/17/09	Analysis Year	2025 BUILD
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: CR 49A	North/South Street: Gunnison Rd/Belleayre Lower
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	993	2	1	155	1
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1289	2	1	234	1
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	3	0	1
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	12	0	4
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			16	
C (m) (veh/h)	1332	517		185			0	
v/c	0.00	0.00		1.36				
95% queue length	0.00	0.01		14.77				
Control Delay (s/veh)	7.7	12.0		242.2				
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	242.2					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2025 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		877	24	2	167	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	1082	29	2	225	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	21		118			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	28	0	159	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		2		187				
C (m) (veh/h)		610		233				
v/c		0.00		0.80				
95% queue length		0.01		5.98				
Control Delay (s/veh)		10.9		62.9				
LOS		B		F				
Approach Delay (s/veh)	--	--	62.9					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JMK
Agency/Co.	CHA
Date Performed	09/1 1/09
Analysis Time Period	Saturday Peak

Site Information

Intersection	CR 49A & Upper Discovery Park
Jurisdiction	Highmount, NY
Analysis Year	2025 Build

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Upper Discovery Parking

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		679	2	41	147	
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	881	2	62	222	0
Percent Heavy Vehicles	2	--	--	3	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	12		222			
Peak-Hour Factor, PHF	0.65	0.60	0.65	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	18	0	341	0	0	0
Percent Heavy Vehicles	5	0	5	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		62		359				
C (m) (veh/h)		762		326				
v/c		0.08		1.10				
95% queue length		0.26		13.85				
Control Delay (s/veh)		10.1		116.2				
LOS		B		F				
Approach Delay (s/veh)	--	--	116.2					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Upper Driveway
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 7/09	Analysis Year	2025 BUILD
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Upper Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		12	7	122	37	
Peak-Hour Factor, PHF	1.00	0.43	0.43	0.71	0.71	0.25
Hourly Flow Rate, HFR (veh/h)	0	27	16	171	52	0
Percent Heavy Vehicles	2	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	27		669			
Peak-Hour Factor, PHF	0.79	1.00	0.79	0.25	0.65	0.25
Hourly Flow Rate, HFR (veh/h)	34	0	846	0	0	0
Percent Heavy Vehicles	1	0	1	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		171		880				
C (m) (veh/h)		1553		1002				
v/c		0.11		0.88				
95% queue length		0.37		12.08				
Control Delay (s/veh)		7.6		27.8				
LOS		A		D				
Approach Delay (s/veh)	--	--	27.8					
Approach LOS	--	--	D					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 212

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	32	573			547	62
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	36	651	0	0	614	69
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				47		43
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	72	0	66
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	36						138	
C (m) (veh/h)	919						229	
v/c	0.04						0.60	
95% queue length	0.12						3.48	
Control Delay (s/veh)	9.1						42.0	
LOS	A						E	
Approach Delay (s/veh)	--	--				42.0		
Approach LOS	--	--				E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 214
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	117	687	2	0	314	36
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	127	746	2	0	382	43
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	0	2	63	0	99
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	4	0	4	69	0	108
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	127	0		8			177	
C (m) (veh/h)	1134	865		129			209	
v/c	0.11	0.00		0.06			0.85	
95% queue length	0.38	0.00		0.20			6.39	
Control Delay (s/veh)	8.6	9.2		34.7			75.8	
LOS	A	A		D			F	
Approach Delay (s/veh)	--	--	34.7			75.8		
Approach LOS	--	--	D			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed09/1	1/09	Analysis Year	2035 No-Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 42
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	29	703			229	73
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	30	747	0	0	243	77
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				68		6
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	95	0	8
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	30					95		8
C (m) (veh/h)	1329					233		762
v/c	0.02					0.41		0.01
95% queue length	0.07					1.86		0.03
Control Delay (s/veh)	7.8					30.7		9.8
LOS	A					D		A
Approach Delay (s/veh)	--	--				29.1		
Approach LOS	--	--				D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 47
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	657	45	31	261	11
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	6	691	47	32	277	11
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	25	6	31	2	2	6
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	35	8	43	2	2	8
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	6	32		86			12	
C (m) (veh/h)	1274	868		265			367	
v/c	0.00	0.04		0.32			0.03	
95% queue length	0.01	0.11		1.36			0.10	
Control Delay (s/veh)	7.8	9.3		25.0			15.1	
LOS	A	A		C			C	
Approach Delay (s/veh)	--	--	25.0			15.1		
Approach LOS	--	--	C			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JMK
Agency/Co.	CHA
Date Performed	09/1 1/09
Analysis Time Period	Saturday Peak

Site Information

Intersection	Rte 28 & Main St.
Jurisdiction	Highmount NY
Analysis Year	2035 No Build

Project Description 18882 - Belleayre Ski Center

East/West Street: Rte 28 | North/South Street: Main St.

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		809	17	25	224	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	834	17	29	266	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	9		12			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	12	0	17	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		29		29				
C (m) (veh/h)		796		270				
v/c		0.04		0.11				
95% queue length		0.11		0.36				
Control Delay (s/veh)		9.7		19.9				
LOS		A		C				
Approach Delay (s/veh)	--	--	19.9					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: CR 49A
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	142	51	51	190	5
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	173	62	67	250	6
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	243	14	709	2	0	2
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	282	16	824	8	0	8
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	67		1122			16	
C (m) (veh/h)	1297	1338		674			22	
v/c	0.00	0.05		1.66			0.73	
95% queue length	0.00	0.16		62.71			2.10	
Control Delay (s/veh)	7.8	7.8		322.3			346.7	
LOS	A	A		F			F	
Approach Delay (s/veh)	--	--	322.3			346.7		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	Rte 28 & Rte 38
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: Rte 38

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	97	167			306	136
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	105	181	0	0	343	152
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				89		63
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	114	0	80
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	105						194	
C (m) (veh/h)	1058						399	
v/c	0.10						0.49	
95% queue length	0.33						2.58	
Control Delay (s/veh)	8.8						22.3	
LOS	A						C	
Approach Delay (s/veh)	--	--				22.3		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Gunnison Rd
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Gunnison Rd/Belleayre Lower

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	628	2	1	81	2
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	815	2	1	122	3
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	3	0	2
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	12	0	8
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			20	
C (m) (veh/h)	1462	785		363			126	
v/c	0.00	0.00		0.69			0.16	
95% queue length	0.00	0.00		5.01			0.54	
Control Delay (s/veh)	7.5	9.6		34.6			38.9	
LOS	A	A		D			E	
Approach Delay (s/veh)	--	--	34.6			38.9		
Approach LOS	--	--	D			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		444	25	25	70	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	548	30	33	94	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	24		186			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	32	0	251	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		33		283				
C (m) (veh/h)		971		492				
v/c		0.03		0.58				
95% queue length		0.11		3.57				
Control Delay (s/veh)		8.8		21.8				
LOS		A		C				
Approach Delay (s/veh)	--	--	21.8					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Upper Driveway
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/1 1/09	Analysis Year	2035 No Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: CR 49A	North/South Street: Upper Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		10	5	78	16	
Peak-Hour Factor, PHF	1.00	0.43	0.43	0.71	0.71	0.25
Hourly Flow Rate, HFR (veh/h)	0	23	11	109	22	0
Percent Heavy Vehicles	2	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	16		459			
Peak-Hour Factor, PHF	0.79	1.00	0.79	0.25	0.65	0.25
Hourly Flow Rate, HFR (veh/h)	20	0	581	0	0	0
Percent Heavy Vehicles	1	0	1	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		109		601				
C (m) (veh/h)		1565		1031				
v/c		0.07		0.58				
95% queue length		0.22		3.91				
Control Delay (s/veh)		7.5		13.3				
LOS		A		B				
Approach Delay (s/veh)	--	--	13.3					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 212
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/2 2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 212
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	64	948			613	62
Peak-Hour Factor, PHF	0.88	0.88	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	72	1077	0	0	688	69
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				47		48
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.65	1.00	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	72	0	73
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	72						145	
C (m) (veh/h)	863						115	
v/c	0.08						1.26	
95% queue length	0.27						9.48	
Control Delay (s/veh)	9.6						240.6	
LOS	A						F	
Approach Delay (s/veh)	--	--				240.6		
Approach LOS	--	--				F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/2 2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 214
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	148	1094	2	0	385	36
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	160	1189	2	0	469	43
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	0	2	63	0	105
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	4	0	4	69	0	115
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	160	0		8			184	
C (m) (veh/h)	1053	590		37			67	
v/c	0.15	0.00		0.22			2.75	
95% queue length	0.53	0.00		0.69			18.38	
Control Delay (s/veh)	9.0	11.1		127.4			921.5	
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	127.4			921.5		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 42
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed09/2	2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 42
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	60	1141			306	73
Peak-Hour Factor, PHF	0.94	0.94	0.25	1.00	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	63	1213	0	0	325	77
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			1
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				68		12
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.71	1.00	0.71
Hourly Flow Rate, HFR (veh/h)	0	0	0	95	0	16
Percent Heavy Vehicles	0	0	0	2	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
v (veh/h)	63					95		16
C (m) (veh/h)	1240					96		685
v/c	0.05					0.99		0.02
95% queue length	0.16					5.91		0.07
Control Delay (s/veh)	8.1					169.4		10.4
LOS	A					F		B
Approach Delay (s/veh)	--	--				146.5		
Approach LOS	--	--				F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & CR 47
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/2 2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 47
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	1126	77	31	344	11
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	6	1185	81	32	365	11
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	30	6	31	2	2	6
Peak-Hour Factor, PHF	0.71	0.71	0.71	0.75	0.75	0.75
Hourly Flow Rate, HFR (veh/h)	42	8	43	2	2	8
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	6	32		93			12	
C (m) (veh/h)	1182	549		103			160	
v/c	0.01	0.06		0.90			0.08	
95% queue length	0.02	0.19		5.31			0.24	
Control Delay (s/veh)	8.1	12.0		139.3			29.3	
LOS	A	B		F			D	
Approach Delay (s/veh)	--	--	139.3			29.3		
Approach LOS	--	--	F			D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Main St.
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/2 2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882

East/West Street: Rte 28 | North/South Street: Main St.

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1310	17	25	312	
Peak-Hour Factor, PHF	0.50	0.97	0.97	0.84	0.84	0.42
Hourly Flow Rate, HFR (veh/h)	0	1350	17	29	371	0
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	9		12			
Peak-Hour Factor, PHF	0.70	1.00	0.70	0.25	0.25	1.00
Hourly Flow Rate, HFR (veh/h)	12	0	17	0	0	0
Percent Heavy Vehicles	14	0	0	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		29		29				
C (m) (veh/h)		509		118				
v/c		0.06		0.25				
95% queue length		0.18		0.90				
Control Delay (s/veh)		12.5		45.2				
LOS		B		E				
Approach Delay (s/veh)	--	--	45.2					
Approach LOS	--	--	E					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/2 2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28 | North/South Street: CR 49A

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	142	68	139	190	5
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	173	82	182	250	6
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	336	14	1210	2	0	2
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	390	16	1406	8	0	8
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR		LTR			LTR	
v (veh/h)	0	182		1812			16	
C (m) (veh/h)	1297	1316		578			0	
v/c	0.00	0.14		3.13				
95% queue length	0.00	0.48		158.54				
Control Delay (s/veh)	7.8	8.2		981.0				
LOS	A	A		F			F	
Approach Delay (s/veh)	--	--	981.0					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 38
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/2 2/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description	18882 - Belleayre Mtn Ski Center
East/West Street: Rte 28	North/South Street: Rte 38
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	97	173			337	198
Peak-Hour Factor, PHF	0.92	0.92	0.25	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	105	188	0	0	378	222
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				100		63
Peak-Hour Factor, PHF	0.25	1.00	0.25	0.78	1.00	0.78
Hourly Flow Rate, HFR (veh/h)	0	0	0	128	0	80
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	105						208	
C (m) (veh/h)	967						352	
v/c	0.11						0.59	
95% queue length	0.36						3.61	
Control Delay (s/veh)	9.2						29.0	
LOS	A						D	
Approach Delay (s/veh)	--	--	29.0					
Approach LOS	--	--	D					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Van Loan
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/24/09	Analysis Year	Build 2035
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Van Loan

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	1448	2	25	182	3
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1683	2	37	275	4
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	0	112	3	0	0
Peak-Hour Factor, PHF	0.70	0.70	0.70	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	10	0	160	12	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	37		170			12	
C (m) (veh/h)	1284	379		104			0	
v/c	0.00	0.10		1.63				
95% queue length	0.00	0.32		13.11				
Control Delay (s/veh)	7.8	15.5		396.5				
LOS	A	C		F			F	
Approach Delay (s/veh)	--	--	396.5					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & North Parking
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: North Parking
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1134	1	23	152	
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1472	1	34	230	0
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6		122			
Peak-Hour Factor, PHF	0.70	0.60	0.70	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	8	0	174	0	0	0
Percent Heavy Vehicles	5	0	5	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		34		182				
C (m) (veh/h)		458		148				
v/c		0.07		1.23				
95% queue length		0.24		10.66				
Control Delay (s/veh)		13.5		208.0				
LOS		B		F				
Approach Delay (s/veh)	--	--	208.0					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	CLD
Agency/Co.	CHA
Date Performed	9/23/2008
Analysis Time Period	Saturday Peak

Site Information

Intersection	CR 49A & Gunnison Rd
Jurisdiction	Highmount, NY
Analysis Year	2035 BUILD

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Gunnison Rd/Belleayre Lower

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	994	2	1	155	2
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	1290	2	1	234	3
Percent Heavy Vehicles	2	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	13	0	139	3	0	2
Peak-Hour Factor, PHF	0.60	0.60	0.60	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	21	0	231	12	0	8
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		252			20	
C (m) (veh/h)	1330	517		184			0	
v/c	0.00	0.00		1.37				
95% queue length	0.00	0.01		14.86				
Control Delay (s/veh)	7.7	12.0		245.5				
LOS	A	B		F			F	
Approach Delay (s/veh)	--	--	245.5					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JMK	Intersection	CR 49A & Discovery Lodge
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	09/11/09	Analysis Year	2035 Build
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A	North/South Street: Discovery Lodge
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		878	24	2	167	
Peak-Hour Factor, PHF	0.77	0.81	0.81	0.74	0.74	0.66
Hourly Flow Rate, HFR (veh/h)	0	1083	29	2	225	0
Percent Heavy Vehicles	2	--	--	7	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	21		118			
Peak-Hour Factor, PHF	0.74	0.60	0.74	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	28	0	159	0	0	0
Percent Heavy Vehicles	9	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		2		187				
C (m) (veh/h)		610		233				
v/c		0.00		0.80				
95% queue length		0.01		5.98				
Control Delay (s/veh)		10.9		62.9				
LOS		B		F				
Approach Delay (s/veh)	--	--	62.9					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JMK
Agency/Co.	CHA
Date Performed09/1	1/09
Analysis Time Period	Saturday Peak

Site Information

Intersection	CR 49A & Upper Discovery Park
Jurisdiction	Highmount, NY
Analysis Year	2035 Build

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: CR 49A | North/South Street: Upper Discovery Parking

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		680	2	41	147	
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.66	0.66	0.66
Hourly Flow Rate, HFR (veh/h)	0	883	2	62	222	0
Percent Heavy Vehicles	2	--	--	3	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	12		222			
Peak-Hour Factor, PHF	0.65	0.60	0.65	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	18	0	341	0	0	0
Percent Heavy Vehicles	5	0	5	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		62		359				
C (m) (veh/h)		761		325				
v/c		0.08		1.10				
95% queue length		0.27		13.92				
Control Delay (s/veh)		10.1		117.5				
LOS		B		F				
Approach Delay (s/veh)	--	--	117.5					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	CR 49A & Upper Driveway
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed09/2	2/09	Analysis Year	2035 BUILD
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center	
East/West Street: CR 49A	North/South Street: Upper Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		13	7	122	37	
Peak-Hour Factor, PHF	1.00	0.43	0.43	0.71	0.71	0.25
Hourly Flow Rate, HFR (veh/h)	0	30	16	171	52	0
Percent Heavy Vehicles	2	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	27		669			
Peak-Hour Factor, PHF	0.79	1.00	0.79	0.25	0.65	0.25
Hourly Flow Rate, HFR (veh/h)	34	0	846	0	0	0
Percent Heavy Vehicles	1	0	1	2	0	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		171		880				
C (m) (veh/h)		1549		998				
v/c		0.11		0.88				
95% queue length		0.37		12.23				
Control Delay (s/veh)		7.6		28.3				
LOS		A		D				
Approach Delay (s/veh)	--	--	28.3					
Approach LOS	--	--	D					

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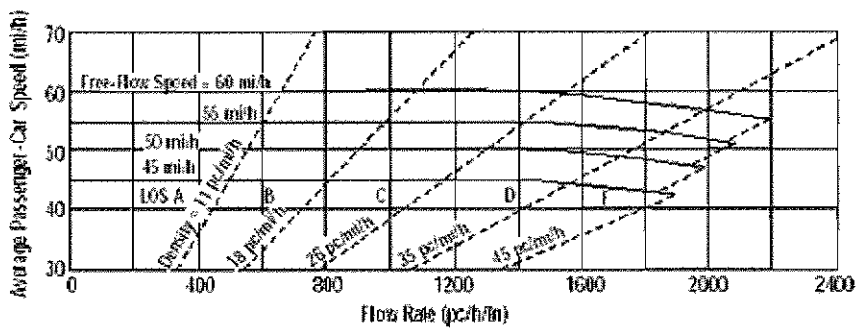
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	05/20/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	950	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	526
Speed, S (mi/h)	58.4
D (pc/mi/ln)	9.0
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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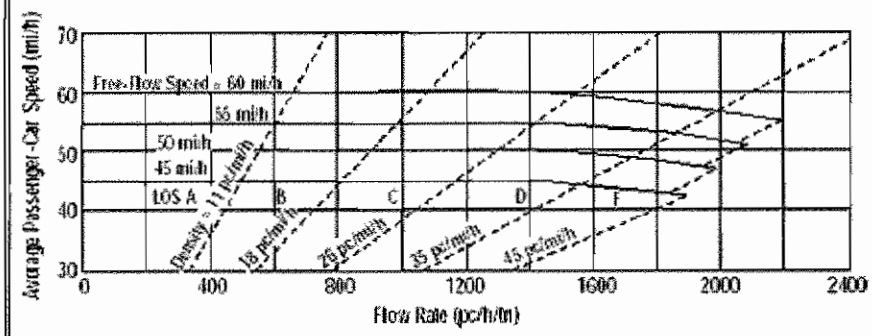
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	05/20/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1090	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	616
Speed, S (mi/h)	58.4
D (pc/mi/ln)	10.5
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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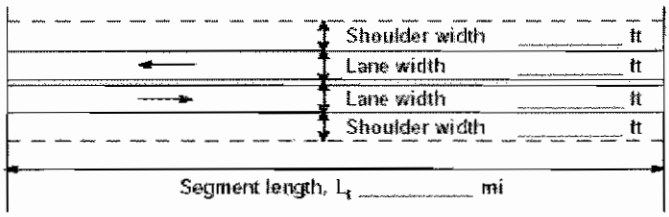
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	EXISTING 2008

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1091 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1279
v_p * highest directional split proportion[2] (pc/h)	652

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.4
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	48.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1254
v_p * highest directional split proportion[2] (pc/h)	640
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	66.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	8.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	75.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.40
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	4013
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	13965
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	83.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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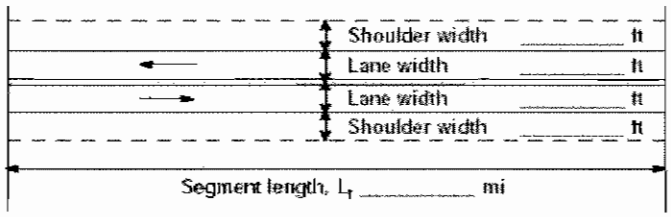
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	EXISTING 2008

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	705 veh/h
Directional split	58 / 42
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	887
v_p * highest directional split proportion[2] (pc/h)	514

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	50.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	871
v_p * highest directional split proportion[2] (pc/h)	505
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	53.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	12.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	65.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.28
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	790
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	2750
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	15.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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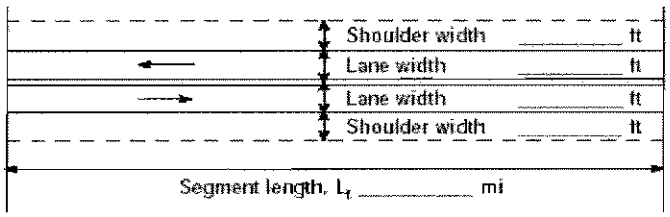
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	EXISTING 2008

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	490 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.81
No-passing zone	45
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	662
v_p * highest directional split proportion[2] (pc/h)	344

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.4
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	51.7

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	650
v_p * highest directional split proportion[2] (pc/h)	338
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	43.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	15.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	59.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.21
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	212
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	686
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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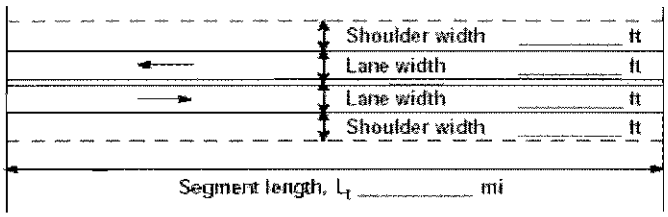
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	EXISTING 2008

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	349 veh/h
Directional split	85 / 15
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.71
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	2.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.971
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	569
v_p * highest directional split proportion[2] (pc/h)	484

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	4.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	32.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.77
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.8
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.984
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	517
v_p * highest directional split proportion[2] (pc/h)	439
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	36.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	28.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	64.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.18
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	137
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	489
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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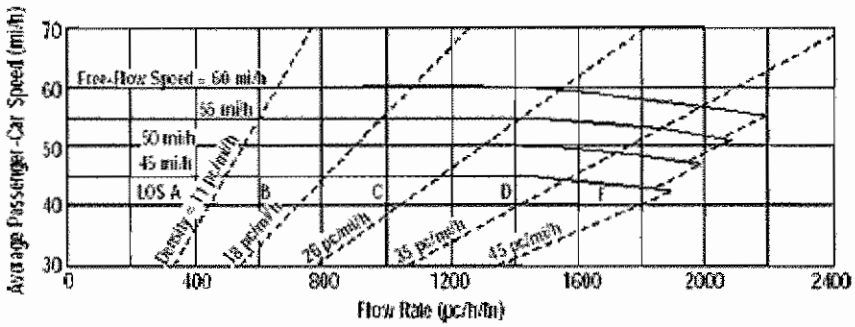
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	05/20/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	NO BUILD 2015

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1070	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	592
Speed, S (mi/h)	58.4
D (pc/mi/ln)	10.1
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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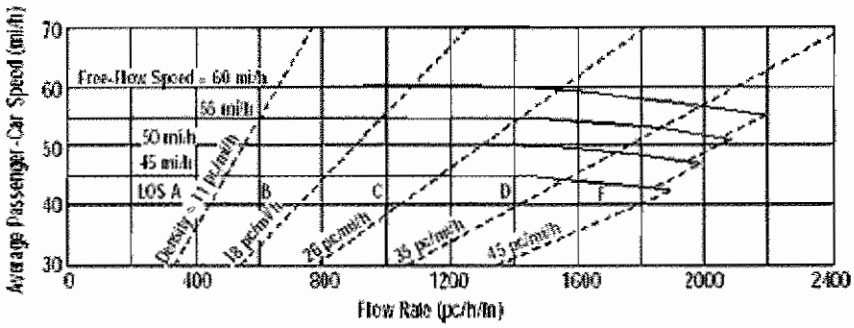
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	05/20/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	NO BUILD 2015

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1250	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	707
Speed, S (mi/h)	58.4
D (pc/mi/ln)	12.1
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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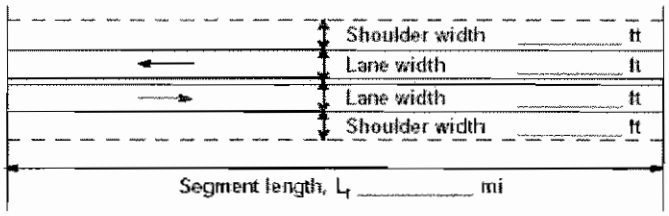
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1225 veh/h
Directional split	51 / 49
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1436
v_p * highest directional split proportion[2] (pc/h)	732

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	47.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1408
v_p * highest directional split proportion[2] (pc/h)	718
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	71.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	77.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3.200	0.45
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	4506
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	15680
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	95.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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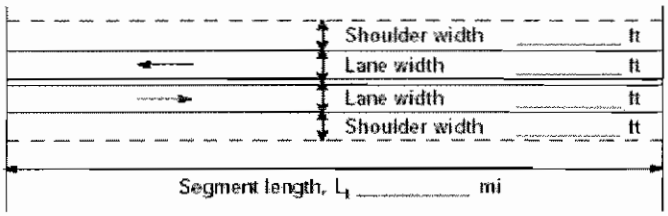
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	760 veh/h
Directional split	58 / 42
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	956
v_p * highest directional split proportion[2] (pc/h)	554

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	49.8

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	939
v_p * highest directional split proportion[2] (pc/h)	545
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	56.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	67.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.30
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	852
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	2964
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	17.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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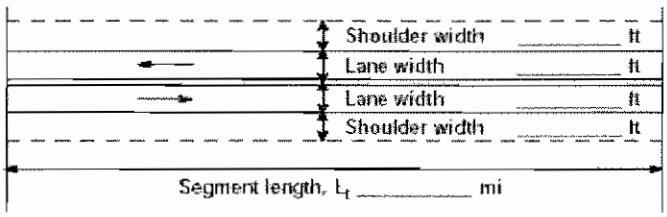
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	545 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.81
No-passing zone	45
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	737
v_p * highest directional split proportion[2] (pc/h)	383

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	51.3

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	723
v_p * highest directional split proportion[2] (pc/h)	376
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	47.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	14.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	61.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.23
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	235
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	763
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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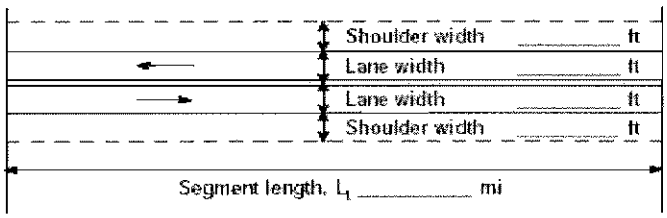
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	400 veh/h
Directional split	85 / 15
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	492
v_p * highest directional split proportion[2] (pc/h)	418

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	4.2
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	32.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.77
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.8
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.984
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	593
v_p * highest directional split proportion[2] (pc/h)	504
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	40.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	26.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	67.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.15
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	157
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	560
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.8

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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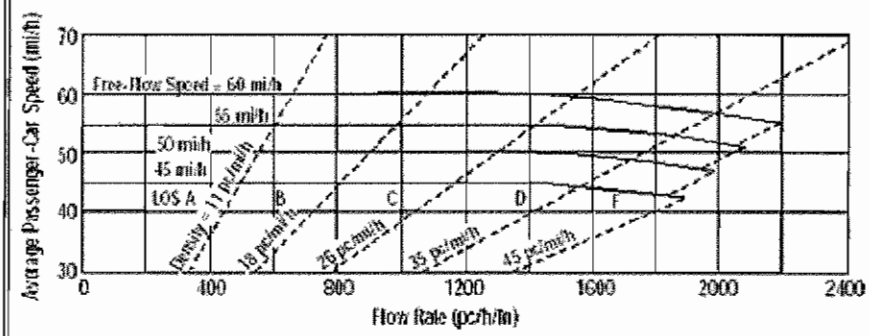
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	05/20/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	BUILD 2015

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1385	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	766
Speed, S (mi/h)	58.4
D (pc/mi/ln)	13.1
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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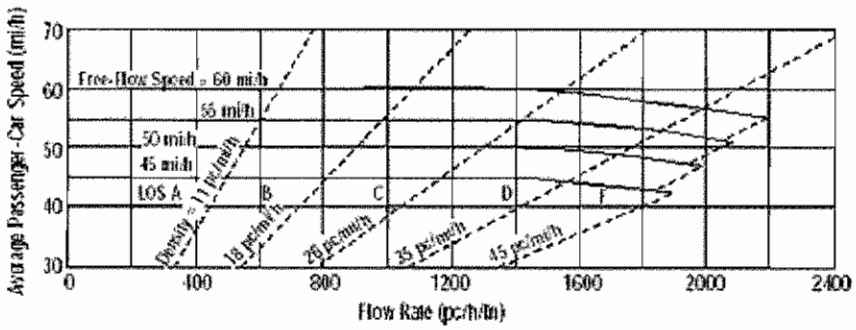
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	05/20/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	BUILD 2015

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1305	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	738
Speed, S (mi/h)	58.4
D (pc/mi/ln)	12.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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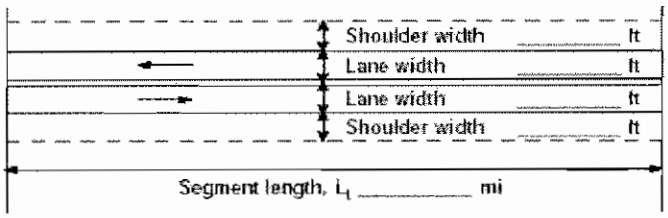
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1930 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2263
v_p * highest directional split proportion[2] (pc/h)	1177

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	0.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	40.9

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2218
v_p * highest directional split proportion[2] (pc/h)	1153
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	85.8
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	2.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	88.7

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.71
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	7099
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	24704
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	173.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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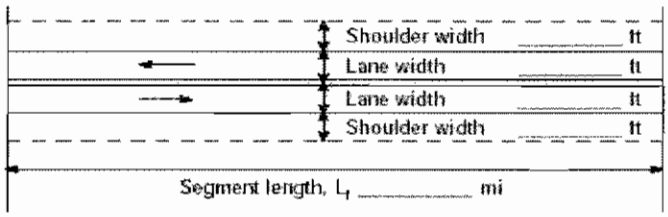
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	1235 veh/h
Directional split	67 / 33
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1448
v_p * highest directional split proportion[2] (pc/h)	970

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	46.9

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1420
v_p * highest directional split proportion[2] (pc/h)	951
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	71.3
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.8
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	78.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.45
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1384
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	4817
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	29.5

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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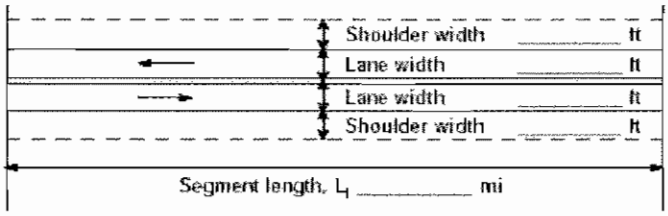
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	580 veh/h
Directional split	52 / 48
Peak-hour factor, PHF	0.81
No-passing zone	45
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	784
v_p * highest directional split proportion[2] (pc/h)	408

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	51.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	769
v_p * highest directional split proportion[2] (pc/h)	400
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	49.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	13.0
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	62.2

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.25
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	251
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	812
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	4.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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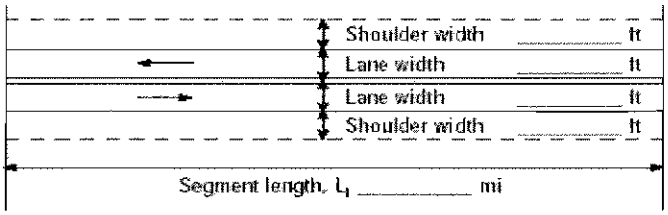
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	05/20/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	[redacted] BUILD 2015

Project Description: *Belleayre Ski resort expansion*

Input Data



☐ Class I highway ☑ Class II highway

Terrain ☐ Level ☑ Rolling

Two-way hourly volume	435 veh/h
Directional split	79 / 21
Peak-hour factor, PHF	0.89
No-passing zone	100
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	535
v_p * highest directional split proportion[2] (pc/h)	423

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	4.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	32.3

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	525
v_p * highest directional split proportion[2] (pc/h)	415
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	37.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	25.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	62.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.17
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	171
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	609
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	5.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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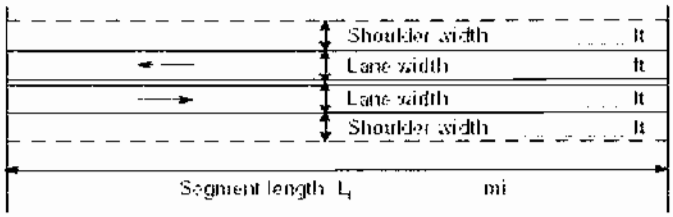
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	830 veh/h	
Directional split	52 / 48	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses, P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1044
v_p * highest directional split proportion[2] (pc/h)	543

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	49.3

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1025
v_p * highest directional split proportion[2] (pc/h)	533
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	59.4
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	10.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	70.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.33
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	930
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3237
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	18.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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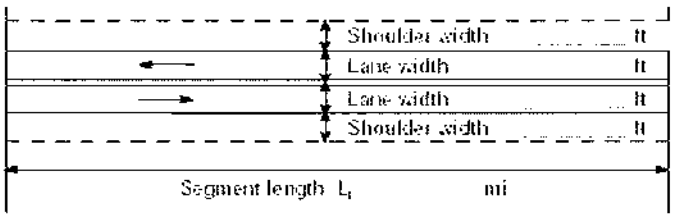
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	1390 veh/h	
Directional split	54 / 46	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1630
v_p * highest directional split proportion[2] (pc/h)	880

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	45.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1598
v_p * highest directional split proportion[2] (pc/h)	863
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	75.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	5.6
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	81.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.51
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	5113
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	17792
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	112.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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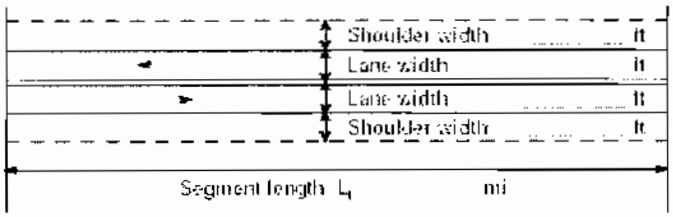
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	615 veh/h	
Directional split	51 / 49	
Peak-hour factor, PHF	0.81	
No-passing zone	45	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	831
v_p * highest directional split proportion[2] (pc/h)	424

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS ($FSS=BFFS-f_{LS}-f_A$)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	2.0
Average travel speed, ATS (*mi/h*) $ATS=FFS-0.00776v_p-f_{np}$	50.8

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	816
v_p * highest directional split proportion[2] (pc/h)	416
Base percent time-spent-following, $BPTSF(\%)=100(1-e^{-0.000879v_p})$	51.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	12.4
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{d/np}$	63.6

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, $v/c=V_p/3{,}200$	0.26
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= $0.25L_t(V/PHF)$	266
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=$V*L_t$	861
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	5.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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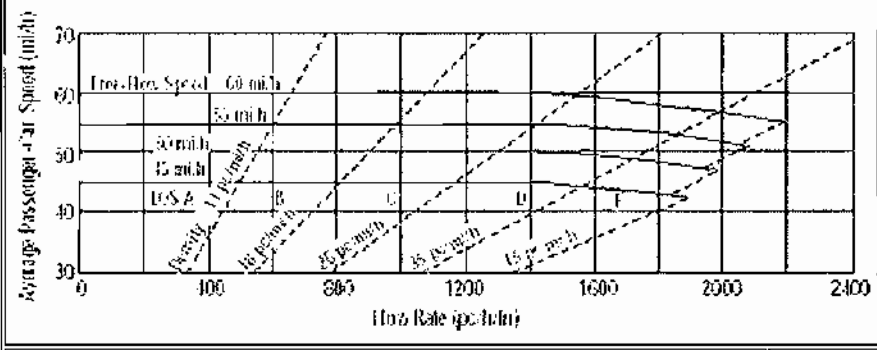
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	NO BUILD 2025

Project Description Belleayre Ski resort expansion

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1450	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	820
Speed, S (mi/h)	58.4
D (pc/mi/ln)	14.0
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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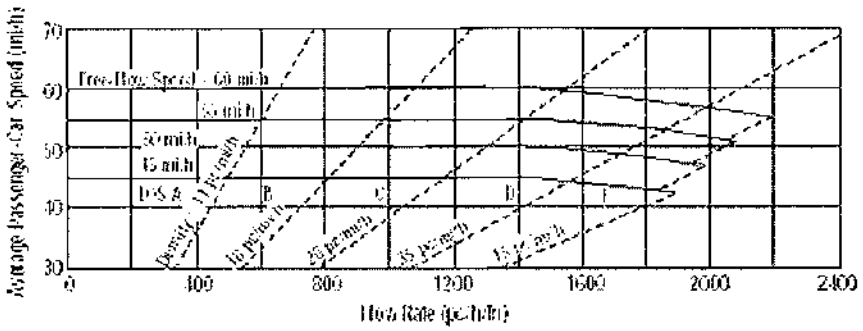
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	NO BUILD 2025

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1220	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	675
Speed, S (mi/h)	58.4
D (pc/mi/ln)	11.6
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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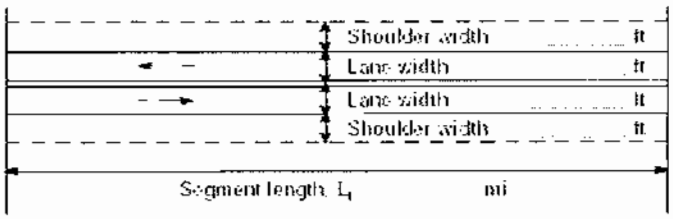
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	465 veh/h	
Directional split	85 / 15	
Peak-hour factor, PHF	0.89	
No-passing zone	100	
% Trucks and Buses, P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	572
v_p * highest directional split proportion[2] (pc/h)	486

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS $FFS=S_{FM}+0.00776(V_f/f_{HV})$	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS ($FSS=BFFS-f_{LS}-f_A$)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	4.0
Average travel speed, ATS (*mi/h*) $ATS=FFS-0.00776v_p-f_{np}$	32.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	561
v_p * highest directional split proportion[2] (pc/h)	477
Base percent time-spent-following, $BPTSF(\%)=100(1-e^{-0.000879v_p})$	38.9
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	27.1
Percent time-spent-following, $PTSF(\%)=BPTSF+f_{d/np}$	66.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, $v/c=V_p/3{,}200$	0.18
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= $0.25L_t$(V/PHF)	183
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	651
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	5.7

Notes

1. If Vp >= 3,200 pc/h. terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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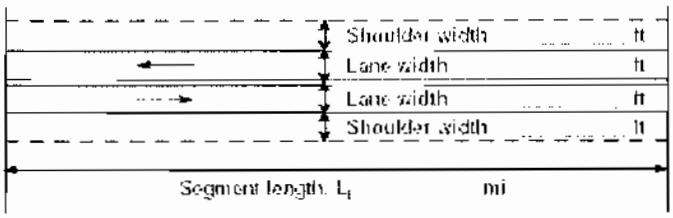
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	1305 veh/h	
Directional split	64 / 36	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1530
v_p * highest directional split proportion[2] (pc/h)	979

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.1
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	46.3

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1500
v_p * highest directional split proportion[2] (pc/h)	960
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	73.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	6.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	79.6

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.48
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1463
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	5090
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	31.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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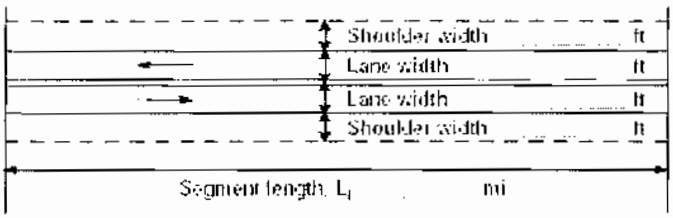
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	1795 veh/h	
Directional split	55 / 45	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2105
v_p * highest directional split proportion[2] (pc/h)	1158

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	0.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	42.1

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2063
v_p * highest directional split proportion[2] (pc/h)	1135
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	83.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	3.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	87.1

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.66
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	6602
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	22976
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	156.9

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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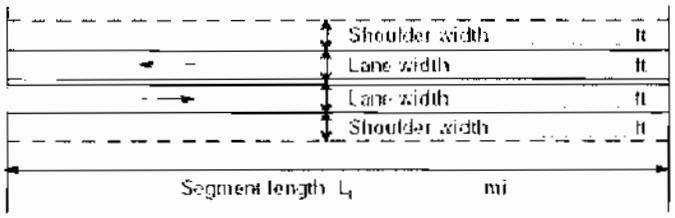
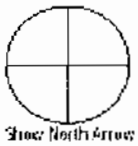
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data





	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	650 veh/h	
Directional split	51 / 49	
Peak-hour factor, PHF	0.81	
No-passing zone	45	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	878
v_p * highest directional split proportion[2] (pc/h)	448

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.9
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	50.5

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	862
v_p * highest directional split proportion[2] (pc/h)	440
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	53.1
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	11.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	65.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.27
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	281
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	910
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	5.6

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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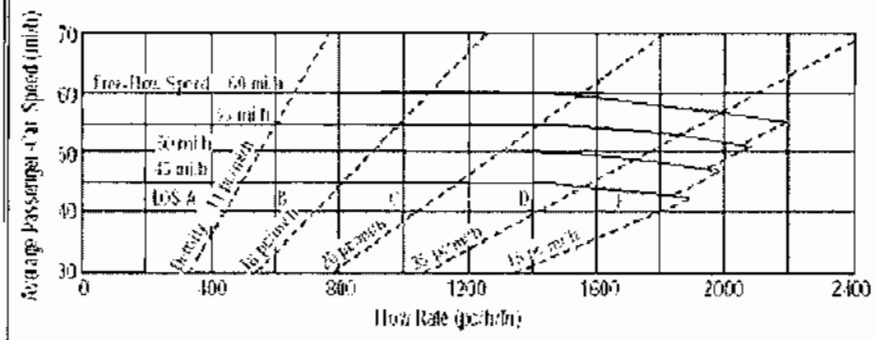
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	BUILD 2025

Project Description Belleayre Ski resort expansion

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1505	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	851
Speed, S (mi/h)	58.4
D (pc/mi/ln)	14.6
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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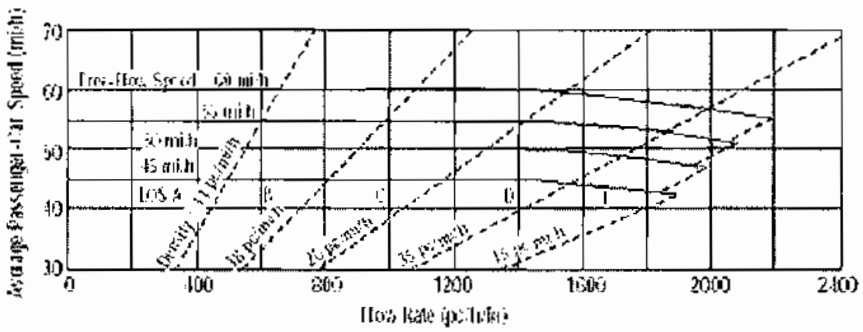
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	BUILD 2025

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1535	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	850
Speed, S (mi/h)	58.4
D (pc/mi/ln)	14.6
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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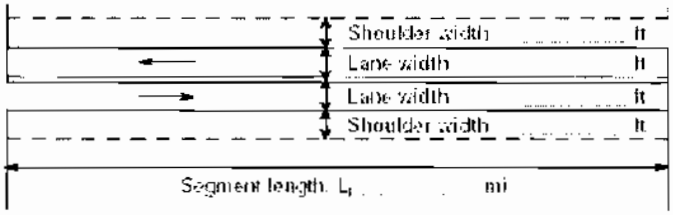
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2025

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	500 veh/h	
Directional split	80 / 20	
Peak-hour factor, PHF	0.89	
No-passing zone	100	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	615
v_p * highest directional split proportion[2] (pc/h)	492

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	3.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	31.9

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	604
v_p * highest directional split proportion[2] (pc/h)	483
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	41.2
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	24.4
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	65.5

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.19
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	197
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	700
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	6.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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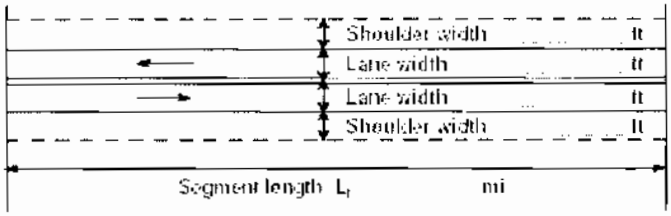
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	915 veh/h	
Directional split	50 / 50	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1151
v_p * highest directional split proportion[2] (pc/h)	576

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.6
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	48.7

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1130
v_p * highest directional split proportion[2] (pc/h)	565
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	63.0
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	9.7
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	72.7

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.36
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1025
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	3569
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	21.0

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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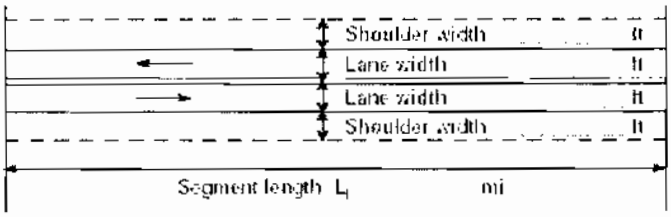
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	1580 veh/h	
Directional split	55 / 45	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1853
v_p * highest directional split proportion[2] (pc/h)	1019

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	0.9
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	44.0

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1816
v_p * highest directional split proportion[2] (pc/h)	999
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	79.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	4.5
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	84.2

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.58
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	5811
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	20224
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	132.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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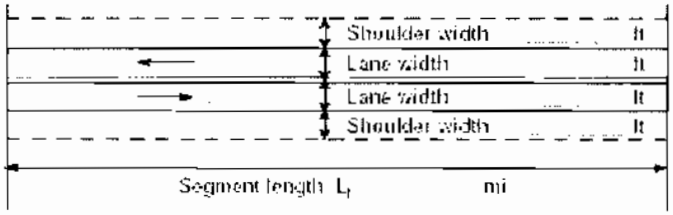
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	695 veh/h	
Directional split	53 / 47	
Peak-hour factor, PHF	0.81	
No-passing zone	45	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	939
v_p * highest directional split proportion[2] (pc/h)	498

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	50.2

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	922
v_p * highest directional split proportion[2] (pc/h)	489
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	55.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	10.9
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	66.4

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.29
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	300
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	973
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	6.0

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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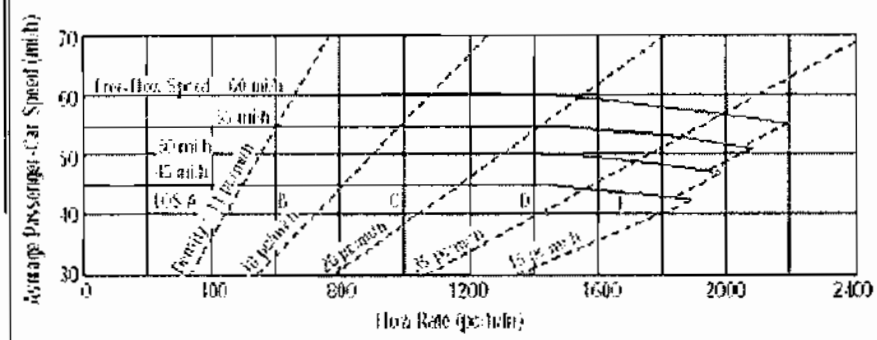
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	NO BUILD 2035

Project Description Belleayre Ski resort expansion

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1685	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	953
Speed, S (mi/h)	58.4
D (pc/mi/ln)	16.3
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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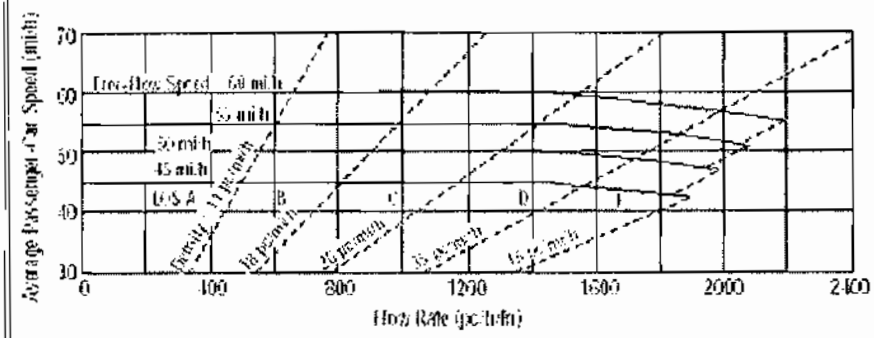
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	NO BUILD 2035

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1390	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	769
Speed, S (mi/h)	58.4
D (pc/mi/ln)	13.2
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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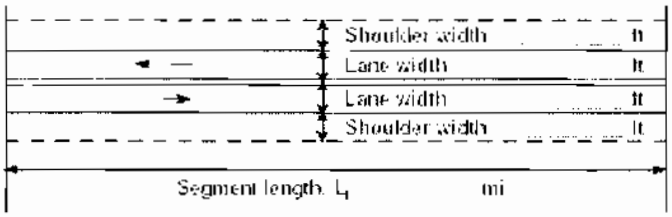
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	540 veh/h	
Directional split	85 / 15	
Peak-hour factor, PHF	0.89	
No-passing zone	100	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	664
v_p * highest directional split proportion[2] (pc/h)	564

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	3.6
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	31.8

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	652
v_p * highest directional split proportion[2] (pc/h)	554
Base percent time-spent-following, BPTSF(%)=$100(1-e^{-0.000879v_p})$	43.6
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	24.2
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	67.8

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.21
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	212
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	756
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	6.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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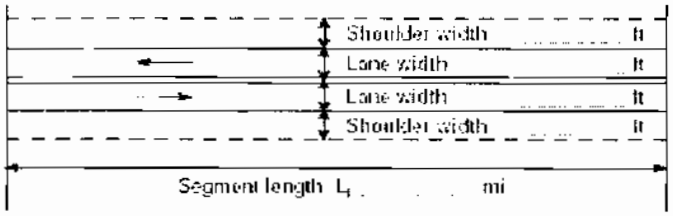
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 212 / Rte 214
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



Class I highway Class II highway

Terrain	Level / Rolling
Two-way hourly volume	1390 veh/h
Directional split	62 / 38
Peak-hour factor, PHF	0.87
No-passing zone	56
% Trucks and Buses , P_T	2 %
% Recreational vehicles, P_R	0%
Access points/ *mi*	3

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1630
v_p * highest directional split proportion[2] (pc/h)	1011

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.0
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	45.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	1598
v_p * highest directional split proportion[2] (pc/h)	991
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	75.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	5.8
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	81.2

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	D
Volume to capacity ratio, v/c=V_p/ 3,200	0.51
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	1558
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	5421
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	34.2

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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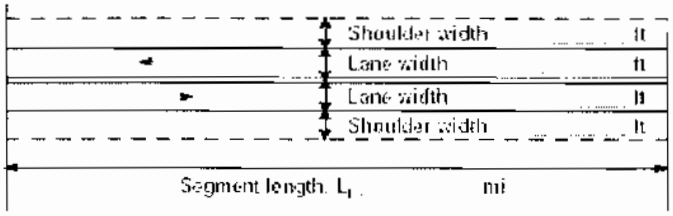
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	Rte 375 / Rte 212
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	1985 veh/h	
Directional split	53 / 47	
Peak-hour factor, PHF	0.87	
No-passing zone	56	
% Trucks and Buses, P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.99
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2328
v_p * highest directional split proportion[2] (pc/h)	1234

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	0.8
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	40.4

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	2282
v_p * highest directional split proportion[2] (pc/h)	1209
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	86.5
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	2.8
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	89.3

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c=V_p/ 3,200	0.73
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	7301
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	25408
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	180.7

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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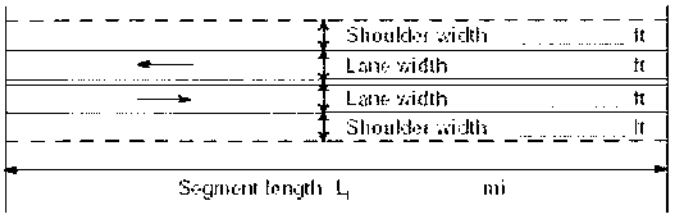
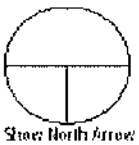
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 38 / Rte 30
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	NO BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data





	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	730 veh/h	
Directional split	51 / 49	
Peak-hour factor, PHF	0.81	
No-passing zone	45	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	987
v_p * highest directional split proportion[2] (pc/h)	503

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	60.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	0.0 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	59.3 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	1.7
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	49.9

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	968
v_p * highest directional split proportion[2] (pc/h)	494
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	57.3
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	10.7
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	68.0

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.31
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	315
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	1022
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	6.3

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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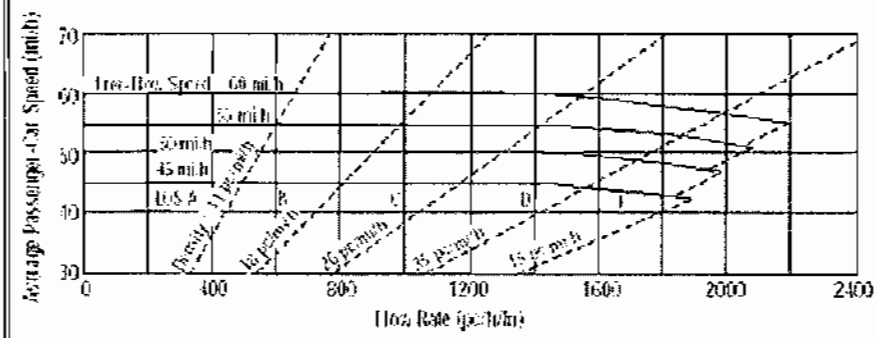
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	BUILD 2035

Project Description Belleayre Ski resort expansion

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1740	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	984
Speed, S (mi/h)	58.4
D (pc/mi/ln)	16.8
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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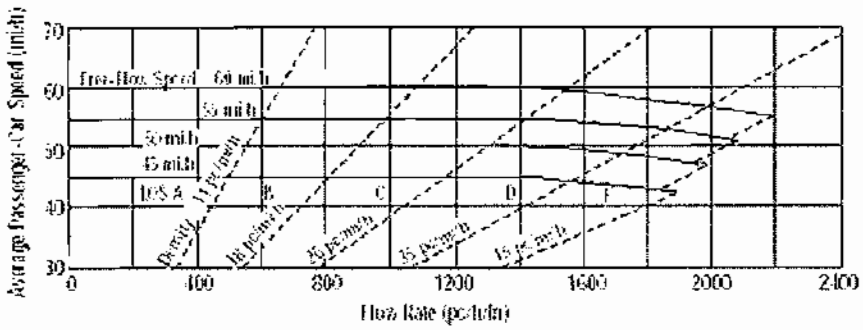
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	CLD
Agency or Company	CHA
Date Performed	09/22/09
Analysis Time Period	SATURDAY PEAK

Site Information

Highway/Direction to Travel	Rte 28
From/To	Rte 209 / Rte 375
Jurisdiction	
Analysis Year	BUILD 2035

Project Description Belleayre Ski resort expansion

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1705	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	2.0
E_T	2.5	f_{HV}	0.971

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	Undivided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.0
f_M (mi/h)	1.6
FFS (mi/h)	58.4

Operations

Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	944
Speed, S (mi/h)	58.4
D (pc/mi/ln)	16.2
LOS	B

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

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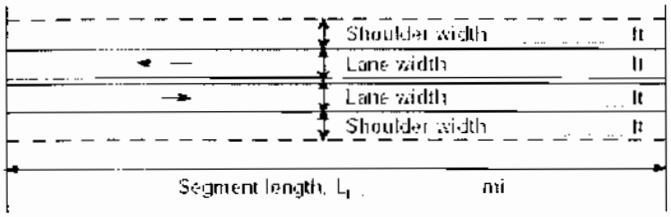
TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	CLD	Highway	Rte 28
Agency or Company	CHA	From/To	CR 49A S. of Ski Center
Date Performed	09/22/09	Jurisdiction	
Analysis Time Period	SATURDAY PEAK	Analysis Year	BUILD 2035

Project Description: *Belleayre Ski resort expansion*

Input Data



	Class I highway	Class II highway
Terrain	Level	Rolling
Two-way hourly volume	575 veh/h	
Directional split	81 / 19	
Peak-hour factor, PHF	0.89	
No-passing zone	100	
% Trucks and Buses , P_T	2 %	
% Recreational vehicles, P_R	0%	
Access points/ *mi*	3	

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	0.93
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.1
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.982
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	707
v_p * highest directional split proportion[2] (pc/h)	573

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S_{FM}	*mi/h*	Base free-flow speed, $BFFS_{FM}$	45.0 *mi/h*
Observed volume, V_f	*veh/h*	Adj. for lane width and shoulder width[3], f_{LS} (Exhibit 20-5)	3.7 *mi/h*
Free-flow speed, FFS FFS=S_{FM}+0.00776(V_f/ f_{HV})	*mi/h*	Adj. for access points, f_A (Exhibit 20-6)	0.8 *mi/h*
		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	40.5 *mi/h*

Adj. for no-passing zones, f_{np} (*mi/h*) (Exhibit 20-11)	3.4
Average travel speed, ATS (*mi/h*) ATS=FFS-0.00776v_p-f_{np}	31.6

Percent Time-Spent-Following

Grade Adjustment factor, f_G (Exhibit 20-8)	0.94
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.5
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	0.990
Two-way flow rate[1], v_p (pc/h)=V/ (PHF * f_G * f_{HV})	694
v_p * highest directional split proportion[2] (pc/h)	562
Base percent time-spent-following, BPTSF(%)=100(1-$e^{-0.000879v_p}$)	45.7
Adj. for directional distribution and no-passing zone, $f_{d/np}$(%)(Exh. 20-12)	21.3
Percent time-spent-following, PTSF(%)=BPTSF+$f_{d/np}$	66.9

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c=V_p/ 3,200	0.22
Peak 15-min veh-miles of travel, VMT_{15} (veh- *mi*)= 0.25L_t(V/PHF)	226
Peak-hour vehicle-miles of travel, VMT_{60}(veh- *mi*)=V*L_t	805
Peak 15-min total travel time, TT_{15}(veh-h)= VMT_{15}/ATS	7.1

Notes

1. If Vp >= 3,200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split Vp>= 1,700 pc/h, terminated anlysis-the LOS is F.

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SHORT REPORT

General Information		Site Information	
Analyst	CLD	Intersection	RTE 28 & CR 49A
Agency or Co.	CHA	Area Type	All other areas
Date Performed	05/08/09	Jurisdiction	HIGHMOUNT, NY
Time Period	SATURDAY PEAK	Analysis Year	2015 BUILD MITIGATION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0
Lane Group		LT	R		LTR			LT	R		LTR	
Volume (vph)	0	106	55	126	141	3	312	13	1141	1	0	1
% Heavy Vehicles	4	4	4	1	1	1	1	1	1	0	0	0
PHF	0.82	0.82	0.82	0.76	0.76	0.76	0.86	0.86	0.86	0.25	0.25	0.25
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time		2.0	2.0		2.0			2.0	2.0		2.0	
Extension of Effective Green		2.0	2.0		2.0			2.0	2.0		2.0	
Arrival Type		3	3		3			3	3		3	
Unit Extension		3.0	3.0		3.0			3.0	3.0		3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0	12.0		12.0			12.0	12.0		12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0	0		0			0	0		0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	WB Only	03	04	NS Perm	06	07	08
Timing	G = 20.0	G = 20.0	G = 0.0	G = 0.0	G = 68.0	G = 0.0	G = 0.0	G =
	Y = 4	Y = 4	Y = 0	Y = 0	Y = 4	Y = 0	Y = 0	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 120.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		129	67		356			378	1327		8	
Lane Group Capacity		305	259		510			777	1226		920	
v/c Ratio		0.42	0.26		0.70			0.49	1.08		0.01	
Green Ratio		0.17	0.17		0.37			0.57	0.77		0.57	
Uniform Delay d_1		44.8	43.5		32.3			15.6	14.0		11.3	
Delay Factor k		0.11	0.11		0.26			0.11	0.50		0.11	
Incremental Delay d_2		0.9	0.5		4.2			0.5	51.1		0.0	
PF Factor		1.000	1.000		1.000			1.000	1.000		1.000	
Control Delay		45.8	44.1		36.5			16.0	65.1		11.3	
Lane Group LOS		D	D		D			B	E		B	
Approach Delay	45.2			36.5			54.2			11.3		
Approach LOS	D			D			D			B		
Intersection Delay	50.5			Intersection LOS						D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & Rte 214
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	05/18/09	Analysis Year	2015 Build - 6078 attend
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: Rte 214
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	111	692	1	0	250	26
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.82	0.82	0.82
Hourly Flow Rate, HFR (veh/h)	120	752	1	0	304	31
Percent Heavy Vehicles	2	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration	LTR			LT		R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	1	47	0	75
Peak-Hour Factor, PHF	0.50	0.50	0.50	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	2	0	2	51	0	82
Percent Heavy Vehicles	0	0	0	3	3	3
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LT		LTR			LTR	
v (veh/h)	120	0		4			133	
C (m) (veh/h)	1224	861		158			246	
v/c	0.10	0.00		0.03			0.54	
95% queue length	0.33	0.00		0.08			2.93	
Control Delay (s/veh)	8.3	9.2		28.4			35.6	
LOS	A	A		D			E	
Approach Delay (s/veh)	--	--	28.4			35.6		
Approach LOS	--	--	D			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	CLD	Intersection	Rte 28 & CR 49A
Agency/Co.	CHA	Jurisdiction	Highmount, NY
Date Performed	05/18/09	Analysis Year	2015 Build - 6078 attend
Analysis Time Period	Saturday Peak		

Project Description 18882 - Belleayre Mtn Ski Center

East/West Street: Rte 28	North/South Street: CR 49A
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	106	42	59	141	3
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76
Hourly Flow Rate, HFR (veh/h)	0	129	51	77	185	3
Percent Heavy Vehicles	4	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	242	13	763	1	0	1
Peak-Hour Factor, PHF	0.86	0.86	0.86	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	281	15	887	4	0	4
Percent Heavy Vehicles	1	1	1	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	LT		R		LTR	
v (veh/h)	0	77	296		887		8	
C (m) (veh/h)	1374	1402	478		924		18	
v/c	0.00	0.05	0.62		0.96		0.44	
95% queue length	0.00	0.17	4.13		16.07		1.22	
Control Delay (s/veh)	7.6	7.7	24.0		41.9		315.8	
LOS	A	A	C		E		F	
Approach Delay (s/veh)	--	--	37.4			315.8		
Approach LOS	--	--	E			F		

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