

WHAT IS TRAVEL DEMAND MANAGEMENT (TDM)?

- TDM broadly refers to a set of strategies implemented by transportation agencies to ease traffic congestion by reducing demand on roadways.
- TDM strategies use an incentive and disincentive approach to achieving a shift in travel modes to reduce traffic congestion, such as tolling and vehicle occupancy restrictions.
- Any TDM strategy would require an improved, robust transit system in order to be successful.

ASSESSING TRAVEL DEMAND MANAGEMENT STRATEGIES

- In support of the Little Cottonwood Canyon EIS, a tolling survey was conducted to identify TDM strategies to improve mobility on S.R. 210.
- The survey was conducted by Lighthouse Research & Development, Inc., for UDOT in 2019 (focusing on residents in Davis, Salt Lake, Summit and Utah Counties who visited the ski resorts during the winter season at least once within the past 5 years). The survey explored canyon traveler profiles and the public's willingness to pay for travel time improvements generated by a potentially faster route or a new, quick and reliable transit system.

MOST FREQUENTLY USED WINTER CANYON TRAVEL MODES

Actual traffic count data from 2018 shows the following vehicle occupancy:

36% SINGLE OCCUPANT VEHICLES

38% DOUBLE OCCUPANT VEHICLES

26% THREE OR MORE OCCUPANT VEHICLES

SURVEY RESULTS



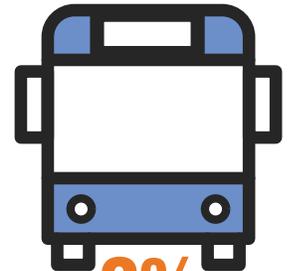
11%

SINGLE DRIVER WITH NO PASSENGERS



35%

CARPOOL WITH FAMILY, FRIENDS OR OTHERS



2%

BUS



52%

OTHER

Other includes travel modes not listed above or respondents didn't provide a travel mode.

ESTIMATING MODE CHOICE - WILLINGNESS TO PAY SURVEY

SUMMARY

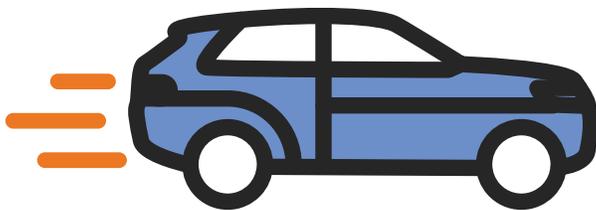
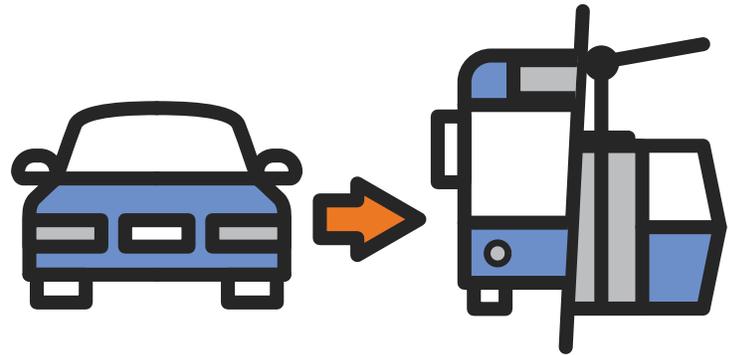
The survey showed that overall, the majority of the respondents (54%) were willing to pay a fee for more-reliable travel times or improved transit service. The results also indicate that there is a demand among local canyon users for improved travel times and an openness for considering alternative transportation modes, but there is still a level of preference to continuing using a personal vehicle.



TDM strategies considered include tolls or congestion pricing, occupancy restriction and parking management. Results suggest that a winter peak-period fee of \$20 to \$30 per vehicle yields the highest potential for improving mobility.

LIKELIHOOD TO SWITCH TO TRANSIT

61% of respondents who indicated they were extremely willing to switch modes were also willing to pay a higher price.



IMPORTANCE OF FASTER TRAVEL TIME

57% of respondents who indicated that faster travel was very important to them were also willing to pay a higher price.



IMPORTANCE OF PREDICTABLE TRAVEL TIME

55% of respondents who indicated that predictable travel time was extremely important to them were also willing to pay a higher price.

The survey results are exploratory in nature, and further tolling and revenue analysis is needed before implementing.

TOLLING OR VEHICLE OCCUPANCY RESTRICTIONS IN LITTLE COTTONWOOD CANYON

Tolling and vehicle occupancy restrictions would only be implemented during the winter on-peak use days when congestion levels are high. There are no plans to implement a toll or vehicle occupancy restrictions on S.R. 210 in Little Cottonwood Canyon outside of the winter ski season.

TOLLING

With improved transit options (bus, gondola or cog rail), tolls during the ski season would make users of personal vehicles consider whether an added toll would make transit a better option. The exact amount of the toll has yet to be determined, but the toll could range from \$20 to \$30 for most vehicles during peak-periods, with possible variations based on the time of day and the day of the week. Tolling would be focused on the area of S.R. 210 around the ski resorts that would be served by the proposed transit in the action alternatives. Residents of Little Cottonwood Canyon, drivers of service vehicles and potentially resort employees would likely be exempt from paying the toll.



I-15 toll lane

TOLLING CONSIDERATIONS

UDOT did consider low-income populations in how a toll would be implemented. Practicable measures to avoid or reduce the potential adverse effects would include:

- Subsidized transit service similar to the existing bus service with a reduced cost for use.
- Place the toll gantry below Snowbird Entry 1. This would allow all users including low-income populations wanting to recreate outside the ski resorts in the lower portions of Little Cottonwood Canyon to avoid having to pay the toll.
- Have the toll in effect only during the morning peak-period (7 a.m. to 10 a.m.), which would allow low-income populations to avoid paying the toll in the upper canyon by recreating after 10 a.m.

VEHICLE OCCUPANCY RESTRICTIONS

Another form of congestion management would be to exclude certain vehicles from entering Little Cottonwood Canyon based on vehicle occupancy, requiring those users to take transit. With this implementation strategy, during busy ski days (typically Friday through Sunday and holidays), single-occupant vehicles would not be allowed in the canyon from 7 a.m. to 10 a.m. Occupancy readers or other enforcement strategies would be implemented to determine the number of vehicle occupants. Violators would be fined for violating the occupancy requirements. To avoid riding in a single-occupant vehicle, some single occupants might carpool, which would improve traffic conditions by reducing the number of vehicles in the canyon.

ENFORCEMENT TECHNOLOGY

Tolling strategies would require technology solutions to support enforcement, a toll booth at the entrance to the canyon would cause significant queuing and delay. A dynamic tolling system would need to be implemented.

UDOT has not identified a specific tolling technology. It could be a cell phone-based system, an E-ZPass-type system and/or a license plate reader. If the tolling system requires a gantry, UDOT would prefer a single-pole gantry over the uphill travel lane on S.R. 210 just below Snowbird Entry 1. To minimize visual impacts, UDOT would coordinate with the U.S. Department of Agriculture (USDA) Forest Service regarding the pole aesthetics.

Technology	Vehicle Requirement	Consumer Cost	Operator Cost
Dedicated Short-Range Communication (DSRC) (e.g., EZPASS)	On-board transponder unit	Medium	Medium
License Plate Recognition (LPR)	License plate	None	Medium to high
Radio Frequency Identification (RFID)	RFID tag	Low	Low
Smartphone App	Phone	Low (app fee)	Medium to high
Vehicle Occupancy Detection	Dependent on detection program	Low to medium	Highest

POTENTIAL TOLLING REVENUE USAGE

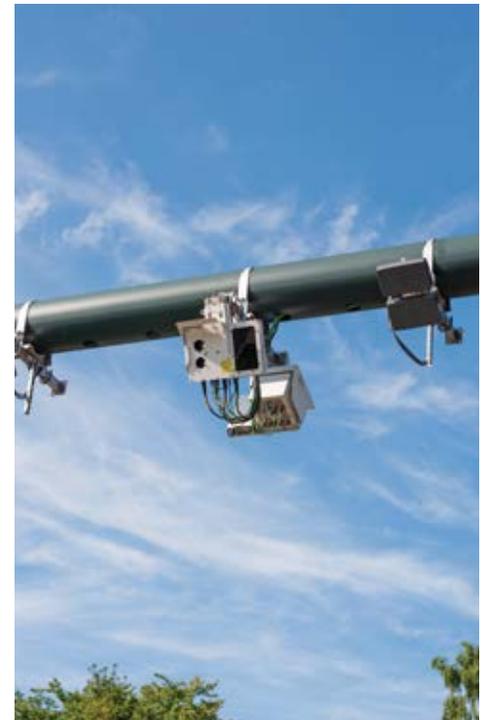
The toll fees generated would be used to pay for the operation of the tolling system and potentially the operation and maintenance costs of the transit system to reduce fares to make transit an attractive option to paying a toll. Any tolling would need to follow applicable Federal Highway Administration and State of Utah requirements. Tolling revenue generated from a toll on a state highway must be deposited into the Tollway Special Revenue Fund and used for acquiring right-of-way and designing, constructing, reconstructing, operating, maintaining and enforcing state transportation systems and facilities, including making operating improvements to the tollway and other facilities used exclusively for the operation of a tollway facility.

NEXT STEPS

TOLLING ANALYSIS

DESIGN

CONSTRUCTION



Tolling gantry