



CENTRAL  
WASATCH  
COMMISSION

# Mill Creek Shuttle Feasibility Study



DRAFT | September 2025

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# Executive Summary

Mill Creek Canyon offers a place for people to hike, bike, picnic, cross-country ski, snowshoe, and experience nature. Mill Creek Canyon is located immediately adjacent to Millcreek City and the Salt Lake County urban area. Mill Creek Canyon Road is the main roadway in the canyon, and most vehicle traffic occurs on this road. The United States Forest Service (USFS) is the majority landowner in Mill Creek Canyon, along with some private parcels.

Mill Creek Canyon has long experienced overcrowding, and a canyon shuttle has been identified as a possible option to help with canyon traffic congestion, parking issues, and user-conflict within the canyon. For watershed and resource protection, the USFS's Forest Plan contains a "Desired Future Condition" to maintain parking capacity in the Canyon at year-2000 levels, which a Mill Creek Shuttle service would help achieve.

To determine the feasibility of a Mill Creek Canyon Shuttle, the following analyses were performed:

- Review of past studies and existing conditions.
- Calculations of parking demand.
- Scoping of possible staging areas for shuttle operation.
- Shuttle operations' impact on recreation fees.
- Estimation of operation costs and the creation of a shuttle service plan.

Due to lower visitor volumes on weekdays and in winter months, it is recommended that a shuttle provide service in warm weather months (May through October). During these months, visitors are spending time hiking, mountain biking, and picnicking throughout the day and in all areas of the canyon, ideal for all-day service. Existing infrastructure on Virginia Way in Millcreek, next to Skyline High School, provides the opportunity for a staging area, and FLAP construction in the upper canyon will contain shuttle pullouts necessary for effective operation.

After conversations with potential service providers, the cost to operate this shuttle program would likely be between \$150 and \$200 per service hour. For a pilot program shuttle with 30-minute frequency, this would lead to a high-end estimate of \$300,000 per season. A shuttle with 15-minute frequencies that services the entire canyon would have a high-end estimated cost of \$725,000 per season.

There are concerns that a shuttle program may result in a reduction of recreation fee revenue collected at the fee station at the mouth of the canyon. This report addresses those concerns by calculating an estimated revenue per visitor and providing several fare models that assume shuttle fares will be counted as recreation fees. These fare models find:

- The annual revenue per visitor is \$1.73.
- By pricing the shuttle above \$1.73 and including shuttle fare in recreation fee revenue, it is unlikely that the introduction of a shuttle would have a negative impact on fee revenue.
- Without increasing recreation fees for those who drive private vehicles, outside funding sources will need to be explored to fund shuttle operations.
- By increasing recreation fees and carefully selecting a shuttle fare that would promote use, the shuttle could operate without the need for outside funding sources.

**Table 1** and **Table 2** show the proposed shuttle operations for the entire canyon and the estimated cost based on two different shuttle fare models.

**Table 1. Shuttle Cost Service and Estimates for Full Canyon Service**

SERVICE ASSUMPTIONS		
One-way Travel Time (mins)	30	
Cycle Time (mins)	69.85	
Number of Stops	7	
Recovery (%)	10%	
Delay per stop (s)	30	
Headways (min)	15	
Span (hrs)	10	
Weeks Operated	25	
Buses Needed	5	
Daily VRH	47	
Total Hours	3,500	
COST ESTIMATES		
Hourly Fixed Route Cost (\$)	\$150	\$200
Total Cost	\$525,000	\$700,000

**Table 2. Net income estimates based on two different fare models**

FARE MODEL 1			FARE MODEL 3A		
	Low Estimate	High Estimate		Low Estimate	High Estimate
Recreation Fee	\$5		Recreation Fee	\$12	
Shuttle Fare	\$2.50		Shuttle Fare	\$7	
Total Cost	\$525,000	\$750,000	Total Cost	\$525,000	\$750,000
Fare Revenue	\$38,668	\$38,668	Fare Revenue	\$752,872	\$752,872
<b>Net Income</b>	<b>(\$486,332)</b>	<b>(\$711,332)</b>	<b>Net Income</b>	<b>\$227,872</b>	<b>\$2,872</b>

While this study concludes that a Mill Creek Canyon Shuttle is feasible. There are additional steps that need to be taken on the path to implementing this project.

- Funding Sources for Canyon Shuttle Operations include:
  - Competitive federal grants
  - Increase in sales tax
- Due to the potential impacts at trailheads and trails due to a potential increase in visitation, a NEPA environmental assessment would need to be completed. An environmental assessment for a project of this scale would likely cost between \$150,000 and \$200,000.
- Further research into transit providers will need to be done. Discussions with UTA suggest the best providers would be companies that provide tourism-based transit.



# 1. Introduction

A shuttle service has long been considered for Mill Creek Canyon, most notably in Salt Lake County's 2012 Regional Transportation Plan, the associated 2012 Fehr & Peers Mill Creek Canyon Transportation Study, and in the 2015 Mountain Accord Charter, which identified a Mill Creek Canyon Shuttle as a component for the reduction of canyon traffic congestion, the mitigation of parking issues, and of user-conflict within the canyon. For watershed and resource protection, the Forest Plan contains a Desired Future Condition to maintain parking capacity in the Canyon at year-2000 levels, which a Mill Creek Shuttle service would help achieve. The Shuttle Service would also serve to protect quality user experience in Mill Creek Canyon, with the expressed goal of also preserving canyon vegetation and wildlife through a reduction of canyon vehicular presence.

As the Federal Highways Administration (FHWA) Upper Mill Creek Canyon Federal Lands Access Program (FLAP) Project began construction in the upper portion of Mill Creek Canyon in Summer 2025 there is interest in a shuttle program to service Mill Creek Canyon while construction closes off access to the upper portion of the canyon and the entirety of Mill Creek Canyon Road once construction is complete. This study, conducted between the partnership of Central Wasatch Commission and Fehr & Peers, assesses the feasibility of a shuttle program that could begin service in Summer 2026 and would expand service as roadway construction progresses.

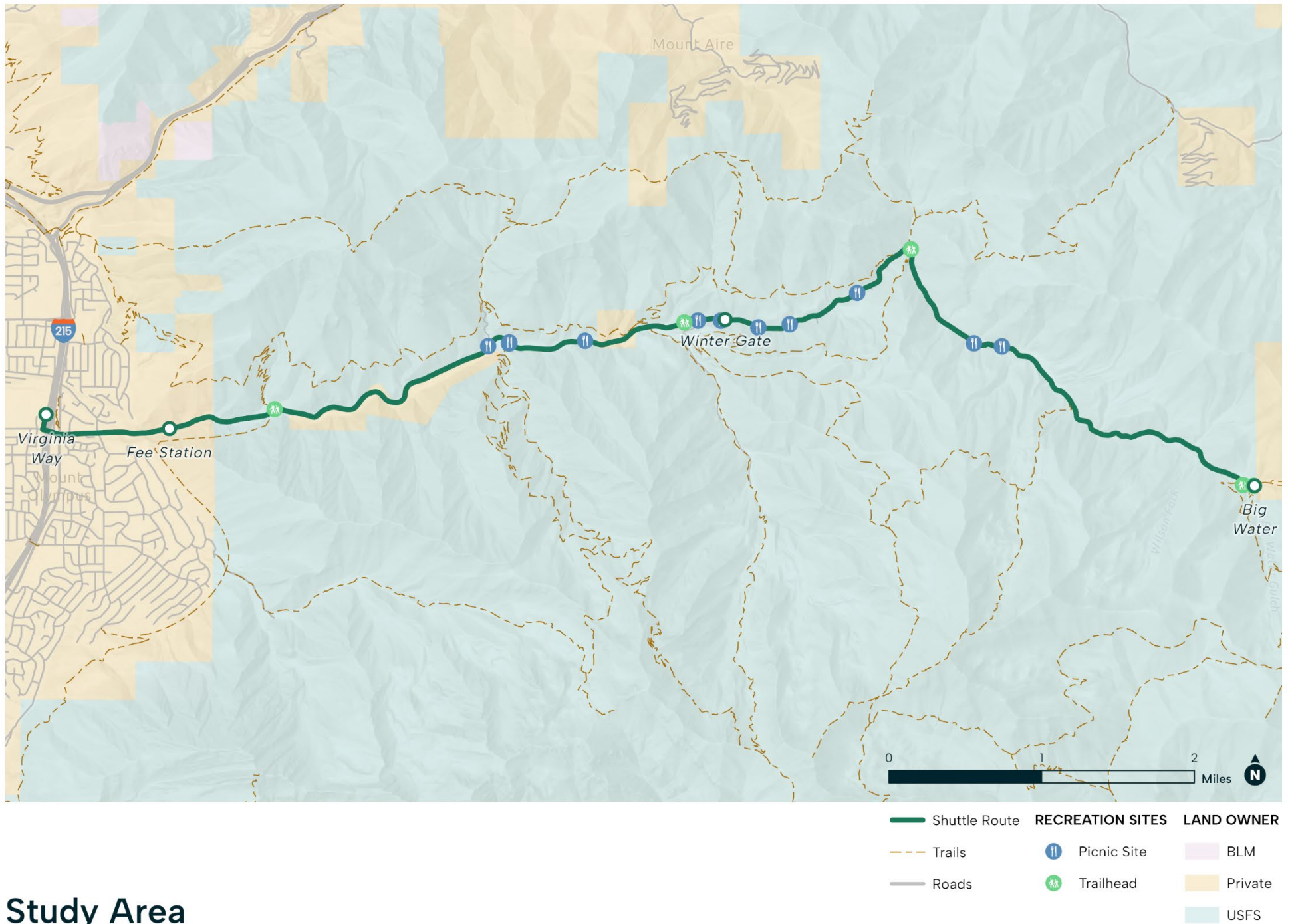
The Mount Olympus Wilderness sign shown in **Figure 1** marks the transition into the protected canyon environment that the shuttle service aims to preserve.



Figure 1. Mount Olympus Wilderness Sign

## 2. Existing Conditions

Since the Mill Creek Canyon Transportation Feasibility Study was published in 2012, the conditions in and around Mill Creek Canyon have changed. The shuttle feasibility study requires a thorough understanding of existing conditions in the area. To capture an accurate picture of the current context, previous studies were reviewed, and new data were collected, ensuring that the known existing conditions reflect the changes that have occurred in the 13 years since the original study was completed. The study area for this effort, which encompasses the canyon and surrounding access points, is shown in **Figure 2**.



## Study Area

Figure 2. Map of the study area



# Previous Studies

## 2012 Transportation Study

In 2012, Fehr & Peers conducted the Mill Creek Canyon Transportation Feasibility Study, shown in Error! Reference source not found., to identify solutions to the problems of overcrowding, environmental degradation, and roadway conflicts between motorists and non-motorists. From the 2012 study, one of the several proposed solutions to address these problems was the introduction of a shuttle program.

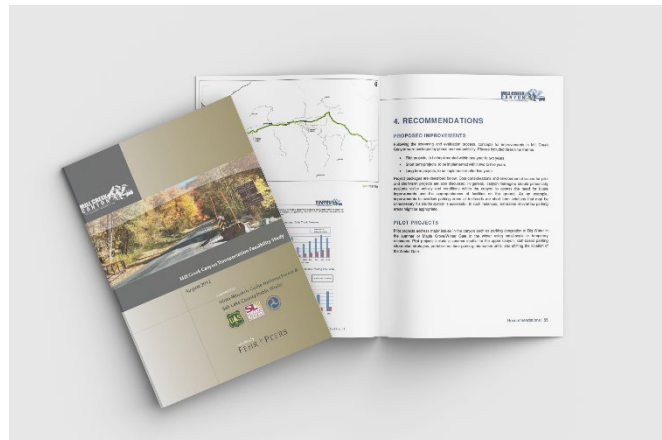


Figure 3. 2012 Mill Creek Canyon Transportation Study

This study proposed three shuttle bus options. A winter shuttle, a summer all-canyon shuttle, and a summer upper-canyon shuttle. Each shuttle concept is outlined below.

- **Winter Shuttle:** This concept would connect the 3900 South park-and-ride to Maple Grove (the location of the Winter Gate), with stops at major activity centers such as Rattlesnake Gulch, Church Fork, and Porter Fork. The shuttle would be voluntary and would be equipped with racks to carry skis, snowshoes, poles, and other types of winter sporting gear, as well as accommodations for dogs. Shuttles would turn around at the Winter Gate; adequate space is available at the gate to accommodate a turnaround maneuver, if some parking spaces are eliminated. Adequate space is available near the potential shuttle stop locations for a vehicle to pull off the roadway and load or unload riders.
- **Summer All-Canyon Shuttle:** This concept would connect the 3900 South park-and-ride to the Big Water trailhead at the eastern terminus of the canyon, with stops at major activity centers. The shuttle would be voluntary and able to carry people, gear, and dogs. Adequate space is available for shuttle vehicle pullouts in the section of the canyon below the Winter Gate; however, in the upper section of the canyon, pullout locations will be more limited. Shuttle vehicles may stop in the roadway, blocking passage of vehicles behind them until all riders are loaded or unloaded.
- **Summer Upper-Canyon Shuttle:** This concept would connect the Terraces Roadside parking lot to the Big Water trailhead at the eastern terminus of the canyon, with stops at major activity centers in the upper canyon. This shuttle could be mandatory, coupled with periodic closures of Mill Creek Canyon above the Winter Gate. Private property owners and administrative vehicles would still be allowed to drive beyond the gate.

After identifying three shuttle service options, the study suggested a pilot program for the Summer Upper-Canyon Shuttle and mentioned that roadway and park-and-ride enhancements would need to be made to accommodate an all-canyon shuttle. Limited action has occurred since that publication, such as detailed service plans, funding needs and sources, and sponsorship, to name a few.

## 2023 Visitor Use Study



Figure 4. 2023 Visitor Use Study

A visitor use study, shown in **Figure 4**, was conducted in 2023 by the Utah State University Institute of Outdoor Recreation and Tourism. This study used survey data to understand visitor use in the Central Wasatch range, categorizing results into four areas: Big Cottonwood Canyon, Little Cottonwood Canyon, Mill Creek Canyon, and the rest of Uinta-Wasatch-Cache National Forest.

The study estimated that Mill Creek Canyon received 434,000 visits between October 1, 2021, and September 30, 2022. Of these visitors, 71.4% of those surveyed stated that their primary activity was hiking, and on average, they spent 2.1 hours hiking during their visit. Additionally, the study found that visitors to Mill Creek Canyon were relatively unsatisfied with the parking lot conditions and parking availability in the canyon compared with their perceived importance.

## FLAP Grant

### Background and Purpose

Reconstruction of Mill Creek Canyon road above the winter gate is needed for several reasons. The eroding roadway, poor sightlines, and informal roadside parking led to ecological and safety hazards. Additionally, the upper parts of the canyon lack cellphone service, which prevents communication in emergencies. Finally, the roadway conditions do not allow for an effective transit solution that could alleviate traffic and congestion within the canyon.

The Federal Lands Access Program (FLAP) was established to improve transportation facilities that provide access to Federal lands around the country. The program supplements state and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites. In 2020, Salt Lake County, the USFS, Salt Lake County, and the City of Millcreek applied for the FLAP grant to address roadway improvements in Mill Creek Canyon above the Winter Gate. Funds were awarded in 2021 to implement these improvements.

### Planned Construction

Construction of the Millcreek Canyon Road above the Winter Gate began in May 2025 and is expected to be complete in the Summer of 2026. The construction will repave the entire roadway and install a conduit along the road shoulder for adding communication infrastructure at a later date. Along with repaving the road, parking areas will be repaved and modified to account for the possibility of shuttle service and the removal of roadside parking. As shown in **Figure 5**, the Winter Gate, Alexander Basin, and Big Water Trailhead parking areas will all be paved and include a drop-off/pick up location for a shuttle.



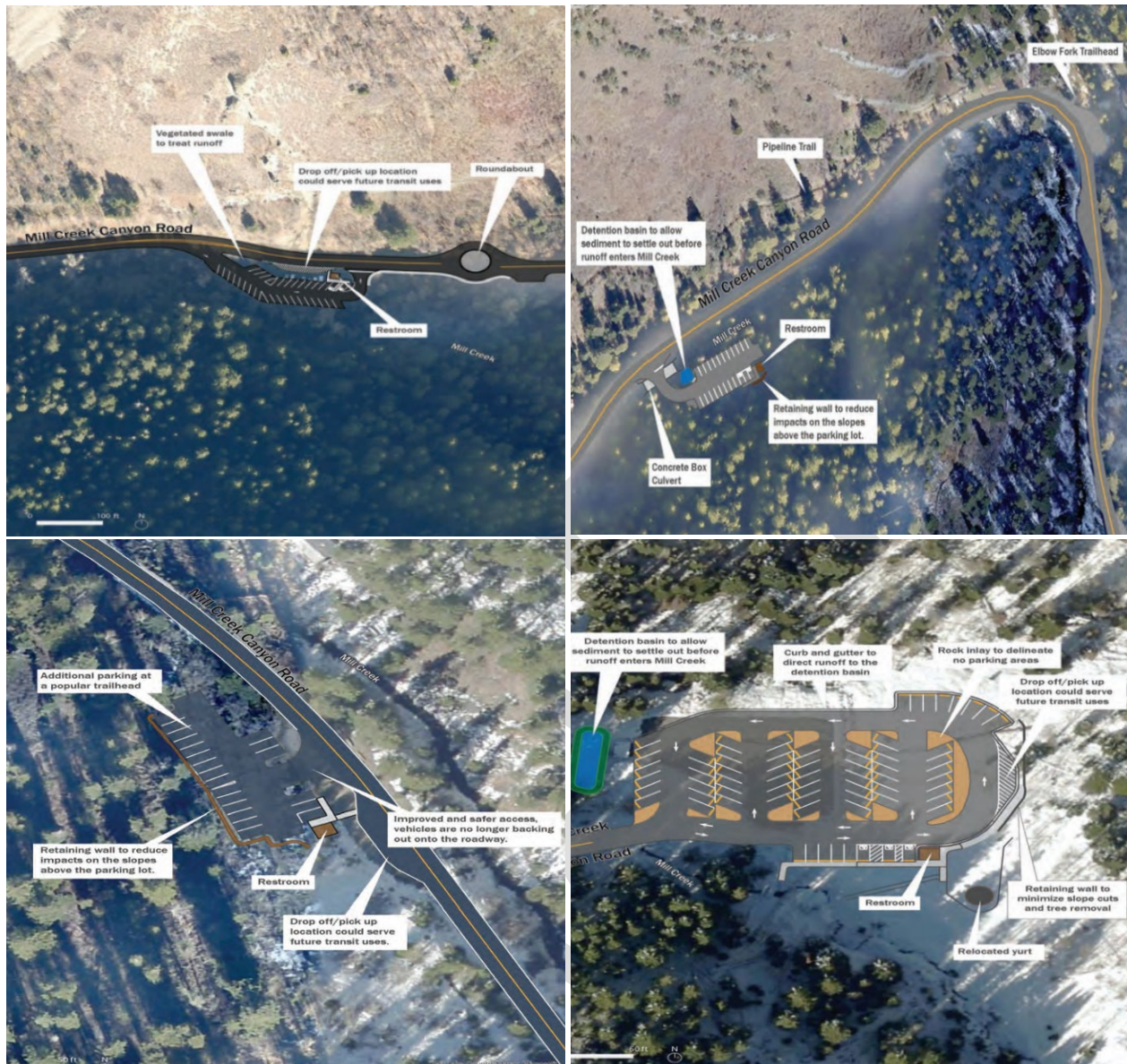


Figure 5. FLAP parking lot construction. Clockwise starting in upper left, Winter Gate, Elbow Fork, Alexander Basin, and Big Water.

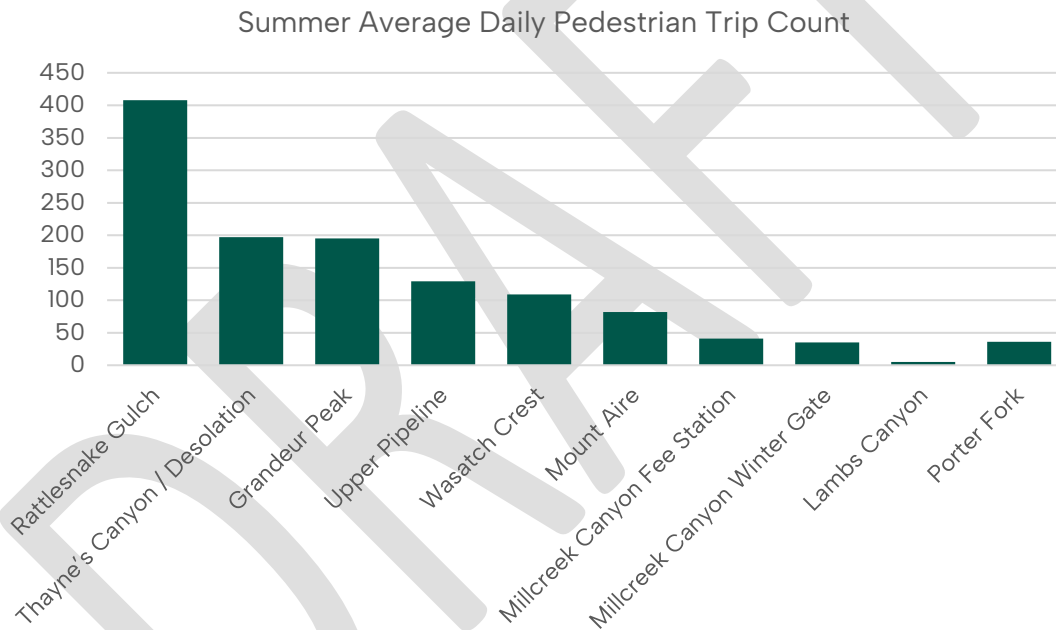
Source: US Department of Transportation, *Finding of No Significant Impact and Final Section 4(F) Evaluation for the Upper Mill Creek Canyon Road Improvement Project* (2024)

## Trail Use Data

Trail use data was collected by the Salt Lake Ranger District's TRAFx Trail Counter Program and published in the Utah State report, *Outdoor recreation use and indicators of the ecological, physical, and social characteristics of recreation settings in the Central Wasatch: Phase 2 Trail Use report*. This data included trail counts in Big Cottonwood Canyon, Little Cottonwood Canyon, and Mill Creek Canyon. This study reviews the results from the Mill Creek Trail counters. The following data collection locations were identified in Mill Creek Canyon:

- Mill Creek Fee Station
- Grandeur Peak
- Rattlesnake Gulch
- Desolation
- Mount Aire
- Lambs Canyon
- Porter Fork
- Upper Pipeline
- Winter Gate
- Wasatch Crest

**Figure 6** shows the average daily pedestrian trip count at population locations in Mill Creek Canyon. This chart shows that Rattlesnake Gulch has about twice the visitation as the next highest trail. Over half of all areas counted see more than 100 daily visitors. Above the Winter Gate, Upper Pipeline, Mount Aire, and Wasatch Crest see the most visitors.



*Figure 6. Summer Average Daily Pedestrian Trip Count*

## Traffic Volume

Vehicle counts were provided by Millcreek City. Counting devices located at the intersection of Mill Creek Canyon Rd and Parkview Dr/Millcreek Rd provided vehicle counts for all westbound traffic on Mill Creek Canyon Rd exiting the canyon.

**Figure 7** and **Figure 8** show the 2025 total canyon vehicle volumes by month and week, respectively. This data shows that volumes peak in the summer months with weekly peaks during the early fall when leaves begin to change color. While this dataset is incomplete, the trends are still visible in the data. Overall, vehicle volumes in the summer months are about 50% higher than the volumes experienced in the winter.

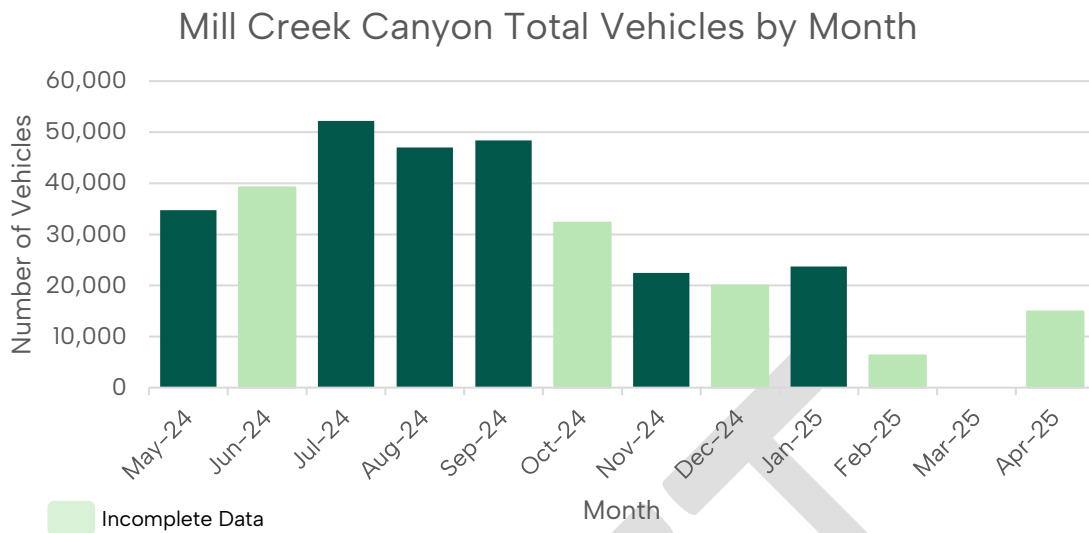


Figure 7. Mill Creek Total Vehicle by Month

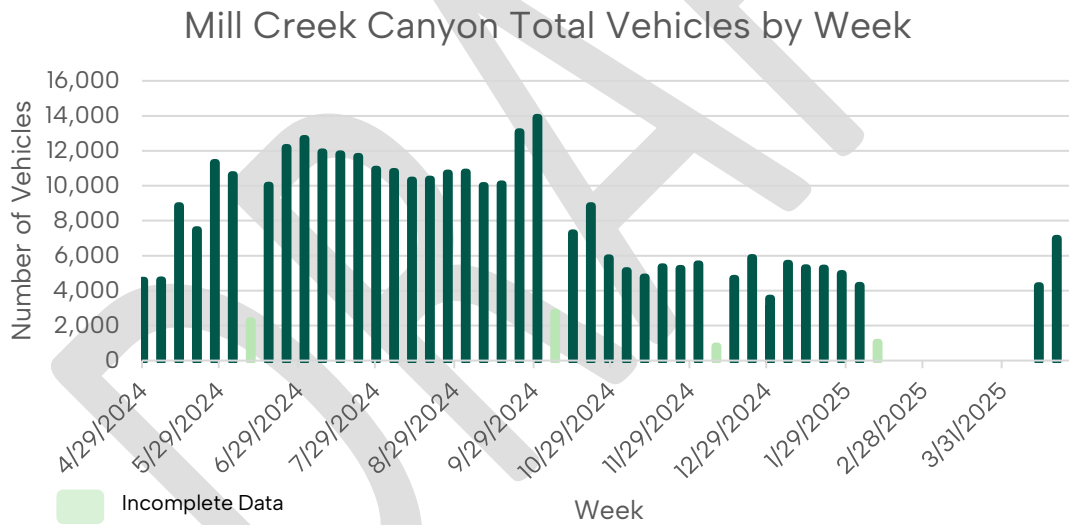


Figure 8. Mill Creek Canyon Total Vehicles by Week

There is also a shift in peak visitation hours between the summer and winter months. As shown in **Figure 10**, the summer months (May through October) see visitation more widespread throughout the day, while in the winter months (November through April), when daylight and temperatures are less favorable, visitors concentrate in the afternoon.



## 2024/25 Average Daily Vehicle Volumes Summer vs Winter

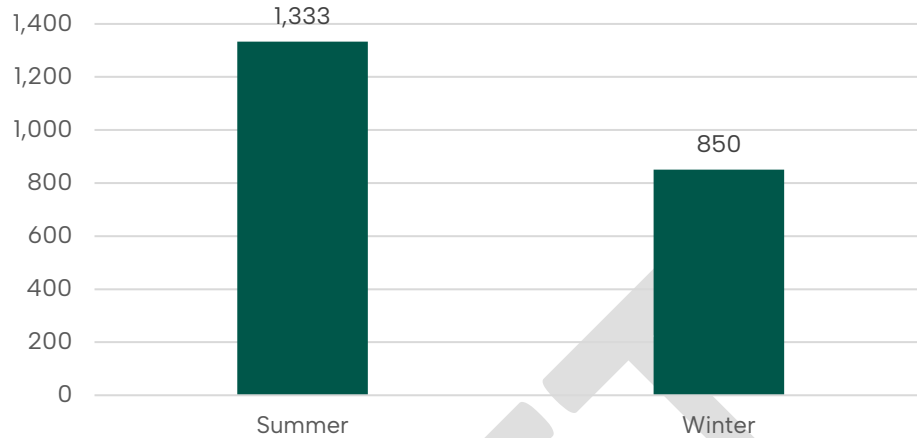


Figure 9. 2024/25 Average Daily Vehicle Volumes Summer vs Winter

## Percent of Daily Visitors by Hour

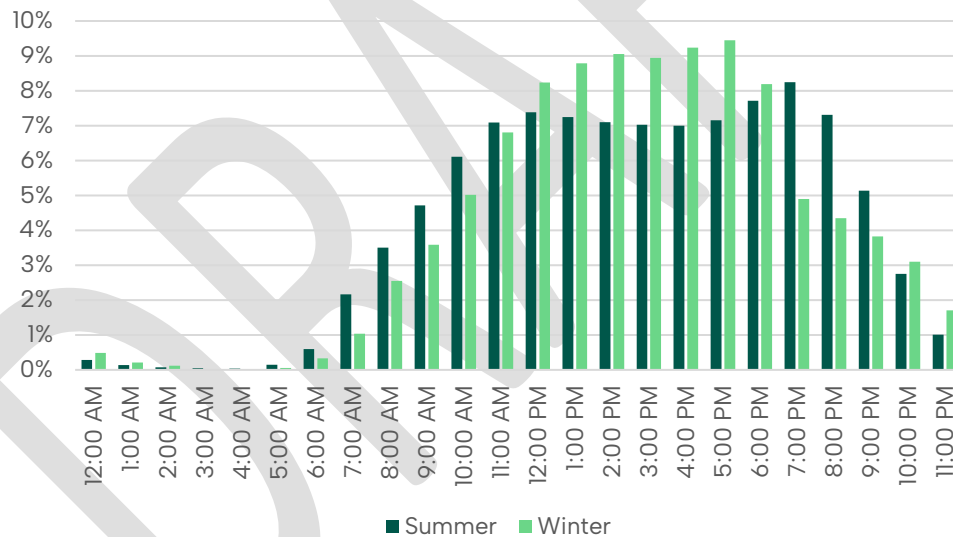


Figure 10. Percent of Visitors by Hour

As shown in **Figure 11** and **Figure 12**, visitation also varies between weekdays and weekends. On weekends, vehicle volumes are about 40% higher than on weekdays. Additionally, a relatively higher proportion of weekday visitors visit before and after typical working hours, compared to weekend visitors who spend more time in the canyon in the middle of the day.

## 2024/25 Average Daily Visitation Weekday vs Weekday

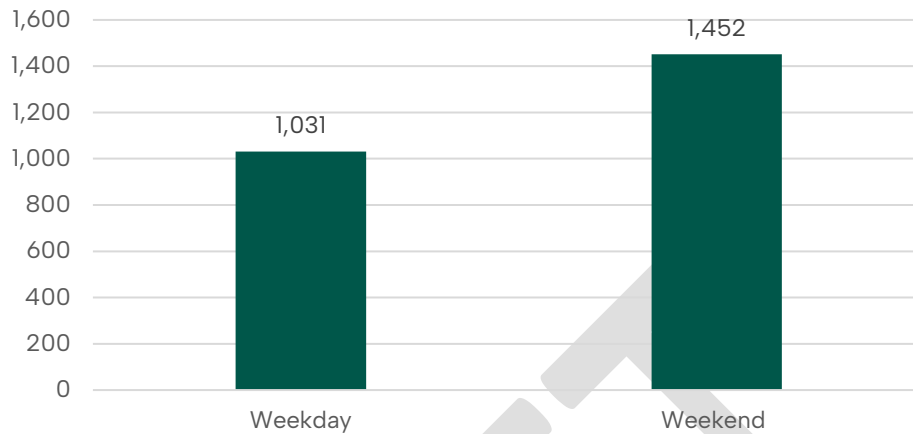


Figure 11. 2024/25 Average Daily Visitation Weekday vs Weekday

## Percent of Daily Visitors by Hour

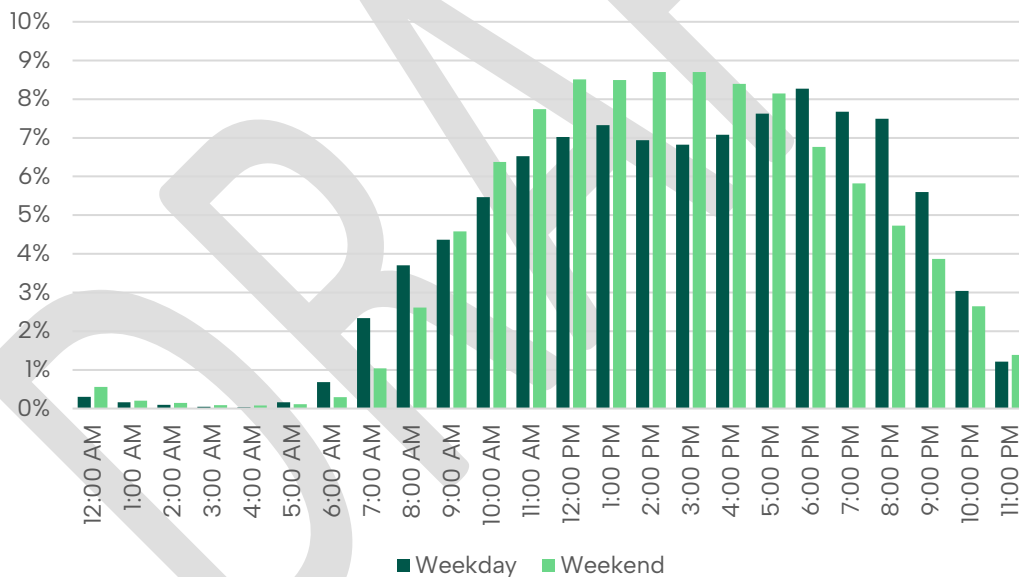


Figure 12. Percent of Daily Visitors by Hour

## Vehicle Occupancy

Vehicle occupancy data was gathered by Mill Creek Canyon Fee Station attendants over two weekends in August 2025 (8/8/25–8/10/25 and 8/15/25–8/17/25). As vehicles passed through the canyon exit, attendants recorded data from a sample of visitors. The data points included vehicle occupancy, the number of visitors with dogs, the number of visitors with bicycles, and whether visitors paid at the booth or used a season pass.

**Figure 13** shows the average vehicle occupancy by payment type. This data shows that, on average, passholders have a lower vehicle occupancy than those without season passes. Overall, the average vehicle occupancy is below two people per vehicle.

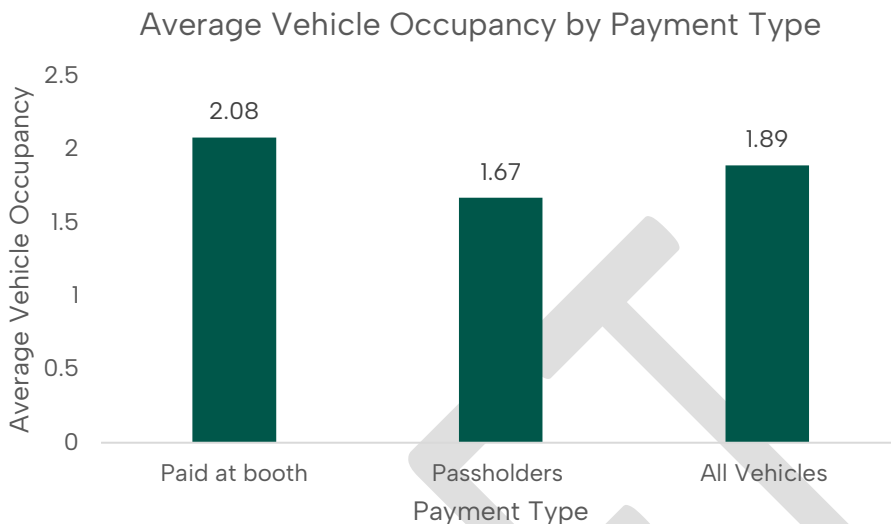


Figure 13. Average Vehicle Occupancy by Payment Type

**Figure 14** and **Figure 15** show the percentage of vehicles for a given occupancy. While there are more vehicles with two or more occupants than one occupant, over 80% of all vehicles have only one or two occupants.

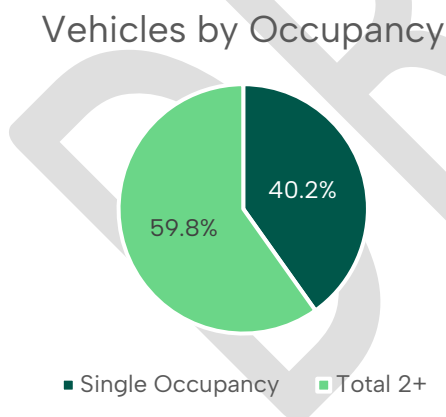


Figure 14: Vehicles by Occupancy

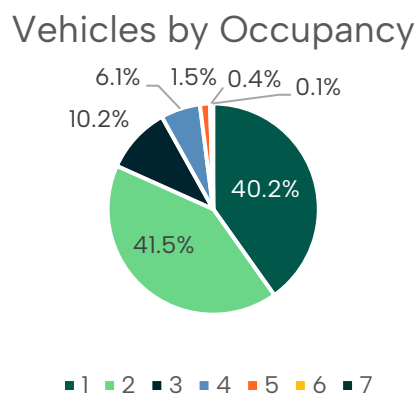


Figure 15: Vehicles by Occupancy Breakout

**Figure 16** shows visitors by vehicle occupancy and payment type. More vehicles pay at the booth than have season passes, and those with season passes are more likely to be single-occupancy vehicles compared to those who pay at the fee booth.

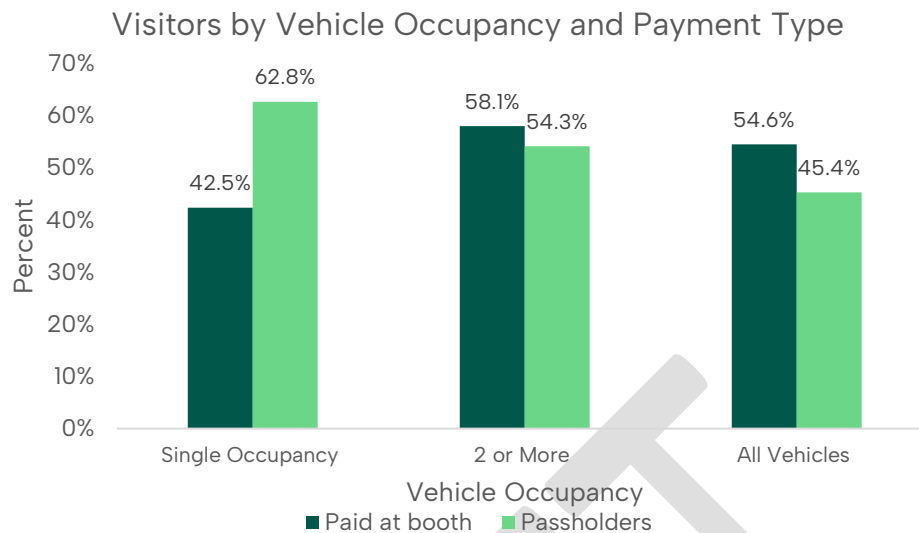


Figure 16: Visitors by Vehicle Occupancy

As shown in **Figure 17** and **Figure 18**, Mill Creek Canyon has restrictions on bicycles and dogs depending on the day. Bicycles are restricted from using trails in the upper canyon on odd-numbered days. The Pipeline Trail is open to bikes on all days. Dogs are required to be leashed at developed sites, parking areas, and on roads. On even-numbered calendar days, dogs are required to be leashed on all hiking trails.

On odd-numbered days, dogs are permitted to be off-leash on hiking trails. These visitor restrictions are seen in the vehicle occupancy data as the number of vehicles with dogs is higher on odd days, and the number of vehicles with bikes is higher on even days. Overall, far more visitors bring dogs into the canyon than bicycles.

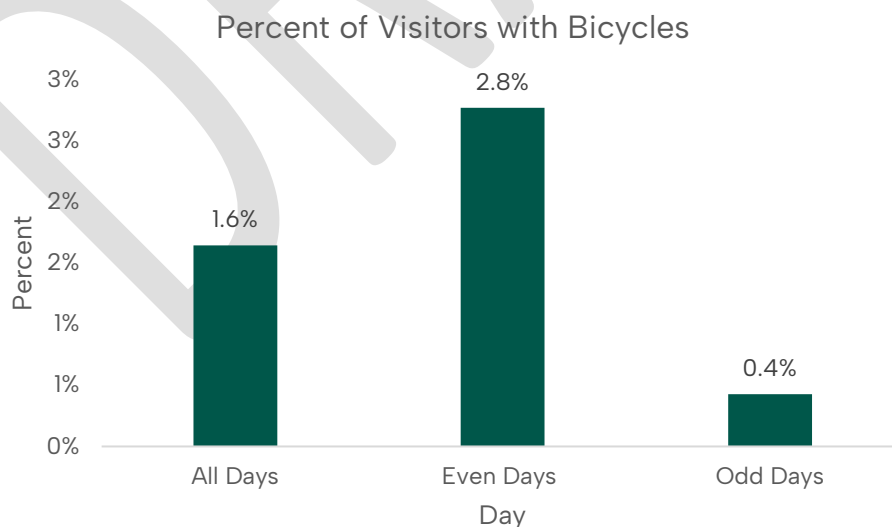


Figure 17. Percent of visitors with bicycles

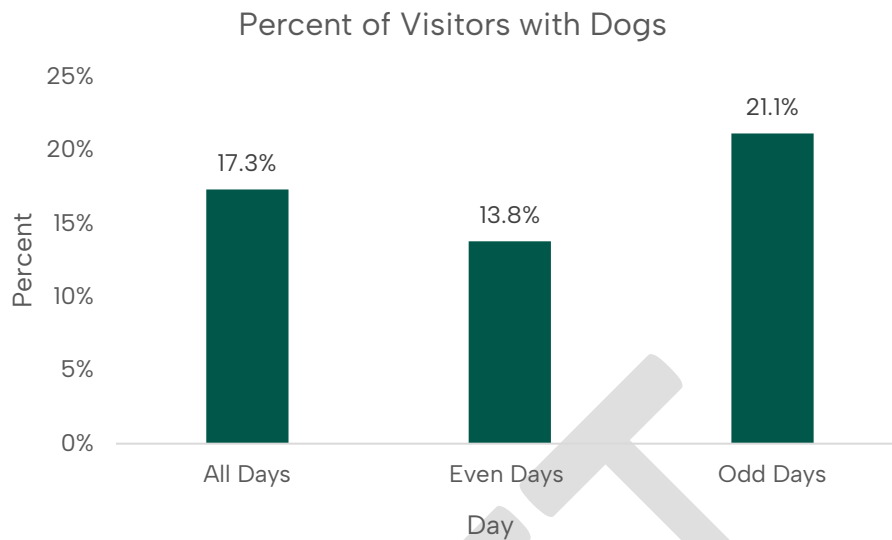


Figure 18. Percent of Visitors with Dogs

## Canyon Parking

As exemplified in **Figure 19**, parking in Mill Creek Canyon is currently a mix of developed parking lots, unpaved turnouts, and informal roadside parking. At peak times, parking lots reach peak capacity and lead to more roadside parking, which increases erosion, posing safety and environmental risks. The USFS Forest Plan contains the Desired Future Condition to maintain parking capacity in the Canyon at year 2000 levels. To remain consistent with this goal, the FLAP project in the upper canyon will remove roadside parking and formalize the former roadside parking by increasing parking lot capacity. Parking conditions in the lower canyon are currently planned to remain unchanged.



Figure 19. Mill Creek Canyon gravel parking lot

## Mill Creek Canyon Fee Station

There is a station at the base of the canyon that collects a visitor use fee as vehicles exit the canyon. This daily fee is currently \$5 per vehicle or \$3 per vehicle for seniors. Those looking to avoid daily fees can purchase an annual pass for \$50 or \$30 for seniors. Revenue generated from these fees is split between the USFS and Salt Lake County. The USFS share is used to maintain services and access to recreation in the canyon. Salt Lake County's share is used to pay for toll booth operations and roadway maintenance. Table 3 shows the annual toll booth revenue for the five most recent years of data (2019–2024). The revenue that is brought in from these recreation fees is crucial to the operation and maintenance of Mill Creek Canyon; therefore, the operation of a shuttle must not have a negative impact on the revenue brought in from the tolls.



**Table 3. Fee Station Revenue**

YEAR	FEE REVENUE	COUNTY SHARE	USFS SHARE	PERCENT
2019	\$668,231.19	\$168,181.55	\$500,050	25.2%
2020	\$1,039,944.50	\$232,673.60	\$807,270	22.4%
2021	\$1,053,837.00	\$216,708.70	\$837,128	20.6%
2022	\$962,886.85	\$215,196.41	\$747,690	22.3%
2023	\$1,015,023.50	\$357,224.40	\$657,799	35.2%
2024	\$1,005,726.24	\$366,023.74	\$639,703	36.4%
<b>Six-year Average</b>	<b>\$957,608</b>	<b>\$259,335</b>	<b>\$698,273</b>	<b>27%</b>

## Parking Demand and Location

### Parking Demand

For a shuttle to operate effectively, there must be adequate parking available for users when they arrive at the shuttle staging area. For this study, parking demand for a shuttle will be based on 15-minute headways with a shuttle capacity of 100 riders per hour. Based on findings from the 2023 Visitor Use Study, it was estimated that the average visitor spends a little over two hours recreating in the canyon. Accounting for travel time and shuttle wait time, it is estimated that the average visitor will spend 3 hours and 20 minutes parked in the shuttle park-and-ride lot. Additionally, the average visitors per vehicle of 1.89% was decreased by 20% to 1.5 to account for the higher likelihood that vehicles with more than two visitors would be less likely to ride the shuttle. Lastly, a mode shift was included to account for shuttle riders who will not be parking before riding the shuttle.

**Table 4. Parking Demand by Shuttle Capacity**

SHUTTLE CAPACITY	30% CAPACITY	60% CAPACITY	100% CAPACITY
Riders per Hour	30	60	100
Percent of riders not parking	5%	10%	15%
Vehicles per Hour	9	27	48
Estimated Time Parked (Hours)	3.3	3.3	3.3
<b>Total Stalls Needed</b>	<b>31</b>	<b>89</b>	<b>159</b>

# Shuttle Staging Options

The 2012 Mill Creek Canyon Transportation Feasibility Study reviewed several staging locations before recommending the 3900 South UTA Park and Ride as the preferred location for shuttle staging. Since then, changes to the area have necessitated a re-evaluation of all shuttle staging options. Each option evaluated is shown below in **Figure 20**:

- A. **Virginia Way** – this is along the west edge of I-215 and next to Skyline High School. Currently, the location of overflow parking for students at Skyline High School, the district is close to completing a massive rebuild that includes on-site parking. Once complete, district officials believe that no school-related parking will be necessary on Virginia Way. Millcreek City has striped the road with 90-degree parking. The road is over 60 feet wide.
- B. **Millcreek Park** – is located on the east side of I-215, along Wasatch Boulevard. Despite its proximity to the mouth of Mill Creek Canyon, the park's small parking lot would provide parking and shuttle access challenges.
- C. **Maintenance Yard** – there is a highway maintenance parcel also along I-215 and Wasatch Boulevard, south of the park. It is used for salt storage by UDOT, Millcreek City, and Salt Lake County. This location provides enough space for shuttle operations and parking, but would require repaving and the relocation of salt storage facilities.
- D. **Olympus Cove Shopping Center** – At the time of the previous study, the western sections of the center's parking were largely underutilized. Despite that, the property owner was not interested in allowing shuttle staging. In addition, new buildings have been constructed on the western part of the parking lot, and the lot appears to be much more utilized than in the past.
- E. **Empty Lot** – the lot due west of the shopping center has been planned for commercial use for some time. It is currently being developed as a car dealer.

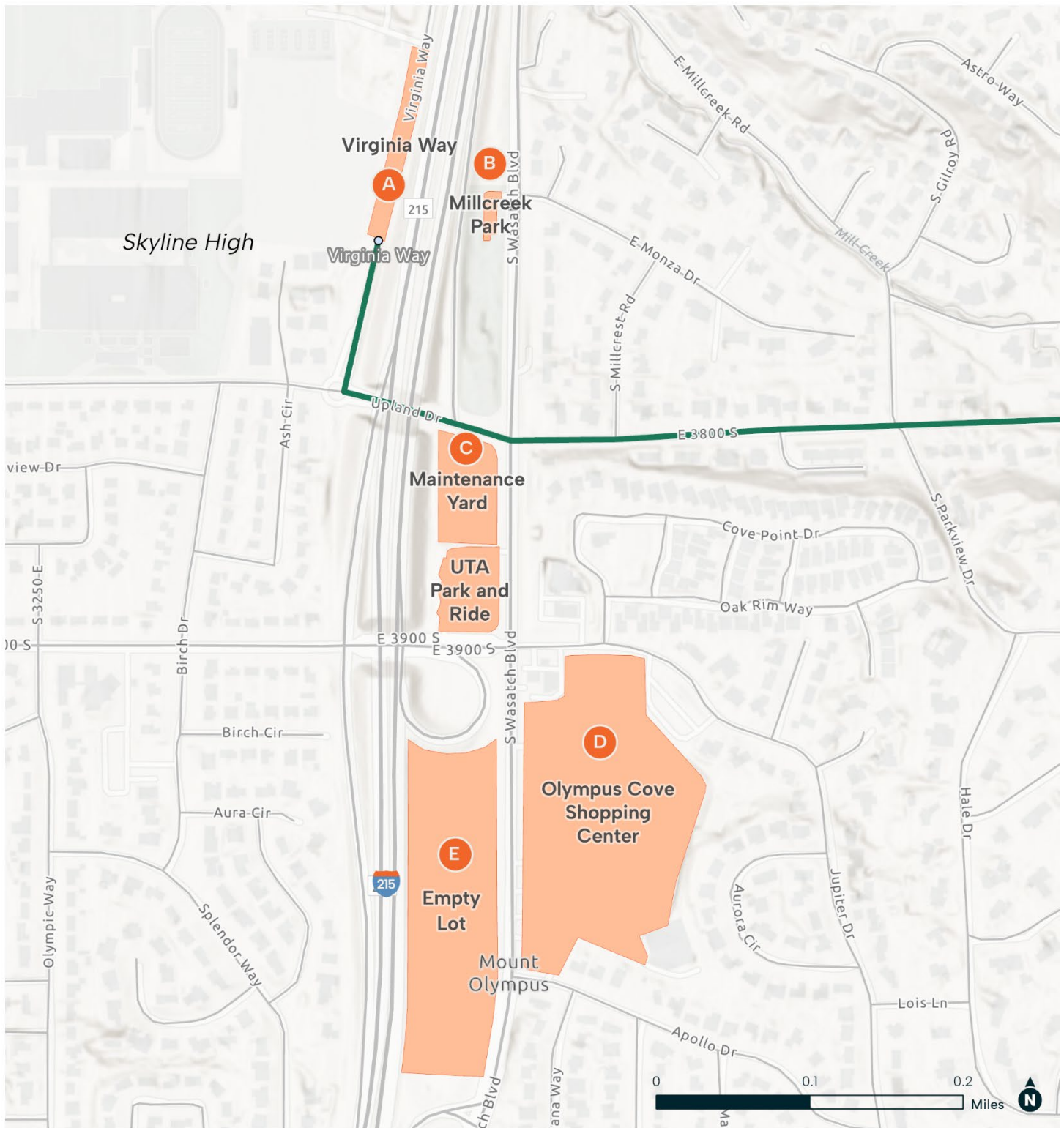


Figure 20. Staging area options

# Staging Area Options

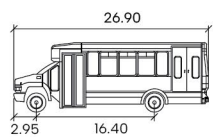
After evaluating each staging area option, it became clear that most identified staging areas are either too small or have significant logistical encumbrances to be pursued. For example, the park-and-ride lot is often full with those who carpool. After site visits and meetings with key stakeholders, it is recommended that Virginia Way is the best location for possible shuttle staging for the following reasons:

- It is a public right-of-way, used for transportation purposes.
- It is wide enough to accommodate shuttle vehicles to pull over, load, and turn around.
- There will be little to no interference with any Skyline High School parking needs, especially on weekends when the shuttle demand is likely highest.
- It is currently being used as a shuttle parking area for Wasatch Crest Trail providers.



Figure 21. Virginia Way

Virginia Way, seen in **Figure 21**, currently has around 155 parking stalls. For this area to be used as a shuttle staging area, it is recommended that a section of the currently striped 90-degree parking be repainted as a shuttle stop and turnout. As shown in **Figure 22**, the turning shuttle has plenty of space to turn around after loading passengers, assuming some parking stalls are removed, bringing the total number of parking stalls to approximately 135, depending on the final striping plan. Given that the estimated maximum parking demand for the shuttle is estimated to be 150 stalls, adjustments to the parking area or incentives to encourage alternative modes of transport to the park-and-ride should be considered if the park-and-ride is consistently over capacity.



Mini Bus      feet  
 Width : 7.87  
 Track : 7.87  
 Lock to Lock Time : 6.0  
 Steering Angle : 38.0

Mini Bus  
 CMBC 2018 (CA) [ft]

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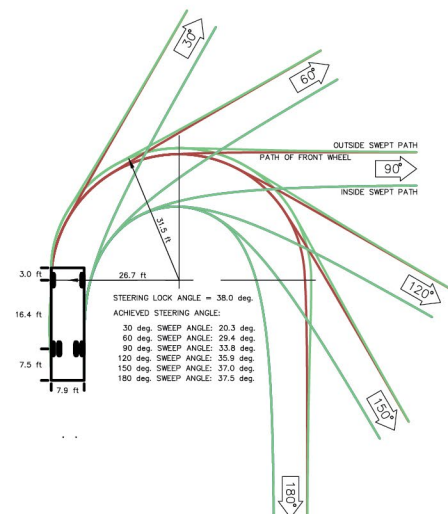
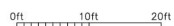


Figure 22. Shuttle turning area



# Fee Revenue Outcomes

The USFS's main concern is that a shuttle may reduce the revenue brought in from the fee station. Funds to support the operations of Mill Creek Canyon are collected in the form of recreation fees at the toll booth. As previously mentioned, these fees are currently \$5 per vehicle or \$3 per vehicle for seniors, and annual passes are available for \$50 or \$30 for seniors. Given the importance of these fees for maintenance access to the canyon, it is crucial that the projected decrease in vehicles driving through the fee station due to shifting to a shuttle does not lead to a decrease in fee revenue.

## Assumptions

Assuming the recreation fee does not change, three models have been developed to understand the potential impacts on fee revenue, exclusive of the costs to operate a shuttle. Each model assumes a shuttle capacity of 25 riders per shuttle. Using fee revenue provided by Salt Lake County, vehicle volume data provided by Millcreek, and vehicle occupancy data collected for this study, it was estimated that the Mill Creek Canyon revenue is \$1.73 per visitor. Assuming all shuttle fares counted as recreation fees, the shuttle would need to have a fare of greater than \$1.73 per rider to remain revenue neutral (for a detail of the net impacts of revenue less expenses of the shuttle, see the [Cost Estimates](#) within the following Service Plan section). As the fare increases, the expected number of visitors who change from driving to riding the shuttle (mode shift) is expected to decrease. Mode shift was estimated at 20% for the lowest shuttle fare and 10% for the highest shuttle fare. Mode shift multiplied by the daily estimated visitor numbers resulted in the ridership estimates. Given that recreation fees do not change in fare models 1 through 3, we do not expect shuttle operations to have an impact on canyon visitation.

## Results

Error! Reference source not found. shows three fare models, each assuming a different cost to ride. In each model provided, the USFS and the County will see an increase in revenue once a shuttle is implemented. However, even the highest gain in revenue (Model 3) will not cover the cost of operating a shuttle. For this shuttle to bring in enough revenue to cover the cost of operation and not decrease fee station revenue, an increase in recreation fees should be considered.

**Table 5. Fare Model Overview**

	MODEL 1	MODEL 2	MODEL 3
	Assumptions	Assumptions	Assumptions
Visitors	251,552	251,552	251,552
Revenue	\$435,542	\$435,542	\$435,542
Shuttle Capacity	25	25	25
Visitors Per Vehicle	1.89	1.89	1.89
Mode Shift	0.2	0.15	0.1
Fare	\$2.5	\$4	\$7
Seasonal Shuttle Riders	50,310	37,733	25,155
Daily Shuttle Riders	621	466	311
Revenue lost at the Fee Station	\$87,108	\$65,331	\$43,554
Revenue gained from the Shuttle	\$125,776	\$150,931	\$176,086
<b>Net Change in Revenue (Excluding Cost to Operate the Shuttle)</b>	<b>\$38,668</b>	<b>\$85,600</b>	<b>\$132,532</b>

Vehicle counts from Millcreek, fee revenue from Salt Lake County.

Error! Reference source not found. shows Model 3A, where the fee for using Mill Creek Canyon has been increased to provide enough revenue to account for the cost of operating a shuttle. In this model, it is assumed that season passes increase at the rate proportional to day pass rates, and visitor numbers are unaffected.

**Table 6. Model 3A**

Model 3A	
Assumptions	
Weekend Visitors	251,552
Shuttle Capacity	25
Visitors Per Vehicle	1.89
Mode Shift	0.2
<b>Fare</b>	<b>\$7</b>
<b>Station Fee</b>	<b>\$12</b>
Estimated Weekend Revenue	\$1,045,301
Seasonal Shuttle Riders	50,310
Daily Shuttle Riders	621
Revenue gained from the shuttle	\$352,173
Revenue lost at the fee station	\$209,060
Revenue gained by the fee increase	\$609,759
<b>Net Change in Revenue (Excluding Cost of to Operate the Shuttle)</b>	<b>\$752,872</b>

These ridership and fare revenue estimates for models 1 through 3A are based on shuttle service throughout the entire canyon. The relationship between projected shuttle fare revenue and shuttle operation costs can be found later in the *Shuttle Service Plan, Model 2* section of this study. From these fare estimates, a shuttle would likely increase canyon (USFS/Salt Lake County) revenue.

# Shuttle Service Plan

## Survey Results

The CWC conducted a survey on the idea of a shuttle in the summer of 2025. This survey got comments from 375 respondents. The key takeaways from the comments are outlined in this section.

### Convenience is the most important factor in ridership

When asked to select the features of a shuttle that would encourage ridership, 78% of respondents mentioned convenience, and 75% selected hassle-free parking. Based on comments, convenience could have multiple meanings, ranging from short wait times to adequate storage for recreational equipment. Additionally, respondents claimed to be the most sensitive to the shuttle frequency, with 86% of respondents reporting that an inconvenient schedule would discourage ridership. Comments revealed that frequencies of now more than 15 minutes would be the longest respondents would be willing to wait for a shuttle.

### Warm weather months would see the most ridership

Visitation data shows that canyon visitation is the highest in the summer and fall, when the weather is the best for hiking, cycling, and picnics. When asked which season respondents would be most likely to ride the shuttle in, Summer and Fall received the most responses, although responses suggest there could be year-round demand. Compared to visitation data, there is a higher proportion of respondents who say that they would take the shuttle in winter. This suggests that riders may be more likely to take the shuttle in winter due to snowy road conditions or a current lack of parking availability below the Winter Gate.

### Riders are sensitive to cost

When compared to the price of a day pass for Mill Creek Canyon, 54.6% stated that they would pay the same amount, 12.5% would pay less, and 33% stated they would pay more. These responses show a general acceptance of the current fees and a willingness to pay the same fee for a shuttle as long as the shuttle meets their needs. Comments highlighted that the shuttle fare should be lower for seniors, cover a group of people, and season passes should be available to match the pricing structure of current day passes. Additionally, respondents recommended that the shuttle should cost less than the daily fee to incentivize shuttle use.

## Service Plan

Given the current construction above the Winter Gate, two shuttle service scenarios have been developed. Scenario 1 will consider a shuttle pilot program during construction. This scenario seeks to alleviate traffic in the lower canyon while providing important information that can be used when implementing shuttle service along the entirety of Mill Creek Canyon Road once construction is complete. Scenario 2 will include expanded service to the Big Water parking lot once construction is complete. Service is expected to be provided by a private turn-key shuttle operator.

## Service Characteristics

### Frequency, Travel Time, and Reliability

As mentioned in the existing conditions, the 2012 Transportation Study specified shuttle services that ran in both the summer and winter. However, after reviewing the most recent data, which shows that visitation in the summer months is 50% higher than in the winter months, it is recommended to offer the shuttle only in the summer when ridership numbers are projected to be higher. Additionally, winter visitation tends to be concentrated in the afternoon. Relatively high peak visitation could create service issues with overcrowding during peak times and empty shuttles at other times.

There was also found to be considerably lower visitation volumes on weekdays when compared to weekends, with weekday visitation concentrated in early mornings and evenings. Similar to winter visitation, weekday visitation indicated that a shuttle would be most effective on weekends when the shuttle is projected to see more use.

For this service plan, the daily duration of service was estimated to be 10 hours per day with 15-minute frequency. Having vehicles operating every 15 minutes in both directions is recommended to maximize convenience and encourage use. This span would be able to capture the peak visitation periods and allow visitors to effectively use the canyon. The cycle time (time it takes a vehicle to complete a full round-trip and be available to start the next departure) for operating in just half the canyon is about 30 minutes, which would require two vehicles for a 15-minute frequency (vehicles needed is cycle time divided by desired frequency) during the pilot program. The cycle time for serving the entire canyon is 75 minutes, which would require five vehicles to achieve 15-minute frequencies.

### Fleet

The type of shuttle used for this project should be determined by ensuring shuttle capacity can meet demand while considering the space constraints of the canyon and staging area, and minimizing cost. The preferred staging area on Virginia Way has a roadway width of about 60 feet, wide enough for most shuttle options. Given the existing parking constraints and estimated shuttle use, it is recommended that 25-passenger shuttle buses, as shown in **Figure 23**, be used as they can adequately handle the projected shuttle demand and still navigate the canyon roads effectively.



*Figure 23. Example of a 25-passenger shuttle bus.*

*Source: Master's Transportation*

### Infrastructure Needs

- **Roadway Improvements:** No changes to roadways and intersections would be required to accommodate the maneuvering of the shuttles. However, roadway improvements should be considered to improve the safety and efficiency of shuttle stops.
- **Signage:** Signage would be needed in the proposed staging parking area to direct drivers to the shuttle stops and to give instructions on how to park. Shuttle Stop signage would also be needed at all stops to indicate to visitors where they can wait for the shuttle. Benches, lights, and shelters can also be considered at shuttle stops to improve user experience.

The proposed staging area on Virginia Way would also need signage in addition to the proposed draft striping plan discussed previously.

## Scenario 1

### Field Operations

Scenario 1, shown in **Figure 24**, considers a shuttle pilot program to begin before the FLAP work is complete, and therefore, the end of the route will be the Winter Gate. There will likely not be enough room for the shuttle to turn around at the given shuttle pullout and will therefore need to pull through the parking lot to turn around, as cars do today. The roadway below the Winter Gate is not scheduled for roadway improvements, so space for shuttle stops may not be available at all popular locations. Given the trail use data, it is recommended that the following stops be included in this scenario:

- Rattlesnake Gulch
- Church Fork
- Porter Fork
- Winter Gate/ Maple Grove

“Whistle stops”, allowing riders to be dropped off along Mill Creek Canyon Road at locations outside of the designated stops, can also be considered as a policy decision to increase the flexibility of service to meet the varying needs of canyon visitors.





## Shuttle Route: Scenario 1

Figure 24. Scenario 1 shuttle route

## Cost Estimates

Cost estimates for Scenario 1 are summarized in **Table 7**. “Span” indicates the total hours in the day service will run. The cost covers 3,750 in-service hours per season (four buses, 10 hours per day). Discussions with shuttle operators provided us with approximate cost estimates of between \$150 and \$200 per service hour.

**Table 7. Scenario 1: Service and Cost Estimates**

SERVICE ASSUMPTIONS		
Cycle Time (mins)	30	
Number of Stops	4	
Frequency (min)	15	
Span (hrs)	10	
Weeks Operated	25	
Buses Needed	2	
Daily Vehicle Hours	20	
Total Hours	1,500	
COST ESTIMATES		
Hourly Fixed Route Cost (\$)	\$150	\$200
Total Seasonal Shuttle Cost	\$225,000	\$300,000

## Scenario 2

### Field Operations

Scenario 2, shown in **Figure 25**, considers a shuttle program that would provide transportation all the way to the end of Mill Creek Canyon Road at the Big Water parking lot. Once FLAP construction is complete, the Big Water parking lot will have a shuttle turnout and ample room to turn around to travel back down the canyon. Given the trail use data and FLAP construction that includes shuttle turnouts at a few parking lots, it is recommended that the following stops be included in this scenario:

- Rattlesnake Gulch
- Church Fork
- Porter Fork
- Winter Gate/ Maple Grove
- Elbow Fork
- Alexander Basin
- Big Water

As in Scenario 1, whistle stops can be considered as a policy decision to increase the flexibility of service to meet the varying needs of canyon visitors.



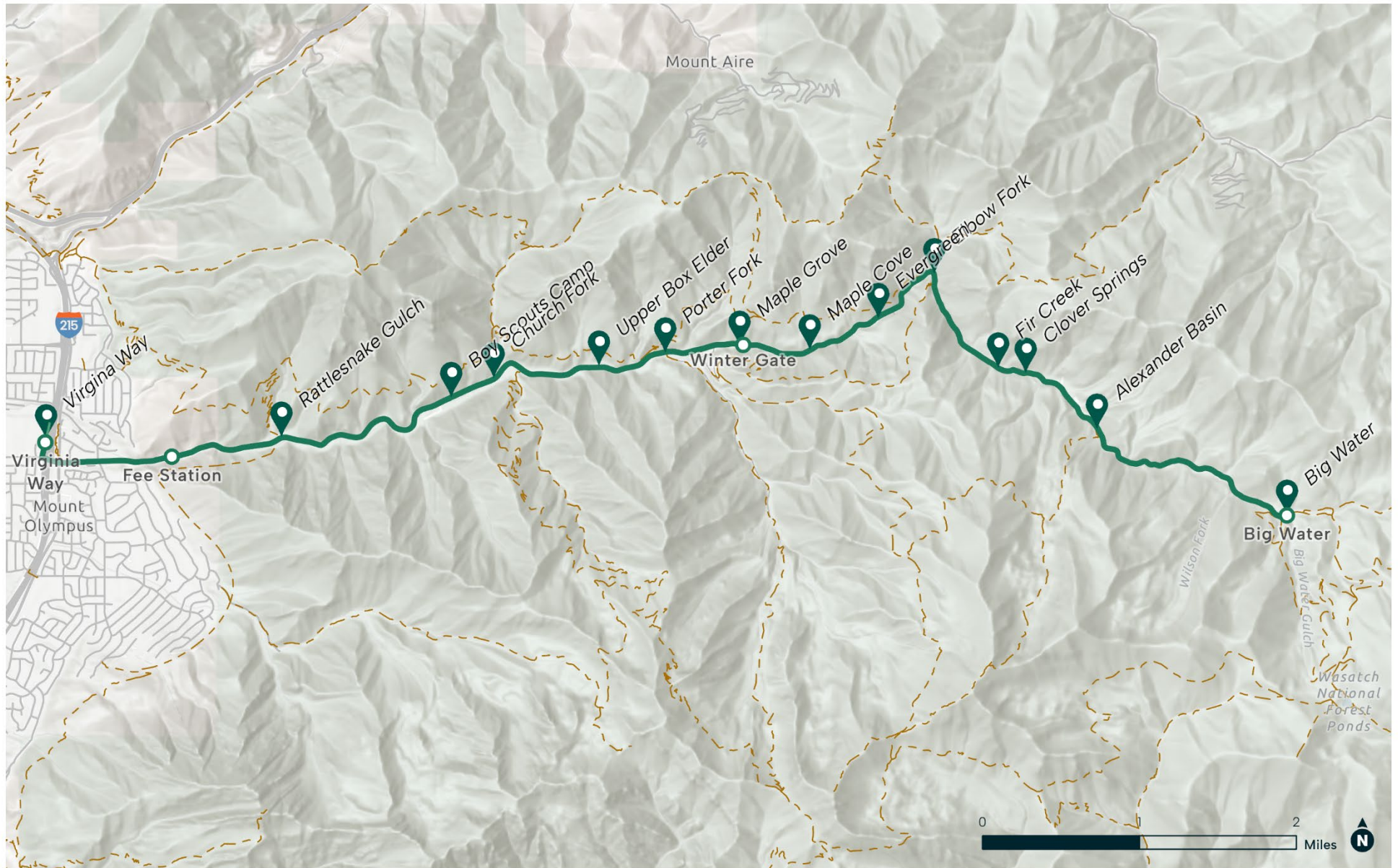



Figure 25. Scenario 2 shuttle route

## Shuttle Route: Scenario 2

-  Shuttle Stops
-  Shuttle Route
-  Trails
-  Roads

## Cost Estimate

Cost estimates for Scenario 2 are summarized in **Table 8**. The cost covers 3,500 in-service hours per season (five buses, 10 hours per day).

**Table 8. Scenario 2: Service and Cost Estimates**

SERVICE ASSUMPTIONS		
Cycle Time (mins)	69.85	
Number of Stops	7	
Frequency (min)	15	
Span (hrs)	10	
Weeks Operated	25	
Buses Needed	5	
Daily Vehicle Hours	50	
Total Hours	3,750	
COST ESTIMATES		
Hourly Fixed Route Cost (\$)	\$150	\$200
Total Cost	\$525,000	\$750,000

## Net Income Analysis

**Table 9** shows the total cost estimates related to projected revenue income to show the funds needed for shuttle operations. Fee models 1 and 3A were used to show the high and low cost estimates. In Fare Model 1 (\$2.50 fare per passenger), between \$486,332 and \$661,332 in new net revenue would be needed to operate the shuttle service. In Fare Model 3A (\$7.00 fare per passenger and increased recreation fees to \$12), the shuttle could operate at a profit without the need for outside funding. However, this assumes that overall visitation to the canyon would remain fixed – with high fares and high recreation fees, there may be less visitation as visitors seek other recreation opportunities outside of Mill Creek Canyon. All assumptions can be found in the *Fee Revenue Outcomes, Assumptions* section of this study

**Table 9. Net Income Estimates**

FARE MODEL 1			FARE MODEL 3A		
	Low Estimate	High Estimate		Low Estimate	High Estimate
Recreation Fee		\$5	Recreation Fee		\$12
Shuttle Fare		\$2.50	Shuttle Fare		\$7
Total Cost	\$525,000	\$750,000	Total Cost	\$525,000	\$750,000
Fare Revenue	\$38,668	\$38,668	Fare Revenue	\$752,872	\$752,872
Net Income	(\$486,332)	(\$711,332)	Net Income	\$227,872	\$2,872

## Accommodating Dogs and Bicycles

Mill Creek Canyon currently has a policy for dogs and bicycles. Dogs are allowed off-leash on trails on odd days, and bicyclists are allowed on the trails on even. Dogs can be in the canyon on even days but must remain on-leash.

A proposed shuttle program's success will include accommodating both users on the system. The previous report identified meeting the needs of canine companions as an obstacle. Based on regional research, transit systems, including shuttle programs, have evolved to become more permissive of dogs on vehicles.

Policies vary by agency, of course, and the posted rules vary by provider. The Snowmass (Colorado) shuttle allows dogs, but they must be trained and stay on the floor. The same is true with the Maroon Bells (Colorado) shuttle. A regional provider, GoWest, allows dogs that are "under control," but if the dog takes up a seat, then the owner must purchase a ticket. (The transit system in Ft. Wayne, Indiana, requires dogs to be groomed; a very subjective requirement!). Park City Transit is currently testing dogs on buses, and that policy will likely become permanent year-round. Like most others, dogs must be leashed and muzzled. It is assumed that service will very likely be contracted; provisions for dogs and bicycles should be included in the procurement document(s).

## Conclusion

Mill Creek Canyon has long experienced overcrowding that has led to safety and environmental hazards. Overall, a shuttle is feasible and would help reach the goals of reducing canyon traffic congestion, mitigating parking issues, and reducing user-conflict within the canyon.

Due to lower visitor volumes on weekdays and in winter months, it is recommended that a shuttle provide service in warm weather months (May through October). During these months, visitors are spending time hiking, mountain biking, and picnicking throughout the day and in all areas of the canyon, ideal for all-day service. Existing infrastructure on Virginia Way in Millcreek provides the opportunity for a staging area, and FLAP construction in the upper canyon will contain shuttle pullouts necessary for effective operation. Future roadway improvements to the lower canyon are recommended to take place with the shuttle in mind by including turnouts at parking areas. Signage will be required to inform shuttle users about parking and stop information.

Additionally, Mill Creek Canyon is a popular location for dogs and cycling. Dogs are allowed off-leash on trails on odd days, and bicyclists are allowed on the trails on even days. Dogs can be in the canyon on even days but must remain on leash. A successful shuttle would be able to accommodate dogs and bikes.

For a pilot program shuttle with 30-minute frequency, this would lead to a high-end estimate of \$300,000 per season. A shuttle with 15-minute frequencies that services the entire canyon would have a high-end estimated cost of \$725,000 per season. This study also addresses USFS concerns about a potential reduction in revenue from shuttle use and concludes a shuttle service would likely increase overall revenue but not enough to cover the cost of a shuttle program. If recreation fees are not increased, outside funding sources will need to be explored to fund shuttle operations without negatively impacting recreation fee revenue. However, by significantly increasing recreation fees and carefully selecting a shuttle fare that would promote use, the shuttle could operate without the need for outside funding sources.

## Next Steps

While this study concludes that a Mill Creek Canyon Shuttle is feasible, There are additional steps that need to be taken on the path to implementing this project.



- Funding Sources for Canyon Shuttle operations include:
  - Competitive federal grants
  - Increase in recreation fees
  - Work with staff at the Wasatch Front Regional Council (WFRC) to get assistance with a comprehensive list of potential federal, state, and local options
  - Foundation/non-profit grants
- Due to the potential impacts at trailheads and trails due to a potential increase in visitation, an environmental analysis per USFS guidelines would need to be completed. This would likely be a “Categorical Exclusion” level of effort. A range of cost for this scale of analysis could range from \$100,000 to \$150,000.
- Further research into transit providers will need to be done. Discussions with UTA suggest the best providers would be companies that provide tourism-based transit due to greater flexibility to accommodate the seasonal nature of the shuttle program.