WALL CONSULTANT GROUP
2139 South 1260 West, Salt Lake City, UT 84119-1464

TECHNICAL MEMORANDUM

Date: Wednesday, May 3rd, 2023

To: John Robertson, City Engineer

Cc: Alexandra Ananth, Senior Planner

From: Jeremy Searle, PE, PTOE and Gary Horton, SE

Subject: Snow Park Village Transportation Analysis Independent 3rd Party Review

Purpose & Background

WCG has been involved as the independent 3rd party review for the Snow Park Village project by Deer Valley since September 2021 and has provided multiple reviews of submitted materials and coordinated with City staff and the Deer Valley team. Through these reviews, meetings, and coordination, the proposed project has become more defined, better aligned with the goals of Park City, and more in tune with the feelings of the surrounding community.

Most recently, WCG was asked to review the updated Transportation Analysis – Shared Mobility Lane Alternative, dated April 2023 for the proposed Snow Park Village Redevelopment project at Deer Valley and provide comments. This memorandum outlines how previous comments on this analysis were addressed. No new concerns were identified in the review.

Summary

Generally, WCG finds **that the applicant's transportation analysis is sound**, and the previous traffic related concerns identified were addressed. **WCG supports the Shared Managed Lane (SML) Plan** proposed by the applicant, noting that this plan provides the best use of public right of way by providing improvements for transit balanced with bike lanes, while also improving transportation for all modes of travel in a safe manner. The proposed transit priority traffic signals provide Park City the flexibility needed to improve traffic operations while prioritizing transit when needed. There are a few comments related to driveway design/layout (comments #10, 11, 12) that are not critical to preliminary approvals, and will be addressed during final design review and approval. All addressed comments are marked with a green check mark. ✓

Previous Comments

Previously, the Applicant had requested a 20 percent parking reduction for the development. Recently, they have changed their application to provide the full amount of required parking, which results in a total of 2,262 required parking stalls. The increase in the number of parking also results in an expected increase in trips generated. Previously, the Applicant had submitted a PowerPoint in February 2023 outlining their proposed changes to the trip generation calculations and assumptions. WCG had previously reviewed this submittal and provided the following comments. Underneath each comment is an explanation of how each was addressed in the latest transportation analysis:

1. Why did the assumed transit reduction percentage increase with the removal of the parking reduction request? It would seem likely that transit ridership would decrease with the availability of more parking stalls.

This was addressed by decreasing the transit reduction from 3% to 1.5% daily and during the PM peak hour, and 1% during the AM peak hour. This change in calculating the trip generation is in line with what is expected with the increase in parking. Therefore, this comment has been addressed.

2. The diagram on slide 7 shows existing incoming and outgoing trips during the AM and PM peak hours. It also indicates that a 5% reduction on these counts was assumed to account for background traffic to Solamere and Queen Esther. However, the diagram shows the counts on DVD East being collected beyond Solamere and Queen Esther. If the diagram is accurate, a 5% reduction would not be needed for these counts. Please clarify these numbers and assumption.

This was addressed by removing the 5% reduction that was previously assumed. Therefore, the diagram, percent reduction, and overall comment are not relevant anymore.

3. Why was a daily trip generation total not calculated with the revised assumptions? Please provide a daily trip generation total for the development assuming no parking reduction.

This comment was addressed by providing an updated trip generation table in the new transportation analysis report, including a daily trip generation total. The projected number of daily trips from the development is 3,616 trips, with 261 during the AM peak hour and 322 during the PM peak hour.

4. Please provide a more detailed parking program for the planned stalls. How many will be reserved for residents, for the hotel, day skiers, etc? The parking program will greatly influence the trip generation for the project.

This comment was addressed with the Snow Park Village Parking Management Plan included as Attachment B in the transportation analysis report. This report provides details on the number of parking for each use, how each parking level is programmed, circulation, paid parking, etc.

5. Once the trip generation numbers are finalized, an updated traffic analysis is recommended to determine the impact of the additional trips.

This comment was addressed with the new transportation analysis report, which is dated April 2023. The new report includes updating trip generation, analyses, parking information, pick-up / drop-off loop analyses, etc.

6. Park City Municipal Corporation (PCMC) has a stated goal of reducing peak-hour traffic volumes by 20% citywide. The applicant's project will add peak hour traffic in the most congested areas of the City.

a. It is recommended that PCMC staff and the Applicant identify specific goals that can be measured and achievable. The Deer Valley team has outlined a detailed TDM plan and a monitoring system. The next step is to finalize the plan and identify the objectives that should be met with the annual data monitoring program.

This comment has been partially addressed through the Applicants detailed TDM plan, which outlines extensive efforts to reduce peak hour traffic. The final step is to continue to work with City Staff to identify specific metrics and objectives that can be monitored over time and be flexible in making adjustments as needed.

7. The Applicant's trip distribution assumptions between Deer Valley Drive East and West should be further justified and supported. If the distribution assumed in the TIS is different in reality, additional queuing will result on Deer Valley Drive East and West, as well as Doe Pass Road.
   a. The most recent plan submitted by the Applicant includes a signal at the "Y-intersection", which alleviates much of the concern regarding the distribution and potential queuing at that intersection. The signal timing can be adjusted, and transit priority can be added to provide flexibility for different distributions and transit needs.
   b. It is recommended that ingress into the parking garages be carefully monitored to ensure that queues do not develop and back up onto City streets. If the Applicant's distribution assumptions are not correct this could further exacerbate this concern.
   c. Similarly, the drop-off and pick-up area east of Snow Park Lodge should be monitored to ensure queues do not develop and back up onto City streets.

This comment was addressed in the most recent transportation analysis report (April 2023). The distribution was adjusted to more closely match existing travel patterns, and a sensitivity analysis was completed to show the impacts of changes to the distribution percentages. In addition, clarification on parking ingress and egress times were confirmed through WGI, a parking garage design and operations consultant, providing additional confidence in the parking garage assumptions. Finally, a detailed analysis of the drop-off and pick-up area east of Snow Park Lodge was completed. This included data on the average dwell time for vehicles in the pick-up / drop-off area collected in January 2022. This analysis provides a much clearer understanding of how the pick-up / drop-off area will operate. It shows that during peak times it is anticipated to operate at LOS E, with an average of 44 sec/veh of delay, however it does not impact adjacent intersections. The report suggests that added efficiencies with on-site staff will help improve operations as needed.

8. The additional VISSIM transportation analysis does not consider actual travel conditions, downstream impacts, or other common causes of delay in the Deer Valley Loop during peak traffic hours or weather/special events. PCMC has provided actual travel times of buses traveling these roads during ski season. Utilization of this data to calibrate the model could provide a more accurate view of the benefits of the SML to transit during peak congestion times.

a. It is recommended that the Applicant refine and calibrate the VISSIM model to better represent actual conditions and provide a better representation of the proposed project conditions.

This comment was addressed by the Applicant further refining the VISSIM model, including collecting additional dwell time data for the pick-up/drop-off loop. Park City also provided transit travel time data to further refine the model.

Additional explanation was provided in the report, "The simulation shows traffic circulation with minimal delays with the proposed configuration in peak ski season conditions. Because of the lack of congestion, the buses simulated in this analysis travel in near free-flow conditions. This was due to the models being calibrated to typical travel times. Bus and vehicle travel time measurements were provided by Deer Valley and Park City, which showed several outlier days with excessive travel times. However, the calibrated VISSIM model travel times were closer to the median travel times observed from the data."

9. The applicant does not provide enough detail about the assumptions for the pick/up drop off loop of 100 pick/up drop/off vehicles, 50 Transportation Network Company (TNC) vehicles, and 50 Valet vehicles were developed.
    a. WCG has requested additional detail outlining what data was collected to support these assumptions and what happens to the internal circulation if these numbers are low.

This comment was addressed with a detailed analysis for the drop-off and pick-up area in the latest transportation analysis report (April 2023). This included data on the average dwell time for vehicles in the pick-up / drop-off area collected in January 2022. This analysis provides a much clearer understanding of how the pick-up / drop-off area will operate. It shows that during peak times it is anticipated to operate at LOS E, with an average of 44 sec/veh of delay, however it does not impact adjacent intersections. The report suggests that added efficiencies with on-site staff will help improve operations as needed.

10. Some driveway widths do not appear to meet LMC § 15-3-4(C) requirements but may facilitate efficient garage ingress.

As conditions of final approval, these modifications need to be addressed with the final design.

11. The intersection of Royal Street and a proposed new driveway across the street do not appear to meet LMC § 15-3-3(H) requirements.
    a. It is recommended that the Applicant coordinate with City Staff on adjustments to the proposed driveway to meet City code.

As conditions of final approval, these modifications need to be addressed with the final design.

12. The driveway spacing of some driveways on Doe Pass Road does not appear to meet LMC § 15-3-3(H) requirements
    a. It is recommended that the Application coordinate with City Staff on adjustments to driveway spacing on Doe Pass Road to meet City code.

As conditions of final approval, these modifications need to be addressed with the final design.

13. A review of the bus auto-turn templates show that buses can make the required turning movements.
    a. It is recommended that another review be completed in the final design phases.

As noted above, the current design does meet bus turning requirements. Additional review is required with any design changes.

Applicant Proposed Mitigation Measures

The Applicant proposed to implement the following mitigation measures to improve traffic operations, safety, active transportation, and transit operations:

1. Reconfiguring the "Y-intersection" and adding signalized traffic control, which helps to establish a new access pattern for visitors while providing safety for pedestrians and bicyclists, as well as transit pre-emption.
2. A new left-turn deceleration and acceleration lane at Solamere Drive and Queen Esther Drive.
3. Reducing parking demand by implementing paid parking and shared parking for the development.
4. Improving the active transportation network with new or improved trails, safer crossings, and multi-use paths.
5. A new on-site mobility hub with space for six buses and additional amenities.
6. A new traffic signal at the intersection of Doe Pass Road / Deer Valley Drive East with transit signal pre-emption capabilities to expedite transit service into and out of the proposed mobility hub.
7. Either dedicated bike lanes or bike lanes during the summer and dedicated transit lanes during the peak winter season, depending on which transportation alternative is chosen.
8. A detailed transportation demand management plan that outlines a lot of measures the applicant is both currently doing and new measures that they plan to implement to reduce travel demand (see Snow Park Village TDM Plan for details).

Snow Park Traffic Study Independent Review

Wall Consultant Group

June 15, 2023

Overview

WCG provided an independent 3rd party review, including

- 17 different applicant submittals
- 11 different formal reviews of the proposed development.
- Numerous meetings with the applicant and City staff

Trip Generation

Table 3: Snow Park Traffic

	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing Traffic	5,221	5,329	10,550	770	249	1,019	333	903	1,236
New Trips	1,808	1,808	3,616	176	85	261	115	207	322
Total Trips	7,029	7,137	14,166	946	334	1,280	448	1,110	1,558

Parking Comparison

The applicant is currently proposing **2,236** total stalls on site for Snow Park, as required by City code. Previously, a 20% reduction in parking was proposed (Nov. 2022 study)

Table 2: Trip Generation Comparison

Trip Generation			
Period	**Nov 2022 Study**	**Mar 2023 Update (Full Parking Supply)**	**Difference**
Daily	2,276	3,616	1,340
AM Peak Hour	162	261	99
PM Peak Hour	204	322	118

Table 3: 2040 Plus Project Peak Hour Total Traffic Volume Assumptions

Traffic Volume Assumptions								
Period	**Nov 2022 Study**			**Mar 2023 Update (Full Parking Supply)**			**Increase in Total Vehicles**	**% Increase in Total Traffic**
	Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**		
AM Peak Hour	1,043	454	**1,497**	1,136	460	**1,596**	99	7%
PM Peak Hour	584	1,195	**1,779**	595	1,302	**1,897**	118	7%

Mitigation Measures Proposed by Applicant

1. Reconfiguring the “Y-intersection” with the addition of signalized traffic control
    - new access pattern for visitors
    - safety for pedestrians and bicyclists
    - transit pre-emption
2. A new left-turn deceleration and acceleration lane
    - Solamere Drive
    - Queen Esther Drive
3. Reducing parking demand by
    - implementing paid parking
    - shared parking for the development
4. Improving the active transportation network with
    - new or improved trails
    - safer crossings
    - multi-use paths

Mitigation Measures Proposed by Applicant

5. A new transit mobility hub
   - Room for 6 buses
   - Restrooms & lockers
   - Additional amenities
6. Traffic signal at Doe Pass Road / Deer Valley Drive East
   - Transit pre-emption
   - Safety for pedestrians and bicyclists
7. Shared Mixed Lanes
   - Bike Lanes during summer
   - Dedicated transit lanes during peak winter season
8. Transportation Demand Management (TDM) Plan
   - Outlines existing programs and efforts to reduce trips
   - Identifies new strategies to reduce trips
   - See Snow Park Village TDM Plan for details

Latest Traffic Impact Study Review

Please see the WCG review memo dated May 3rd, 2023 for details.

A few highlights of our review include:

- Concerns with trip generation and distribution were corrected
- Questions about parking were addressed with a detailed parking management plan
- Concerns about the pick-up / drop-off area were addressed
- The VISSIM model was calibrated and refined with additional data

Recommended Next Steps

WCG recommends the following next steps:

- PCMC Staff and the Deer Valley Team establish a regular TDM meeting schedule
- Implement a monitoring system
- Establish clear goals and metrics that can be tracked and measured
- Be flexible in trying new methods for reducing travel demand
- Consider reservation parking and reconsider the parking reduction with offsite mitigation (20% reduction to support Park City goals)
- Driveway spacing and access widths can be refined if the project proceeds towards final design