

TREASURE HILL  
PARK CITY, UTAH  
TRAFFIC IMPACT ANALYSIS



Prepared for:

MPE Inc.

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Prepared by:



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## I. Executive Summary

This report concludes that the development accesses and surrounding intersections will function adequately to transfer the project-generated traffic to and from the Treasure Hill site. Existing traffic delay problems during occasional peak periods are addressed in this report with respect to any contributions from the Treasure Hill Project (Project). Recommendations are included for addressing these and undertaking other measures to assure the most favorable level of service (LOS) in the traffic study area.

## II. Introduction

The traffic portion of this development has been previously studied in two reports. The first report was prepared by CRS Group Engineers, Inc. in the early 1980's for the proposed Silver Mountain Development. This report studied a development nearly twice the size than proposed today. The Silver Mountain Plan did receive conceptual access approval in the early 1980's. A second report was commissioned for the Park City Village in 1998. This report included anticipated Project trips in baseline traffic volumes and those trips were a small contributor to the overall numbers. In the 1980's the Park City Council approved the Sweeney Master Plan which included the Project along with its Empire and Lowell access.

A summary of prior traffic reports and updated calculations of estimated trips generated by the Treasure Hill Project was presented to the Park City Planning Commission on May 26<sup>th</sup>, 2004. The Planning Commission requested additional analyses of the general study area based on specific input from the Park City staff. Project Engineering Consultants (PEC) on May 31, 2004 met with the Project proponents and the Park City staff to discuss the scope of such analysis. The agreed upon objective was to determine the effects of the proposed development on the surrounding traffic corridors and intersections located within a specific the study area. PEC was retained by the MPE Inc. to perform such analysis.

The development site currently consists of undeveloped land located above the Lowell/Empire Loop. It is bisected by the Town Lift. The Project will be a hillside resort complex similar to the Town Lift Base area. The complex anticipates a combination of hotel, timeshare, condominium, and commercial uses. Commercial uses could include a café, a formal restaurant, a sports shop, and



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retail stores. Other possible amenities could consist of a pool and waterfall complex, spa facilities, mine exhibit and convention space. The Project will have two access points, both onto the Lowell / Empire Loop. A general site plan of the Project is illustrated in Figure One. The study area includes the Project access points along with the following intersections:

- Lowell Ave. / Manor Way
- Empire Ave. / Manor Way
- Lowell Ave. / Shadow Ridge
- Empire Ave. / Shadow Ridge
- Silver King Dr. / Empire Ave.
- Park Ave. / Empire Ave. and Deer Valley Dr.

There are three primary destination locations in Park City: Main Street and the two Ski Areas. In planning the Treasure Hill Project, great consideration has been given to reduce vehicular traffic and encourage a pedestrian/ski friendly development. It should be noted that the overall Sweeney Master Plan, which the Treasure Hill Project is a part of, is unique because while it contributes vehicles to the study area, at the same time, it reduces traffic in the study area by providing ski-to ski-from access to all of Old Town.





### III. Study Area Conditions

The study area for this development includes the Project accesses onto the Empire / Lowell Ave. Loop. Based on information gathered during a site visit, it was determined that the Empire / Lowell Ave. Loop has a speed limit of 25 mph. It generally is a 25-foot wide road, with intermittent parking allowed in various locations by permit.

### IV. Existing Conditions

In order to quantify the impact that the proposed development could have on adjacent traffic flow, a traffic survey and an assessment were performed. PEC gathered counts of the existing traffic volumes at selected intersections within the specified study area. The traffic counts were performed on Wednesday, June 16, 2004. This day was considered to be a representative traffic volume day during the "non-ski" season since weather conditions were fair and no unusual impacts existed. The selected intersections within the study area recommended by Park City staff were:

- Lowell Ave. / Manor Way
- Empire Ave. / Manor Way
- Lowell Ave. / Shadow Ridge
- Empire Ave. / Shadow Ridge
- Silver King Dr. / Empire Ave.
- Park Ave. / Empire Ave. and Deer Valley Dr.

The counts were performed between the hours of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. These hours were obtained from *The Institute of Transportation Engineers (ITE) Trip Generation Manual, 6th Edition, 1997* and were considered to be the peak operating hours for the proposed development. Figure two shows each of these six intersections and the existing lane configurations. The existing traffic volumes for each of the peak operating hours are illustrated in Figure Three.

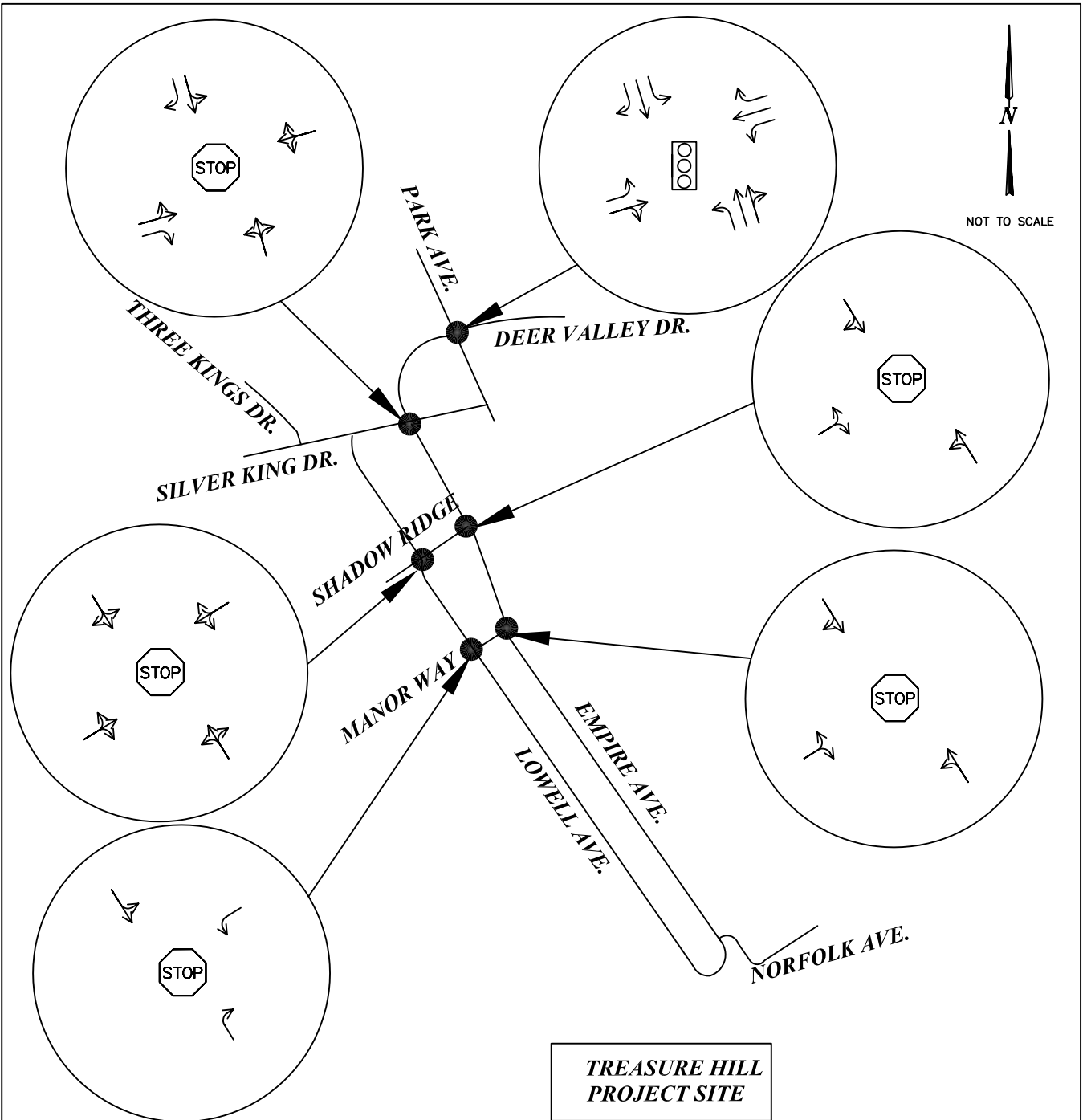
To determine the expected vehicular traffic on an average "ski day" the *Economic Report to the Governor, 2003*, was referenced. In the Tourism Chapter, historical information was documented regarding occupancy rates in Park City. Table One below summarizes the pertinent information.

TABLE ONE - PARK CITY OCCUPANCY RATES										
MONTH	2003	2002	2001	2000	1999	1998	1997	1996	1995	AVE.
June	25%	33%	34%	30%	32%	32%	36%	28%	30%	31%
January	55%	63%	62%	63%	63%	62%	60%	72%	71%	63%
February	56%	76%	71%	66%	78%	71%	79%	66%	76%	71%



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As detailed in Table One the nine-year average occupancy rate in June has been 31%. February produced the highest ski season occupancy rate at 71%. To forecast the expected traffic volumes for a typical "ski-day," existing "non ski-day" counts were multiplied by the difference in the occupancy rate. The existing traffic volumes for "ski-day" peak operating hours are illustrated in Figure Four.

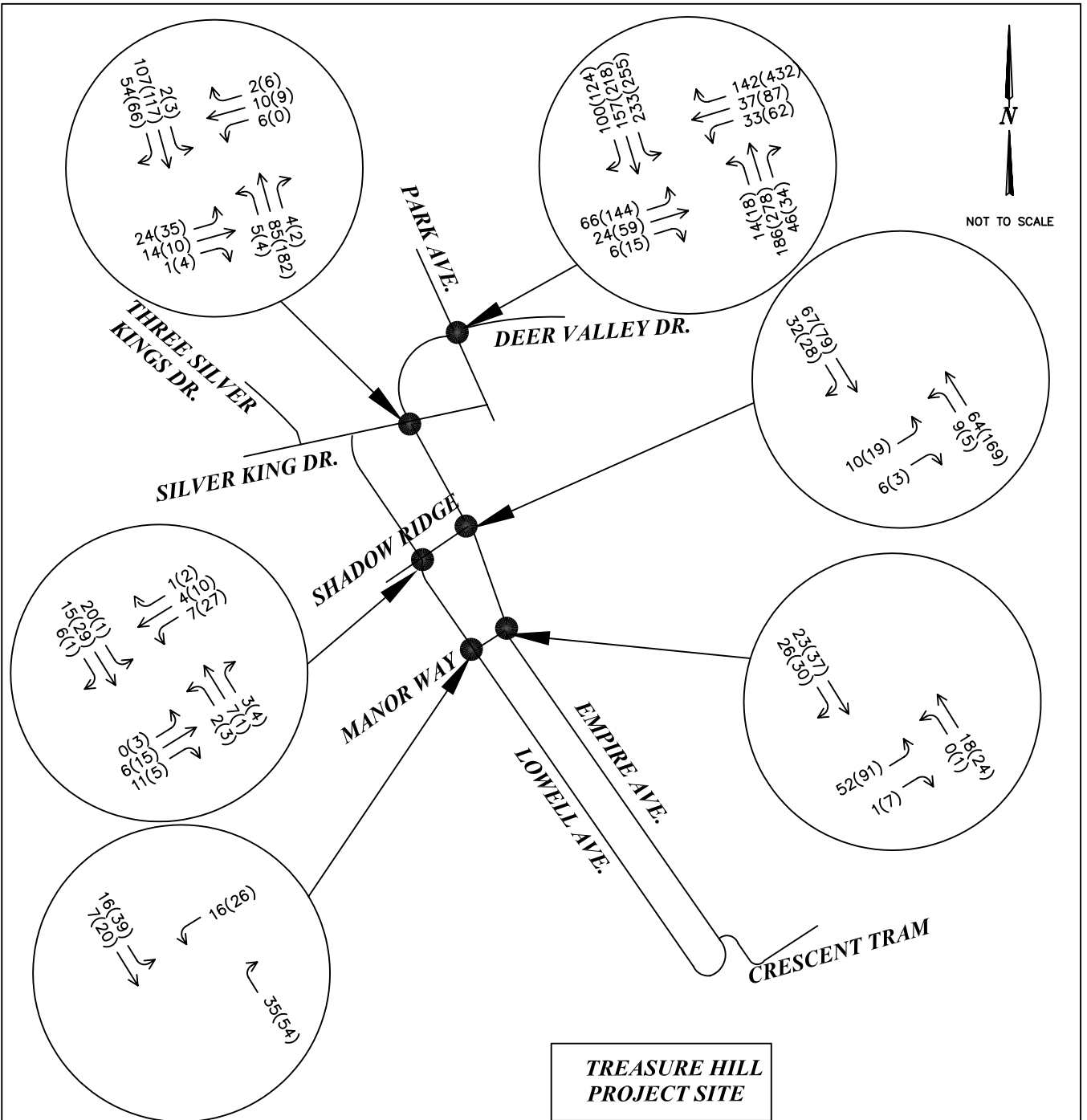


**LEGEND:**

XXX(YYY)

XXX = AM Peak Hour Vehicles  
 YYY = PM Peak Hour Vehicles









## V. Project Trip Generation

Trip Generation is defined as the number of vehicle trips a development will generate during the peak hours of the day. Peak hours usually occur one hour in the morning between 7:00 – 9:00 AM and one hour in the evening between 4:00 – 6:00 PM. These are typically the highest volumes of the day and are used for analysis purposes to create a “worst-case” scenario.

PEC used *The Institute of Transportation Engineers (ITE) Trip Generation Manual, 6th Edition, 1997* to project the trips that would be generated by the development. The *ITE Trip Generation Manual* is a standard compilation of trip counts for different types of facilities at different time periods. The ITE land use (L.U.) cited was: L.U. 230 for Condominium/Townhouse, L.U. 310 for Hotel and L.U. 814 for Specialty Retail. The trip generation rate for the proposed development was determined from the ITE Manual based on hotel, Condominium/Townhouses and gross floor area for Specialty Retail.

Based on the number of units (1000 sq. feet of gross floor area per commercial unit) displayed in Table Two, the Treasure Hill development would be expected with 100% occupancy, worst case, to generate the following vehicle trips:

<b>TABLE TWO - RAW TRIPS 100% OCCUPANCY</b>							
<b>Type of Facility</b>	<b># of Units</b>	<b>AM Trip</b>	<b>PM Trip</b>	<b>AM Peak Hour</b>		<b>PM Peak Hour</b>	
		<b>Generation</b>	<b>Generation</b>	<b># Entering</b>	<b># Exiting</b>	<b># Entering</b>	<b># Exiting</b>
<b>Hotel</b>	264	176	171	102	74	84	87
<b>Condominium/Townhouse</b>	19	14	12	2	11	8	4
<b>Commercial</b>	19	0	49	0	0	21	28
<b>TOTAL</b>		190	232	104	85	113	119

*It is important to note that these Trip Generation Estimates include service vehicles and employee vehicular trips. Copies of the land use, as seen in the ITE manual, can be found in the appendix of this report.*

## VI. Project Trip Reduction

Reduction trips are vehicle or pedestrian trips that stop at more than one place in the same complex or use alternative modes of transportation. For example a driver might pull into the hotel to stay for the night and later walk across the parking lot to the restaurant. There is only one vehicle



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trip generated, however; the complex sees two customers, one at the hotel and another at the restaurant. From a traffic reduction perspective, this is counted as one trip and only shows in the reduced traffic volumes once. Trip reduction also takes into account those people who may choose to come to the Project in something other than a personal vehicle, i.e. shuttle, bus, taxi etc. or choose to go to Main Street by the gondola or stairs/pathways. Downward adjustment of trips in this manner will reduce the raw trips shown in Table Two above. Adjusted trips are shown in Table Three below. They are based on the following detailed analysis.

As pointed out, in the *Economic Report to the Governor, 2003*, Tourism Chapter, three of the primary activities for tourists are skiing, dining and visiting Main Street. Accordingly, the following features contribute to trip reduction.

- The Main Street gondola which traverses between Main Street and the Project with a one way capacity of 2,600 passengers per hour, transit time of one minute, and operating without charge during similar hours as the Park City bus system
- Pedestrian connections to Main Street via the 6<sup>th</sup> Street Stairs and the 8<sup>th</sup> Street Stairs / Crescent Walkway
- Alternative modes of transportation (bus, airport shuttles, etc.)

With respect to trip reduction due to mode of transportation, local resorts with similar characteristics to the proposed Treasure Hill Project were surveyed to discover historical modes of transportation.

The results of the survey are:

- Marriott Mountain Side - 70% Alternate vs. 30% Private Vehicle
- Marriott Summit Watch - 60% Alternate vs. 40 % Private Vehicle
- Deer Valley Ski Resort - 50% Alternate vs. 50% Private Vehicle

It is likely that a percentage of the units in the Treasure Hill Project will be occupied by year round residents and therefore generate trips similar to a standard personal residence. Considering all of the above factors, a 30% trip reduction is conservative. It is important to note this still assumes 100% occupancy and trip reduction is only due to the factors mentioned above.



TABLE THREE – ADJUSTED TRIPS 100% OCCUPANCY						
	<i>AM Trip</i>	<i>PM Trip</i>	<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
	<i>Generation</i>	<i>Generation</i>	<i># Entering</i>	<i># Exiting</i>	<i># Entering</i>	<i># Exiting</i>
<i>Total Original Trip Generation</i>	190	232	104	85	113	119
<i>Total Trips after Reduction</i>	133	162	73	60	79	83

## VII. Project Trip Distribution

Project Trip Distribution was determined by analyzing three elements: major traffic corridors, traffic count data, and the proposed Project Traffic Plan (see signing detail). From these elements, an accurate representation of the direction that the Project generated traffic will travel can be obtained. It is anticipated that 75% of the traffic will enter using the Access Point 1 (Lowell) and the remaining 25% will enter using the Access Point 2 (lower/Empire Loop). Vehicles leaving the Project are anticipated to distribute evenly between the two access points. Using adjusted trips, the Project Generated traffic volumes are illustrated in Figure Five.

A benefit of the Project location is the ability to encourage a circular traffic pattern. With the layout of the Lowell Ave. and Empire Ave. Loop it is anticipated most vehicles arriving will enter from along Lowell Ave. (see signing details), creating a right turn movement into the Project site. When exiting the Project site it is anticipated the majority of the vehicles will turn right and proceed along Empire Ave. back to their destination. This circulation pattern and available right turning movements at the Project access points creates a safer traffic environment due to the reduction in conflicting turning movements.

“Design Year” is defined in this report as the year that the development opens. For the purposes of this report, the design year was determined to be the year fall 2012. “Design Year” traffic volumes are obtained by adding the distributed project generated volumes to the existing traffic volumes. Using adjusted trips, the total future traffic volumes after the development is constructed and occupied for a typical “Non Ski-Day” and “Ski-Day” are illustrated in Figures Six and Seven, respectively.











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## VIII. Traffic and Improvement Analysis

Intersection analyses have been conducted in accordance with the 2000 Highway Capacity Manual guidelines using Highway Capacity Software (HCS). The intersections are given a level of service (LOS) from A through F. LOS is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or pedestrians. A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. There are six levels of service describing these conditions, ranging from A to F, which have been standardized by the Transportation Research Board. LOS A represents a free-flowing traffic condition where motorists are affected very little by other motorists, there is a high degree of freedom to select a desired speed, and the level of comfort and convenience to the motorist is excellent. LOS F is characterized by congested flow conditions with stoppages as the amount of traffic approaching a point exceeds the amount that can pass that point. Motorists have little if any freedom to choose speeds or lanes of travel, and experience discomfort, inconvenience, and delay. In general, governing agencies consider improvements at a LOS D or less.

The existing and "design-year" traffic volumes for both the "Non Ski-Day" and "Ski-Day" were input into the Highway Capacity Software. The existing traffic control devices as shown in Figure 2 were applied at the intersections and a two-way stop intersection was analyzed at both the proposed Access Points. The road widths were taken to be 25 feet and the percent of heavy vehicles used in the analysis was taken as 1% due to the very small number of heavy truck traffic observed during data collection and expected upon completion of the Project. The proposed accesses are planned for full ingress and egress, with one designated lane for receiving traffic into the development, and one designated lane for exiting the development.

The LOS and expected delay time for all intersections and each leg of the intersection are depicted in the tables below. The HCS output for the traffic conditions can be found in the appendix of this report.



<b>TABLE FOUR - PARK AVE. / EMPIRE SUMMARY</b>								
	<i>Existing Non Ski-Day</i>		<i>Existing Ski-Day</i>		<i>Design Non Ski-Day</i>		<i>Design Ski-Day</i>	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
<b>Intersection</b>	A / 8.7	B / 11.3	B / 15.2	D / 48.0	A / 9.7	B / 11.9	B / 16.9	D / 52.9
<b>Northbound</b>	A / 5.5	B / 17.5	B / 18.6	E / 71.6	A / 7.1	B / 19.1	C / 21.3	E / 75.8
<b>Southbound</b>	A / 2.7	A / 5.8	B / 10.5	C / 27.6	A / 3.8	A / 8.7	B / 12.4	D / 36.2
<b>Eastbound</b>	C / 25.5	B / 19.7	D / 35.5	E / 69.3	C / 22.9	B / 16.0	D / 36.3	E / 80.0
<b>Westbound</b>	C / 21.0	B / 10.4	B / 13.0	D / 47.5	B / 18.3	A / 9.4	B / 12.0	D / 45.6
<i>Legend: A / 8.7 A = Level of Service 8.7 = Delay Time in Seconds</i>								

As highlighted in Table Four, the Intersection of Park Ave. and Empire currently experiences heavy delays on certain ski-days, which will be minimally impacted after occupation of the proposed Project. The delay is an existing problem due to Park City Mountain Resort and Deer Valley Resort day-skiers leaving the respective resort parking lots at approximately the same time and converging on the Park Ave. / Empire Ave. and Deer Valley Dr. intersection. This happens when both resorts approach their respective maximum parking capacity and skiers depart the Resorts at about the same time. This usually occurs on weekends or holidays, particularly if good weather prevails. This intersection experiences delays also during the Sundance Film Festival and other Special Events when all of Park City frequently reaches gridlock. This phenomenon is analogous to large sporting events letting out. One way to handle these traffic bottlenecks is with human traffic control as often provided for major sporting events. If such delays become more frequent and involve longer time periods in the future, consideration based on updated Peak Hour analysis can be given to adding additional turning lanes to help address this problem.

<b>TABLE FIVE - SILVER KING / EMPIRE SUMMARY</b>								
	<i>Existing Non Ski-Day</i>		<i>Existing Ski-Day</i>		<i>Design Non Ski-Day</i>		<i>Design Ski-Day</i>	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
<b>Intersection</b>	NA	NA	NA	NA	NA	NA	NA	NA
<b>Northbound</b>	A / 0	A / 0	A / 0	A / 0	A / 0	A / 0	A / 0	A / 0
<b>Southbound</b>	A / 0	A / 0	A / 0	A / 0	A / 0	A / 0	A / 0	A / 0
<b>Eastbound</b>	B / 10.6	B / 11.2	C / 15.8	D / 25.1	B / 11.4	B / 12.0	C / 18.4	E / 36.5
<b>Westbound</b>	B / 10.7	B / 11.7	B / 14.3	C / 20.5	B / 11.7	B / 11.7	C / 16.5	D / 26.5
<i>Legend: A / 8.7 A = Level of Service 8.7 = Delay Time in Seconds</i>								

As seen in Table Five, the intersection of Silver King and Empire Ave. functions adequately except for the Eastbound turning movement in the PM Peak Hour scenario of the "Existing and Design-Year



Ski-Day” on a limited number of ski-days. The delay is due to traffic traveling Northbound and Southbound along Empire Ave when Park City Mountain Resort day-skiers leave the parking lot at approximately the same time and try to make an Eastbound left turn while waiting for sufficient gaps in the Northbound/Southbound traffic. Again, human traffic control can be utilized. If such delays become more frequent and involve longer time periods in the future, consideration based on updated Peak Hour analysis can be given to constructing a roundabout or a traffic signal to help address the problem.

<b>TABLE SIX – EMPIRE / SHADOW RIDGE SUMMARY</b>								
	<b>Existing Non Ski-Day</b>		<b>Existing Ski-Day</b>		<b>Design Non Ski-Day</b>		<b>Design Ski-Day</b>	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
<b>Intersection</b>	A / 7.6	A / 8.1	A / 8.5	B / 11.2	A / 7.8	A / 8.9	A / 9.4	B / 13.8
<b>Northbound</b>	A / 7.6	A / 8.4	A / 8.5	B / 12.4	A / 7.8	A / 9.3	A / 9.3	C / 16.1
<b>Southbound</b>	A / 7.5	A / 7.7	A / 8.6	A / 9.6	A / 7.9	A / 8.3	A / 9.5	B / 11.0
<b>Eastbound</b>	A / 7.5	A / 7.9	A / 8.0	A / 9.1	A / 7.6	A / 8.3	A / 8.4	A / 9.6
<b>Westbound</b>	NA	NA	NA	NA	NA	NA	NA	NA

Legend: A / 8.7 A = Level of Service 8.7 = Delay Time in Seconds

As shown in Table Six, the intersection of Empire Ave. and Shadow Ridge performs at a good LOS for all time periods analyzed.

<b>TABLE SEVEN - LOWELL / SHADOW RIDGE SUMMARY</b>								
	<b>Existing Non Ski-Day</b>		<b>Existing Ski-Day</b>		<b>Design Non Ski-Day</b>		<b>Design Ski-Day</b>	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
<b>Intersection</b>	A / 7.2	A / 7.4	A / 7.5	A / 7.7	A / 7.2	A / 7.3	A / 7.6	A / 7.8
<b>Northbound</b>	A / 7.1	A / 7.0	A / 7.3	A / 7.2	A / 7.0	A / 7.0	A / 7.3	A / 7.3
<b>Southbound</b>	A / 7.4	A / 7.4	A / 7.7	A / 7.7	A / 7.3	A / 7.3	A / 7.8	A / 7.8
<b>Eastbound</b>	A / 6.9	A / 7.2	A / 7.3	A / 7.4	A / 6.8	A / 7.0	A / 7.3	A / 7.5
<b>Westbound</b>	A / 7.3	A / 7.5	A / 7.5	A / 7.9	A / 7.3	A / 7.4	A / 7.6	A / 8.0

Legend: A / 8.7 A = Level of Service 8.7 = Delay Time in Seconds

The intersection of Lowell Ave. and Shadow Ridge is anticipated to operate at a LOS A during the AM and PM Peak Hours (Table Seven).

<b>TABLE EIGHT – EMPIRE / MANOR SUMMARY</b>								
	<b>Existing Non Ski-Day</b>		<b>Existing Ski-Day</b>		<b>Design Non Ski-Day</b>		<b>Design Ski-Day</b>	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak



<b>Intersection</b>	A / 7.4	A / 7.7	A / 8.0	B / 9.1	A / 7.7	A / 8.2	A / 8.5	B / 10.2
<b>Northbound</b>	A / 7.3	A / 7.5	A / 7.7	B / 8.2	A / 7.6	A / 7.9	A / 8.1	B / 8.9
<b>Southbound</b>	A / 7.1	A / 7.4	A / 7.7	A / 8.5	A / 7.4	A / 7.8	A / 8.2	A / 9.5
<b>Eastbound</b>	A / 7.7	A / 8.1	A / 8.4	A / 9.8	A / 8.1	A / 8.7	A / 9.0	A / 11.2
<b>Westbound</b>	NA	NA	NA	NA	NA	NA	NA	NA
<i>Legend:</i> A / 8.7    A = Level of Service    8.7 = Delay Time in Seconds								

The intersection of Empire Ave. and Manor Way is anticipated to operate at a LOS A or B during the AM and PM Peak Hours (Table Eight).

<b>TABLE NINE – LOWELL / MANOR SUMMARY</b>								
	<b>Existing Non Ski-Day</b>		<b>Existing Ski-Day</b>		<b>Design Non Ski-Day</b>		<b>Design Ski-Day</b>	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
<b>Intersection</b>	A / 7.0	A / 7.4	A / 7.2	A / 9.9	A / 7.3	A / 7.5	A / 7.6	B / 10.9
<b>Northbound</b>	A / 6.6	A / 6.8	A / 6.8	A / 8.9	A / 6.8	A / 7.0	A / 7.1	A / 9.9
<b>Southbound</b>	A / 7.3	A / 7.7	A / 7.6	A / 10.9	A / 7.4	A / 7.8	A / 7.8	B / 11.9
<b>Eastbound</b>	NA	NA	NA	NA	NA	NA	NA	NA
<b>Westbound</b>	A / 7.4	A / 7.7	A / 7.7	A / 9.8	A / 7.7	A / 8.0	A / 8.1	B / 10.7
<i>Legend:</i> A / 8.7    A = Level of Service    8.7 = Delay Time in Seconds								

The intersection of Lowell Ave. and Manor Way is also anticipated to operate at a LOS A or B during the AM and PM Peak Hours (Table Nine).

The LOS and delay times at the proposed Access Points also were analyzed for the AM and PM Peak Hour periods. As expected due to the low volume of traffic, the Access Points operate at a LOS A for all time periods. The HCS output for the traffic conditions at the access points can also be found in the appendix of this report.

## IX. Construction Traffic Plan

There are few alternatives for construction vehicles and their access to the Project site. The primary route of travel will be along Park Ave. to Empire Ave. At the intersection of Empire Ave. and Manor Way, it is recommended vehicles turn right onto Manor Way and then left again on Lowell Ave. When returning it is recommended construction vehicles turn right out of the Project site and travel along Empire Ave. to Park Ave. The most important issue will be not to allow construction vehicles along Crescent Tram. The anticipated route for construction traffic is depicted in Figure 8.





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## X. Service Vehicle Plan

After researching information for the anticipated service vehicle trips for the Project, it was determined they would be comparable to those of the lower Main Street “Town Lift Plaza”. The “Town Lift Plaza” consists of three restaurants, one arcade, one gallery, three specialty retail stores and one spa for a total of about 21,000 square feet of commercial. A positive difference between the two sites is that the Project will have provisions for all service vehicles to load and unload off-street. An anticipated list of service vehicles per day includes:

- One or two food delivery vehicles (Sysco or Nichols)
- Two or three beverage delivery vehicles (Coors, Bud Light and a soda vender)
- Two garbage trucks (BFI)
- Ten miscellaneous (Fed Ex, Ups and other providers to specialty retail stores)

It is important to note that these vehicle trips have been included in the trip generation estimates already provided in this report.

It is anticipated that the service vehicles will follow the “Swede Alley Rules” as outlined in the Park City Code, Chapter 8, and operate between the hours of 7:00 a.m. and 4:00 p.m. The major positive difference, as mentioned before, is no on-street offloading is anticipated for the Project service vehicles. It is expected that the service vehicles will follow the same circulation pattern as the construction vehicles depicted in Figure 8.

## XI. Residential Project Traffic Plan

A path similar to that for construction traffic and service traffic is recommended for residents and guests using private vehicles. The Project should be signed accordingly. A review of the current signs demonstrates some viable options.



Looking South on Deer Valley Drive coming into town



Northwest corner of Deer Valley Dr. and Empire Ave.



Southwest corner of Empire Ave. and Silver King Dr.



Southwest corner of Empire Ave. and Manor Way

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## XII. Parking and Related Considerations

There are two scenarios when parking needs to be addressed; one, during construction and, two, long term after occupancy. PEC makes the following observations:

### 1. Construction Parking

Initial grading should include a location on site for construction parking and staging.

After a parking structure is completed, construction vehicles should be directed to use such parking structure.

### 2. Post Construction Parking

Parking along Lowell Ave. and Empire Ave. should be restricted to residents with permits.

Within 150 to 200-feet of the Project Access Points, parking should not be allowed on the driveway side of the street; and parking should not be allowed along the

Lowell/Empire inside curve adjacent to the Project. The berm on the inside curve should be leveled and planted with low lying vegetation to improve site distance.



Parking for the balance of Empire and Lowell Avenues should be limited to one side of the roadway during winter months. As in the photograph of Lowell Avenue and Empire Ave. below, the width of the existing travel way is 25-feet (red line). When parking is allowed along the street, 5 to 6-feet of the travel way is reduced because only a portion of the vehicle is accommodated within the curb and gutter. With 20-feet available, emergency vehicles can be accommodated. If parking is allowed on both sides, emergency response times may be compromised. Priority snow removal to maintain travel lanes is important.





Lowell Ave.



Empire Ave.

### XIII. Summary and Recommendations

As seen in this report, the Project accesses and intersections will function adequately to transfer the project-generated traffic to and from the site.

Occasional delays are currently experienced during winter PM Peak Periods and during Special Events such as Sundance, Arts Festival, 4<sup>th</sup> of July, etc. This Project will contribute little to existing



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delays. One intersection that will continue to experience delays higher than recommended is the Park Ave. and Empire Ave. / Deer Valley Drive intersection. Several proposals have been presented to Park City Staff for possible improvement to this intersection based on prior Traffic Studies performed in the study area. Another intersection that currently experiences delays on a limited number of days during the PM Peak Period is the Silver King Dr. and Empire Ave. intersection. Delays at this intersection result from the Mountain Resort day-skiers leaving the parking lots at approximately the same time. Any Treasure Hill Project traffic will also contribute to these delays. However, individuals who leave Treasure Hill in their cars to ski or visit elsewhere will be returning in the direction opposite to the main traffic flow during the PM Peak Periods. Therefore, they will not contribute to the traffic flow and delays created by day-skiers leaving the resort parking area. It is also likely that Treasure Hill Project guests and residences will learn quickly to avoid such delays. Finally, it is important to note that addressing such delays will be of little practical value without addressing coinciding delays at Park Ave. and Empire Ave / Dear Valley Drive and else where in the traffic stream.

Human traffic control, adding turning lanes at Park Ave. and Empire Ave. / Dear Valley Drive, and a roundabout or traffic signal at Silver King Dr. and Empire Ave., although not recommended per say at the present time, are potential viable options if delays become more frequent and or longer in the future.

The following recommendations are forwarded with the purpose of assuring the most favorable LOS for the traffic study area:

1. Construct the gondola to Main Street and operate during PM Peak Periods.
2. Construct and maintain the proposed pedestrian connections.
3. Limit parking on Lowell / Empire Loop to local residents with permits and restrict parking to one side of Lowell / Empire Loop during winter months.
4. Prohibit parking on both sides of Lowell / Empire Loop adjacent to the Project.
5. Level the berm on the inside of the Lowell / Empire curve and revegetate with low lying plants.
6. Prohibit parking on both sides of Lowell / Empire Loop adjacent to the Project.
7. Remove snow from Lowell and Empire Avenues on a priority basis.
8. Direct construction and service traffic to follow specified routes and avoid winter PM Peak Periods.
9. Accommodate construction parking and staging on site.
10. Encourage Project guests and residents to use alternate modes of transportation and follow the



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set pattern of up Lowell Avenue and down Empire Avenue.

11. Update analysis periodically using actual Peak Hour delay counts.



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## XIV. Appendices