Memorandum

Date:	May 23, 2022
To:	John Sale,; Park City Mountain Resort
	Lillian Lederer, Park City Municipal Corporation
From:	Dan Cawley, Jon Nepstad, AICP; Fehr & Peers
Subject:	**Potential Impacts of Paid Parking on Parking Demand and Trip Generation**

UT22-2339

This memorandum describes how charging for parking can affect demand for parking and upstream effects on mode choice and trip generation. To reduce traffic generated by day skiers on weekends and holidays, Park City Mountain Resort (PCM) intends to charge for parking during the 2022-2023 ski season. Charging for parking is among the most effective means of influencing travel behavior available to PCM, as it acts to discourage inefficient means of travel to the ski area (namely driving alone) while encouraging more efficient options (such as carpooling and riding transit). An abundance of free parking locally and nationally is seen by many transportation professionals as a key structural element of transportation infrastructure that incentivizes traveling by car.

Parking Fundamentals

Municipalities often require that property owners and developers provide a minimum amount of off-street parking based on the proposed use of a given property. In its most benevolent form, these minimums are instituted to ensure that patrons of a business, who are expected to arrive by car, will have space in which to park their vehicles. In its most malignant form, abundant free parking encourages inefficient travel behavior by enabling drivers to travel alone and a broader misallocation of resources (land).

Increasingly, municipalities are reevaluating how parking requirements have affected our built environment and travel behavior, as planners and transportation professionals acknowledge the connection between vehicle trip generation and abundant parking. Updating how new parking is provided, or how existing parking is managed, is an essential element in managing our broader transportation system.

Charging for Parking

Charging for parking is an increasingly common tool in managing parking supplies and associated traffic in a variety of scenarios. While familiar in downtown areas, it is increasingly common in the context of ski areas, as shown below in **Table 1**.

Table 1: Parking Policy at Utah Ski Areas

Ski Area	Paid Parking in Effect	Notes
Sundance	Yes	System incentivizes carpooling through a tiered pricing system
Alta	Yes	Reservations are required on weekends and holidays, free after 1:00 PM
Brighton	Yes	Majority of parking is free with an optional reservation system
Snowbird	Yes	Mix of free and paid parking, priority parking reserved for vehicles with 4+ occupants
Deer Valley	Yes	Minimal paid parking in effect, priority parking on weekends and holidays for vehicles with 3+ occupants
Snowbasin	No	Preferred parking for vehicles with 3+ occupants in one lot
Powder Mountain	No	
Nordic Valley	No	
Solitude	Yes	Tiered pricing based on vehicle occupancy

Source: Fehr & Peers, Vail Resorts, 2022.

The implementation of paid parking at PCM would represent a sea change in how guests who drive access the ski area. However, considering increased traffic congestion in recent years, paired with an ever-increasing need to travel by more sustainable modes, the benefits of charging for parking at PCM are significant.

Benefits of Paid Parking

The potential benefits of implementing paid parking at PCM are driven primarily by its ability to influence travel behavior. If a large enough portion of PCM guests opt to travel by more efficient modes (riding transit, carpooling, or use of other modes), area traffic may be reduced. The potential benefits stemming from reduced traffic volumes are myriad, and a key justification for pursuing the implementation of paid parking at PCM.

Promoting Mode Shift

Promoting mode shift (change in by what mode of transportation travelers arrive at their destination) is a laudable pursuit, and Park City Municipal Corporation is promoting this through their "Transit First" goal. As stated elsewhere, charging for parking is one of the best available ways to influence travel behavior and should increase travel by other modes.

Dispersed Arrival Times with More-Complete Information

Implementing a required reservation system will provide guests with more information as to where they can expect to find parking, reducing the reliance on real-time messaging and allowing guests to arrive at more distributed (later) times. This information will be provided in advance of departing for PCM, allowing guests to select the travel option that best suits their needs.

Paid Parking at Park City Mountain

To quantify the potential benefits of paid parking on existing demand at PCM, the existing parking supply and observed, average parking demand from the 2021-2022 ski season was analyzed under a $25/day pricing scheme for all existing PCM base parking. It is our understanding that PCM has not yet determined rates for the 2022/2023 season but we used $25 as an average of ski resort pricing. Relying on price sensitivities for different user groups (in this case guests) published in a meta-analysis of 50 different parking studies, an 11% reduction in parking demand is achievable under a paid parking system at PCM.

This analysis is based on price elasticities for different user groups identified in *The price elasticity of parking: A meta-analysis* (Lehner, Peer, 2019). This analysis evaluates only potential reductions in demand for guests ("visitors" in the referenced literature), as it is assumed that all PCM employees will be required to park off-site. Further, this analysis relies on access to alternative modes as a viable means for accessing the PCM base. Lastly, as the methods outlined in the analysis better capture reactions to price increases when the starting price is more than $0 (as is the case at PCM), we assumed a starting price of $10 to reflect the existing parking experience at PCM. While there is no current price, the opportunity cost of arriving early enough to access available parking is not zero, as the peak arrival times are increasingly early in the day to ensure a parking spot is available, and navigating crowded parking lots (by car or on foot) can be inconvenient.

This analysis relies on a host of variables taken from 50 studies on parking price elasticities including elasticity of occupancy, dwell time, and volume. For guests, a price elasticity of approximately 0.0 to -0.4 (a 10% increase in price is expected to result in a demand reduction of from 0-4%) was used to determine the reduction of 11% in parking demand should a price of $25 be implemented on a daily basis.

We anticipate that the potential reduction in demand will be achieved through an increase in vehicle occupancy, and/or an increase in transit ridership. However, we also expect that parking supply at PCM will be fully occupied on days of peak demand. We understand that the pricing system will be designed to reward guests who carpool with reduced prices for higher-occupancy vehicles.

Evidence of Paid, Reserved Parking's Effects on Traffic

Alta, Utah is located at the top of Little Cottonwood Canyon and is home to Alta Ski Area. This past winter, following the announcement of Alta Ski Lifts' (which operates the ski area) that they would implement paid, reserved parking, the Town implemented a paid parking program where visitors would be required to reserve parking in advance. Parking from 8:00 am to 1:00 pm on

Saturdays, Sundays, and holidays requires a $25 reservation. Additionally, backcountry users must make $15 reservations to park Monday through Friday (non-holiday) between 6:00 am and 8:00 am, and $25 reservations to park weekends and holidays from 6:00 am to 1:00 pm. Free and discounted rates are also offered to ski area season pass and lift ticket holders.

The program was implemented with the intent to reduce overall traffic in Little Cottonwood Canyon, and to reduce the excessive traffic and parking congestion experienced in Town and at the ski area in years prior. These goals have been largely achieved due to a combination of the paid parking fee, the reservation requirement, and a no-show penalty (which discourages reserving unneeded spaces). In response to the fees, the Wasatch Backcountry Alliance also started a Saturday shuttle service to provide backcountry skiers with an additional transit/carpool option that doesn't rely on the town's parking supply.[1]

Alta's parking program is still in its first year of operation, and data is still being collected by the parking vendor, Interstate Parking, to evaluate the effects of the program. However, according to Town of Alta staff, "it might not be shaped the way some of us would prefer, the Alta Ski Area [paid parking] program has yielded a more manageable Alta."

Traffic data recorded by the Utah Department of Transportation (UDOT) through its Continuous Count Stations indicates that weekend and holiday traffic recorded during January 2022 is broadly comparable with that recorded during January 2020; this is notable as January 2020 is pre-Covid 19 pandemic, when more skiers were likely to be carpooling and riding transit. The peak recorded daily traffic volume in 2022 is marginally lower than the peak recorded volume in 2020 (13,882 vehicles compared with 13,981 vehicles). Given the location of the Continuous Counts Station, it is worth noting that recorded traffic counts presented in this memorandum include traffic bound for Snowbird and other locations in the canyon that are not Alta.

Given the noted surge in recreation-based traffic in Utah stemming from the global Covid-19 pandemic, showing effectively flat (if not modestly reduced) volumes in traffic in Little Cottonwood Canyon suggests that the implementation of a new parking management system has had a tangible impact on total traffic in the canyon. Recorded traffic volumes in Little Cottonwood Canyon in January 2020 and January 2022 are presented below in **Figure 1.**

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[1] https://wasatchbackcountryalliance.org/shuttle/

Figure 1: Recorded Traffic Volumes in Little Cottonwood Canyon in January 2020 and January 2022
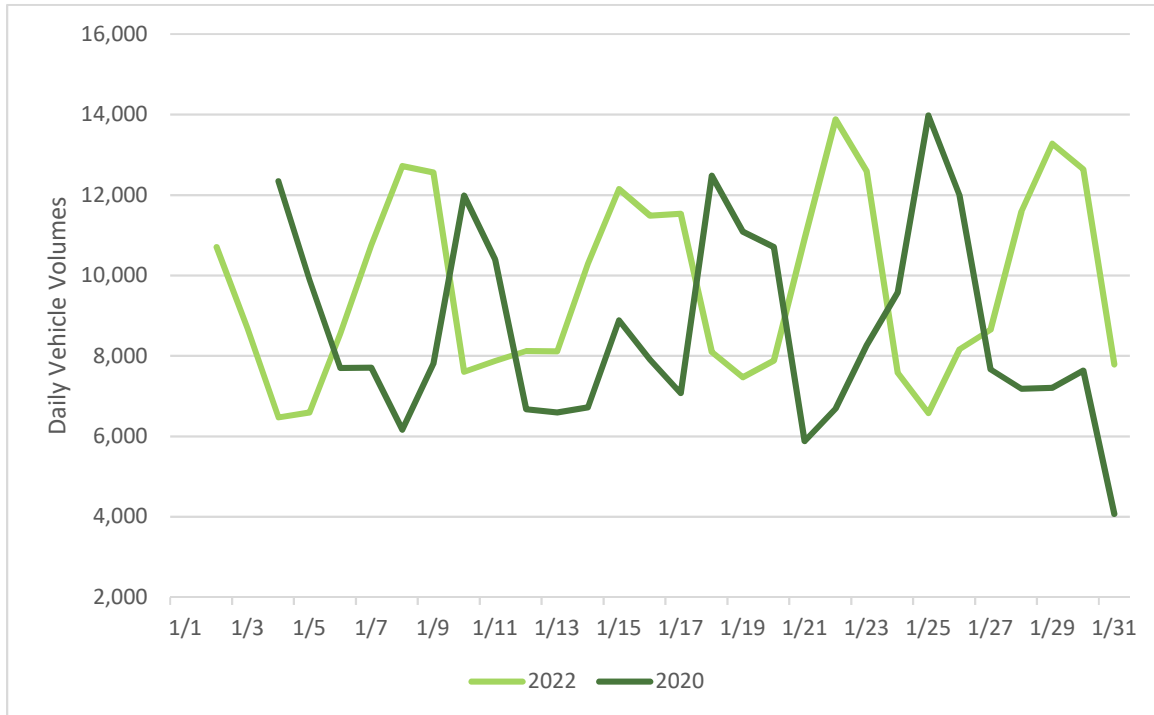
Conclusion

Paid parking is a proven strategy, both locally and in documented case studies, through which to affect how people choose to travel. Charging for parking at Park City Mountain is critical to addressing increased traffic, a goal shared by the community, Park City Municipal Corporation, and Park City Mountain. Implementing a reservation system to better inform guests of their parking and transportation options well in advance of their arrival will disperse arrival times and influence travel behavior.