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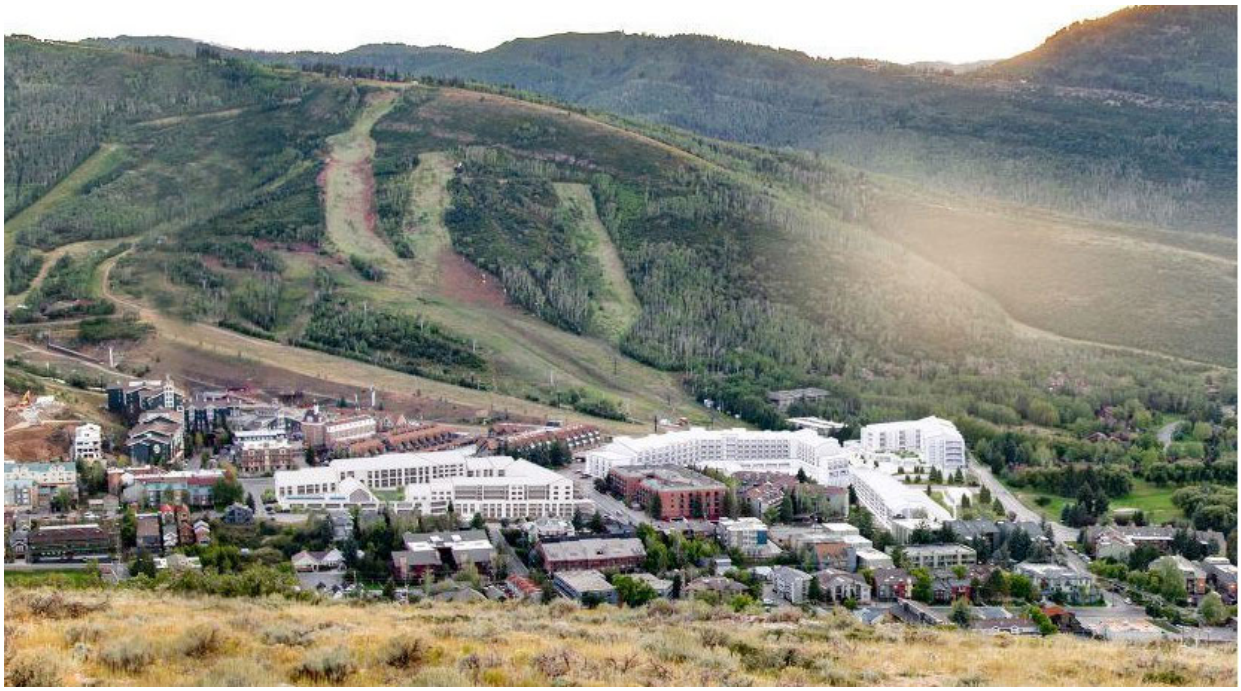
# Park City Mountain Resort

## Transportation Analyses



## Park City, Utah

**April 20, 2021**

**UT19-1481**

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# SUMMARY

Hales Engineering completed several multi-modal transportation analyses for the proposed Park City Mountain Resort development in Park City, Utah. Five memorandums have been created based on various requests by Park City staff and their consultants. Below are the five memorandums with links to each one in this document.

## 1 - Scenario 2b Evaluation (02/09/2021)

- Evaluated transit and vehicle operations with VISSIM simulation analysis
- Recommended mode split goals
- Evaluated transit travel time and intersection control

## 2 - Parking Study (02/11/2021)

- Established City parking requirements
- Used time-of-day shared use and actual observed demand to recommend minimum stall count

## 3 - Additional Traffic Information (02/26/2021)

- Provided additional details on modified mode split
- Addressed questions regarding site circulation and the pick-up / drop-off areas

## 4 - Responses to AECOM Review (03/22/2021)

- Responded to comments from AECOM's review of previous memorandums

## 5 - People-Based Analysis (04/20/2021)

- Outlined people-based analysis that was completed with Park City staff and AECOM

# 1 – Scenario 2b Evaluation

02/09/2021

Return to Memo List

# MEMORANDUM

Date: February 9, 2021

To: Park City

From: Hales Engineering

**Subject: Park City Mountain Resort – Scenario 2b Year 2040 Evaluation**

UT19-1481

## Introduction

This memorandum discusses the evaluation of Scenario 2b for the Park City Mountain Resort area. Scenario 2b includes exclusive transit lanes, with a transit route on Silver King and Lowell. The bus station would be located at the current location, on the south side of Lowell by parcel B. A concept of this scenario is shown in Figure 2.

## Traffic Analysis

*Background Traffic Volumes*

Most of the traffic counts used for the intersections were collected in February 2017 and were increased by approximately 14%, as discussed in the previous PCMR TIS, to bring the volumes up to a peak ski season level. Other counts were collected by Park City or Hales Engineering in other times of year and adjusted accordingly to match peak February conditions.

Future background traffic growth was determined based on the Summit County / Wasatch County travel demand model (TDM) results for winter conditions. The growth internal to the PCMR base area estimated by the TDM was almost identical (within ~20 peak hour vehicles) to that estimated previously with a 1% growth rate per year, so the previous volume growth that was used was implemented for this analysis. Hales Engineering used the people-based analysis to estimate volume elements such as pedestrian volumes and pick-ups and drop-offs, etc.

*Project Traffic*

New PCMR project traffic was added on top of the background traffic to get future (2040) plus project conditions. The trip generation was updated to represent the latest land uses for the proposed development. Trip generation and occupied percentages for condos and hotel units came from local trip data collected at the Canyons Resort area in 2018. Detailed trip data from the Canyons can be found with Summit County. Trends in the Canyons area indicated high internal capture percentages of 95% for retail space. To be conservative, 80% internal capture

was assumed for retail for the Park City development. Detailed trip generation calculations are provided in Appendix A.

*Mode Split*

Hales Engineering evaluated the transportation system of the resort area under two mode split conditions: a base scenario and a modified scenario. The base scenario represents the current mode split of today's operations without increased percentage of transit, shuttle, walking, and other alternative modes of transportation. The modified scenario was created to identify the change in mode split required to achieve a 20% reduction in overall vehicle volumes in the study area. As discussed later, this reduction was identified as a needed reduction in traffic to make the intersections work at an acceptable level of service. This reduction would need to be a global goal for PCMR and the City to work towards for both existing and proposed traffic.

The mode split of the base and modified scenarios are summarized in Figure 1, shown in percentages of people that use passenger vehicles, transit/shuttles, and walking/lifts to travel to and from the Park City Mountain Resort base area.

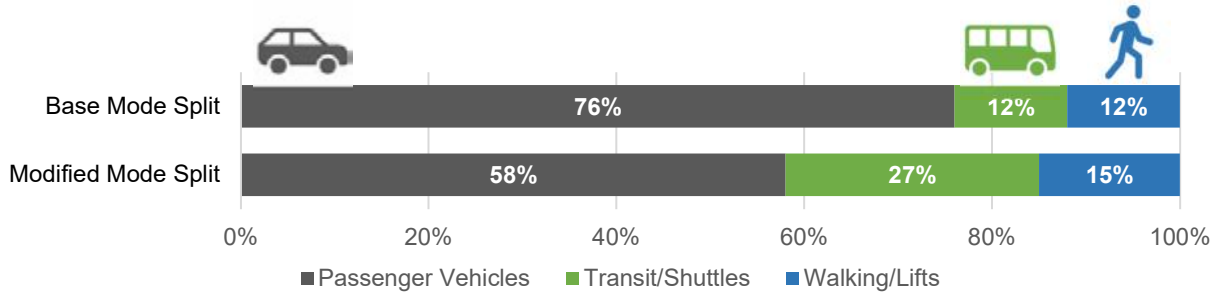


**Figure 1: Mode Split Scenarios**

*Assumptions*

The following assumptions were made for Scenario 2b:

- Four (4) traffic signals internal to the PCMR base area at Empire Avenue / Silver King Drive, Lowell Avenue / Silver King Drive, Shadow Ridge Road/ Empire Avenue, and Shadow Ridge Drive / Lowell Avenue
- A HAWK pedestrian crossing on Lowell Avenue between parcels C and D.
- Silver King Drive / Empire Avenue lane configuration:
    - EB: Left-turn lane and shared left-through-right lane
    - WB: Shared left-through-right lane
    - NB: Thru lane and shared through-right lane (no left turn)
    - SB: Right-turn lane (general purpose) and shared through-right lane (right for transit, and through for general purpose)
    - Split-side phasing on the EB and WB approaches due to the lane configuration
- Transit lanes can be exclusive starting and ending at the Silver King / Empire intersection. In other words, transit flow must be mixed with general purpose traffic north of Silver King.

*VISSIM Model*

Hales Engineering completed a VISSIM traffic simulation model to analyze the proposed Scenario 2b for transit and general-purpose vehicle operations. Included within the model were parameters for the transit-only lanes, bus stops, drop-off areas, traffic signals, etc.

The initial model runs of the base mode split scenario for both morning and evening peak hours resulted in excessive queueing and delays at the Park Ave. / S.R. 224 / Empire Ave. intersection. Based on Park City and UDOT's desires to not make any lane change and capacity improvements to this intersection, the resulting option is to reduce vehicle volume in the area with mode shifts (transit, shuttles, walking, biking). Because of this, Hales Engineering completed a sensitivity analysis to determine how much traffic would need to be reduced globally in a modified mode split for the Park Ave. / S.R. 224 / Empire Ave. intersection to work at an acceptable LOS. It was found that a reduction of approximately 20% would be needed. The results of the VISSIM model for the base and modified mode split scenarios are provided in the following sections.

*Transit Travel Time*

Hales Engineering calculated the bus travel times for the site using the time it would take to travel the entire bus loop plus the delay buses would experience along the route. The travel times did not include any dwell time at the bus station or stop. It is anticipated that buses will have a loop travel time of approximately 3 minutes 8 seconds, and 3 minutes 4 seconds from and to the Silver King Drive / Empire Avenue intersection for morning and evening peak hours, respectively. This was assuming the modified mode split scenario.

*Level of Service*

The level of service results for the base and modified mode split scenarios are shown in Table 1. As shown, poor levels of service are anticipated at several intersections in the base mode split scenario, including excessive delays and queueing on S.R. 224 at the Park Avenue / Deer Valley Drive intersection.

Though the City and UDOT have decided not to make major improvements to the Park Avenue / Deer Valley Drive intersection, one improvement that could be considered is striping a channelized lane on the southbound right-turn movement of the Park Avenue / Deer Valley Drive intersection on the existing pavement. This would help alleviate some delays in the morning peak hour especially. However, assuming this improvement may not be possible, Hales Engineering also ran the modified mode split scenario to show how the intersections would work. As shown in Table 1, it is anticipated that all study intersections except the East B Access / Empire Avenue intersection would operate at an acceptable LOS with the modified mode split.

**Table 1: Level of Service**

| | Intersection | Future (2040) Plus Project - Scenario 2b | | | |
|---|---|---|---|---|---|
| | | Base Mode Split | | Modified Mode Split | |
| | | AM | PM | AM | PM |
| 1 | S.R. 224 / S.R. 248 | F | C | C | C |
| 2 | Homestake Ave / Park Ave | f | f | c | c |
| 3 | Iron Horse / Park Ave | f | f | b | c |
| 4 | Park Ave / Deer Valley Dr | E | F | D | D |
| 5 | Silver King Dr / Empire Ave | B | D | B | B |
| 6 | Lowell Ave / Silver King Dr | B | B | B | B |
| 7 | Three Kings Dr / Silver King Dr | a | c | a | c |
| 8 | Shadow Ridge Rd / Empire Ave | B | C | B | B |
| 9 | Shadow Ridge Rd / Lowell Ave | C | E | C | C |
| 10 | 14th St / Empire Ave | c | c | b | c |
| 11 | Manor Way / Empire Ave | a | c | a | b |
| 12 | Manor Way / Lowell Ave | b | f | a | b |
| 13 | NE E Access / Silver King Dr | b | d | b | c |
| 14 | East D Access / Empire Ave[3] | f | f | d | d |
| 15 | West D Access / Lowell Ave | c | d | b | b |
| 16 | C Access / Lowell Ave | e | f | c | b |
| 17 | North B Access / Shadow Ridge Rd | b | f | a | b |
| 18 | East B Access / Empire Ave | e | f | c | f |
| 19 | South B Access / Manor Way | b | f | b | d |

1. Intersection LOS values represent the overall intersection average for roundabout, signalized, and all-way stop-controlled (AWSC) intersections (uppercase letter) and the worst movement for all other unsignalized intersections (lowercase letter)
2. BG = Background (without project traffic), PP = Plus Project (with project traffic)
3. Intersection results not recorded due to proximity to Silver King Drive. LOS results were estimated.

Source: Hales Engineering, February 2021

**Evaluation**

Hales Engineering evaluated Scenario 2b based on criteria and questions provided by Park City staff, summarized as follows:

*General Pros & Cons*

Pros:

- Transit is given priority on-site
- Transit station stays at current location with seven (7) bus bays
- Additional transit stop location on Silver King Drive
- Safe pedestrian crossing locations
- Minimal impacts to Silver King Drive
- Empire Avenue keeps two-way flow
- Two general purpose drop-off locations

Cons:

- Permanent changes to Lowell for drop-off loops
- Four traffic signals and a HAWK pedestrian signal for Park City to operate
- Potential congestion on Empire Avenue during peak hours

*Do the intersections work? Impacts of traffic signals?*

With the base mode split scenario, poor levels of service are anticipated at several intersections including S.R. 224 / S.R. 248, Park Avenue / Deer Valley Drive, and Shadow Ridge Road / Lowell Avenue, as well as several unsignalized intersections. With the modified mode split scenario, it is anticipated that all study intersections will operate at an acceptable LOS except for the East B Access / Empire Avenue intersection. To make the traffic signal system work well, the signals will have to be coordinated with each other to allow for good traffic flow around the site.

*Does the bus station work?*

Hales Engineering evaluated the bus station from a traffic operations perspective. A conservative assumption of 50 buses per hour was assumed coming to the site during peak hours. That is nearly 1 bus arriving to the bus station per minute. With seven (7) bus bays planned at the station, that provides buses with up to seven minutes of dwell time before having to depart the transit station. It is anticipated, therefore, that the seven (7) proposed bus bays will be sufficient. In the case that buses are delayed at the station, there is still some storage area on Lowell leading up to the station for buses to queue up in, if necessary. This is a great benefit of the transit-only lanes.

*Intersection Control*

The proposed intersection control is shown in Figure 2. As shown, four traffic signals are being proposed to provide bus priority and efficient traffic flow. A controlled pedestrian crossing with signalization (HAWK) is proposed on Lowell Avenue between parcels C and D. All other intersections and accesses will have stop control.

*Pedestrian and Bike Accommodations*

The proposed pedestrian and bike paths, crossing, and volumes are shown in Figure 3. A multi-use trail is being proposed along Lowell Avenue and looped around Parcel B. Sidewalks are being planned at other locations to tie into existing sidewalks. The traffic signals will provide safe pedestrian crossings for many of the pedestrians walking through the Park City Mountain base area. Crosswalks will be provided across each project access as well. Some existing sidewalks will remain untouched (shown in white in Figure 2) while others will be replaced with new sidewalk or a multi-use trail. Additional safe pedestrian walking paths will be provided in the plaza areas on all parcels, connecting the new resort area with the existing facilities.

*Parking and Driveways*

A map summarizing the supply for the project and day skier parking is shown in Figure 4. The approximate stalls assigned or located closest to each access is summarized in the figure as well. 1,720 total stalls are planned to be provided on site including 1,200 day skier parking stalls split up between Parcels B and E.

*Three Kings Drive Traffic Deterrents*

A raised median has been designed for Silver King Drive in front of the Parcel E access to restrict left turns out onto Silver King.

*Drop-off Area Queue Storage*

It is recommended that both the north drop-off area and the south drop-off loop on Lowell Avenue be available for general purpose resort and day skier traffic. This will maximize the drop-off area on site to reduce back-ups during peak times. It is anticipated that there will be enough pick-up / drop-off area if both the north Lowell and south Lowell drop-off locations are used for general purpose traffic.

*Walking Distance from Transit*

Hales Engineering evaluated the walking distance from the proposed transit station on Lowell to the Payday Lift and compared this walking distance to other resorts. A summary of the walking distances is shown in Table 2.

**Table 2: Walking Distance from Transit**

| Resort | Transit Station/Stop | Lift(s) | Walking Distance (ft) |
|---|---|---|---|
| Park City | Lowell Avenue | Payday | 700 |
| Deer Valley | Deer Valley Dr. | Carpenter | 450 |
| Canyons | Canyons Transit Hub | Cabriolet + Red Pine + Saddleback | 700 |

**Scenario 2b**

**Transit and Vehicle Circulation and Control**

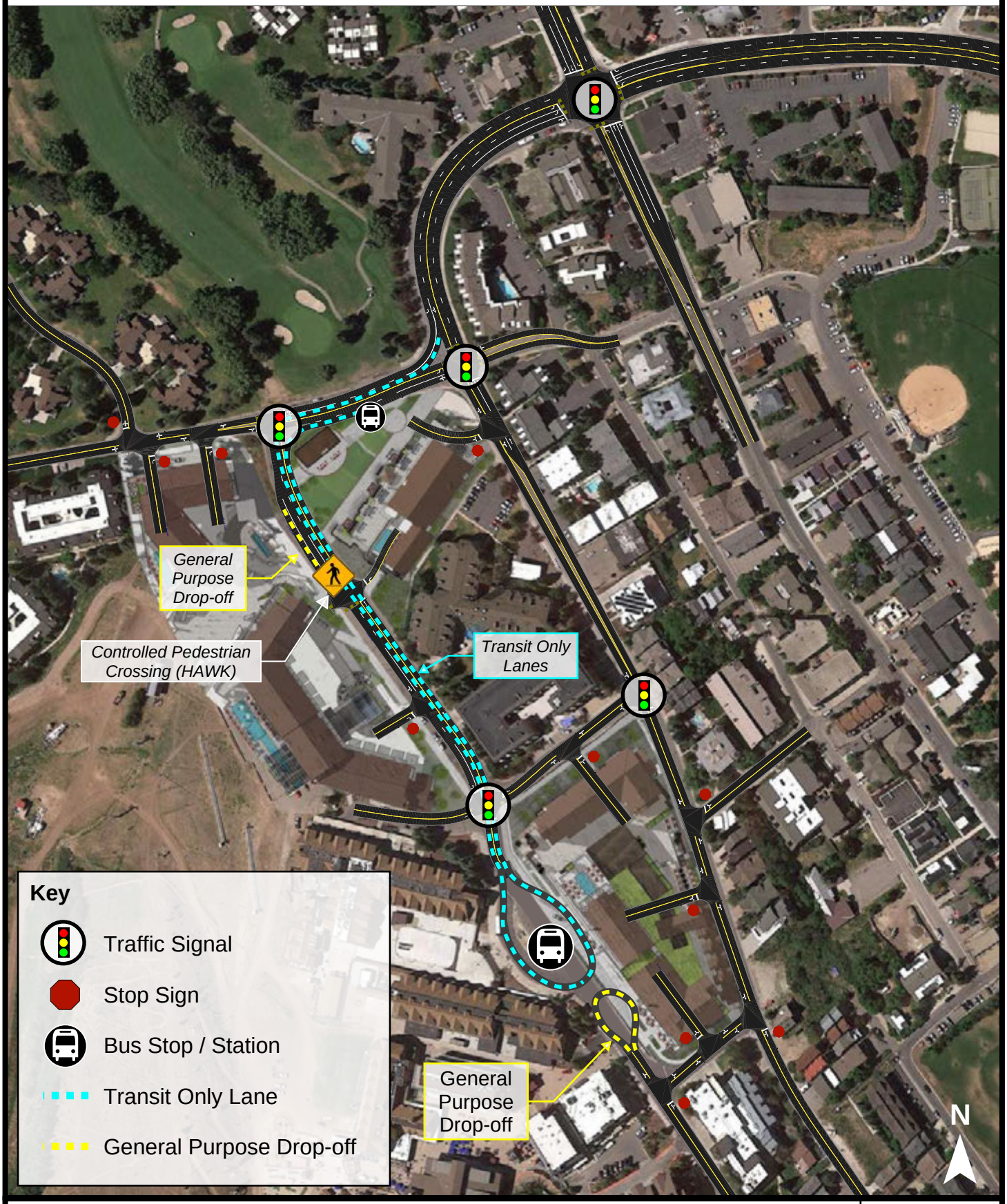


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Figure 2

**Scenario 2b** **Pedestrian and Bike Paths**

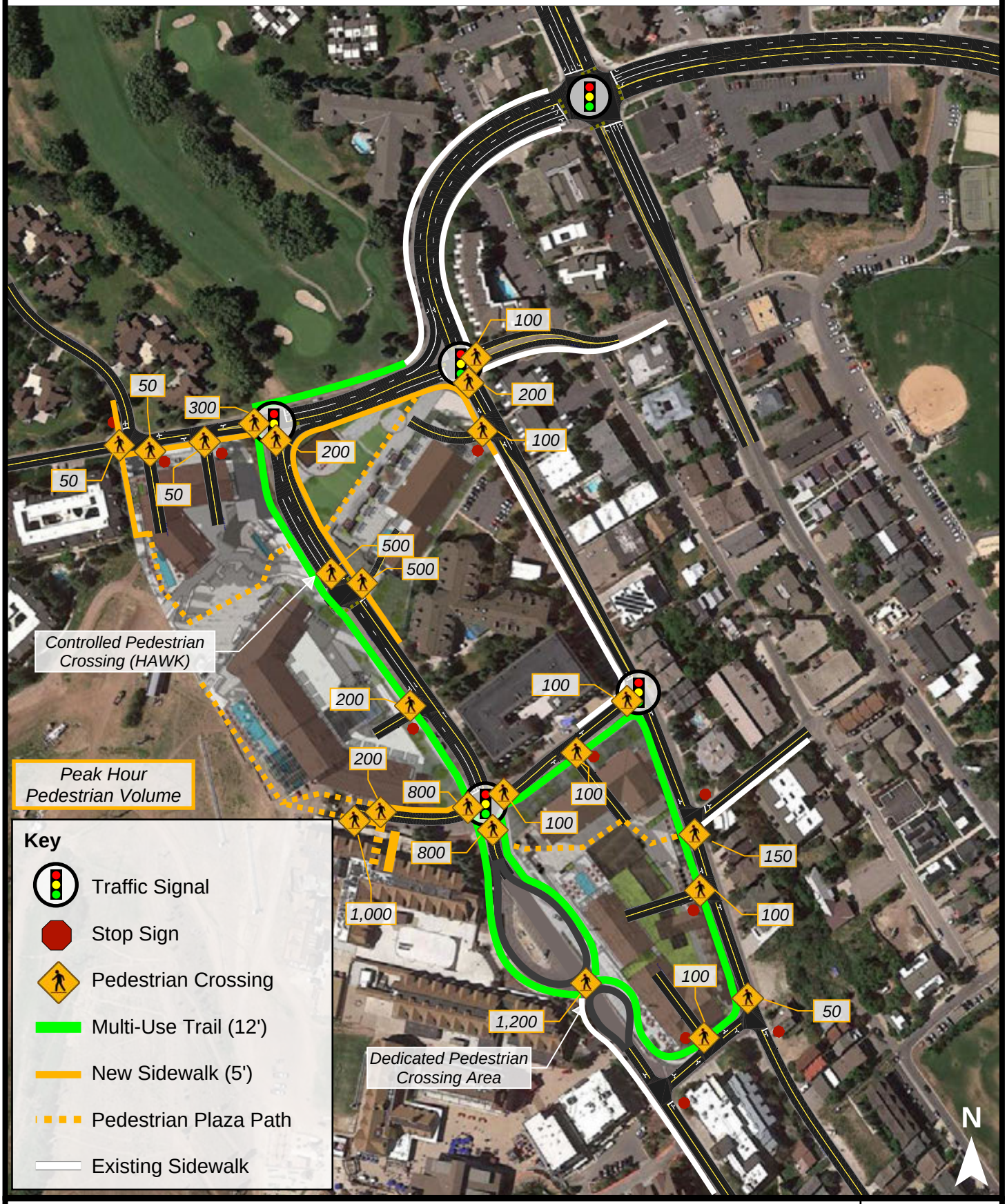


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Figure 3

**Scenario 2b** **Parking & Driveways**

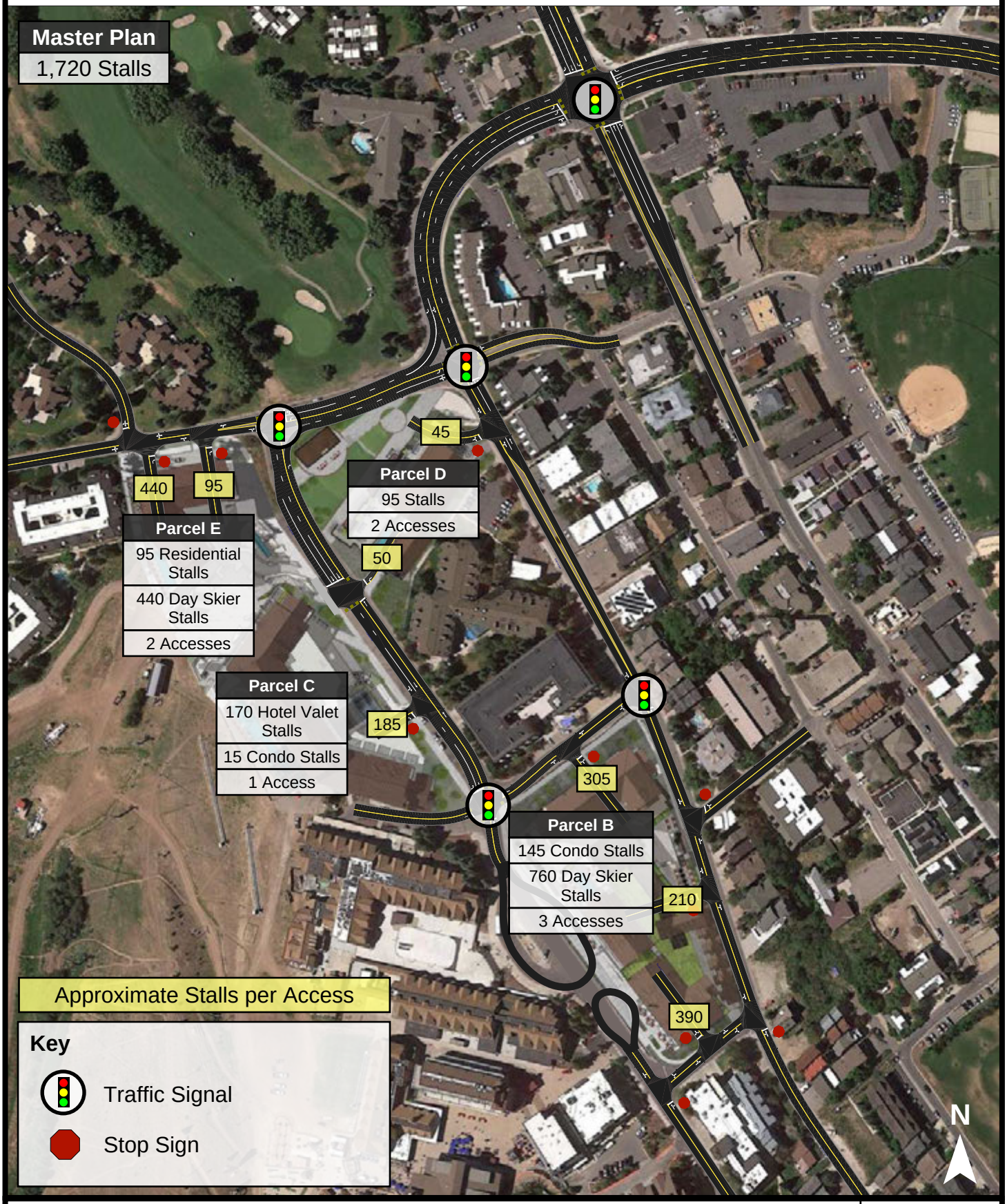


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Figure 4

# 2 – Parking Study

02/11/2021

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# MEMORANDUM

Date: February 11, 2021

To: Park City

From: Hales Engineering

**Subject: Park City Mountain Resort Parking Study**

UT19-1481

This memorandum discusses the parking study completed for the proposed Park City Mountain Resort development located in Park City, Utah. The study identifies the Park City parking requirements and considers shared parking between land uses. The proposed Park City Mountain Resort development is located on four parcels adjacent to the existing Park City Mountain Resort, as shown in Figure 1.


**Figure 1: Site vicinity map of the project in Park City, Utah**

**Park City Parking Code**

The Park City code specifies parking rates for various land use types in Section 15-3-6. The City parking rates for land uses within the proposed area of the resort are summarized in Table 1.

**Table 1: Park City Parking Rates**

| Land Use | Parking Rate |
|---|---|
| Hotel | 1 space per room plus 5 spaces per 1,000 sf of separately leasable commercial space |
| Condominium | <1,000 sf: 1 space per dwelling unit<br>1,000 – 2,000 sf: 1.5 spaces per dwelling unit<br>>2,000 sf: 2 spaces per dwelling unit |
| Retail & Service Commercial, Minor | 3 spaces per 1,000 sf of net leasable space |
| Retail & Service Commercial, Major | 5 spaces per 1,000 sf of net leasable space |
| Multi-tenant commercial complex | 3.5 spaces per 1,000 sf of leasable floor area |
| Meetings space | 5 spaces per 1,000 square feet |
| Restaurant, standard and bar | 10 spaces per 1,000 square feet net leasable area |

Being programmed within the project are 1,200 parking spaces for day skier use, separate from the existing 300 day skier stalls provided by Vail. Based on initial calculations of the parking needed for the proposed land uses, the City would normally require 2,223 parking spaces, including the day skier parking. A detailed table outlining required parking is provided in Appendix A.

**Nearby Resort Experience**

Recently, Hales Engineering collected data at a nearby ski resort and identified how people arrive to a resort. The following data is an average of 9 separate locations counted within the studied resort area and identifies:

- 57% drove a vehicle to the resort
- 18% rode in a shuttle
- 15% rode in an Uber / Lyft vehicle
- 9.4% rode in a black car or other transport vehicle
- 0.6% rode in transit, an individual location identified that 5% rode transit

Hales Engineering has also collected overnight parking demand data at a nearby ski resort. Based on a total of 34 data points collected over four peak nights between 2017 and 2019, it was found that the overnight demand was an average of 0.68 stalls per occupied unit and an 85$^{th}$ percentile of 0.99 stalls per occupied unit.

**Time-of-day Shared Use**

Many land uses are able to share parking due to offsetting peaks in parking demand. It is anticipated that this will be the case for Parcels B, C, D and E of the Park City Mountain Resort

project along with the day skier parking needs. Designing for the actual parking demand for a mixed-use project results in efficient use of parking spaces. The Institute of Transportation Engineers (ITE) provides percentages of parking demand throughout the day for many land uses in the *Parking Generation* (5th Edition, 2019) manual.

Hales Engineering made conservative estimates regarding the hourly parking demand of the meeting space land use, as these are not available from ITE. The day skier parking being programed into the site, 1,200 stalls, will not be included within the share parking calculations to remain conservative, and will remain at a fixed level. Also, as discussed previously, a parking demand of 0.99 stall per occupied unit is anticipated based on 34 data points. Therefore, a parking demand rate of 1.0 stall per occupied unit was assumed for most residential and hotel units. A percent occupied rate of 85% was assumed for residential and hotel units, consistent with the traffic analyses. PEG development does not anticipate any parking demand for employees that live on site. Therefore, it was assumed that no stalls were needed for employee housing.

Hales Engineering identified a mixed use / time of day parking demand for each land use for every hour of the day to determine the actual parking demand for Parcels B, C, D, and E. Internal capture rates were estimated and matched with those presented in the traffic analyses. A summary of these calculations are provided in Appendix B and shown graphically in Figure 2.

As shown in Figure 2, it is anticipated that the peak parking demand when considering shared use and time-of-day needs will be approximately 1,583 parking vehicles at 9:00 pm. This includes fixed day skier parking stalls (reserved) in both Parcel B (760 stalls) and Parcel E (440 stalls) during each hour of the day. It is anticipated that at the peak parking demand hour (9:00 pm), an additional 138 stall surplus will still be available on-site (8%) at all times for the combined parking lot supply of 1,721 parking stalls.

**Conclusions / Recommendations**

Hales Engineering concludes the following:

- The proposed project is programming 1,200 day-skier parking stalls (current surface stalls on Parcels B, C, D and E) be provided somewhere on the site during and after construction of the project.
- Park City parking rates would require a parking supply of 2,223 stalls (including the programmed 1,200 stalls for the day-skiers).
- Hales Engineering completed a parking study at a near-by resort and has identified that actual parking rates per residential unit are lower than the projected ITE rates.
    - Utilizing mixed use reductions, time of day parking needs, and occupancy values, while fixing the day-skier parking (1,200 stalls) results in a peak shared parking demand of 1,583 vehicles.
        - The parking supply on-site will be 1,721 stalls; therefore, at peak demand (1,583 stalls) there will be an 8% surplus of stalls (138 stalls).

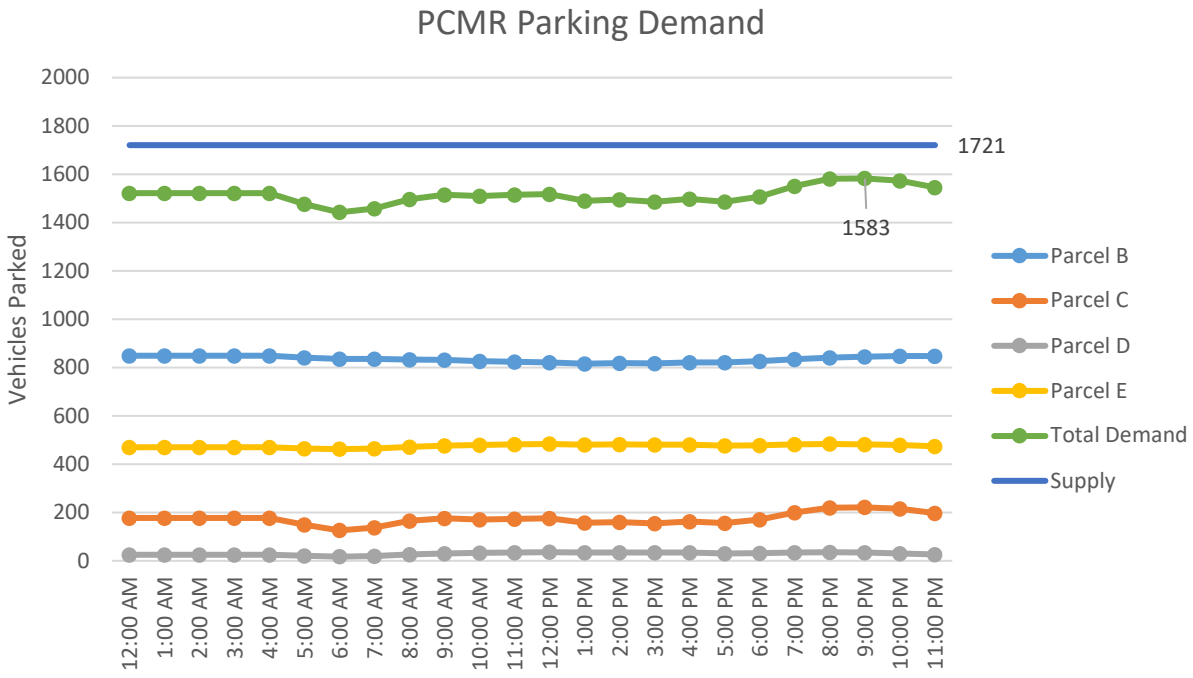


**Figure 2: PCMR Parking Demand by Time of Day**

- Dynamic parking signs will be placed in strategic locations within the resort and on the parking structures to guide patrons to open parking spaces within Parcels B, C, D and E, creating a more efficient hunt for parking availability.
- Parcels B, C, D, and E, will all have shuttle service provided to move patrons around Park City, if scheduled in advance.
- The Park City Mountain bus pull out area is being expanded with the proposed project from 3 to 7 spaces aligned in a more efficient layout to increase transit opportunities and potentially increase bus frequency, with landowner's cooperation.
    - Paid parking will be instituted into the proposed project, and it is anticipated that transit ridership will increase, and passenger vehicle occupancy will also increase.
- A day skier drop-off / pick-up area is being programmed into the site between Parcels C and E.
- The following potential measures could be implemented to encourage alternative modes of arrival to the resort:
    - Advertise remote day skier parking at Ecker Hill park and ride lot
    - Promote employee remote parking (see Vail's employee parking management plan), promote employee existing retail / base to ride transit from remote areas
    - Promote other remote lots including high school, etc.
    - Parking allocated to condo / hotel will be actively managed and surplus will be made available to general public / day skiers

- Ski lockers for day skiers and season rentals can be added which will promote bus ridership
- Preferred parking for carpoolers
- Encourage residential properties to provide patron discounts for Uber / Lyft / Black Car Service arrivals / departures
- Encourage through the booking process alternatives forms of arrival / departure other than rental vehicles

# 3 – Additional Traffic Information

02/26/2021

Return to Memo List

# MEMORANDUM

Date: February 26, 2021

To: Park City

From: Hales Engineering

**Subject: Park City Mountain Resort – Additional Traffic Information**

UT19-1481

This memorandum provides additional information related to the proposed Scenario 2b for the Park City Mountain Resort area, as requested by Park City staff.

## Modified Mode Split

As discussed previously, Hales Engineering has identified a modified mode split that needs to be reached in the Park City Mountain Resort area and nearby City traffic movements to achieve acceptable levels of service. The mode split of the base and modified scenarios are summarized in Figure 1, shown in percentages of people that use passenger vehicles, transit/shuttles, and walking/lifts to travel to and from the Park City Mountain Resort base area. It is anticipated that the modified mode split would result in a 20% reduction in peak hour vehicle trips in and out of the site.

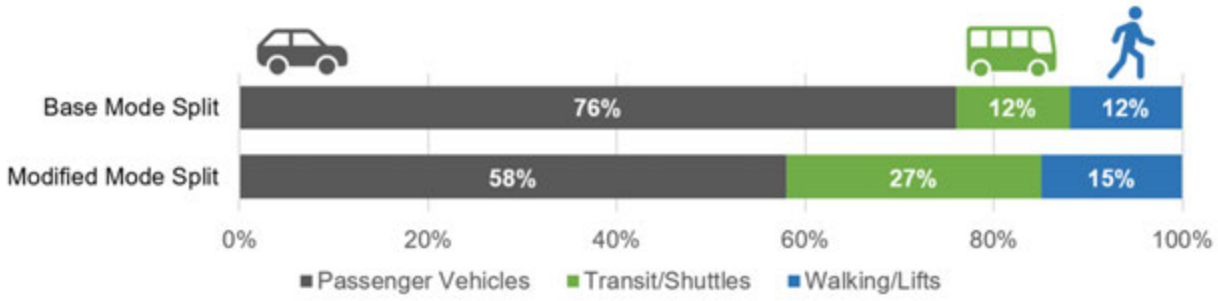


**Figure 1: Mode Split Scenarios**

Park City staff requested additional information as to how this modified mode split will be achieved. Hales Engineering has summarized the transportation demand management (TDM) strategies from PEG's draft TDM plan and how these strategies can be applied to reach certain reductions in vehicle traffic. Hales Engineering has classified all strategies in four primary high-level TDM strategies / categories. The strategies and anticipated reductions are provided in Table 1. The sub-strategies for each high-level strategy are listed as follows:

**Table 1: High-Level TDM Strategies and Anticipated Reductions**

| | High-Level TDM Strategy | Peak Hour Vehicle Trip Reduction | % Reduction |
|---|---|---|---|
| 1 | Increase day skier AVO from assumed 2.7 to a 3.1 | 116 | 4.3% |
| 2 | Increase transit capacity and incentives (36 buses per hour) | 360 | 13.5% |
| 3 | Increase shuttle capacity and incentives | 18 | 0.7% |
| 4 | Other Improvements | 40 + | 1.5% + |
| TOTAL | | 534 + | 20% + |

*1: Increase day skier AVO from assumed 2.7 to 3.1 on peak day*

*Calculation: For 2,430 day skiers coming/going in peak hour, calculated difference in vehicles for 2.7 AVO (assumed for traffic analyses) versus 3.1 AVO.*

- Designate a Transit / Parking Manager
- Coordinate with parking operations to assess and grow programs that will promote carpooling and ridesharing programs
- Implement paid parking system that incentivizes carpooling
    - The parking and trips on site can be monitored and parking rates adjusted as needed to ensure an increase in AVO
- Install a dynamic parking monitoring program that broadcasts available stalls number on variable message signs
    - Signs should be placed in advance of the PCM base area to alert drivers not to drive into the site to search for parking, in addition to alerting people via an app or via text messaging or emails
- Coordinate app with City and Resort that provides real-time parking information for guests

*2: Increase transit capacity (50% increase) and incentives*

*Calculation: Assumed increase from 48 bus trips to 72 future bus trips in peak hour (50% increase). Also assumed average occupancy increase from 8 to 16, knowing that bus routes can be added that terminate at PCM, resulting in more people in buses. Removed passenger vehicle trips and added in bus trips.*

- Designate a Transit / Parking Manager
- Increase transit capacity and frequency, from 24 buses per hour to 36 buses per hour
- Coordinate with Park City Municipal on public transportation from satellite lots and operation of the transit center at the base area
- Coordinate with Park City Municipal on potential enhancements to existing bus routes
- Implement paid parking system that incentivizes transit usage, beyond the benefit of increasing the AVO
- Coordinate app with City and Resort that provides alternative transit information for guests

- Continue to use variable message signing to direct drivers away from the resort when parking is full
- Install dedicated bus lanes on Silver King Drive and Lowell Avenue
- Install day skier lockers at the new base area to promote transit usage
- Upgrade the existing bus station at the base area with seven (7) bus bays, shelters, bike facilities, facilities for bus drivers, bus charging stations
- Consider potential bus stop on eastbound Silver King Drive
- Communicate transit information to all employees and guests, including new options such as the Quinn's Junction park and ride and proposed bus lanes
- Encourage existing PCM base employers to incentivize employee transit usage (PC-SLC Connect, UTA Vanpool, and RideOn for those living outside Park City; and Park City Transit for those living in Park City)
- Develop a robust information and communication system to inform stakeholders and employees of off-site parking areas, shuttle availability and schedules, carpooling using RideOn, and regional transit options
- Extend PC-SLC Connect bus pass program to all employees at the new base area

*3: Increase shuttle capacity (10% increase) and incentives*

*Calculation: Increase from assumed 60 shuttle trips to 66 future shuttle trips in peak hour. Also assumed average occupancy increase from 8. Removed passenger vehicle trips and added in shuttle trips.*

- Designate a Transit / Parking Manager
- Implement paid parking system that incentivizes shuttle usage, beyond the benefit of increasing the AVO
- Establish new parking procedures that shift employee parking to alternate locations
- Create and/or fund enhanced private shuttle program to/from satellite lots
- Provide employee breakroom at new hotel with bathrooms and showers
- Provide employee bike storage facilities
- Develop a robust information and communication system to inform stakeholders and employees of off-site parking areas and shuttle availability / schedules
- Expand employee usage of the UTA van/shuttle program for new base area employees that live in Salt Lake City and Heber

*4: Other Improvements*

- Enhance pedestrian facilities on site with multi-use path and sidewalks throughout
- Enhance pedestrian connections to external points of access, including enhanced connections to Old Town
- Provide bike racks on site for guests and secured bike parking for residents
- Provide a Summit Bike Share station on site
- Provide annual report of the TDM plan and progress, and make necessary adjustments to reduce traffic volumes to acceptable level
- Incentivize carpooling with the RideOn Park City Platform for the new base area employees

**Pick-up / Drop-off Area**

Scenario 2b has been designed with two primary pick-up / drop-off locations. The north pick-up / drop-off is located on the west side of Lowell Avenue, just south of Silver King Drive. This area will be used primarily for day skier pick-up / drop-off. It is anticipated that approximately eight passenger vehicles can fit in this area as currently planned.

The south pick-up / drop-off is a proposed loop on Lowell Avenue, just north of Manor Way, and just south of the proposed transit station. It is anticipated that this location will be used primarily for shuttle and condo resident pick-up / drop-off. It is anticipated that approximately eight shuttle vehicles can fit within this loop.

The traffic analysis included the north pick-up / drop-off in the VISSIM model, and it was modeled as a "parking" area for accurate dwell time simulation. Average dwell times of 2 minutes and 3.5 minutes were assumed for the morning and evening peak hours, respectively (knowing the morning drop-off takes less time than evening pick-up). It was observed in the modeling that the pick-up / drop-off area rarely filled up during the peak hours. In the VISSIM model, when the area was full, vehicles continued on in the system without entering the loading area. Because of this, Hales Engineering completed calculations to estimate better if the loading area sizes are sufficient.

The average required pick-up / drop-off space needed can be estimated by multiplying the hourly vehicle volume by the average dwell time and then dividing by 60 minutes to get to a number of vehicles at the pick-up/ drop-off area on average. A summary of this calculation for the north and south pick-up / drop-off areas is shown in Table 2 for both morning and evening peak hours. As shown, it is anticipated that average required space requirements of 8 vehicles and 6 vehicles are needed at the north and south pick-up / drop-off areas, respectively.

**Table 2: Average Required Pick-up / Drop-off Space**

| Location | Time Period | Demand (veh. / hr) | Dwell Time (minutes) | Vehicles | Average Required Space |
|---|---|---|---|---|---|
| North | AM | 225 | 2 | 7.5 | 8 |
| | PM | 125 | 3.5 | 7.3 | |
| South | AM | 85 | 2 | 5.0 | 6 |
| | PM | 160 | 3.5 | 5.3 | |

Based on this analysis, the two pick-up / drop-off locations have sufficient space for the average demand anticipated during peak hours. However, there may be times when immediate demand exceeds the average demand with surges in traffic, resulting in overflow of the pick-up / drop-off areas. Hales Engineering recommends the following to mitigate this condition:

- Assign at least one staff member for each pick-up / drop-off to direct traffic
- Locate space in a parking garage for temporary pick-up / drop-off overflow space
    - Direct traffic to this location with signing and with staff members
- Consider finding other locations for pick-up / drop-off, such as on Shadow Ridge Road

**Site Circulation**

Hales Engineering updated the Scenario 2b concepts to match other drawings developed by the project team and also created detailed concepts for key intersections and locations. All concepts are provided in Figures 2 through 5.

**Scenario 2b** **Transit and Vehicle Circulation and Control**

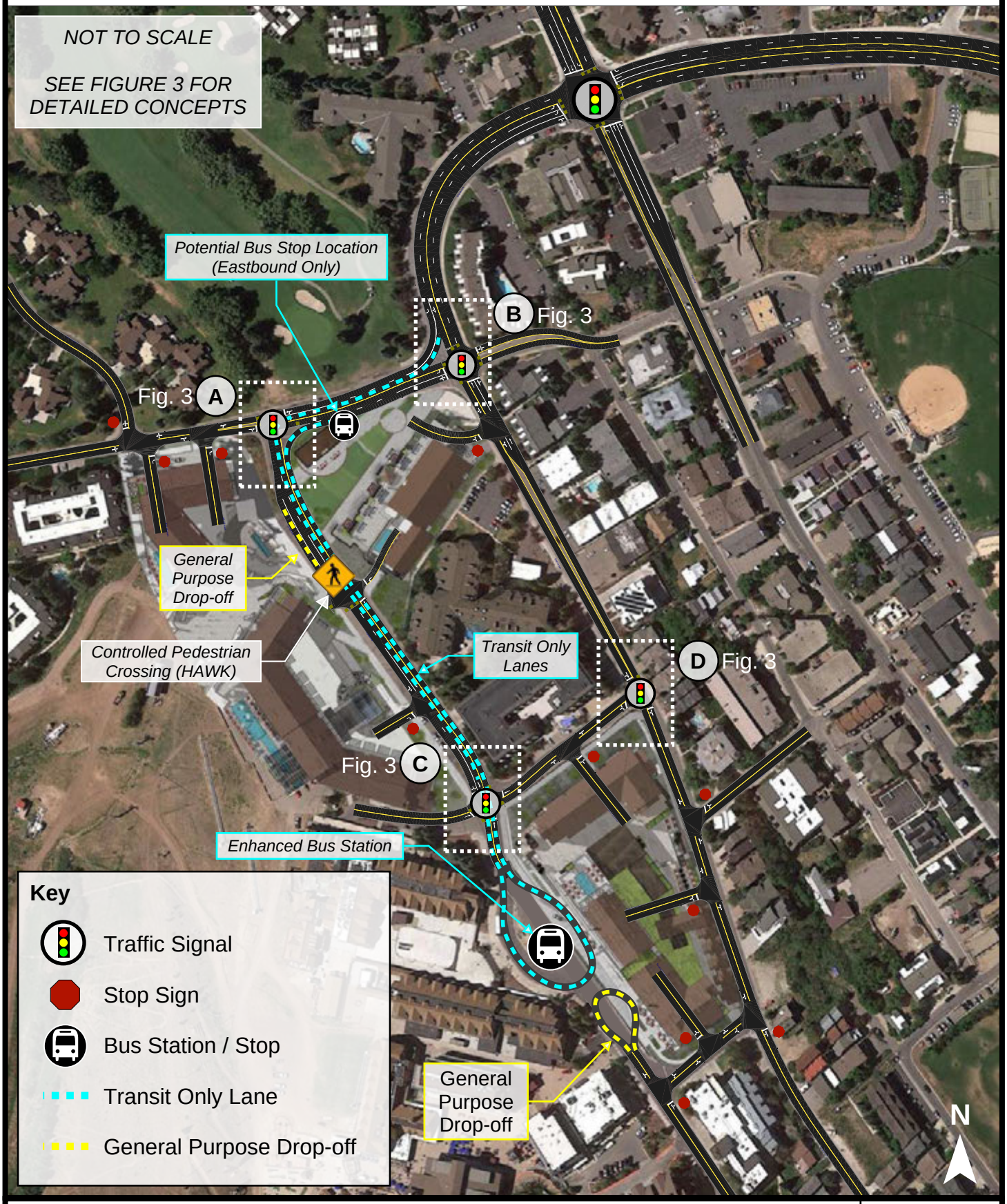


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Figure 2

**Scenario 2b** **Circulation Concept Details**

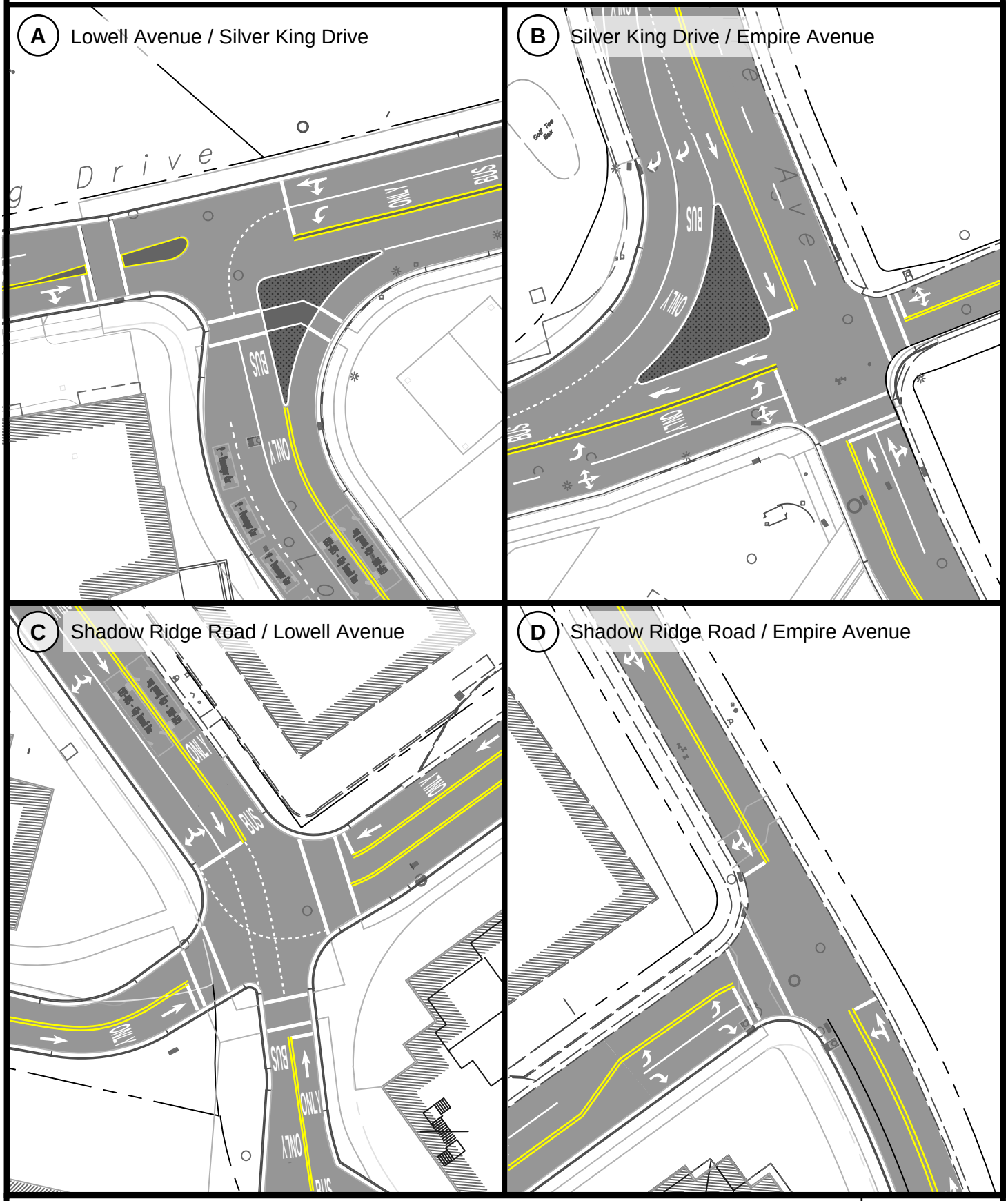


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Figure 3

**Scenario 2b** **Pedestrian and Bike Paths**

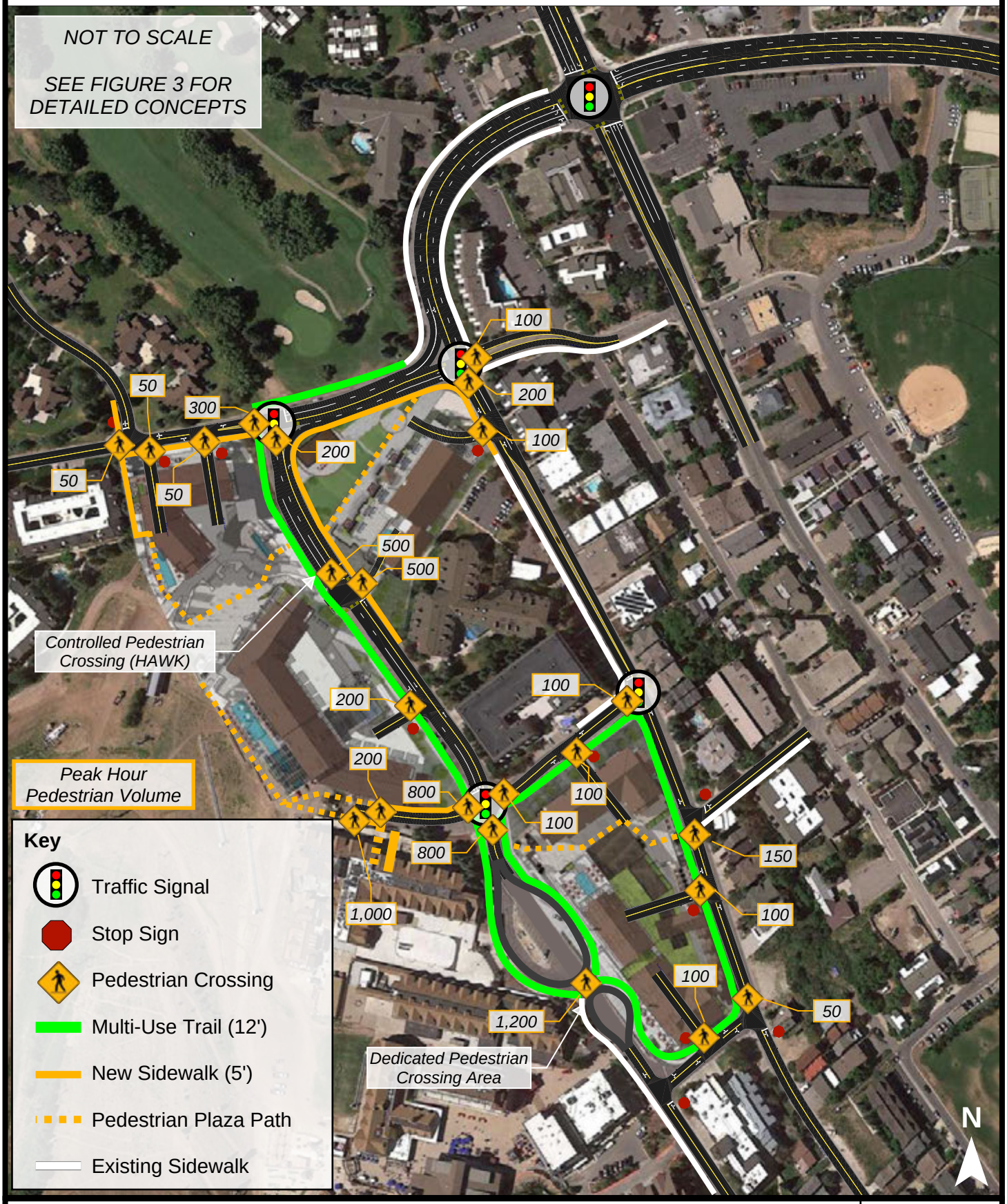


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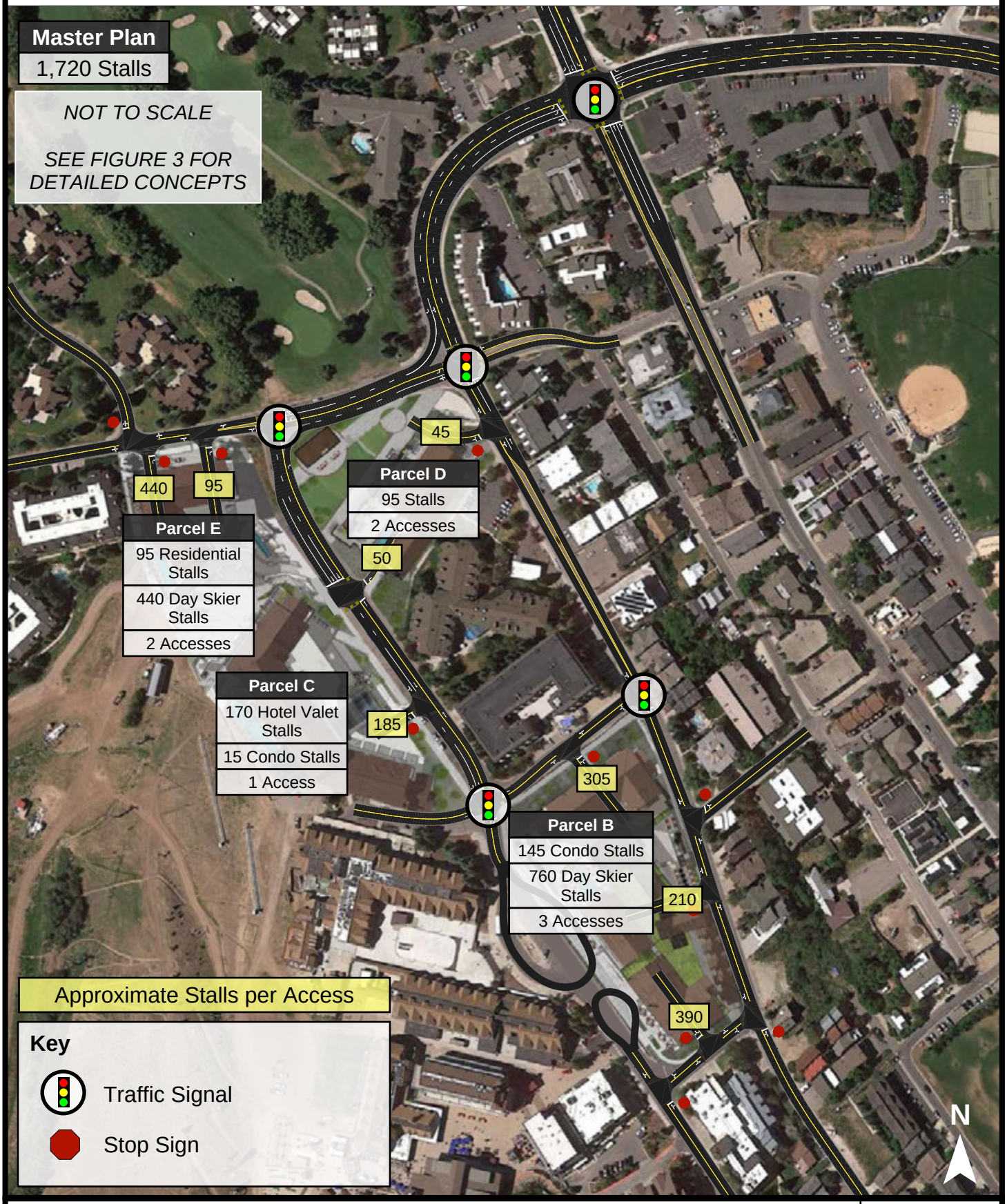
Figure 4

**Scenario 2b** **Parking & Driveways**

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02/26/2021

Figure 5

# 4 – Responses to AECOM Review

03/22/2021

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# MEMORANDUM

Date: March 22, 2021

To: Park City

From: Hales Engineering

**Subject: Park City Mountain Resort – AECOM Review Responses**

UT19-1481

This memorandum provides responses to the AECOM review of the Park City Mountain Resort development documents. The review was dated March 18, 2021. Responses with clarification or commentary have been provided for various points of the review. Below are the references to the review points in black text and a response by Hales Engineering in blue.

1. Page 2, Recommendations Section 1: A transit hub on parcel C or D is recommended.
    a. Locating a hub on parcel C or D would increase pedestrian / vehicle conflict compared with Scenario 2b. Scenario 2b provides safe pedestrian crossings on Lowell Avenue south of Shadow Ridge with a dedicated pedestrian walkway and a controlled crosswalk at a signal (where only buses will be crossing). With a transit hub on parcel C, transit users will not have to cross Lowell Avenue, but more cars will be using Lowell Avenue to the south, resulting in heavy conflicts with thousands of day skiers crossing Lowell Avenue. A transit hub on parcel D would add even more pedestrians crossing Lowell Avenue.
    b. To quantify the walking relative walking distance. Hales Engineering measured the potential walking distances to the Payday lift from potential 2b hub, parcel C hub, and parcel D hub locations, as summarized below. As shown, the proposed scenario 2b has the shortest walking distance to the Payday lift.

| Transit Location | Walking Distance |
|---|---|
| 2b | 725 feet (0.14 mi) |
| Parcel C | 850 feet (0.16 mi) |
| Parcel D | 1,450 feet (0.27 mi) |

2. Page 3, Figure 1: Based on this figure, the Parcel D hub seems to be the preferred scenario by AECOM.
    a. This scenario would result in the longest walking distance to the slopes and would have high pedestrian / vehicle conflicts.
3. Pages 4-5, TDM bulleted summary
    a. The TDM strategies listed here are not a complete list. Please see the 02/26/2021 memo by Hales Engineering to see a comprehensive bulleted summary of the strategies outlined in the current TDM.

4. Page 5, Section A3: Rate structure recommended for paid parking
    a. Yes, a paid parking structure should be set it place. The plan is to set the rate and then adjust as necessary to discourage driving. Setting an exact rate for parking right now is unwise, as the rate will be adjusted based on observed conditions.
5. Page 5, Section A4: Additional information requested to increase AVO
    a. Several strategies are summarized (from the TDM) to this end in the 02/26/2021 memo by Hales Engineering.
6. Page 6, Sections A8 and A9 Off-site employee parking / employee lockers and showers
    a. These are already included in the TDM plan
7. Page 6, "Improve Pedestrian Experience"
    a. Comparatively, the safety element of the pedestrian experience is better for Scenario 2b than the proposal of transit hubs on Parcel C or Parcel D, as outlined previously.
8. Page 7, Section B6 & Page 8, Section C4: Recommendation to move Lowell crosswalk north to cut into the proposed drop-off area
    a. We believe that the entire drop-off area as proposed is needed for pick-ups/drop-offs to avoid overflowing. Moving this crosswalk would remove drop-off space and cause congestion issues.
9. Page 8, Section B10: Pedestrian movement near Building B is circuitous
    a. We believe the proposed pedestrian crossings are good routes. Pedestrians can cross at a controlled location at the Shadow Ridge / Lowell intersection. Only buses will be traveling through this pedestrian crossing location. Pedestrians can also cross at the dedicated pedestrian walkway area between the transit hub and the south pick-up / drop-off zone.
10. Page 9, Section E: "managing parking to around 800 in accordance with the modified mode split goal above"
    a. Based on our modified split numbers, we believe this would more likely be between 900 and 950 vehicles, instead of 800. However, your point is valid that there could excess space to facilitate some of the mentioned elements.
11. Page 10, 2nd bullet of Section G: no improvements made to S.R. 224 / Empire Ave intersection; no no-build comparison in 2040
    a. We were told previously that no improvements should be made at the S.R. 224 / Empire Ave intersection due to limited right-of-way, and due to the City and UDOT not wanting to make changes there. Therefore, we did not recommend any improvements there. However, we did mention on Page 3 of our memo dated 02/09/2021 that the City and UDOT could consider improvements there including striping a channelized southbound right-turn movement on the existing pavement. This would especially help in the morning peak hour for delays on S.R. 224. This improvement was not assumed for the analysis.
    b. Due to time constraints of the submittal of our analyses, we went straight to a 2040 build scenario without running a no-build scenario. However, in a previous traffic impact study completed for this development, dated August 29, 2019, Hales Engineering did analyze 2040 no-build conditions. It was found then that the S.R. 224 / Empire Ave intersection would operate at LOS F in 2040 without the project.

12. Page 10, 2nd-to-last paragraph: No free right-turns recommended at Silver King Drive intersections due to pedestrian conflict
    a. At Silver King / Empire, no crosswalk is being proposed across the proposed free right-turns (or across the west and north legs of the intersection). Therefore, no conflict is anticipated. If the free right-turns are removed and right-turns are controlled by the signal, it is anticipated that traffic may queue up onto S.R. 224 and other roadways.
    b. At Lowell / Silver King, the free right is for buses only, so the conflict would be minimal there. However, the City could consider reducing the radius there as long as the buses can make the turn.
13. Page 10, last paragraph: Bus only lanes recommended on Empire Avenue, north of Silver King; bus only lane recommended for outside eastbound lane at Silver King / Empire intersection with queue jump for buses; bus only lane recommended for outside southbound right-turn lane at Silver King / Empire
    a. We did not recommend bus only lanes on Empire north of Silver King knowing that it is a short distance for vehicles to make decisions and merge before getting to the S.R. 224 / Empire signal. Also, with queues that may back up a distance, vehicles will have to make their lane decision before they pass through the Silver King / Empire intersection. For this reason, we decided that buses should start merging and sharing lanes with other vehicles prior to the Silver King / Empire intersection for buses leaving the site.
    b. Similar to the above reasoning, it is recommended that the outside eastbound lane become a shared lane prior to the Silver King / Empire intersection so that buses can choose the best lane to be in. This would also keep the outside lane available for cars wanting to travel through the intersection or make a right turn. The traffic volumes from the west will be low compared with those on Empire, so it is anticipated that the buses will still have sufficient priority to get through the Silver King / Empire intersection efficiently.
    c. For buses entering the site, they need to be in the inside southbound right-turn lane at Silver King / Empire so that they are in the correct lane to turn onto Lowell and be in the inside southbound lane there.

# 5 – People-Based Analysis

04/20/2021

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# MEMORANDUM

Date: April 20, 2021

To: Park City

From: Hales Engineering

**Subject: Park City Mountain Resort – People-Based Analysis**

UT19-1481

## Background and Methodology

This memorandum provides discusses the people-based analysis that was completed for the PCMR development.

In the review process of the PCMR project by Park City and AECOM in 2020, it was requested that a people-based analysis be completed to understand how many people access the Park City Mountain base area during a typical peak day and during peak hours. Hales Engineering completed this people-based analysis to identify the following:

- How many people use the resort area per day and per peak hour? What modes?
- How may buses will be needed to service the area?
- How many pedestrians will cross Lowell Avenue during peak hours?

To perform this people-based analysis, Hales Engineering gathered all available data to make calculations and estimations. The data gathered includes the following:

- Traffic counts
- Peak hour bus headway and ridership data (provided by Park City staff)
- Comfortable carrying capacity (CCC) of Park City Mountain (provided by SE Group)
- Number of employees at existing and proposed facilities (provided by Vail and PEG)
- Existing and proposed parking supply
- Current average vehicle occupancy (AVO) data for busy and peak days (provided by SE group)
- The number of residential units and nightly rentals within ¼ mile of Park City Mountain (provided by SE group and Park City)

In collaboration with Park City staff and AECOM, a spreadsheet was built to evaluate and calculate the mode splits of the various groups and modes that access the Park City Mountain base area. In addition to the available data, several assumptions were made and verified with City staff and AECOM. Printouts of the spreadsheet inputs and outputs are provided in Appendix A.

### Daily Analysis

The daily analysis evaluated various groups of different entities that use the Park City Mountain base area. The anticipated vehicle and person trip numbers for each group were estimated for typical and peak winter days based on all provided information. The daily analysis is reported in vehicles and people, and not necessarily vehicle and person trips. The groups that were evaluated and their respective vehicle and people percentages are summarized in Table 1.

**Table 1: Daily Analysis Results**

| Group | Vehicles | People |
|---|---|---|
| PCMR Day Skiing | 29.1% | 55.5% |
| Existing PCM Hotels | 20.8% | 16.3% |
| New PCM Base | 13.4% | 10.1% |
| Local Cut-through Traffic | 36.5% | 18.0% |
| Deliveries, Service Vehicles, etc. | 0.2% | 0.1% |
| TOTAL | 8,379 | 20,060 |

### Peak Hour Analysis

The peak hour analysis evaluated the various modes during morning and evening peak hours for winter and summer conditions. The assumptions made were those of a peak day in the respective seasons. Many elements of the daily analysis were transferred to the peak hour analysis if applicable. The modes that were evaluated and their respective vehicle and person trip percentages are summarized for winter conditions in Table 2 and summer conditions in Appendix A.

**Table 2: Peak Hour Analysis Results (Winter)**

| Mode | % of Vehicle Trips | % of Person Trips |
|---|---|---|
| Personal Passenger Vehicles | 64.7% | 59.8% |
| Active (Walking, Biking, & Lifts) | - | 12.8% |
| Bus & Shuttles | 3.9% | 12.1% |
| Ride-hail | 3.6% | 2.8% |
| Local Cut-through Traffic | 27.5% | 12.4% |
| Deliveries | 0.3% | 0.1% |
| Total | 2,789 | 7,141 |

As shown in Appendix A, the peak hour analysis also estimated the number of vehicles that would use Lowell Avenue. It was also assumed that Lowell would have a single lane of capacity due to proposed bus-only lanes. To maintain an acceptable level of service, it was found that 9 and 12 buses should be added during the AM and PM peak hours, respectively. Therefore, Park City should plan on up to 36 buses per peak hour to service the area.

The peak hour analysis also estimated the number of pedestrians that would cross Lowell Avenue during peak hours. It was estimated that approximately 2,700 pedestrians would cross Lowell Avenue at some point during the morning peak hour. This is a combination of pedestrians from the adjacent neighborhoods, the existing and proposed resort buildings, day skiers, and shuttles. The primary component of this pedestrian number is the day skiers that would cross from Parcel B, accounting for approximately 1,550 pedestrians crossing during the morning peak hour. The pedestrian facilities have been designed to accommodate this demand with exclusive and dedicated pedestrian crossings on Lowell Avenue. Minimal vehicle-to-pedestrian conflict is being designed on the south end of Lowell Avenue, where the pedestrian crossings will be highest.

# Appendices

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# MEMO 1: APPENDIX A

## Trip Generation

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**Appendix A**
**Park City - Mountain Resort TIS**
**Trip Generation**

| Saturday Daily Parcel | Land Use | # of Units | Unit Type | Trip Gen. Rate | Trip Generation | % Entering | % Exiting | Trips Entering | Trips Exiting | Internal Capture | % Occupied | Net Trips Entering | Net Trips Exiting | Total Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | Condominiums[2] | 55 | Dwelling Units | 6.27 | 346 | 50% | 50% | 173 | 173 | 0% | 85% | 147 | 147 | **294** |
| | Employee Housing (ITE 220)[1] | 89 | Dwelling Units | 7.32 | 652 | 50% | 50% | 326 | 326 | 50% | - | 163 | 163 | **326** |
| C | Condominiums[2] | 13 | Dwelling Units | 6.27 | 82 | 50% | 50% | 41 | 41 | 0% | 85% | 35 | 35 | **70** |
| | Hotel[2] | 249 | Keys | 6.27 | 1,562 | 50% | 50% | 781 | 781 | 0% | 85% | 664 | 664 | **1,328** |
| | Meeting Space[3] | 20 | 1,000 sq. ft. | 68.80 | 1,376 | 50% | 50% | 688 | 688 | 80% | - | 138 | 138 | **276** |
| | Retail (ITE 820)[1] | 31.5 | 1,000 sq. ft. | 46.12 | 1,454 | 50% | 50% | 727 | 727 | 80% | - | 145 | 145 | **290** |
| D | Condominiums[2] | 34 | Dwelling Units | 6.27 | 214 | 50% | 50% | 107 | 107 | 0% | 85% | 91 | 91 | **182** |
| | Retail (ITE 820)[1] | 19.3 | 1,000 sq. ft. | 46.12 | 892 | 50% | 50% | 446 | 446 | 80% | - | 89 | 89 | **178** |
| E | Condominiums[2] | 42 | Dwelling Units | 6.27 | 264 | 50% | 50% | 132 | 132 | 0% | 85% | 112 | 112 | **224** |
| | Retail (ITE 820)[1] | 22.5 | 1,000 sq. ft. | 46.12 | 1,038 | 50% | 50% | 519 | 519 | 80% | - | 104 | 104 | **208** |
| | **TOTAL** | | | | **7,880** | | | **3,940** | **3,940** | | | **1,688** | **1,688** | **3,376** |

| Saturday AM Peak Hour Parcel | Land Use | # of Units | Unit Type | Trip Gen. Rate | Trip Generation | % Entering | % Exiting | Trips Entering | Trips Exiting | Internal Capture | % Occupied | Net Trips Entering | Net Trips Exiting | Total a.m. Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | Condominiums[2] | 55 | Dwelling Units | 0.41 | 24 | 23% | 77% | 6 | 18 | 0% | 85% | 5 | 15 | **20** |
| | Employee Housing (ITE 220)[1] | 89 | Dwelling Units | 0.46 | 42 | 23% | 77% | 10 | 32 | 50% | - | 5 | 16 | **21** |
| C | Condominiums[2] | 13 | Dwelling Units | 6.27 | 82 | 50% | 50% | 41 | 41 | 0% | 85% | 35 | 35 | **70** |
| | Hotel[2] | 249 | Keys | 0.41 | 104 | 59% | 41% | 61 | 43 | 0% | 85% | 52 | 37 | **89** |
| | Meeting Space[3] | 20 | 1,000 sq. ft. | 6.50 | 130 | 65% | 35% | 85 | 46 | 80% | - | 17 | 9 | **26** |
| | Retail (ITE 820)[1] | 31.5 | 1,000 sq. ft. | 4.50 | 142 | 62% | 38% | 88 | 54 | 80% | - | 18 | 11 | **29** |
| D | Condominiums[2] | 34 | Dwelling Units | 0.41 | 14 | 23% | 77% | 3 | 11 | 0% | 85% | 3 | 9 | **12** |
| | Retail (ITE 820)[1] | 19.3 | 1,000 sq. ft. | 4.50 | 88 | 62% | 38% | 55 | 33 | 80% | - | 11 | 7 | **18** |
| E | Condominiums[2] | 42 | Dwelling Units | 0.41 | 18 | 23% | 77% | 4 | 14 | 0% | 85% | 3 | 12 | **15** |
| | Retail (ITE 820)[1] | 22.5 | 1,000 sq. ft. | 4.50 | 102 | 62% | 38% | 63 | 39 | 80% | - | 13 | 8 | **21** |
| | **TOTAL** | | | | **746** | | | **416** | **331** | | | **162** | **159** | **321** |

| Saturday PM Peak Hour Parcel | Land Use | # of Units | Unit Type | Trip Gen. Rate | Trip Generation | % Entering | % Exiting | Trips Entering | Trips Exiting | Internal Capture | % Occupied | Net Trips Entering | Net Trips Exiting | Total p.m. Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | Condominiums[2] | 55 | Dwelling Units | 0.70 | 40 | 63% | 37% | 25 | 15 | 0% | 85% | 21 | 13 | **34** |
| | Employee Housing (ITE 220)[1] | 89 | Dwelling Units | 0.56 | 50 | 63% | 37% | 32 | 19 | 50% | - | 16 | 10 | **26** |
| C | Condominiums[2] | 13 | Dwelling Units | 6.27 | 82 | 50% | 50% | 41 | 41 | 0% | 85% | 35 | 35 | **70** |
| | Hotel[2] | 249 | Keys | 0.70 | 176 | 56% | 44% | 99 | 77 | 0% | 85% | 84 | 65 | **149** |
| | Meeting Space[3] | 20 | 1,000 sq. ft. | 6.50 | 130 | 35% | 65% | 46 | 85 | 80% | - | 9 | 17 | **26** |
| | Retail (ITE 820)[1] | 31.5 | 1,000 sq. ft. | 4.50 | 142 | 52% | 48% | 74 | 68 | 80% | - | 15 | 14 | **29** |
| D | Condominiums[2] | 34 | Dwelling Units | 0.70 | 24 | 63% | 37% | 15 | 9 | 0% | 85% | 13 | 8 | **21** |
| | Retail (ITE 820)[1] | 19.3 | 1,000 sq. ft. | 4.50 | 88 | 52% | 48% | 46 | 42 | 80% | - | 9 | 8 | **17** |
| E | Condominiums[2] | 42 | Dwelling Units | 0.70 | 30 | 63% | 37% | 19 | 11 | 0% | 85% | 16 | 9 | **25** |
| | Retail (ITE 820)[1] | 22.5 | 1,000 sq. ft. | 4.50 | 102 | 52% | 48% | 53 | 49 | 80% | - | 11 | 10 | **21** |
| | **TOTAL** | | | | **864** | | | **450** | **416** | | | **229** | **189** | **418** |

*1. Based on Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition, 2017*
*2. Based on data collected by Hales Engineering at ski resorts in the Park City area*
*3. Based on data collected by Hales Engineering at other meeting space land uses*

SOURCE: Hales Engineering, February 2021

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# MEMO 1: APPENDIX B

## VISSIM Results

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# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** S.R. 248 & S.R. 224
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 350 | 338 | 97 | 79 | 4 | 24.3 | C |
| | L3 | 443 | 405 | 91 | 679 | 282 | 166.7 | F |
| | Subtotal | 793 | 743 | 94 | | | 101.9 | F |
| NWB | T | 680 | 632 | 93 | 290 | 40 | 16.7 | B |
| | R3 | 242 | 253 | 105 | 311 | 27 | 12.1 | B |
| | Subtotal | 922 | 885 | 96 | | | 15.4 | B |
| SEB | T | 1,447 | 1,128 | 78 | 1,015 | 678 | 162.8 | F |
| | L2 | 505 | 410 | 81 | 300 | 106 | 108.7 | F |
| | Subtotal | 1,952 | 1,538 | 79 | | | 148.4 | F |
| | | | | | | | | |
| **Total** | | 3,667 | 3,166 | 86 | | | 98.7 | *F* |

**Intersection:** Homestake & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 15 | 16 | 107 | 57 | 6 | 21.6 | C |
| | L3 | 10 | 8 | 80 | 59 | 8 | 86.1 | F |
| | Subtotal | 25 | 24 | 96 | | | 43.1 | E |
| NWB | T | 907 | 870 | 96 | 197 | 9 | 2.0 | A |
| | R3 | 15 | 14 | 93 | 157 | 5 | 0.7 | A |
| | Subtotal | 922 | 884 | 96 | | | 2.0 | A |
| ***SEB*** | T | 1,870 | 1,504 | 80 | 722 | 583 | 94.2 | F |
| | L2 | 20 | 16 | 80 | 508 | 248 | 72.3 | F |
| | ***Subtotal*** | ***1,890*** | ***1,520*** | 80 | | | ***94.0*** | ***F*** |
| | | | | | | | | |
| **Total** | | 2,837 | 2,428 | 86 | | | 59.2 | *F* |

# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** Iron Horse & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 65 | 63 | 97 | 148 | 32 | 54.7 | F |
| | L3 | 20 | 18 | 90 | 149 | 33 | 112.4 | F |
| | Subtotal | 85 | 81 | 95 | | | 67.5 | F |
| NWB | T | 857 | 819 | 96 | 18 | 0 | 0.5 | A |
| | R3 | 35 | 31 | 89 | 27 | 0 | -1.2 | #N/A |
| | Subtotal | 892 | 850 | 95 | | | 0.5 | A |
| ***SEB*** | T | 1,805 | 1,447 | 80 | 207 | 132 | 47.3 | E |
| | L2 | 75 | 62 | 83 | 111 | 5 | 15.0 | B |
| | ***Subtotal*** | ***1,880*** | ***1,509*** | 80 | | | ***45.9*** | ***E*** |
| | | | | | | | | |
| **Total** | | 2,857 | 2,440 | 85 | | | 31.2 | *D* |

**Intersection:** Deer Valley & Park Ave
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 220 | 205 | 93 | 574 | 192 | 32.6 | C |
| | L2 | 375 | 366 | 98 | 571 | 190 | 63.8 | E |
| | L3 | 55 | 53 | 96 | 95 | 20 | 79.8 | E |
| | Subtotal | 650 | 624 | 96 | | | 54.9 | D |
| NWB | L | 60 | 54 | 90 | 131 | 31 | 40.1 | D |
| | T | 202 | 192 | 95 | 156 | 36 | 48.3 | D |
| | R3 | 70 | 65 | 93 | 162 | 40 | 20.8 | C |
| | Subtotal | 332 | 311 | 94 | | | 41.2 | D |
| SEB | T | 172 | 142 | 83 | 731 | 661 | 87.6 | F |
| | R | 1,168 | 929 | 80 | 735 | 665 | 111.5 | F |
| | L2 | 485 | 391 | 81 | 609 | 151 | 45.5 | D |
| | Subtotal | 1,825 | 1,462 | 80 | | | 91.5 | F |
| NEB | L | 470 | 452 | 96 | 429 | 112 | 58.5 | E |
| | R | 32 | 28 | 88 | 353 | 55 | 26.6 | C |
| | R2 | 250 | 233 | 93 | 347 | 52 | 35.2 | D |
| | Subtotal | 752 | 713 | 95 | | | 49.6 | D |
| **Total** | | 3,559 | 3,110 | 87 | | | 69.5 | *E* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **15th & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| SB | R | 853 | 720 | 84 | 362 | 127 | 24.5 | C |
| | L2 | 750 | 625 | 83 | 488 | 105 | 13.0 | B |
| | Subtotal | 1,603 | 1,345 | 84 | | | 19.1 | B |
| EB | L | 87 | 102 | 117 | 275 | 36 | 43.6 | D |
| | R2 | 10 | 10 | 100 | 307 | 53 | 23.3 | C |
| | L2 | 13 | 14 | 108 | 275 | 36 | 23.9 | C |
| | Subtotal | 110 | 126 | 115 | | | 39.8 | D |
| WB | T | 20 | 18 | 90 | 78 | 17 | 58.5 | E |
| | R | 10 | 9 | 90 | 81 | 18 | 17.1 | B |
| | L3 | 30 | 28 | 93 | 78 | 17 | 38.5 | D |
| | Subtotal | 60 | 55 | 92 | | | 41.5 | D |
| NWB | R | 30 | 27 | 90 | 166 | 27 | 13.0 | B |
| | R2 | 655 | 600 | 92 | 166 | 27 | 11.9 | B |
| | Subtotal | 685 | 627 | 92 | | | 11.9 | B |
| **Total** | | 2,458 | 2,153 | 88 | | | 18.9 | *B* |

**Intersection:** **Lowell & 15th**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 50 | 66 | 132 | 83 | 3 | 10.4 | B |
| | Subtotal | 50 | 66 | 132 | | | 10.4 | B |
| EB | T | 60 | 61 | 102 | 91 | 8 | 23.5 | C |
| | R | 5 | 4 | 80 | 94 | 6 | 13.2 | B |
| | Subtotal | 65 | 65 | 100 | | | 22.9 | C |
| WB | L | 522 | 443 | 85 | 418 | 162 | 17.1 | B |
| | T | 351 | 296 | 84 | 418 | 159 | 17.9 | B |
| | Subtotal | 873 | 739 | 85 | | | 17.4 | B |
| | | | | | | | | |
| **Total** | | 988 | 870 | 88 | | | 17.4 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **NE E Access & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | R | 20 | 21 | 105 | 41 | 1 | 10.8 | B |
| | ***Subtotal*** | ***20*** | ***21*** | 105 | | | ***10.8*** | ***B*** |
| EB | T | 45 | 45 | 100 | 8 | 0 | 1.8 | A |
| | R | 1 | 0 | 0 | 0 | 0 | 0.0 | A |
| | Subtotal | 46 | 45 | 98 | | | 1.8 | A |
| WB | L | 16 | 15 | 94 | 10 | 0 | 0.5 | A |
| | T | 335 | 282 | 84 | 2 | 0 | 0.5 | A |
| | Subtotal | 351 | 297 | 85 | | | 0.5 | A |
| | | | | | | | | |
| **Total** | | 417 | 363 | 87 | | | 1.3 | *A* |

**Intersection:** **Three Kings & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 15 | 15 | 100 | 32 | 0 | 7.7 | A |
| | Subtotal | 15 | 15 | 100 | | | 7.7 | A |
| SB | L | 20 | 20 | 100 | 56 | 1 | 8.8 | A |
| | T | 1 | 0 | 0 | 33 | 0 | 0.0 | A |
| | R | 1 | 0 | 0 | 55 | 1 | 0.0 | A |
| | Subtotal | 22 | 20 | 91 | | | 8.8 | A |
| EB | L | 1 | 0 | 0 | 2 | 0 | 0.0 | A |
| | T | 10 | 12 | 120 | 2 | 0 | 0.3 | A |
| | R | 1 | 0 | 0 | 2 | 0 | 0.0 | A |
| | Subtotal | 12 | 12 | 100 | | | 0.3 | A |
| ***WB*** | L | 300 | 252 | 84 | 69 | 1 | 1.0 | A |
| | T | 10 | 9 | 90 | 79 | 1 | 0.7 | A |
| | R | 25 | 21 | 84 | 42 | 0 | 0.7 | A |
| | ***Subtotal*** | ***335*** | ***282*** | 84 | | | ***1.0*** | ***A*** |
| **Total** | | 384 | 329 | 86 | | | 1.8 | *A* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **West D Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 50 | 65 | 130 | 97 | 0 | 0.4 | A |
| | Subtotal | 50 | 65 | 130 | | | 0.4 | A |
| ***SEB*** | T | 287 | 450 | 157 | 160 | 4 | 7.1 | A |
| | ***Subtotal*** | ***287*** | ***450*** | 157 | | | ***7.1*** | ***A*** |
| SWB | L | 8 | 8 | 100 | 29 | 0 | 15.6 | C |
| | Subtotal | 8 | 8 | 100 | | | 15.6 | C |
| | | | | | | | | |
| **Total** | | 345 | 523 | 152 | | | 6.4 | *A* |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **C Access & Lowell**
**Type:** **Unsignlized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 50 | 64 | 128 | 0 | 0 | 1.2 | A |
| | Subtotal | 50 | 64 | 128 | | | 1.2 | A |
| ***SEB*** | T | 428 | 365 | 85 | 105 | 8 | 8.0 | A |
| | R | 107 | 91 | 85 | 145 | 15 | 4.3 | A |
| | ***Subtotal*** | ***535*** | ***456*** | 85 | | | ***7.2*** | ***A*** |
| NEB | R | 77 | 72 | 94 | 102 | 16 | 36.5 | E |
| | Subtotal | 77 | 72 | 94 | | | 36.5 | E |
| | | | | | | | | |
| **Total** | | 662 | 592 | 89 | | | 10.1 | *B* |

**Intersection:** **Shadow Ridge & Lowell**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | L2 | 50 | 64 | 128 | 90 | 15 | 26.8 | C |
| | Subtotal | 50 | 64 | 128 | | | 26.8 | C |
| SEB | L | 410 | 356 | 87 | 241 | 101 | 31.0 | C |
| | R | 45 | 38 | 84 | 241 | 101 | 32.8 | C |
| | R2 | 50 | 43 | 86 | 115 | 10 | 26.5 | C |
| | Subtotal | 505 | 437 | 87 | | | 30.7 | C |
| NEB | T | 60 | 60 | 100 | 82 | 13 | 24.2 | C |
| | Subtotal | 60 | 60 | 100 | | | 24.2 | C |
| SWB | T | 125 | 103 | 82 | 85 | 16 | 29.5 | C |
| | Subtotal | 125 | 103 | 82 | | | 29.5 | C |
| **Total** | | 740 | 664 | 90 | | | 29.6 | *C* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **North B Access & Shadow Ridge**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 1 | 0 | 0 | 37 | 2 | 0.0 | A |
| | R | 20 | 20 | 100 | 37 | 2 | 11.1 | B |
| | Subtotal | 21 | 20 | 95 | | | 11.1 | B |
| ***NEB*** | T | 405 | 358 | 88 | 123 | 8 | 1.8 | A |
| | R | 65 | 58 | 89 | 156 | 11 | 1.9 | A |
| | ***Subtotal*** | ***470*** | ***416*** | 89 | | | ***1.8*** | ***A*** |
| SWB | L | 110 | 96 | 87 | 88 | 4 | 6.9 | A |
| | T | 125 | 102 | 82 | 61 | 1 | 1.7 | A |
| | Subtotal | 235 | 198 | 84 | | | 4.3 | A |
| | | | | | | | | |
| **Total** | | 726 | 634 | 87 | | | 2.9 | *A* |

**Intersection:** **Shadow Ridge & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 50 | 45 | 90 | 212 | 50 | 38.9 | D |
| | T | 334 | 318 | 95 | 212 | 50 | 21.1 | C |
| | Subtotal | 384 | 363 | 95 | | | 23.3 | C |
| SEB | T | 546 | 454 | 83 | 486 | 87 | 13.3 | B |
| | R | 185 | 154 | 83 | 486 | 87 | 15.4 | B |
| | Subtotal | 731 | 608 | 83 | | | 13.8 | B |
| NEB | L | 393 | 348 | 89 | 176 | 26 | 8.4 | A |
| | R | 32 | 29 | 91 | 176 | 26 | 8.4 | A |
| | Subtotal | 425 | 377 | 89 | | | 8.4 | A |
| | | | | | | | | |
| **Total** | | 1,540 | 1,348 | 88 | | | 14.9 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **14th & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 332 | 312 | 94 | 170 | 48 | 11.3 | B |
| | R2 | 49 | 44 | 90 | 170 | 48 | 9.8 | A |
| | Subtotal | 381 | 356 | 93 | | | 11.1 | B |
| ***SB*** | T | 553 | 462 | 84 | 254 | 45 | 4.2 | A |
| | L3 | 25 | 20 | 80 | 199 | 21 | 6.7 | A |
| | ***Subtotal*** | ***578*** | ***482*** | 83 | | | ***4.3*** | ***A*** |
| EB | T | 1 | 72 | 7200 | 21 | 1 | 0.0 | A |
| | Subtotal | 1 | 72 | 7200 | | | 0.0 | A |
| SWB | R3 | 52 | 52 | 100 | 106 | 25 | 19.7 | C |
| | L2 | 67 | 65 | 97 | 94 | 20 | 18.3 | C |
| | Subtotal | 119 | 117 | 98 | | | 18.9 | C |
| **Total** | | 1,079 | 1,027 | 95 | | | 8.1 | *A* |

**Intersection:** **East B Access & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | L | 1 | 0 | 0 | 132 | 25 | 0.0 | A |
| | T | 361 | 337 | 93 | 109 | 20 | 8.5 | A |
| | ***Subtotal*** | ***362*** | ***337*** | 93 | | | ***8.5*** | ***A*** |
| SB | T | 420 | 361 | 86 | 82 | 1 | 1.2 | A |
| | R | 200 | 167 | 84 | 107 | 2 | 1.9 | A |
| | Subtotal | 620 | 528 | 85 | | | 1.4 | A |
| EB | L | 20 | 20 | 100 | 61 | 8 | 42.4 | E |
| | R | 1 | 0 | 0 | 61 | 8 | 0.0 | A |
| | Subtotal | 21 | 20 | 95 | | | 42.4 | E |
| | | | | | | | | |
| **Total** | | 1,003 | 885 | 88 | | | 5.0 | *A* |

# *VISSIM Level of Service Report*

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** South B Access & Manor
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***SEB*** | L | 46 | 43 | 93 | 55 | 9 | 14.9 | B |
| | R | 1 | 0 | 0 | 55 | 9 | 0.0 | A |
| | ***Subtotal*** | ***47*** | ***43*** | 91 | | | ***14.9*** | ***B*** |
| NEB | L | 1 | 0 | 0 | 34 | 10 | 0.0 | A |
| | T | 260 | 244 | 94 | 29 | 9 | 1.2 | A |
| | Subtotal | 261 | 244 | 93 | | | 1.2 | A |
| SWB | T | 200 | 171 | 86 | 25 | 0 | 0.8 | A |
| | R | 165 | 143 | 87 | 47 | 0 | 1.3 | A |
| | Subtotal | 365 | 314 | 86 | | | 1.0 | A |
| | | | | | | | | |
| **Total** | | 673 | 601 | 89 | | | 2.1 | *A* |

**Intersection:** Manor & Lowell
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NWB*** | T | 1 | 0 | 0 | 154 | 34 | 0.0 | A |
| | R | 175 | 166 | 95 | 122 | 25 | 9.4 | A |
| | ***Subtotal*** | ***176*** | ***166*** | 94 | | | ***9.4*** | ***A*** |
| SEB | L | 85 | 79 | 93 | 81 | 11 | 10.2 | B |
| | T | 1 | 0 | 0 | 111 | 15 | 0.0 | A |
| | Subtotal | 86 | 79 | 92 | | | 10.2 | B |
| SWB | L | 115 | 99 | 86 | 10 | 0 | 0.6 | A |
| | R | 85 | 72 | 85 | 10 | 0 | 0.4 | A |
| | Subtotal | 200 | 171 | 86 | | | 0.5 | A |
| | | | | | | | | |
| **Total** | | 462 | 416 | 90 | | | 5.9 | *A* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **Manor & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | T | 60 | 56 | 93 | 163 | 32 | 7.4 | A |
| | L3 | 5 | 4 | 80 | 113 | 25 | 9.6 | A |
| | ***Subtotal*** | ***65*** | ***60*** | 92 | | | ***7.5*** | ***A*** |
| SB | T | 60 | 52 | 87 | 133 | 9 | 6.6 | A |
| | R2 | 360 | 311 | 86 | 133 | 9 | 3.2 | A |
| | Subtotal | 420 | 363 | 86 | | | 3.6 | A |
| EB | T | 1 | 26 | 2600 | 5 | 0 | 0.0 | A |
| | Subtotal | 1 | 26 | 2600 | | | 0.0 | A |
| WB | T | 1 | 27 | 2700 | 12 | 0 | 0.0 | A |
| | Subtotal | 1 | 27 | 2700 | | | 0.0 | A |
| NEB | R3 | 5 | 5 | 100 | 69 | 11 | 0.5 | A |
| | L2 | 301 | 281 | 93 | 97 | 15 | 2.2 | A |
| | Subtotal | 306 | 286 | 93 | | | 2.2 | A |
| **Total** | | 487 | 476 | 98 | | | 3.1 | *A* |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **Total** | | | | | | | | |

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# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b
**Time Period:** Evening Peak Hour
**Project #:** *UT18-1215*

**Intersection:** S.R. 248 & S.R. 224
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 450 | 441 | 98 | 121 | 14 | 15.3 | B |
| | L3 | 390 | 379 | 97 | 386 | 123 | 83.5 | F |
| | Subtotal | 840 | 820 | 98 | | | 46.8 | D |
| NWB | T | 1,526 | 1,288 | 84 | 533 | 76 | 14.8 | B |
| | R3 | 506 | 474 | 94 | 528 | 54 | 13.4 | B |
| | Subtotal | 2,032 | 1,762 | 87 | | | 14.5 | B |
| SEB | T | 1,146 | 1,146 | 100 | 284 | 28 | 9.4 | A |
| | L2 | 500 | 495 | 99 | 374 | 135 | 81.2 | F |
| | Subtotal | 1,646 | 1,641 | 100 | | | 31.1 | C |
| | | | | | | | | |
| **Total** | | 4,518 | 4,223 | 93 | | | 27.2 | *C* |

**Intersection:** Homestake & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 30 | 30 | 100 | 130 | 22 | 70.3 | F |
| | L3 | 20 | 19 | 95 | 131 | 24 | 121.1 | F |
| | Subtotal | 50 | 49 | 98 | | | 90.0 | F |
| NWB | T | 2,002 | 1,738 | 87 | 219 | 11 | 1.6 | A |
| | R3 | 20 | 21 | 105 | 179 | 6 | 0.4 | A |
| | Subtotal | 2,022 | 1,759 | 87 | | | 1.6 | A |
| ***SEB*** | T | 1,511 | 1,499 | 99 | 487 | 107 | 18.9 | C |
| | L2 | 25 | 24 | 96 | 245 | 23 | 46.5 | E |
| | ***Subtotal*** | ***1,536*** | ***1,523*** | 99 | | | ***19.3*** | ***C*** |
| | | | | | | | | |
| **Total** | | 3,608 | 3,331 | 92 | | | 10.9 | *B* |

# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b
**Time Period:** Evening Peak Hour
**Project #:** *UT18-1215*

**Intersection:** Iron Horse & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 95 | 89 | 94 | 181 | 41 | 55.7 | F |
| | L3 | 20 | 20 | 100 | 181 | 42 | 90.4 | F |
| | Subtotal | 115 | 109 | 95 | | | 62.1 | F |
| NWB | T | 1,927 | 1,671 | 87 | 33 | 1 | 0.4 | A |
| | R3 | 50 | 47 | 94 | 45 | 1 | -1.3 | #N/A |
| | Subtotal | 1,977 | 1,718 | 87 | | | 0.4 | A |
| ***SEB*** | T | 1,451 | 1,427 | 98 | 167 | 38 | 15.0 | B |
| | L2 | 80 | 78 | 98 | 193 | 33 | 62.4 | F |
| | ***Subtotal*** | ***1,531*** | ***1,505*** | 98 | | | ***17.4*** | ***C*** |
| | | | | | | | | |
| **Total** | | 3,623 | 3,332 | 92 | | | 10.1 | *B* |

**Intersection:** Deer Valley & Park Ave
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 680 | 608 | 89 | 888 | 738 | 125.8 | F |
| | L2 | 364 | 321 | 88 | 885 | 736 | 253.0 | F |
| | L3 | 75 | 69 | 92 | 273 | 35 | 218.9 | F |
| | Subtotal | 1,119 | 998 | 89 | | | 173.2 | F |
| NWB | L | 59 | 58 | 98 | 93 | 14 | 63.9 | E |
| | T | 400 | 399 | 100 | 498 | 147 | 74.5 | E |
| | R3 | 70 | 71 | 101 | 503 | 152 | 58.6 | E |
| | Subtotal | 529 | 528 | 100 | | | 71.2 | E |
| SEB | T | 365 | 363 | 99 | 534 | 92 | 38.0 | D |
| | R | 571 | 553 | 97 | 537 | 94 | 10.0 | A |
| | L2 | 535 | 518 | 97 | 716 | 361 | 77.6 | E |
| | Subtotal | 1,471 | 1,434 | 97 | | | 41.5 | D |
| NEB | L | 897 | 701 | 78 | 707 | 389 | 97.6 | F |
| | R | 49 | 38 | 78 | 377 | 43 | 44.7 | D |
| | R2 | 379 | 319 | 84 | 370 | 40 | 46.1 | D |
| | Subtotal | 1,325 | 1,058 | 80 | | | 80.2 | F |
| **Total** | | 4,444 | 4,018 | 90 | | | 88.3 | *F* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **15th & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| SB | R | 406 | 379 | 93 | 381 | 53 | 8.8 | A |
| | L2 | 588 | 550 | 94 | 522 | 54 | 11.5 | B |
| | Subtotal | 994 | 929 | 93 | | | 10.4 | B |
| EB | L | 298 | 312 | 105 | 347 | 76 | 62.6 | E |
| | R2 | 10 | 9 | 90 | 378 | 98 | 40.0 | D |
| | L2 | 19 | 21 | 111 | 347 | 76 | 38.2 | D |
| | Subtotal | 327 | 342 | 105 | | | 60.5 | E |
| WB | T | 19 | 18 | 95 | 61 | 7 | 48.7 | D |
| | R | 13 | 14 | 108 | 63 | 7 | 34.0 | C |
| | L3 | 15 | 14 | 93 | 61 | 7 | 41.6 | D |
| | Subtotal | 47 | 46 | 98 | | | 42.1 | D |
| NWB | R | 59 | 49 | 83 | 709 | 295 | 71.8 | E |
| | R2 | 1,014 | 738 | 73 | 709 | 295 | 76.3 | E |
| | Subtotal | 1,073 | 787 | 73 | | | 76.0 | E |
| **Total** | | 2,441 | 2,104 | 86 | | | 43.7 | *D* |

**Intersection:** **Lowell & 15th**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 50 | 65 | 130 | 114 | 7 | 17.3 | B |
| | Subtotal | 50 | 65 | 130 | | | 17.3 | B |
| EB | T | 277 | 273 | 99 | 135 | 57 | 16.6 | B |
| | R | 3 | 3 | 100 | 137 | 57 | 16.4 | B |
| | Subtotal | 280 | 276 | 99 | | | 16.6 | B |
| WB | L | 310 | 288 | 93 | 308 | 56 | 21.2 | C |
| | T | 115 | 109 | 95 | 308 | 49 | 18.2 | B |
| | Subtotal | 425 | 397 | 93 | | | 20.4 | C |
| | | | | | | | | |
| **Total** | | 755 | 738 | 98 | | | 18.7 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **NE E Access & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 19 | 19 | 100 | 42 | 2 | 31.5 | D |
| | Subtotal | 19 | 19 | 100 | | | 31.5 | D |
| ***EB*** | T | 261 | 258 | 99 | 124 | 14 | 18.7 | C |
| | R | 1 | 0 | 0 | 137 | 17 | 0.0 | A |
| | ***Subtotal*** | ***262*** | ***258*** | 98 | | | ***18.7*** | ***C*** |
| WB | L | 27 | 27 | 100 | 35 | 0 | 2.4 | A |
| | T | 88 | 83 | 94 | 14 | 0 | 0.6 | A |
| | Subtotal | 115 | 110 | 96 | | | 1.0 | A |
| | | | | | | | | |
| **Total** | | 396 | 387 | 98 | | | 14.4 | *B* |

**Intersection:** **Three Kings & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | R | 229 | 226 | 99 | 131 | 20 | 16.6 | C |
| | ***Subtotal*** | ***229*** | ***226*** | 99 | | | ***16.6*** | ***C*** |
| SB | L | 25 | 26 | 104 | 57 | 1 | 10.9 | B |
| | T | 1 | 0 | 0 | 35 | 1 | 0.0 | A |
| | R | 1 | 0 | 0 | 56 | 1 | 0.0 | A |
| | Subtotal | 27 | 26 | 96 | | | 10.9 | B |
| EB | L | 1 | 0 | 0 | 4 | 0 | 0.0 | A |
| | T | 7 | 8 | 114 | 4 | 0 | 2.8 | A |
| | R | 1 | 0 | 0 | 4 | 0 | 0.0 | A |
| | Subtotal | 9 | 8 | 89 | | | 2.8 | A |
| WB | L | 56 | 56 | 100 | 17 | 0 | 0.7 | A |
| | T | 7 | 6 | 86 | 78 | 2 | 0.5 | A |
| | R | 25 | 23 | 92 | 4 | 0 | 0.4 | A |
| | Subtotal | 88 | 85 | 97 | | | 0.6 | A |
| **Total** | | 353 | 345 | 98 | | | 12.0 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **West D Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 50 | 65 | 130 | 97 | 0 | 0.5 | A |
| | Subtotal | 50 | 65 | 130 | | | 0.5 | A |
| ***SEB*** | T | 313 | 286 | 91 | 269 | 37 | 28.8 | D |
| | ***Subtotal*** | ***313*** | ***286*** | 91 | | | ***28.8*** | ***D*** |
| SWB | L | 8 | 8 | 100 | 27 | 0 | 30.6 | D |
| | Subtotal | 8 | 8 | 100 | | | 30.6 | D |
| | | | | | | | | |
| **Total** | | 371 | 359 | 97 | | | 23.4 | C |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **C Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 50 | 65 | 130 | 0 | 0 | 1.2 | A |
| | Subtotal | 50 | 65 | 130 | | | 1.2 | A |
| ***SEB*** | T | 193 | 177 | 92 | 134 | 26 | 31.0 | D |
| | R | 128 | 114 | 89 | 174 | 38 | 13.8 | B |
| | ***Subtotal*** | ***321*** | ***291*** | 91 | | | ***24.3*** | ***C*** |
| NEB | R | 116 | 86 | 74 | 115 | 41 | 112.3 | F |
| | Subtotal | 116 | 86 | 74 | | | 112.3 | F |
| | | | | | | | | |
| **Total** | | 487 | 442 | 91 | | | 35.4 | *E* |

**Intersection:** **Shadow Ridge & Lowell**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | L2 | 50 | 64 | 128 | 90 | 14 | 25.1 | C |
| | Subtotal | 50 | 64 | 128 | | | 25.1 | C |
| SEB | L | 234 | 195 | 83 | 250 | 114 | 74.5 | E |
| | R | 25 | 19 | 76 | 250 | 114 | 71.1 | E |
| | R2 | 50 | 43 | 86 | 106 | 8 | 20.3 | C |
| | Subtotal | 309 | 257 | 83 | | | 65.2 | E |
| NEB | T | 112 | 114 | 102 | 189 | 41 | 74.3 | E |
| | Subtotal | 112 | 114 | 102 | | | 74.3 | E |
| SWB | T | 24 | 22 | 92 | 28 | 1 | 9.6 | A |
| | Subtotal | 24 | 22 | 92 | | | 9.6 | A |
| **Total** | | 495 | 457 | 92 | | | 58.8 | *E* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **North B Access & Shadow Ridge**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 1 | 0 | 0 | 183 | 75 | 0.0 | A |
| | R | 135 | 113 | 84 | 183 | 76 | 115.1 | F |
| | Subtotal | 136 | 113 | 83 | | | 115.1 | F |
| ***NEB*** | T | 324 | 286 | 88 | 223 | 59 | 33.2 | D |
| | R | 22 | 20 | 91 | 256 | 77 | 24.5 | C |
| | ***Subtotal*** | ***346*** | ***306*** | 88 | | | ***32.6*** | ***D*** |
| SWB | L | 40 | 36 | 90 | 41 | 1 | 7.9 | A |
| | T | 24 | 21 | 88 | 20 | 0 | 1.5 | A |
| | Subtotal | 64 | 57 | 89 | | | 5.5 | A |
| | | | | | | | | |
| **Total** | | 546 | 476 | 87 | | | 49.1 | *E* |

**Intersection:** **Shadow Ridge & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 14 | 10 | 71 | 222 | 69 | 38.2 | D |
| | T | 689 | 457 | 66 | 222 | 69 | 27.3 | C |
| | Subtotal | 703 | 467 | 66 | | | 27.5 | C |
| SEB | T | 549 | 509 | 93 | 526 | 74 | 19.1 | B |
| | R | 50 | 47 | 94 | 526 | 74 | 18.9 | B |
| | Subtotal | 599 | 556 | 93 | | | 19.1 | B |
| NEB | L | 354 | 307 | 87 | 185 | 100 | 27.4 | C |
| | R | 105 | 92 | 88 | 185 | 100 | 24.2 | C |
| | Subtotal | 459 | 399 | 87 | | | 26.6 | C |
| | | | | | | | | |
| **Total** | | 1,761 | 1,422 | 81 | | | 23.8 | *C* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **14th & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 683 | 447 | 65 | 184 | 151 | 19.2 | C |
| | R2 | 138 | 89 | 64 | 184 | 151 | 18.5 | C |
| | Subtotal | 821 | 536 | 65 | | | 19.1 | C |
| ***SB*** | T | 624 | 571 | 92 | 325 | 40 | 8.6 | A |
| | L3 | 30 | 29 | 97 | 283 | 30 | 15.4 | C |
| | ***Subtotal*** | ***654*** | ***600*** | 92 | | | ***8.9*** | ***A*** |
| EB | T | 1 | 76 | 7600 | 21 | 1 | 0.0 | A |
| | Subtotal | 1 | 76 | 7600 | | | 0.0 | A |
| SWB | R3 | 20 | 20 | 100 | 54 | 3 | 21.4 | C |
| | L2 | 19 | 18 | 95 | 42 | 2 | 17.7 | C |
| | Subtotal | 39 | 38 | 97 | | | 19.7 | C |
| **Total** | | 1,515 | 1,250 | 83 | | | 13.1 | *B* |

**Intersection:** **East B Access & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | L | 1 | 0 | 0 | 262 | 141 | 0.0 | A |
| | T | 608 | 523 | 86 | 234 | 116 | 43.7 | E |
| | ***Subtotal*** | ***609*** | ***523*** | 86 | | | ***43.7*** | ***E*** |
| SB | T | 606 | 555 | 92 | 99 | 5 | 3.4 | A |
| | R | 37 | 34 | 92 | 128 | 8 | 2.9 | A |
| | Subtotal | 643 | 589 | 92 | | | 3.4 | A |
| EB | L | 213 | 11 | 5 | 145 | 127 | 1342.8 | F |
| | R | 1 | 0 | 0 | 145 | 127 | 0.0 | A |
| | Subtotal | 214 | 11 | 5 | | | 1342.8 | F |
| | | | | | | | | |
| **Total** | | 1,466 | 1,123 | 77 | | | 34.0 | *D* |

# *VISSIM Level of Service Report*

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b
**Time Period:** Evening Peak Hour
**Project #:** *UT18-1215*

**Intersection:** South B Access & Manor
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| SEB | L | 140 | 68 | 49 | 169 | 115 | 374.4 | F |
| | R | 1 | 0 | 0 | 169 | 115 | 0.0 | A |
| | Subtotal | 141 | 68 | 48 | | | 374.4 | F |
| ***NEB*** | L | 1 | 0 | 0 | 178 | 61 | 0.0 | A |
| | T | 392 | 376 | 96 | 152 | 47 | 20.6 | C |
| | ***Subtotal*** | ***393*** | ***376*** | 96 | | | ***20.6*** | ***C*** |
| SWB | T | 414 | 372 | 90 | 109 | 5 | 3.0 | A |
| | R | 80 | 74 | 93 | 135 | 7 | 2.6 | A |
| | Subtotal | 494 | 446 | 90 | | | 2.9 | A |
| | | | | | | | | |
| **Total** | | 1,028 | 890 | 87 | | | 34.4 | *D* |

**Intersection:** Manor & Lowell
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NWB*** | T | 1 | 0 | 0 | 266 | 49 | 0.0 | A |
| | R | 232 | 234 | 101 | 233 | 33 | 39.0 | E |
| | ***Subtotal*** | ***233*** | ***234*** | 100 | | | ***39.0*** | ***E*** |
| SEB | L | 160 | 143 | 89 | 146 | 53 | 63.3 | F |
| | T | 1 | 0 | 0 | 176 | 67 | 0.0 | A |
| | Subtotal | 161 | 143 | 89 | | | 63.3 | F |
| SWB | L | 254 | 230 | 91 | 62 | 6 | 1.8 | A |
| | R | 160 | 143 | 89 | 62 | 6 | 1.4 | A |
| | Subtotal | 414 | 373 | 90 | | | 1.6 | A |
| | | | | | | | | |
| **Total** | | 808 | 750 | 93 | | | 25.0 | *C* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **Manor & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 81 | 85 | 105 | 76 | 7 | 21.0 | C |
| | L3 | 5 | 5 | 100 | 56 | 3 | 13.2 | B |
| | Subtotal | 86 | 90 | 105 | | | 20.6 | C |
| ***SB*** | T | 117 | 112 | 96 | 263 | 81 | 13.5 | B |
| | R2 | 489 | 442 | 90 | 263 | 81 | 9.9 | A |
| | ***Subtotal*** | ***606*** | ***554*** | 91 | | | ***10.6*** | ***B*** |
| EB | T | 1 | 26 | 2600 | 5 | 0 | 0.0 | A |
| | Subtotal | 1 | 26 | 2600 | | | 0.0 | A |
| WB | T | 1 | 27 | 2700 | 12 | 0 | 0.0 | A |
| | Subtotal | 1 | 27 | 2700 | | | 0.0 | A |
| NEB | R3 | 5 | 5 | 100 | 156 | 108 | 8.2 | A |
| | L2 | 527 | 440 | 83 | 199 | 145 | 16.6 | C |
| | Subtotal | 532 | 445 | 84 | | | 16.5 | C |
| **Total** | | 694 | 697 | 100 | | | 13.2 | *B* |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **Total** | | | | | | | | |

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# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b - 20% Reduction
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** S.R. 248 & S.R. 224
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 280 | 282 | 101 | 50 | 2 | 6.3 | A |
| | L3 | 354 | 356 | 101 | 242 | 83 | 63.0 | E |
| | Subtotal | 634 | 638 | 101 | | | 37.9 | D |
| NWB | T | 544 | 543 | 100 | 210 | 20 | 10.4 | B |
| | R3 | 194 | 225 | 116 | 225 | 14 | 8.2 | A |
| | Subtotal | 738 | 768 | 104 | | | 9.8 | A |
| SEB | T | 1,158 | 1,161 | 100 | 250 | 17 | 5.4 | A |
| | L2 | 404 | 400 | 99 | 279 | 90 | 67.7 | E |
| | Subtotal | 1,562 | 1,561 | 100 | | | 21.4 | C |
| | | | | | | | | |
| **Total** | | 2,934 | 2,967 | 101 | | | 22.0 | *C* |

**Intersection:** Homestake & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 12 | 13 | 108 | 38 | 1 | 10.2 | B |
| | L3 | 8 | 7 | 88 | 40 | 1 | 19.9 | C |
| | Subtotal | 20 | 20 | 100 | | | 13.6 | B |
| NWB | T | 726 | 755 | 104 | 166 | 7 | 2.0 | A |
| | R3 | 12 | 11 | 92 | 126 | 3 | 0.1 | A |
| | Subtotal | 738 | 766 | 104 | | | 2.0 | A |
| ***SEB*** | T | 1,496 | 1,501 | 100 | 176 | 6 | 2.0 | A |
| | L2 | 16 | 16 | 100 | 22 | 0 | 5.5 | A |
| | ***Subtotal*** | ***1,512*** | ***1,517*** | 100 | | | ***2.0*** | ***A*** |
| | | | | | | | | |
| **Total** | | 2,270 | 2,303 | 101 | | | 2.1 | *A* |

# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b - 20% Reduction
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** Iron Horse & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 52 | 50 | 96 | 53 | 2 | 8.2 | A |
| | L3 | 16 | 15 | 94 | 53 | 2 | 13.7 | B |
| | Subtotal | 68 | 65 | 96 | | | 9.5 | A |
| NWB | T | 686 | 715 | 104 | 4 | 0 | 0.3 | A |
| | R3 | 28 | 26 | 93 | 8 | 0 | -1.2 | #N/A |
| | Subtotal | 714 | 741 | 104 | | | 0.2 | A |
| ***SEB*** | T | 1,444 | 1,447 | 100 | 27 | 2 | 2.2 | A |
| | L2 | 60 | 61 | 102 | 38 | 1 | 5.8 | A |
| | ***Subtotal*** | ***1,504*** | ***1,508*** | 100 | | | ***2.4*** | ***A*** |
| | | | | | | | | |
| **Total** | | 2,286 | 2,314 | 101 | | | 1.9 | *A* |

**Intersection:** Deer Valley & Park Ave
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 176 | 168 | 95 | 463 | 121 | 7.3 | A |
| | L2 | 300 | 310 | 103 | 460 | 119 | 62.8 | E |
| | L3 | 44 | 45 | 102 | 95 | 17 | 70.6 | E |
| | Subtotal | 520 | 523 | 101 | | | 45.7 | D |
| NWB | L | 48 | 47 | 98 | 67 | 7 | 33.1 | C |
| | T | 162 | 160 | 99 | 115 | 23 | 37.2 | D |
| | R3 | 56 | 54 | 96 | 121 | 26 | 14.1 | B |
| | Subtotal | 266 | 261 | 98 | | | 31.7 | C |
| SEB | T | 138 | 140 | 101 | 558 | 153 | 31.0 | C |
| | R | 934 | 933 | 100 | 562 | 156 | 24.8 | C |
| | L2 | 388 | 384 | 99 | 370 | 72 | 31.7 | C |
| | Subtotal | 1,460 | 1,457 | 100 | | | 27.3 | C |
| NEB | L | 376 | 410 | 109 | 411 | 106 | 60.8 | E |
| | R | 26 | 24 | 92 | 301 | 53 | 30.5 | C |
| | R2 | 200 | 202 | 101 | 295 | 49 | 39.3 | D |
| | Subtotal | 602 | 636 | 106 | | | 52.8 | D |
| **Total** | | 2,848 | 2,877 | 101 | | | 36.7 | *D* |

# *VISSIM Level of Service Report*

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b - 20% Reduction
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** 15th & Empire
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| SB | R | 682 | 689 | 101 | 201 | 17 | 6.6 | A |
| | L2 | 600 | 602 | 100 | 332 | 39 | 10.0 | A |
| | Subtotal | 1,282 | 1,291 | 101 | | | 8.2 | A |
| EB | L | 70 | 93 | 133 | 295 | 29 | 45.1 | D |
| | R2 | 8 | 9 | 113 | 326 | 45 | 21.3 | C |
| | L2 | 10 | 12 | 120 | 295 | 29 | 25.7 | C |
| | Subtotal | 88 | 114 | 130 | | | 41.2 | D |
| WB | T | 16 | 15 | 94 | 68 | 8 | 46.7 | D |
| | R | 8 | 8 | 100 | 71 | 8 | 18.1 | B |
| | L3 | 24 | 23 | 96 | 68 | 8 | 38.9 | D |
| | Subtotal | 48 | 46 | 96 | | | 37.8 | D |
| NWB | R | 24 | 23 | 96 | 147 | 22 | 12.6 | B |
| | R2 | 524 | 537 | 102 | 147 | 22 | 11.1 | B |
| | Subtotal | 548 | 560 | 102 | | | 11.1 | B |
| **Total** | | 1,966 | 2,011 | 102 | | | 11.6 | *B* |

**Intersection:** Lowell & 15th
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 40 | 66 | 165 | 83 | 3 | 10.4 | B |
| | Subtotal | 40 | 66 | 165 | | | 10.4 | B |
| EB | T | 48 | 48 | 100 | 79 | 6 | 24.2 | C |
| | R | 4 | 4 | 100 | 82 | 4 | 11.6 | B |
| | Subtotal | 52 | 52 | 100 | | | 23.3 | C |
| WB | L | 418 | 423 | 101 | 409 | 106 | 16.1 | B |
| | T | 281 | 282 | 100 | 409 | 103 | 16.5 | B |
| | Subtotal | 699 | 705 | 101 | | | 16.2 | B |
| | | | | | | | | |
| **Total** | | 791 | 823 | 104 | | | 16.2 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **NE E Access & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | R | 16 | 17 | 106 | 37 | 1 | 10.3 | B |
| | ***Subtotal*** | ***16*** | ***17*** | 106 | | | ***10.3*** | ***B*** |
| EB | T | 36 | 35 | 97 | 0 | 0 | 1.7 | A |
| | R | 1 | 0 | 0 | 0 | 0 | 0.0 | A |
| | Subtotal | 37 | 35 | 95 | | | 1.7 | A |
| WB | L | 13 | 13 | 100 | 16 | 0 | 0.6 | A |
| | T | 268 | 268 | 100 | 5 | 0 | 0.5 | A |
| | Subtotal | 281 | 281 | 100 | | | 0.5 | A |
| | | | | | | | | |
| **Total** | | 334 | 333 | 100 | | | 1.1 | *A* |

**Intersection:** **Three Kings & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 12 | 12 | 100 | 31 | 0 | 7.4 | A |
| | Subtotal | 12 | 12 | 100 | | | 7.4 | A |
| SB | L | 16 | 17 | 106 | 56 | 1 | 8.6 | A |
| | T | 1 | 0 | 0 | 33 | 0 | 0.0 | A |
| | R | 1 | 0 | 0 | 55 | 1 | 0.0 | A |
| | Subtotal | 18 | 17 | 94 | | | 8.6 | A |
| EB | L | 1 | 0 | 0 | 4 | 0 | 0.0 | A |
| | T | 8 | 8 | 100 | 4 | 0 | 0.5 | A |
| | R | 1 | 0 | 0 | 4 | 0 | 0.0 | A |
| | Subtotal | 10 | 8 | 80 | | | 0.5 | A |
| ***WB*** | L | 240 | 240 | 100 | 62 | 0 | 0.9 | A |
| | T | 8 | 8 | 100 | 76 | 1 | 0.6 | A |
| | R | 20 | 21 | 105 | 36 | 0 | 0.6 | A |
| | ***Subtotal*** | ***268*** | ***269*** | 100 | | | ***0.9*** | ***A*** |
| **Total** | | 308 | 306 | 99 | | | 1.6 | *A* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **West D Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 40 | 65 | 163 | 97 | 0 | 0.4 | A |
| | Subtotal | 40 | 65 | 163 | | | 0.4 | A |
| ***SEB*** | T | 230 | 426 | 185 | 117 | 3 | 6.4 | A |
| | ***Subtotal*** | ***230*** | ***426*** | 185 | | | ***6.4*** | ***A*** |
| SWB | L | 6 | 7 | 117 | 20 | 0 | 13.7 | B |
| | Subtotal | 6 | 7 | 117 | | | 13.7 | B |
| | | | | | | | | |
| **Total** | | 276 | 498 | 180 | | | 5.7 | *A* |

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **C Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 40 | 64 | 160 | 0 | 0 | 1.2 | A |
| | Subtotal | 40 | 64 | 160 | | | 1.2 | A |
| ***SEB*** | T | 342 | 349 | 102 | 61 | 2 | 3.6 | A |
| | R | 86 | 84 | 98 | 98 | 3 | 2.7 | A |
| | ***Subtotal*** | ***428*** | ***433*** | 101 | | | ***3.4*** | ***A*** |
| NEB | R | 62 | 62 | 100 | 59 | 4 | 17.2 | C |
| | Subtotal | 62 | 62 | 100 | | | 17.2 | C |
| | | | | | | | | |
| **Total** | | 530 | 559 | 105 | | | 4.7 | *A* |

**Intersection:** **Shadow Ridge & Lowell**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | L2 | 40 | 64 | 160 | 90 | 15 | 26.8 | C |
| | Subtotal | 40 | 64 | 160 | | | 26.8 | C |
| SEB | L | 328 | 334 | 102 | 235 | 60 | 24.6 | C |
| | R | 36 | 35 | 97 | 235 | 60 | 24.8 | C |
| | R2 | 40 | 43 | 108 | 106 | 8 | 23.1 | C |
| | Subtotal | 404 | 412 | 102 | | | 24.5 | C |
| NEB | T | 48 | 49 | 102 | 61 | 5 | 24.7 | C |
| | Subtotal | 48 | 49 | 102 | | | 24.7 | C |
| SWB | T | 100 | 97 | 97 | 91 | 15 | 28.8 | C |
| | Subtotal | 100 | 97 | 97 | | | 28.8 | C |
| **Total** | | 592 | 622 | 105 | | | 25.4 | *C* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **North B Access & Shadow Ridge**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 1 | 0 | 0 | 35 | 0 | 0.0 | A |
| | R | 16 | 17 | 106 | 35 | 1 | 9.8 | A |
| | Subtotal | 17 | 17 | 100 | | | 9.8 | A |
| ***NEB*** | T | 324 | 332 | 102 | 54 | 0 | 1.1 | A |
| | R | 52 | 51 | 98 | 85 | 1 | 1.7 | A |
| | ***Subtotal*** | ***376*** | ***383*** | 102 | | | ***1.1*** | ***A*** |
| SWB | L | 88 | 90 | 102 | 72 | 3 | 6.1 | A |
| | T | 100 | 96 | 96 | 45 | 1 | 1.6 | A |
| | Subtotal | 188 | 186 | 99 | | | 3.8 | A |
| | | | | | | | | |
| **Total** | | 581 | 586 | 101 | | | 2.2 | *A* |

**Intersection:** **Shadow Ridge & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 40 | 38 | 95 | 204 | 37 | 36.4 | D |
| | T | 267 | 274 | 103 | 204 | 37 | 18.9 | B |
| | Subtotal | 307 | 312 | 102 | | | 21.0 | C |
| SEB | T | 437 | 435 | 100 | 425 | 51 | 14.4 | B |
| | R | 148 | 148 | 100 | 425 | 51 | 16.8 | B |
| | Subtotal | 585 | 583 | 100 | | | 15.0 | B |
| NEB | L | 314 | 321 | 102 | 164 | 12 | 6.4 | A |
| | R | 26 | 26 | 100 | 164 | 12 | 7.8 | A |
| | Subtotal | 340 | 347 | 102 | | | 6.5 | A |
| | | | | | | | | |
| **Total** | | 1,232 | 1,242 | 101 | | | 14.1 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **14th & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 266 | 268 | 101 | 131 | 14 | 6.5 | A |
| | R2 | 39 | 39 | 100 | 131 | 14 | 5.8 | A |
| | Subtotal | 305 | 307 | 101 | | | 6.4 | A |
| ***SB*** | T | 442 | 443 | 100 | 206 | 20 | 3.6 | A |
| | L3 | 20 | 18 | 90 | 153 | 4 | 5.0 | A |
| | ***Subtotal*** | ***462*** | ***461*** | 100 | | | ***3.6*** | ***A*** |
| EB | T | 1 | 77 | 7700 | 21 | 1 | 0.0 | A |
| | Subtotal | 1 | 77 | 7700 | | | 0.0 | A |
| SWB | R3 | 42 | 42 | 100 | 72 | 7 | 12.8 | B |
| | L2 | 54 | 53 | 98 | 59 | 4 | 15.0 | B |
| | Subtotal | 96 | 95 | 99 | | | 14.0 | B |
| **Total** | | 864 | 940 | 109 | | | 5.3 | *A* |

**Intersection:** **East B Access & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | L | 1 | 0 | 0 | 71 | 1 | 0.0 | A |
| | T | 289 | 288 | 100 | 57 | 1 | 1.7 | A |
| | Subtotal | 290 | 288 | 99 | | | 1.7 | A |
| ***SB*** | T | 336 | 338 | 101 | 78 | 1 | 1.2 | A |
| | R | 160 | 159 | 99 | 106 | 2 | 1.8 | A |
| | ***Subtotal*** | ***496*** | ***497*** | 100 | | | ***1.4*** | ***A*** |
| EB | L | 16 | 17 | 106 | 31 | 1 | 21.1 | C |
| | R | 1 | 0 | 0 | 31 | 1 | 0.0 | A |
| | Subtotal | 17 | 17 | 100 | | | 21.1 | C |
| | | | | | | | | |
| **Total** | | 803 | 802 | 100 | | | 1.9 | *A* |

# *VISSIM Level of Service Report*

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b - 20% Reduction
**Time Period:** Morning Peak Hour
**Project #:** *UT19-1481*

**Intersection:** South B Access & Manor
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***SEB*** | L | 37 | 36 | 97 | 38 | 1 | 10.4 | B |
| | R | 1 | 0 | 0 | 38 | 1 | 0.0 | A |
| | ***Subtotal*** | ***38*** | ***36*** | 95 | | | ***10.4*** | ***B*** |
| NEB | L | 1 | 0 | 0 | 0 | 0 | 0.0 | A |
| | T | 208 | 208 | 100 | 0 | 0 | 0.3 | A |
| | Subtotal | 209 | 208 | 100 | | | 0.3 | A |
| SWB | T | 160 | 158 | 99 | 10 | 0 | 0.7 | A |
| | R | 132 | 137 | 104 | 32 | 0 | 1.3 | A |
| | Subtotal | 292 | 295 | 101 | | | 1.0 | A |
| | | | | | | | | |
| **Total** | | 539 | 539 | 100 | | | 1.3 | *A* |

**Intersection:** Manor & Lowell
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 1 | 0 | 0 | 91 | 7 | 0.0 | A |
| | R | 140 | 141 | 101 | 58 | 1 | 7.9 | A |
| | Subtotal | 141 | 141 | 100 | | | 7.9 | A |
| ***SEB*** | L | 68 | 67 | 99 | 67 | 3 | 8.8 | A |
| | T | 1 | 0 | 0 | 97 | 5 | 0.0 | A |
| | ***Subtotal*** | ***69*** | ***67*** | 97 | | | ***8.8*** | ***A*** |
| SWB | L | 92 | 92 | 100 | 0 | 0 | 0.4 | A |
| | R | 68 | 66 | 97 | 0 | 0 | 0.3 | A |
| | Subtotal | 160 | 158 | 99 | | | 0.4 | A |
| | | | | | | | | |
| **Total** | | 370 | 366 | 99 | | | 4.9 | *A* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Morning Peak Hour** **Project #:** ***UT19-1481***

**Intersection:** **Manor & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 48 | 48 | 100 | 92 | 4 | 6.7 | A |
| | L3 | 4 | 4 | 100 | 43 | 1 | 9.2 | A |
| | Subtotal | 52 | 52 | 100 | | | 6.9 | A |
| ***SB*** | T | 48 | 49 | 102 | 111 | 2 | 4.8 | A |
| | R2 | 288 | 290 | 101 | 111 | 2 | 2.3 | A |
| | ***Subtotal*** | ***336*** | ***339*** | 101 | | | ***2.7*** | ***A*** |
| EB | T | 1 | 26 | 2600 | 5 | 0 | 0.0 | A |
| | Subtotal | 1 | 26 | 2600 | | | 0.0 | A |
| WB | T | 1 | 27 | 2700 | 12 | 0 | 0.0 | A |
| | Subtotal | 1 | 27 | 2700 | | | 0.0 | A |
| NEB | R3 | 4 | 5 | 125 | 29 | 0 | 0.4 | A |
| | L2 | 241 | 240 | 100 | 60 | 1 | 1.1 | A |
| | Subtotal | 245 | 245 | 100 | | | 1.0 | A |
| **Total** | | 390 | 444 | 114 | | | 2.2 | *A* |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **Total** | | | | | | | | |

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# VISSIM Level of Service Report

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b - 20% Reduction
**Time Period:** Evening Peak Hour
**Project #:** *UT18-1215*

**Intersection:** S.R. 248 & S.R. 224
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 360 | 359 | 100 | 65 | 6 | 9.6 | A |
| | L3 | 312 | 317 | 102 | 246 | 78 | 64.1 | E |
| | Subtotal | 672 | 676 | 101 | | | 35.2 | D |
| NWB | T | 1,221 | 1,127 | 92 | 421 | 56 | 13.2 | B |
| | R3 | 405 | 429 | 106 | 363 | 37 | 11.0 | B |
| | Subtotal | 1,626 | 1,556 | 96 | | | 12.6 | B |
| SEB | T | 917 | 913 | 100 | 194 | 12 | 4.7 | A |
| | L2 | 400 | 401 | 100 | 256 | 85 | 64.0 | E |
| | Subtotal | 1,317 | 1,314 | 100 | | | 22.8 | C |
| | | | | | | | | |
| **Total** | | 3,615 | 3,546 | 98 | | | 20.7 | *C* |

**Intersection:** Homestake & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 24 | 24 | 100 | 52 | 2 | 14.0 | B |
| | L3 | 16 | 16 | 100 | 53 | 3 | 24.9 | C |
| | Subtotal | 40 | 40 | 100 | | | 18.4 | C |
| ***NWB*** | T | 1,602 | 1,533 | 96 | 186 | 11 | 1.7 | A |
| | R3 | 16 | 18 | 113 | 146 | 6 | 0.4 | A |
| | ***Subtotal*** | ***1,618*** | ***1,551*** | 96 | | | ***1.7*** | ***A*** |
| SEB | T | 1,209 | 1,211 | 100 | 137 | 5 | 1.7 | A |
| | L2 | 20 | 20 | 100 | 49 | 0 | 18.6 | C |
| | Subtotal | 1,229 | 1,231 | 100 | | | 2.0 | A |
| | | | | | | | | |
| **Total** | | 2,887 | 2,822 | 98 | | | 2.0 | *A* |

# *VISSIM Level of Service Report*

**Project:** PCMR
**Analysis Period:** Future 2040 Scenario 2b - 20% Reduction
**Time Period:** Evening Peak Hour
**Project #:** *UT18-1215*

**Intersection:** Iron Horse & Park Ave
**Type:** Unsignalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 76 | 72 | 95 | 72 | 5 | 13.4 | B |
| | L3 | 16 | 15 | 94 | 73 | 5 | 22.0 | C |
| | Subtotal | 92 | 87 | 95 | | | 14.9 | B |
| NWB | T | 1,542 | 1,480 | 96 | 0 | 0 | 0.3 | A |
| | R3 | 40 | 42 | 105 | 2 | 0 | -1.1 | #N/A |
| | Subtotal | 1,582 | 1,522 | 96 | | | 0.2 | A |
| ***SEB*** | T | 1,161 | 1,161 | 100 | 32 | 0 | 0.8 | A |
| | L2 | 64 | 64 | 100 | 67 | 8 | 24.7 | C |
| | ***Subtotal*** | ***1,225*** | ***1,225*** | 100 | | | ***2.0*** | ***A*** |
| | | | | | | | | |
| **Total** | | 2,899 | 2,834 | 98 | | | 1.5 | *A* |

**Intersection:** Deer Valley & Park Ave
**Type:** Signalized

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| WB | R2 | 544 | 536 | 99 | 556 | 209 | 26.7 | C |
| | L2 | 291 | 293 | 101 | 553 | 206 | 95.3 | F |
| | L3 | 60 | 62 | 103 | 115 | 25 | 88.2 | F |
| | Subtotal | 895 | 891 | 100 | | | 53.6 | D |
| NWB | L | 47 | 46 | 98 | 67 | 9 | 41.5 | D |
| | T | 320 | 319 | 100 | 285 | 59 | 49.5 | D |
| | R3 | 56 | 55 | 98 | 290 | 63 | 31.2 | C |
| | Subtotal | 423 | 420 | 99 | | | 46.2 | D |
| SEB | T | 292 | 294 | 101 | 279 | 59 | 33.4 | C |
| | R | 457 | 454 | 99 | 283 | 61 | 5.2 | A |
| | L2 | 428 | 426 | 100 | 448 | 126 | 46.3 | D |
| | Subtotal | 1,177 | 1,174 | 100 | | | 27.2 | C |
| NEB | L | 718 | 666 | 93 | 655 | 209 | 65.6 | E |
| | R | 39 | 36 | 92 | 456 | 68 | 31.4 | C |
| | R2 | 303 | 304 | 100 | 449 | 64 | 39.3 | D |
| | Subtotal | 1,060 | 1,006 | 95 | | | 56.4 | E |
| **Total** | | 3,555 | 3,491 | 98 | | | 44.7 | *D* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **15th & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| SB | R | 325 | 328 | 101 | 123 | 4 | 1.6 | A |
| | L2 | 470 | 466 | 99 | 260 | 15 | 6.4 | A |
| | Subtotal | 795 | 794 | 100 | | | 4.4 | A |
| EB | L | 238 | 263 | 111 | 337 | 59 | 44.6 | D |
| | R2 | 8 | 8 | 100 | 368 | 80 | 25.6 | C |
| | L2 | 15 | 18 | 120 | 337 | 59 | 41.8 | D |
| | Subtotal | 261 | 289 | 111 | | | 43.9 | D |
| WB | T | 15 | 15 | 100 | 57 | 5 | 43.1 | D |
| | R | 10 | 10 | 100 | 60 | 5 | 16.4 | B |
| | L3 | 12 | 11 | 92 | 57 | 5 | 39.8 | D |
| | Subtotal | 37 | 36 | 97 | | | 34.7 | C |
| NWB | R | 47 | 49 | 104 | 383 | 50 | 18.7 | B |
| | R2 | 811 | 730 | 90 | 383 | 50 | 18.5 | B |
| | Subtotal | 858 | 779 | 91 | | | 18.5 | B |
| **Total** | | 1,951 | 1,898 | 97 | | | 16.8 | *B* |

**Intersection:** **Lowell & 15th**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 40 | 65 | 163 | 118 | 6 | 16.8 | B |
| | Subtotal | 40 | 65 | 163 | | | 16.8 | B |
| EB | T | 222 | 220 | 99 | 134 | 41 | 17.9 | B |
| | R | 2 | 3 | 150 | 136 | 40 | 6.1 | A |
| | Subtotal | 224 | 223 | 100 | | | 17.7 | B |
| WB | L | 248 | 248 | 100 | 201 | 31 | 14.9 | B |
| | T | 92 | 94 | 102 | 201 | 24 | 13.7 | B |
| | Subtotal | 340 | 342 | 101 | | | 14.6 | B |
| | | | | | | | | |
| **Total** | | 604 | 630 | 104 | | | 16.0 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **NE E Access & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | R | 15 | 16 | 107 | 35 | 1 | 24.8 | C |
| | Subtotal | 15 | 16 | 107 | | | 24.8 | C |
| ***EB*** | T | 209 | 206 | 99 | 115 | 6 | 12.8 | B |
| | R | 1 | 0 | 0 | 128 | 7 | 0.0 | A |
| | ***Subtotal*** | ***210*** | ***206*** | 98 | | | ***12.8*** | ***B*** |
| WB | L | 22 | 25 | 114 | 36 | 0 | 1.7 | A |
| | T | 70 | 70 | 100 | 19 | 0 | 0.5 | A |
| | Subtotal | 92 | 95 | 103 | | | 0.9 | A |
| | | | | | | | | |
| **Total** | | 317 | 317 | 100 | | | 9.8 | *A* |

**Intersection:** **Three Kings & 15th**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | R | 183 | 182 | 99 | 91 | 9 | 10.8 | B |
| | ***Subtotal*** | ***183*** | ***182*** | 99 | | | ***10.8*** | ***B*** |
| SB | L | 20 | 20 | 100 | 56 | 1 | 9.2 | A |
| | T | 1 | 0 | 0 | 33 | 0 | 0.0 | A |
| | R | 1 | 0 | 0 | 55 | 1 | 0.0 | A |
| | Subtotal | 22 | 20 | 91 | | | 9.2 | A |
| EB | L | 1 | 0 | 0 | 2 | 0 | 0.0 | A |
| | T | 6 | 6 | 100 | 2 | 0 | 1.4 | A |
| | R | 1 | 0 | 0 | 2 | 0 | 0.0 | A |
| | Subtotal | 8 | 6 | 75 | | | 1.4 | A |
| WB | L | 45 | 47 | 104 | 17 | 0 | 0.5 | A |
| | T | 6 | 5 | 83 | 76 | 1 | 0.3 | A |
| | R | 20 | 19 | 95 | 2 | 0 | 0.4 | A |
| | Subtotal | 71 | 71 | 100 | | | 0.4 | A |
| **Total** | | 284 | 279 | 98 | | | 7.9 | *A* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **West D Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NWB*** | T | 40 | 65 | 163 | 97 | 0 | 0.5 | A |
| | ***Subtotal*** | ***40*** | ***65*** | 163 | | | ***0.5*** | ***A*** |
| SEB | T | 250 | 255 | 102 | 88 | 1 | 3.8 | A |
| | Subtotal | 250 | 255 | 102 | | | 3.8 | A |
| SWB | L | 6 | 7 | 117 | 22 | 0 | 13.6 | B |
| | Subtotal | 6 | 7 | 117 | | | 13.6 | B |
| | | | | | | | | |
| **Total** | | 296 | 327 | 110 | | | 3.3 | *A* |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **C Access & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 40 | 65 | 163 | 0 | 0 | 1.2 | A |
| | Subtotal | 40 | 65 | 163 | | | 1.2 | A |
| ***SEB*** | T | 154 | 160 | 104 | 37 | 0 | 0.9 | A |
| | R | 102 | 100 | 98 | 74 | 1 | 2.0 | A |
| | ***Subtotal*** | ***256*** | ***260*** | 102 | | | ***1.3*** | ***A*** |
| NEB | R | 93 | 94 | 101 | 62 | 4 | 10.3 | B |
| | Subtotal | 93 | 94 | 101 | | | 10.3 | B |
| | | | | | | | | |
| **Total** | | 389 | 419 | 108 | | | 3.3 | *A* |

**Intersection:** **Shadow Ridge & Lowell**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | L2 | 40 | 64 | 160 | 90 | 14 | 25.1 | C |
| | Subtotal | 40 | 64 | 160 | | | 25.1 | C |
| SEB | L | 187 | 191 | 102 | 167 | 22 | 18.9 | B |
| | R | 20 | 20 | 100 | 167 | 22 | 19.5 | B |
| | R2 | 40 | 44 | 110 | 106 | 7 | 19.6 | B |
| | Subtotal | 247 | 255 | 103 | | | 19.1 | B |
| NEB | T | 90 | 96 | 107 | 110 | 11 | 25.8 | C |
| | Subtotal | 90 | 96 | 107 | | | 25.8 | C |
| SWB | T | 19 | 18 | 95 | 28 | 1 | 8.2 | A |
| | Subtotal | 19 | 18 | 95 | | | 8.2 | A |
| **Total** | | 396 | 433 | 109 | | | 21.0 | *C* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **North B Access & Shadow Ridge**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 1 | 0 | 0 | 71 | 5 | 0.0 | A |
| | R | 108 | 104 | 96 | 71 | 6 | 13.3 | B |
| | Subtotal | 109 | 104 | 95 | | | 13.3 | B |
| ***NEB*** | T | 259 | 270 | 104 | 67 | 1 | 1.9 | A |
| | R | 18 | 19 | 106 | 100 | 2 | 1.6 | A |
| | ***Subtotal*** | ***277*** | ***289*** | 104 | | | ***1.9*** | ***A*** |
| SWB | L | 32 | 31 | 97 | 26 | 0 | 2.4 | A |
| | T | 19 | 18 | 95 | 8 | 0 | 0.6 | A |
| | Subtotal | 51 | 49 | 96 | | | 1.7 | A |
| | | | | | | | | |
| **Total** | | 437 | 442 | 101 | | | 4.6 | *A* |

**Intersection:** **Shadow Ridge & Empire**
**Type:** **Signalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | L | 11 | 10 | 91 | 217 | 61 | 33.9 | C |
| | T | 551 | 470 | 85 | 217 | 61 | 19.6 | B |
| | Subtotal | 562 | 480 | 85 | | | 19.9 | B |
| SEB | T | 439 | 432 | 98 | 398 | 36 | 12.8 | B |
| | R | 40 | 40 | 100 | 398 | 36 | 14.8 | B |
| | Subtotal | 479 | 472 | 99 | | | 12.9 | B |
| NEB | L | 283 | 286 | 101 | 178 | 26 | 10.4 | B |
| | R | 84 | 86 | 102 | 178 | 26 | 12.2 | B |
| | Subtotal | 367 | 372 | 101 | | | 10.8 | B |
| | | | | | | | | |
| **Total** | | 1,408 | 1,324 | 94 | | | 14.9 | *B* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **14th & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 546 | 463 | 85 | 181 | 119 | 16.4 | C |
| | R2 | 110 | 92 | 84 | 181 | 119 | 14.9 | B |
| | Subtotal | 656 | 555 | 85 | | | 16.1 | C |
| ***SB*** | T | 499 | 494 | 99 | 301 | 22 | 6.1 | A |
| | L3 | 24 | 25 | 104 | 257 | 16 | 14.5 | B |
| | ***Subtotal*** | ***523*** | ***519*** | 99 | | | ***6.5*** | ***A*** |
| EB | T | 1 | 76 | 7600 | 21 | 1 | 0.0 | A |
| | Subtotal | 1 | 76 | 7600 | | | 0.0 | A |
| SWB | R3 | 16 | 17 | 106 | 49 | 2 | 23.0 | C |
| | L2 | 15 | 14 | 93 | 37 | 1 | 13.5 | B |
| | Subtotal | 31 | 31 | 100 | | | 18.7 | C |
| **Total** | | 1,211 | 1,181 | 98 | | | 10.9 | *B* |

**Intersection:** **East B Access & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***NB*** | L | 1 | 0 | 0 | 246 | 48 | 0.0 | A |
| | T | 486 | 478 | 98 | 217 | 36 | 19.8 | C |
| | ***Subtotal*** | ***487*** | ***478*** | 98 | | | ***19.8*** | ***C*** |
| SB | T | 485 | 481 | 99 | 86 | 2 | 1.9 | A |
| | R | 30 | 29 | 97 | 114 | 3 | 1.7 | A |
| | Subtotal | 515 | 510 | 99 | | | 1.9 | A |
| EB | L | 170 | 76 | 45 | 155 | 124 | 378.5 | F |
| | R | 1 | 0 | 0 | 155 | 124 | 0.0 | A |
| | Subtotal | 171 | 76 | 44 | | | 378.5 | F |
| | | | | | | | | |
| **Total** | | 1,173 | 1,064 | 91 | | | 33.0 | *D* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **South B Access & Manor**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| ***SEB*** | L | 112 | 105 | 94 | 102 | 15 | 28.6 | D |
| | R | 1 | 0 | 0 | 102 | 15 | 0.0 | A |
| | ***Subtotal*** | ***113*** | ***105*** | 93 | | | ***28.6*** | ***D*** |
| NEB | L | 1 | 0 | 0 | 39 | 2 | 0.0 | A |
| | T | 314 | 311 | 99 | 29 | 2 | 2.0 | A |
| | Subtotal | 315 | 311 | 99 | | | 2.0 | A |
| SWB | T | 331 | 321 | 97 | 22 | 0 | 1.0 | A |
| | R | 64 | 64 | 100 | 38 | 1 | 1.4 | A |
| | Subtotal | 395 | 385 | 97 | | | 1.1 | A |
| | | | | | | | | |
| **Total** | | 823 | 801 | 97 | | | 5.1 | *A* |

**Intersection:** **Manor & Lowell**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NWB | T | 1 | 0 | 0 | 104 | 10 | 0.0 | A |
| | R | 186 | 188 | 101 | 72 | 2 | 8.9 | A |
| | Subtotal | 187 | 188 | 101 | | | 8.9 | A |
| ***SEB*** | L | 128 | 124 | 97 | 88 | 8 | 11.6 | B |
| | T | 1 | 0 | 0 | 118 | 12 | 0.0 | A |
| | ***Subtotal*** | ***129*** | ***124*** | 96 | | | ***11.6*** | ***B*** |
| SWB | L | 203 | 199 | 98 | 11 | 0 | 0.7 | A |
| | R | 128 | 123 | 96 | 11 | 0 | 0.5 | A |
| | Subtotal | 331 | 322 | 97 | | | 0.6 | A |
| | | | | | | | | |
| **Total** | | 647 | 634 | 98 | | | 5.3 | *A* |

# *VISSIM Level of Service Report*

**Project:** **PCMR**
**Analysis Period:** **Future 2040 Scenario 2b - 20% Reduction**
**Time Period:** **Evening Peak Hour** **Project #:** ***UT18-1215***

**Intersection:** **Manor & Empire**
**Type:** **Unsignalized**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| NB | T | 65 | 66 | 102 | 70 | 5 | 12.4 | B |
| | L3 | 4 | 4 | 100 | 50 | 2 | 12.7 | B |
| | Subtotal | 69 | 70 | 101 | | | 12.4 | B |
| ***SB*** | T | 94 | 99 | 105 | 246 | 27 | 8.2 | A |
| | R2 | 391 | 384 | 98 | 246 | 26 | 5.5 | A |
| | ***Subtotal*** | ***485*** | ***483*** | 100 | | | ***6.0*** | ***A*** |
| EB | T | 1 | 26 | 2600 | 5 | 0 | 0.0 | A |
| | Subtotal | 1 | 26 | 2600 | | | 0.0 | A |
| WB | T | 1 | 27 | 2700 | 12 | 0 | 0.0 | A |
| | Subtotal | 1 | 27 | 2700 | | | 0.0 | A |
| NEB | R3 | 4 | 4 | 100 | 129 | 14 | 2.0 | A |
| | L2 | 422 | 412 | 98 | 172 | 22 | 3.5 | A |
| | Subtotal | 426 | 416 | 98 | | | 3.5 | A |
| **Total** | | 556 | 606 | 109 | | | 5.1 | *A* |

**Intersection:**
**Type:**

| Approach | Movement | Demand Volume | Volume Served | | Queue (ft) | | Delay/Veh (sec) | |
|---|---|---|---|---|---|---|---|---|
| | | | Avg | % | Max | Avg | Avg | LOS |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **Total** | | | | | | | | |

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# MEMO 2: APPENDIX A

## Required Parking (City Code)

1220 North 500 West, Ste. 202 Lehi, UT 84043 p 801.766.4343
www.halesengineering.com

# PARKING REQUIREMENTS PER LMC 15-3

| RESIDENTIAL PARKING REQ'S | MAX AREA | PARKING REQ'S | Rate | PARCEL B | | | | | PARCEL C | | | | | | PARCEL E | | | | PARCEL D | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CONDOS | AFF Housing | EMP Housing | COMM | SUBTOTAL | GUESTROOMS | CONDOS | MEETING | RETAIL | COMM | SUBTOTAL | CONDO | SKICLUB | COMM | SUBTOTAL | CONDO | COMM | SUBTOTAL | |
| Hotel Room | 650 | 1 per room | 1 | | | | | 0 | 249 | | | | | 249 | | | | 0 | | | 0 | 249 |
| Apt/Condo<=1000 SQFT | 1000 | 1 per DU | 1 | 9 | 49 | 22 | | 80 | | 2 | | | | 2 | 8 | | | 8 | 18 | | 18 | 108 |
| 1000 SQFT < Apt/Condo <2000 SQFT | 2000 | 1.5 per DU | 1.5 | 32 | 8 | 7 | | 71 | | 9 | | | | 14 | 34 | | | 51 | 16 | | 24 | 160 |
| Apt/Condo>=2000 SQFT | none | 2 per DU | 2 | 14 | 0 | 3 | | 34 | | 2 | | | | 4 | | | | 0 | | | 0 | 38 |
| **Total Residential Required** | | | | 85 | 61 | 39 | | 185 | 249 | 20 | | | | 269 | | | | 59 | | | 42 | 555 |
| **COMMERCIAL PARKING REQ'S** | | | | | | | | | | | | | | | | | | | | | | |
| Accessory Resort Use Employees | | 1 per 400 sqft | 2.5 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| Commerical Use | | TBD | | | | | | | | | | | | | | | | | | | | 0 |
| Meeting Space | | 1 per 200 sqft | 5 | | | | | 0 | | | 20000 | | | 100 | | | | 0 | | | 0 | 100 |
| Retail& Service Commerical, Minor | | 3 per 1000 sqft | 3.00 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| Retail& Service Commerical, Major | | 5 per 1000 sqft | 5 | | | | | 0 | | | | | 31500 | 158 | | | 22500 | 113 | | 19300 | 97 | 368 |
| Multi-tenant complex | | 3.5 per 1000 sqft | 3.50 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| Restaurant, Standard and Bar | | 1 per 100 sqft | 10 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| **Total Commercial Required** | | | | | | | | 0 | | | | | | 258 | | | | 113 | | | 97 | 468 |
| **DAY SKIER PARKING REQ'S** | | | | | | | | | | | | | | | | | | | | | | |
| Day Skier Parking | | 1200 | | | | | 760 | 760 | | | | | | 0 | | | 440 | 440 | | | 0 | 1200 |
| **TOTAL REQUIRED, EXCLUDING COMM** | | | | | | | | 945 | | | | | | 269 | | | | 499 | | | 42 | 1755 |
| **TOTAL REQUIRED** | | | | | | | | 945 | | | | | | 527 | | | | 612 | | | 139 | 2223 |
| **TOTAL PROVIDED** | | | | | | | | 906 | | | | | | 185 | | | | 535 | | | 95 | 1721 |

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# MEMO 2: APPENDIX B

## Proposed Alternative Parking Calculations

1220 North 500 West, Ste. 202 Lehi, UT 84043 p 801.766.4343
www.halesengineering.com

# PARKING REQUIREMENTS PER LMC 15-3

| RESIDENTIAL PARKING REQ'S | MAX AREA | PARKING REQ'S | Rate | PARCEL B | | | | | PARCEL C | | | | | | PARCEL E | | | | PARCEL D | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CONDOS | AFF Housing | EMP Housing | COMM | SUBTOTAL | GUESTROOMS | CONDOS | MEETING | RETAIL | COMM | SUBTOTAL | CONDO | SKICLUB | COMM | SUBTOTAL | CONDO | COMM | SUBTOTAL | |
| Hotel Room | 650 | 1 per room | 1 | | | | | 0 | 249 | | | | | 249 | | | | 0 | | | 0 | 249 |
| Apt/Condo<=1000 SQFT | 1000 | 1 per DU | 1 | 9 | 49 | 22 | | 80 | | 2 | | | | 2 | 8 | | | 8 | 18 | | 18 | 108 |
| 1000 SQFT < Apt/Condo <2000 SQFT | 2000 | 1.5 per DU | 1 | 32 | 8 | 7 | | 47 | | 9 | | | | 9 | 34 | | | 34 | 16 | | 16 | 106 |
| Apt/Condo>=2000 SQFT | none | 2 per DU | 1 | 14 | 0 | 3 | | 17 | | 2 | | | | 2 | | | | 0 | | | 0 | 19 |
| **Total Residential Required** | | | | 55 | 57 | 0 | | 144 | 249 | 13 | | | | 262 | 42 | | | 42 | 34 | | 34 | 482 |
| **COMMERCIAL PARKING REQ'S** | | | | | | | | | | | | | | | | | | | | | | |
| Accessory Resort Use Employees | | 1 per 400 sqft | 2.5 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| Commerical Use | | TBD | | | | | | | | | | | | | | | | | | | | 0 |
| Meeting Space | | 1 per 200 sqft | 5 | | | | | 0 | | | 20000 | | | 100 | | | | 0 | | | 0 | 100 |
| Retail& Service Commerical, Minor | | 3 per 1000 sqft | 3.00 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| Retail& Service Commerical, Major | | 5 per 1000 sqft | 5 | | | | | 0 | | | | | 31500 | 158 | | | 22500 | 113 | | 19300 | 97 | 368 |
| Multi-tenant complex | | 3.5 per 1000 sqft | 3.50 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| Restaurant, Standard and Bar | | 1 per 100 sqft | 10 | | | | | 0 | | | | | | 0 | | | | 0 | | | 0 | 0 |
| **Total Commercial Required** | | | | | | | | 0 | | | | | | 258 | | | | 113 | | | 97 | 468 |
| **DAY SKIER PARKING REQ'S** | | | | | | | | | | | | | | | | | | | | | | |
| Day Skier Parking | | 1200 | | | | | 760 | 760 | | | | | | 0 | | | 440 | 440 | | | 0 | 1200 |
| **TOTAL REQUIRED, EXCLUDING COMM** | | | | | | | | 904 | | | | | | 262 | | | | 482 | | | 34 | 1682 |
| **TOTAL REQUIRED** | | | | | | | | 904 | | | | | | 520 | | | | 595 | | | 131 | 2150 |
| **TOTAL PROVIDED** | | | | | | | | 906 | | | | | | 185 | | | | 535 | | | 95 | 1721 |

| Time | Parcel | Parcel B | | | | | | Parcel C | | | | | Parcel D | | | | Parcel E | | | | | All Parcels | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Land Use | Condos | Afford. Housing | Employee Housing | Day Skier | TOTAL | SUPPLY / DELTA | Hotel Rooms | Meeting Space | Comm. | TOTAL | SUPPLY / DELTA | Condo | Comm. | TOTAL | SUPPLY / DELTA | Condo | Comm. | Day Skier | TOTAL | SUPPLY / DELTA | TOTAL | SUPPLY / DELTA |
| | Required Parking | 55 | 57 | 0 | 760 | 872 | 906 | 249 | 100 | 158 | 507 | 185 | 34 | 97 | 131 | 95 | 42 | 113 | 440 | 595 | 535 | 2106 | 1721 |
| | Internal Capture / Unoccupied | 15% | 15% | 0% | 0% | | | 15% | 80% | 80% | | | 15% | 80% | | | 15% | 80% | 0% | | | | |
| | ITE Land Use # | 330 | 221 | N/A | N/A | | | 330 | Meeting | 820 | | | 330 | 820 | | | 330 | 820 | N/A | | | | |
| 12:00 AM | | 40 | 49 | 0 | 760 | 849 | 57 | 178 | 0 | 0 | 178 | 7 | 25 | 0 | 25 | 70 | 30 | 0 | 440 | 470 | 65 | 1522 | 199 |
| 1:00 AM | | 40 | 49 | 0 | 760 | 849 | 57 | 178 | 0 | 0 | 178 | 7 | 25 | 0 | 25 | 70 | 30 | 0 | 440 | 470 | 65 | 1522 | 199 |
| 2:00 AM | | 40 | 49 | 0 | 760 | 849 | 57 | 178 | 0 | 0 | 178 | 7 | 25 | 0 | 25 | 70 | 30 | 0 | 440 | 470 | 65 | 1522 | 199 |
| 3:00 AM | | 40 | 49 | 0 | 760 | 849 | 57 | 178 | 0 | 0 | 178 | 7 | 25 | 0 | 25 | 70 | 30 | 0 | 440 | 470 | 65 | 1522 | 199 |
| 4:00 AM | | 40 | 49 | 0 | 760 | 849 | 57 | 178 | 0 | 0 | 178 | 7 | 25 | 0 | 25 | 70 | 30 | 0 | 440 | 470 | 65 | 1522 | 199 |
| 5:00 AM | | 33 | 48 | 0 | 760 | 841 | 65 | 149 | 0 | 0 | 149 | 36 | 21 | 0 | 21 | 74 | 25 | 0 | 440 | 465 | 70 | 1476 | 245 |
| 6:00 AM | | 28 | 47 | 0 | 760 | 835 | 71 | 123 | 2 | 2 | 127 | 58 | 17 | 1 | 18 | 77 | 21 | 2 | 440 | 463 | 72 | 1443 | 278 |
| 7:00 AM | | 28 | 47 | 0 | 760 | 835 | 71 | 123 | 10 | 5 | 138 | 47 | 17 | 3 | 20 | 75 | 21 | 4 | 440 | 465 | 70 | 1458 | 263 |
| 8:00 AM | | 30 | 43 | 0 | 760 | 833 | 73 | 134 | 20 | 12 | 166 | 19 | 19 | 7 | 26 | 69 | 23 | 8 | 440 | 471 | 64 | 1496 | 225 |
| 9:00 AM | | 31 | 41 | 0 | 760 | 832 | 74 | 138 | 20 | 18 | 176 | 9 | 19 | 11 | 30 | 65 | 24 | 13 | 440 | 477 | 58 | 1515 | 206 |
| 10:00 AM | | 29 | 37 | 0 | 760 | 826 | 80 | 127 | 20 | 24 | 171 | 14 | 18 | 15 | 33 | 62 | 22 | 17 | 440 | 479 | 56 | 1509 | 212 |
| 11:00 AM | | 29 | 35 | 0 | 760 | 824 | 82 | 127 | 20 | 27 | 174 | 11 | 18 | 17 | 35 | 60 | 22 | 20 | 440 | 482 | 53 | 1515 | 206 |
| 12:00 PM | | 28 | 33 | 0 | 760 | 821 | 85 | 125 | 20 | 31 | 176 | 9 | 18 | 19 | 37 | 58 | 22 | 22 | 440 | 484 | 51 | 1518 | 203 |
| 1:00 PM | | 24 | 32 | 0 | 760 | 816 | 90 | 106 | 20 | 31 | 157 | 28 | 15 | 20 | 35 | 60 | 18 | 23 | 440 | 481 | 54 | 1489 | 232 |
| 2:00 PM | | 24 | 34 | 0 | 760 | 818 | 88 | 108 | 20 | 32 | 160 | 25 | 15 | 20 | 35 | 60 | 19 | 23 | 440 | 482 | 53 | 1495 | 226 |
| 3:00 PM | | 23 | 34 | 0 | 760 | 817 | 89 | 104 | 20 | 31 | 155 | 30 | 15 | 19 | 34 | 61 | 18 | 22 | 440 | 480 | 55 | 1486 | 235 |
| 4:00 PM | | 26 | 35 | 0 | 760 | 821 | 85 | 115 | 20 | 28 | 163 | 22 | 16 | 18 | 34 | 61 | 20 | 20 | 440 | 480 | 55 | 1498 | 223 |
| 5:00 PM | | 25 | 36 | 0 | 760 | 821 | 85 | 111 | 20 | 25 | 156 | 29 | 16 | 15 | 31 | 64 | 19 | 18 | 440 | 477 | 58 | 1485 | 236 |
| 6:00 PM | | 30 | 36 | 0 | 760 | 826 | 80 | 134 | 16 | 21 | 171 | 14 | 19 | 13 | 32 | 63 | 23 | 15 | 440 | 478 | 57 | 1507 | 214 |
| 7:00 PM | | 38 | 36 | 0 | 760 | 834 | 72 | 170 | 12 | 18 | 200 | -15 | 24 | 11 | 35 | 60 | 29 | 13 | 440 | 482 | 53 | 1551 | 170 |
| 8:00 PM | | 44 | 37 | 0 | 760 | 841 | 65 | 199 | 8 | 13 | 220 | -35 | 28 | 8 | 36 | 59 | 34 | 10 | 440 | 484 | 51 | 1581 | 140 |
| 9:00 PM | | 47 | 38 | 0 | 760 | 845 | 61 | 210 | 4 | 8 | 222 | -37 | 29 | 5 | 34 | 61 | 36 | 6 | 440 | 482 | 53 | 1583 | 138 |
| 10:00 PM | | 47 | 40 | 0 | 760 | 847 | 59 | 212 | 0 | 4 | 216 | -31 | 29 | 2 | 31 | 64 | 36 | 3 | 440 | 479 | 56 | 1573 | 148 |
| 11:00 PM | | 44 | 43 | 0 | 760 | 847 | 59 | 197 | 0 | 0 | 197 | -12 | 27 | 0 | 27 | 68 | 34 | 0 | 440 | 474 | 61 | 1545 | 176 |

# MEMO 5: Appendix A

## People-Based Analysis Spreadsheet

## Daily People-Based Analysis by Source

| | Source | Typical Winter Day # Vehicles | Typical Winter Day Veh. Occ. | Typical Winter Day # People | Peak Winter Day # Vehicles | Peak Winter Day Veh. Occ. | Peak Winter Day # People | |
|---|---|---|---|---|---|---|---|---|
| PCMR Day Skiing | Skiers at PCMR - Personal Vehicles | 1,560 | 2.30 | 3,588 | 1,560 | 2.70 | 4,212 | |
| | Skiers at PCMR - Alternative Modes (incl. Walking) | 534 | - | 5,579 | 534 | - | 5,669 | |
| | Vail Lodges - Day Skier Stalls | 390 | 2.30 | 897 | 390 | 2.70 | 1,053 | |
| | ***Skiers at PCMR SUBTOTAL*** | ***2,484*** | **-** | ***10,064*** | ***2,484*** | **-** | ***10,934*** | 55.5% |
| | PCMR Ski & Lodge Employees - Personal Vehicles | 96 | 1.05 | 100 | - | - | 0 | |
| | PCMR Ski & Lodge Employees - Alternative Modes | 13 | 8.00 | 100 | 25 | 8.00 | 200 | |
| | ***PCMR Ski Employees SUBTOTAL*** | ***109*** | **-** | ***200*** | ***25*** | **-** | ***200*** | |
| Existing PCM Hotels | Existing PCM Hotel Guests - Personal Vehicles | 1,034 | 2.00 | 2,067 | 1,034 | 2.00 | 2,067 | |
| | Existing PCM Hotel Guests - Alternative Modes (incl. Walking) | 525 | - | 517 | 525 | - | 517 | |
| | ***Existing PCM Hotel Guests SUBTOTAL*** | ***1,559*** | **-** | ***2,584*** | ***1,559*** | **-** | ***2,584*** | 16.3% |
| | PCM Base Development Employees - Alternative Modes | 82 | - | 688 | 82 | - | 688 | |
| | PCM Base Development Employees - Staying | 150 | 1.15 | 172 | 150 | 1.15 | 172 | |
| | ***Existing PCM Hotel Employees SUBTOTAL*** | ***232*** | **-** | ***860*** | ***232*** | **-** | ***860*** | |
| New PCM Base | PCM Base Development Guests - Personal Vehicles | 637 | 2.00 | 1,274 | 637 | 2.00 | 1,274 | |
| | PCM Base Development Guests - Alternative Modes (incl. Walking) | 374 | - | 318 | 374 | - | 318 | |
| | ***New PCM Base Development Guests SUBTOTAL*** | ***1,011*** | ***1.57*** | ***1,592*** | ***1,011*** | ***1.57*** | ***1,592*** | 10.1% |
| | PCM Base Development Employees - Alternative Modes | 53 | - | 425 | 53 | - | 425 | |
| | PCM Base Development Employees - Staying | 91 | 1.15 | 105 | 91 | 1.15 | 105 | |
| | ***New PCM Base Development Employees SUBTOTAL*** | ***144*** | **-** | ***530*** | ***144*** | **-** | ***530*** | |
| Other | Local Cut-through Traffic | 3,145 | 1.15 | 3,617 | 3,145 | 1.15 | 3,617 | 18.0% |
| | Deliveries, Service Vehicles, etc. | 20 | 1.00 | 20 | 20 | 1.00 | 20 | 0.1% |
| | **TOTAL TRAVELING** | **8,463** | **2.27** | **19,190** | **8,379** | **2.39** | **20,060** | |
| | **TOTAL ON SITE (Everything but Cut-through)** | **5,559** | **2.85** | **15,850** | **5,475** | **3.05** | **16,720** | |

1200 Stalls — 30% Turnover during the day
384 Buses — 150 Shuttles
300 Stalls — 30% Turnover during the day
12570 Typical CCC — 13440 Peak CCC
(Typical Day = 100 people on-site, 100-offiste; Peak Day = all off-site)
(Shown in TDM document)

80% Personal vehicle
20% Alternative modes
646 Units — 4.0 Guests per Unit — Vehicle per guest ratio from New PCM Base used
(Assumed that employees park off-site and shuttle in)
(Assumed that 20% stay in affordable housing)
3.004 Guests per Employee (Based on New PCM Base Ratio) — 5% of trips are employee trips
80% Personal vehicle
20% Alternative modes
1064 Daily Trips (TIS) — 249 Hotel — 149 Res. Ur — 4.0 Guests per Unit
(Employees will park off-site at Richardson Lot or will take transit)
20% of employees (105) will stay in affordable housing
5% of trips are employee trips
629 PM peak hour trips in/out of Three Kings Drive, Lowell Ave, and Empire Ave neighborhood entrances (2024)
Assume ~20

## Parking Supply

| Parking Area | Existing | Proposed |
|---|---|---|
| Day Skier Parking - Proposed in Lot B | 760 | 760 |
| Day Skier Parking - Proposed in Lot E | 440 | 440 |
| Day Skier Parking - SUBTOTAL | **1,200** | **1,200** |
| Existing Vail Lodge Day Skier Parking | **300** | **300** |
| Existing Hotel Parking | **410** | **410** |
| New Development - Lot B | - | 114 |
| New Development - Lot C | - | 167 |
| New Development - Lot D | - | 96 |
| New Development - Lot E | - | 103 |
| New Development - SUBTOTAL | **-** | **480** |
| **Total** | **1,500** | **1,980** |

## Housing (Units)

| Housing Type | Existing | Proposed | Parking |
|---|---|---|---|
| Existing Silver King | 60 | 60 | 60 |
| Existing Shadow Ridge | 82 | 82 | 50 |
| Existing Mountain Village | 40 | 40 | 40 |
| Existing Marriott's Mountainside | 364 | 364 | 160 |
| Existing Lowell Condos | 50 | 50 | 50 |
| Existing Legacy Lodge | 50 | 50 | 50 |
| New hotel | - | 249 | |
| New apartments | - | 149 | |
| Nightly rentals within 1/4 mile | 260 | 260 | |
| Residential Units within 1/4 mile | 1,500 | 1,500 | |
| **TOTAL** | **2,406** | **2,804** | |
| People Walking / Unit (Daily) | 2.4 | 2.4 | |
| # People Walking | 5,774 | 6,730 | |

142 0.219814
504 0.780186
646

(2074 total parcels within 1/4 mile based on City data, including multi-family complexes/unit groups)

(SE Group assumed 4 guests per unit and a 60% occupancy / skier rate)
60% occupancy/skier rate — 4 guests per unit

## Peak Hour People-Based Mode Split Analysis (Peak Winter Day)

| Mode | AM Peak Hour (8:15 - 9:15 AM) | | | | | | | | | | | | PM Peak Hour (4:00 - 5:00 PM) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Winter | | | | | | Summer | | | | | | Winter | | | | | | Summer | | | | | |
| | # Vehicle Trips | Veh. Occ. | # People | Mode % | # Veh. on Lowell | # Peds X-ing Lowell | # Vehicle Trips | Veh. Occ. | # People | Mode % | # Veh. on Lowell | # Peds X-ing Lowell | # Vehicle Trips | Veh. Occ. | # People | Mode % | # Veh. on Lowell | # Peds X-ing Lowell | # Vehicle Trips | Veh. Occ. | # People | Mode % | # Veh. on Lowell | # Peds X-ing Lowell |
| Walking | - | - | 634 | 8.4% | - | 507 | - | - | 100 | 14.1% | - | 80 | - | - | 634 | 8.9% | - | 507 | - | - | 100 | 7.1% | - | 80 |
| Biking | - | - | 0 | 0.0% | - | 0 | - | - | 30 | 4.2% | - | 24 | - | - | 0 | 0.0% | - | 0 | - | - | 30 | 2.1% | - | 24 |
| Town and Silver Star Lifts | - | - | 282 | 3.7% | - | 0 | - | - | 50 | 7.0% | - | 0 | - | - | 282 | 3.9% | - | 0 | - | - | 50 | 3.5% | - | 0 |
| Resort Drive/Park - Lot B | 27 | 2.00 | 54 | | 8 | 14 | 5 | 2.00 | 10 | | 2 | 10 | 46 | 2.00 | 92 | | 14 | 92 | 17 | 2.00 | 34 | | 5 | 34 |
| Resort Drive/Park - Lot C | 295 | 2.00 | 590 | | 89 | 0 | 56 | 2.00 | 112 | | 17 | 0 | 355 | 2.00 | 710 | | 107 | 0 | 128 | 2.00 | 256 | | 38 | 0 |
| Resort Drive/Park - Lot D | 46 | 2.00 | 92 | | 14 | 23 | 9 | 2.00 | 18 | | 3 | 18 | 56 | 2.00 | 112 | | 17 | 112 | 20 | 2.00 | 40 | | 6 | 40 |
| Resort Drive/Park - Lot E | 100 | 2.00 | 200 | 51.4% | 30 | 0 | 19 | 2.00 | 38 | 39.0% | 6 | 0 | 111 | 2.00 | 222 | 51.0% | 33 | 0 | 40 | 2.00 | 80 | 51.7% | 12 | 0 |
| Day Skier Drive/Park - Lot B | 570 | 2.70 | 1,539 | | 171 | 1,539 | 0 | 2.00 | | | 0 | | 380 | 2.70 | 1,026 | | 114 | 1,026 | 0 | | | | 0 | |
| Day Skier Drive/Park - Lot E | 330 | 2.70 | 891 | | 99 | 0 | 0 | 2.00 | | | 0 | | 220 | 2.70 | 594 | | 66 | 0 | 0 | | | | | |
| Drive/Park/Stay - Existing Hotels | 226 | 2.30 | 520 | | 68 | 130 | 43 | 2.30 | 99 | | 13 | 25 | 386 | 2.30 | 888 | | 116 | 222 | 139 | 2.30 | 320 | | 42 | 80 |
| Bus | 48 | 8.00 | 384 | 5.1% | 14 | 0 | 12 | 2.00 | 24 | 3.4% | 4 | 0 | 48 | 8.00 | 384 | 5.4% | 14 | 0 | 12 | 2.00 | 24 | 1.7% | 4 | 0 |
| Personal Drop off / Pick up | 450 | 2.50 | 1,125 | 14.9% | 135 | 0 | 25 | 2.00 | 50 | 7.0% | 8 | 25 | 250 | 2.50 | 625 | 8.8% | 75 | 313 | 25 | 2.00 | 50 | 3.5% | 8 | 25 |
| Shuttle (hotel, private) | 60 | 8.00 | 480 | 6.3% | 18 | 480 | 10 | 8.00 | 80 | 11.3% | 3 | 40 | 60 | 8.00 | 480 | 6.7% | 18 | 240 | 10 | 8.00 | 80 | 5.7% | 3 | 40 |
| Ride-hail | 200 | 2.00 | 400 | 5.3% | 60 | 0 | 25 | 1.10 | 28 | 3.9% | 8 | 0 | 100 | 2.00 | 200 | 2.8% | 30 | 0 | 25 | 1.10 | 28 | 2.0% | 8 | 0 |
| Local Cut-through Traffic | 314 | 1.15 | 361 | 4.8% | 94 | 0 | 60 | 1.15 | 69 | 9.7% | 18 | 0 | 767 | 1.15 | 882 | 12.4% | 230 | 0 | 276 | 1.15 | 318 | 22.5% | 83 | 0 |
| Deliveries | 10 | 1.00 | 10 | 0.1% | 3 | 0 | 2 | 1.00 | 2 | 0.3% | 1 | 0 | 10 | 1.00 | 10 | 0.1% | 3 | 0 | 2 | 1.00 | 2 | 0.1% | 1 | 0 |
| **TOTAL** | **2,676** | **2.83** | **7,562** | | **803** | **2,693** | **266** | **2.67** | **710** | | **83** | **222** | **2,789** | **2.56** | **7,141** | | **837** | **2,512** | **694** | **2.03** | **1,412** | | **210** | **323** |
| Peak Hour Back-Check (2040 PP) | **2,703** | | | | **1,373** | | **514** | | | | **261** | | **2,789** | | | | **1,028** | | **1,004** | | | | **370** | |
| Lowell Capacity (veh/hr) | | | | | 800 | | | | | | 800 | | | | | | 800 | | | | | | 800 | |
| Volume / Capacity | | 16.0% | Multi-modal Reduction | | 0.84 | | | 0.0% | Multi-modal Reduction | | 0.10 | | | 20.0% | Reduction due to Transit | | 0.84 | | | 0.0% | Reduction due to Transit | | 0.26 | |
| Level of Service | | | | | D | | | | | | A | | | | | | D | | | | | | A | |
| | | 675 | Vehicles on Lowell (post-reduction) | | | | | 83 | Vehicles on Lowell (post-reduction) | | | | | 670 | Vehicles on Lowell (post-reduction) | | | | | 210 | Vehicles on Lowell (post-reduction) | | | |
| | | 256 | People shifted to other modes - in this case, all were assumed to move to transit | | | | | 0 | People shifted to other modes - in this case, all were assumed to move to transit | | | | | 334 | People shifted to other modes - in this case, all were assumed to move to transit | | | | | 0 | People shifted to other modes - in this case, all were assumed to move to transit | | | |
| | | 30 | Bus Occupancy | | | | | 30 | Bus Occupancy | | | | | 30 | Bus Occupancy | | | | | 30 | Bus Occupancy | | | |
| | | **9** | **Additional Buses** | | | | | **0** | **Additional Buses** | | | | | **12** | **Additional Buses** | | | | | **0** | **Additional Buses** | | | |

| *V/C* | *LOS* |
|---|---|
| *0* | *A* |
| *0.3* | *B* |
| *0.5* | *C* |
| *0.75* | *D* |
| *0.85* | *E* |
| *1* | *F* |

| | |
|---|---|
| Day Skier Parking - Lot B | 760 |
| Day Skier Parking - Lot E | 440 |
| Existing Hotels | 710 |
| New Development - Lot B | 114 |
| New Development - Lot C | 167 |
| New Development - Lot D | 96 |
| New Development - Lot E | 103 |

% of Stalls Transitioned - Day Skiers

| | |
|---|---|
| 75% | AM Peak Hour |
| 50% | PM Peak Hour |

| | |
|---|---|
| 30% | AM Traffic on Lowell |
| 30% | PM Traffic on Lowell |
| 80% | of Off-site Peds X-ing Lowell |
| 19% | AM Winter to Summer Modifier |
| 36% | PM Winter to Summer Modifier |
| 25% | of resort traffic crosses Lowell |
| 50% | of shuttle and pick-up crosses Lowell |