



June 25, 2009

Matthew Cassel, P.E.  
Park City Engineer  
445 Marsac Avenue  
P.O. Box 1480  
Park City, UT 84060-1480

**RE: Sixth Addendum to the Treasure Hill Traffic Impact Analysis, July, 2004  
Intersection Operations Limiting Development Traffic on Empire Avenue**

Dear Mr. Cassel,

Project Engineering Consultants (PEC) has performed a re-analysis of the anticipated traffic impacts of the site traffic on the local street system. This new analysis is due to changes to the development plan made to minimize the use of Empire Avenue south of Manor Way by traffic to and from the development.

The proposed change affects the traffic projections and analysis at the Manor Way intersections with Lowell Avenue and Empire Avenue. The original traffic study analyzed the traffic operations for both the Design Non Ski-Day and the Design Ski-Day. Because the Design Ski-Day is the "worst case" this re-analysis includes only that scenario. The results of the re-analysis are presented in Table 1 below. The highway capacity output sheets for each analysis run are attached.

**Table 1 – Design Ski-Day Summary**

	<i>Empire / Manor</i>		<i>Lowell / Manor</i>	
	AM Peak	PM Peak	AM Peak	PM Peak
<b>Total Intersection</b>	A / 8.6	B / 10.6	A / 7.7	B / 11.4
<b>Northbound</b>	A / 7.9	A / 8.6	A / 7.3	B / 10.7
<b>Southbound</b>	A / 8.1	A / 9.4	A / 7.9	B / 12.3
<b>Eastbound</b>	A / 9.2	B / 11.7	N/A	N/A
<b>Westbound</b>	N/A	N/A	A / 8.3	B / 11.3
<i>Legend: A / 8.7 A = Level of Service 8.7 = Delay Time in Seconds</i>				

By moving that portion of the site traffic that was previously projected to use Empire Avenue over to Lowell Avenue, some of the traffic movements at the analysis intersections are projected to experience less delay, while other movements will experience increased delay. The net effect at both intersections is a minor increase in total intersection average delay. Both intersections are still projected to operate well within acceptable levels of delay in both the AM and PM peak periods on ski-days.



After a review of this addendum, if there are any questions or need for further clarifications, please contact me at your earliest convenience.

Respectfully,

**Project Engineering Consultants**

Gary Horton, P.E.  
Principal

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ALL-WAY STOP CONTROL ANALYSIS										
General Information					Site Information					
Analyst	KJF				Intersection	Manor/Empire				
Agency/Co.	PEC				Jurisdiction	Park City				
Date Performed	6/25/2009				Analysis Year	Total Traffic - Ski Day				
Analysis Time Period	AM Peak									
Project ID <i>Treasure Hill TIA - Addendum 6</i>										
East/West Street: <i>Manor Way</i>					North/South Street: <i>Empire Avenue</i>					
Volume Adjustments and Site Characteristics										
Approach	Eastbound					Westbound				
Movement	L	T	R	L	T	R				
Volume	179	0	2	0	0	0				
%Thrus Left Lane	50				50					
Approach	Northbound					Southbound				
Movement	L	T	R	L	T	R				
Volume	2	41	0	0	53	117				
%Thrus Left Lane	50				50					
	Eastbound		Westbound		Northbound		Southbound			
	L1	L2	L1	L2	L1	L2	L1	L2		
Configuration	LR				LT		TR			
PHF	0.90				0.90		0.90			
Flow Rate	200				47		188			
% Heavy Vehicles	0				0		0			
No. Lanes	1		0		1		1			
Geometry Group	1				1		1			
Duration, T	0.25									
Saturation Headway Adjustment Worksheet										
Prop. Left-Turns	1.0				0.0			0.0		
Prop. Right-Turns	0.0				0.0			0.7		
Prop. Heavy Vehicle										
hLT-adj	0.2	0.2				0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6				-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7				1.7	1.7	1.7	1.7	
hadj, computed	4.61				4.61			4.61		
Departure Headway and Service Time										
hd, initial value	3.20				3.20			3.20		
x, initial	0.18				0.04			0.17		
hd, final value	4.61				4.61			4.61		
x, final value	0.26				0.06			0.21		
Move-up time, m	2.0					2.0		2.0		
Service Time	2.6	2.6			2.6	2.6		2.6		
Capacity and Level of Service										
	Eastbound		Westbound		Northbound		Southbound			
	L1	L2	L1	L2	L1	L2	L1	L2		
Capacity	450				297			438		
Delay	9.18				7.90			8.12		
LOS	A				A			A		
Approach: Delay	9.18					7.90		8.12		
LOS	A					A		A		
Intersection Delay	8.58									
Intersection LOS	A									

ALL-WAY STOP CONTROL ANALYSIS									
<b>General Information</b>					<b>Site Information</b>				
Analyst	KJF				Intersection	Manor/Empire			
Agency/Co.	PEC				Jurisdiction	Park City			
Date Performed	6/25/2009				Analysis Year	Total Traffic - Ski Day			
Analysis Time Period	PM Peak								
Project ID <i>Treasure Hill TIA - Addendum 6</i>									
East/West Street: <i>Manor Way</i>					North/South Street: <i>Empire Avenue</i>				
<b>Volume Adjustments and Site Characteristics</b>									
Approach	Eastbound					Westbound			
Movement	L	T	R	L	T	R	L	T	R
Volume	292	0	16	0	0	0	50	0	0
%Thrus Left Lane	50						50		
Approach	Northbound					Southbound			
Movement	L	T	R	L	T	R	L	T	R
Volume	2	55	0	0	85	130			
%Thrus Left Lane	50						50		
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LR				LT		TR		
PHF	0.90				0.90		0.90		
Flow Rate	341				63		238		
% Heavy Vehicles	0				0		0		
No. Lanes	1		0		1		1		
Geometry Group	1				1		1		
Duration, T					0.25				
<b>Saturation Headway Adjustment Worksheet</b>									
Prop. Left-Turns	1.0				0.0		0.0		
Prop. Right-Turns	0.0				0.0		0.6		
Prop. Heavy Vehicle									
hLT-adj	0.2	0.2			0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6			-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7			1.7	1.7	1.7	1.7	
hadj, computed	4.79				4.79		4.79		
<b>Departure Headway and Service Time</b>									
hd, initial value	3.20				3.20		3.20		
x, initial	0.30				0.06		0.21		
hd, final value	4.79				4.79		4.79		
x, final value	0.45				0.09		0.30		
Move-up time, m	2.0				2.0		2.0		
Service Time	2.8		2.8		2.8		2.8		
<b>Capacity and Level of Service</b>									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity	591				313		488		
Delay	11.70				8.60		9.43		
LOS	B				A		A		
Approach: Delay	11.70				8.60		9.43		
LOS	B				A		A		
Intersection Delay					10.55				
Intersection LOS					B				

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	KJF				Intersection	Manor/Lowell			
Agency/Co.	PEC				Jurisdiction	Park City			
Date Performed	6/25/2009				Analysis Year	Total Traffic - Ski Day			
Analysis Time Period	AM Peak								
Project ID <i>Treasure Hill TIA - Addendum 6</i>									
East/West Street: <i>Manor Way</i>					North/South Street: <i>Lowell Avenue</i>				
Volume Adjustments and Site Characteristics									
Approach	Eastbound					Westbound			
Movement	L	T	R	L	T	R			
Volume	0	0	0	94	0	0			
%Thrus Left Lane	50				50				
Approach	Northbound					Southbound			
Movement	L	T	R	L	T	R			
Volume	0	0	140	37	32	0			
%Thrus Left Lane	50				50				
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration			L		R		LT		
PHF			0.90		0.90		0.90		
Flow Rate			104		155		76		
% Heavy Vehicles			0		0		0		
No. Lanes	0		1		1		1		
Geometry Group			1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns			1.0		0.0		0.5		
Prop. Right-Turns			0.0		1.0		0.0		
Prop. Heavy Vehicle									
hLT-adj			0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj			-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj			1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed			0.00		0.00		0.00		0.00
Departure Headway and Service Time									
hd, initial value			3.20		3.20		3.20		3.20
x, initial			0.09		0.14		0.07		0.07
hd, final value			0.00		0.00		0.00		0.00
x, final value			0.13		0.16		0.09		0.09
Move-up time, m			2.0		2.0		2.0		2.0
Service Time									
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity			354		405		326		
Delay			8.27		7.31		7.86		
LOS			A		A		A		
Approach: Delay			8.27			7.31			7.86
LOS			A			A			A
Intersection Delay	7.73								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	KJF				Intersection	Manor/Lowell		
Agency/Co.	PEC				Jurisdiction	Park City		
Date Performed	6/25/2009				Analysis Year	Total Traffic - Ski Day		
Analysis Time Period	PM Peak							
Project ID <i>Treasure Hill TIA - Addendum 6</i>								
East/West Street: <i>Manor Way</i>					North/South Street: <i>Lowell Avenue</i>			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R	L	T	R		
Volume	0	0	0	180	0	0		
%Thrus Left Lane	50			50				
Approach	Northbound				Southbound			
Movement	L	T	R	L	T	R		
Volume	0	0	327	181	112	0		
%Thrus Left Lane	50			50				
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			L		R		LT	
PHF			0.90		0.90		0.90	
Flow Rate			200		363		325	
% Heavy Vehicles			0		0		0	
No. Lanes	0		1		1		1	
Geometry Group			1		1		1	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns			1.0		0.0		0.6	
Prop. Right-Turns			0.0		1.0		0.0	
Prop. Heavy Vehicle								
hLT-adj			0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj			-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj			1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed			0.00		0.00		0.00	
Departure Headway and Service Time								
hd, initial value			3.20		3.20		3.20	
x, initial			0.18		0.32		0.29	
hd, final value			0.00		0.00		0.00	
x, final value			0.32		0.44		0.46	
Move-up time, m			2.0		2.0		2.0	
Service Time								
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity			450		613		575	
Delay			11.32		10.73		12.28	
LOS			B		B		B	
Approach: Delay			11.32			10.73	12.28	
LOS			B			B	B	
Intersection Delay	11.43							
Intersection LOS	B							