ALBION BASIN
TRANSPORTATION FEASIBILITY STUDY

FINAL REPORT

Prepared for
U.S. Forest Service

Prepared by
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In Cooperation with
National Park Service

January 2011

This report was funded through a Federal Transit Administration (FTA) Paul S. Sarbanes Transit in Parks (TRIP) program grant, formerly known as the Alternative Transportation in Parks and Public Lands (ATPPL) program.

Prepared for:	**U.S. Forest Service** **Uinta-Wasatch-Cache National Forest**
In Cooperation with:	**National Park Service** **Denver Service Center** **Transportation Division**
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EXECUTIVE SUMMARY

INTRODUCTION

The Albion Basin is located in Little Cottonwood Canyon, immediately to the east of the Salt Lake City area in Utah. Albion Basin envelops the small municipality of Alta and much of the Alta Ski Area. Heavy visitation in Albion Basin is typical during the summer months due to its proximity (less than a one-hour drive) to the Salt Lake County metropolitan region, its abundance of wildflowers and recreational opportunities, and the scenic alpine setting that it offers. The current popularity of Albion Basin and projected increases in area population and tourism is contributing to increasing concern about user demand with regard to sustainable visitation levels, recreation, transportation and natural resource protection. The purpose of this report is to develop an understanding of baseline conditions through detailed data collection efforts and preliminary resource analysis, as well as to develop a range of summer season recreation and transportation alternatives for Albion Basin that aim to protect resources and distribute visitors in a sustainable manner.

Wildflowers in Albion Basin

The focus of this effort is to address transportation access options for high-use weekend days and holidays during the summer season when visitor demand is highest and most challenging to manage. For purposes of this study, the operating season was considered to be 20 days over approximately 10 weeks between mid-July and mid-September. It was assumed that the potential new access provisions described for the alternatives would only be implemented on the 20 days in each season with high visitation; however, in the future implementation may occur on additional days depending on the actual number of weekend days, holidays or other high-visitation days to be addressed.

The Town of Alta currently bears a significant management responsibility for summer visitation. The Town funds road maintenance, law enforcement, shuttle operations and staffs the visitor information booth. The nonprofit Friends of Alta provides funding to support booth operations. Increasing visitor management efforts are required by the partners each season. Future operations will be difficult to sustain under the current conditions when increased tourism and population is considered.

BASELINE CONDITIONS

As part of this effort, characteristics and conditions of transportation infrastructure (roadways, trails, parking, transit and other elements) were inventoried, along with information on overnight accommodations and natural resources. A large data collection effort was also undertaken during a five-day period in July 2009, resulting in detailed information on traffic counts and visitor accumulation, parking activity, pilot shuttle use and trail use. A brief summary of baseline conditions is provided here. A complete description of baseline conditions is detailed in **Chapter 2 of the Final Report**.

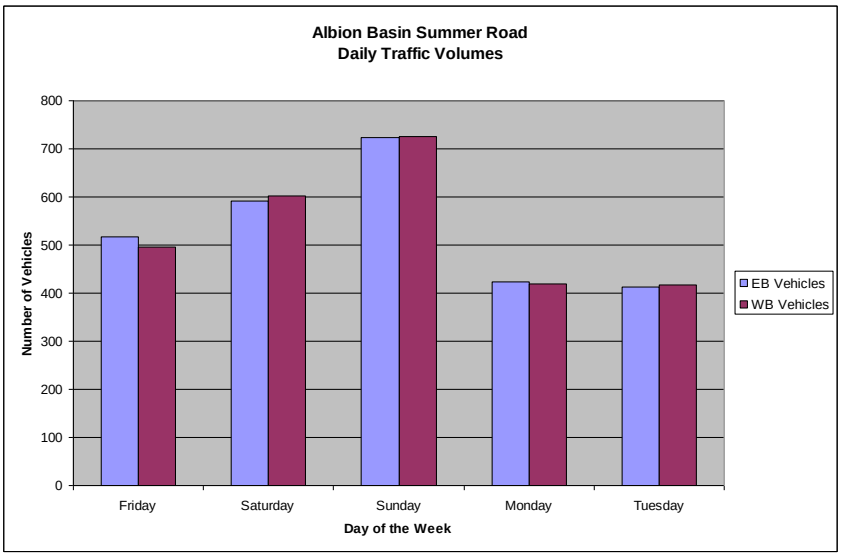
TRANSPORTATION INFRASTRUCTURE

- **Albion Basin Summer Road** extends 2.5-miles from the end of Little Cottonwood Canyon (Utah State Highway 210) to Albion Basin Campground and is open from early summer to early fall.
- The **Summer Entrance Booth** is a temporary, staffed booth located near the entrance to Albion Basin Summer Road. It is staffed from approximately 8:00 AM to 5:00 PM all days except Tuesday in the 2009 summer season. Visitors are notified when parking in Albion Basin has reached capacity and are encouraged to walk, bike or use the pilot shuttle (on weekends only).
- The **Pilot Van Shuttle Service** operates on weekends from mid-July to early/mid-September during the hours of 10:00 AM to 4:30 PM. The pilot shuttle is voluntary and free of cost, and serves three stops: The summer entrance booth, Catherine's Pass Trailhead parking lot and Cecret Lake Trailhead parking lot.
- **Parking** is available in two designated parking lots in Albion Basin (Catherine's Pass Trailhead and Cecret Lake Trailhead parking lots) and in certain roadside locations along Albion Basin Summer Road. Parking is also currently available in the Town of Alta and near the summer entrance booth.
- Three **USFS maintained trails** exist in Albion Basin: Albion Meadows Trail, Catherine's Pass Trail and Cecret Lake Trail. Bicycles are allowed on all trails except for Cecret Lake Trail.
- **Utah Transit Authority (UTA) Summer Season Bus Service** is provided via Route 990, which serves the Snowbird Ski Area and Town of Alta with one trip up-canyon in the morning and one trip down-canyon in the evening.
- **Vehicle types** on Albion Basin Summer Road were found to be predominantly passenger cars (91%), pickups or SUVs. The **average vehicle occupancy** for vehicles accessing Albion Basin Summer Road was found to be 2.4.

TRAFFIC COUNTS AND VISITOR ACCUMULATION

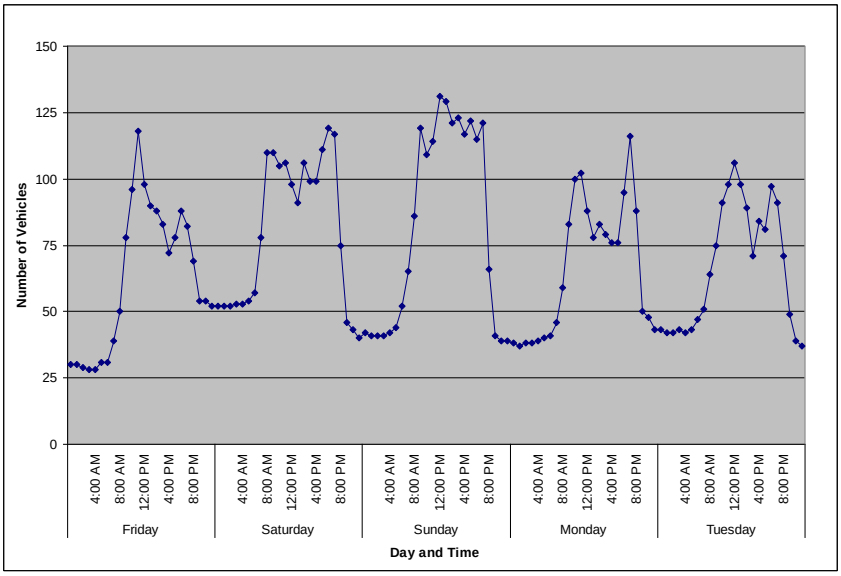
- **Traffic Counts**: Approximately 1,400 vehicles (total trips in both directions) used Albion Basin Summer Road on Sunday, July 19, 2009. **Figure ES-1** illustrates daily traffic counts on Albion Basin Summer Road, summarized by eastbound (in-bound) and westbound (out-bound) movements.

FIGURE ES-1. DAILY 24-HOUR TRAFFIC VOLUMES ON ALBION BASIN SUMMER ROAD (JULY 19-21, 2009)



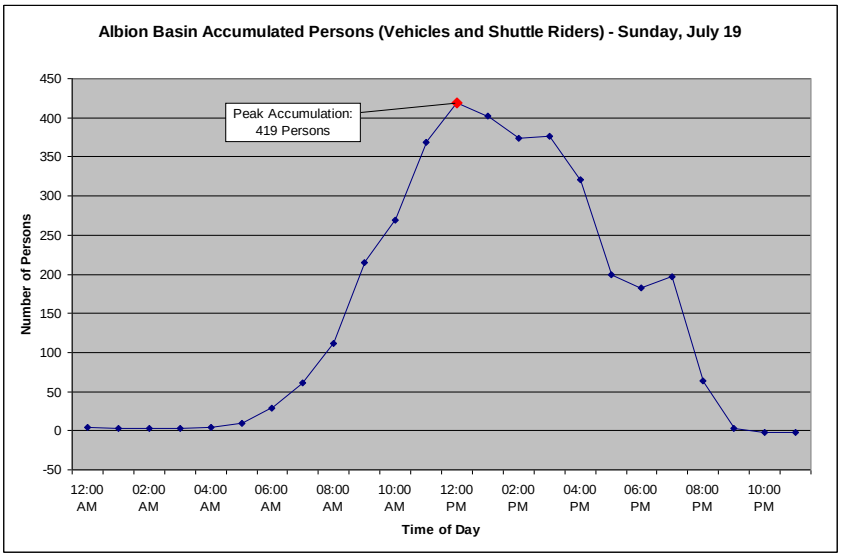
- **Peak Vehicle Accumulation**: A maximum accumulation of over 130 vehicles (present at one time) occurred on Sunday, July 19, 2009 at 12:00 PM within Albion Basin (see **Figure ES-2**).

FIGURE ES-2. ALBION BASIN SUMMER ROAD ACCUMULATED VEHICLES



- **Peak Visitor Accumulation**: A maximum of approximately 420 persons accumulated in Albion Basin on Sunday, July 19, 2009 based on the observed average vehicle occupancy of 2.4 persons, and on visitors who entered the area on the pilot shuttle (see **Figure ES-3**). Peak accumulated persons is estimated to be between 500 and 550 people when those walking/running, bicycling or staying at private residences and campgrounds are included in the estimate.

FIGURE ES-3. PEAK ACCUMULATED PERSONS



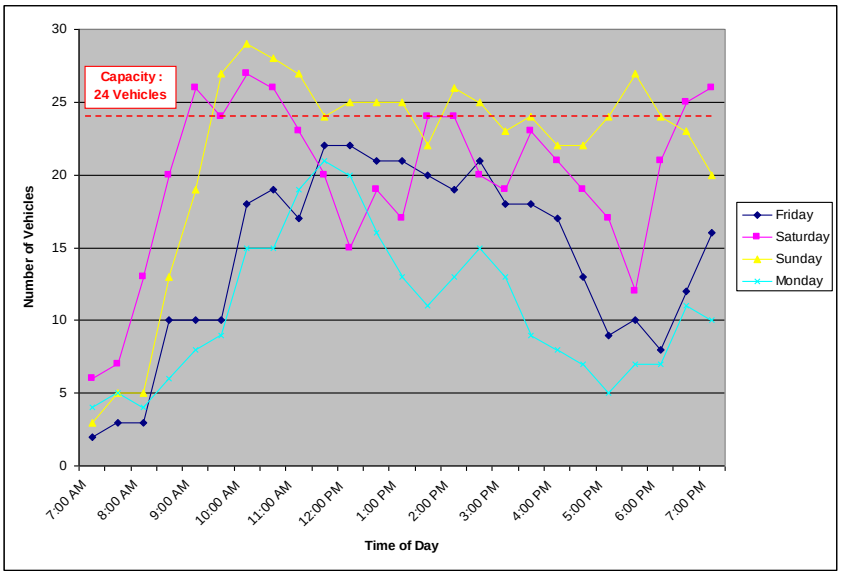
PARKING ACTIVITY IN ALBION BASIN

Parking demand at the two desgnated parking lots within Albion Basin was sampled over four days. The hourly utilization and length of stay were documented.

CATHERINE'S PASS TRAILHEAD PARKING LOT

- Parking Capacity = 24 spaces
- Average length of stay = 2.1 hours
- Parking use is at or exceeds capacity for much of the day on weekends after 9:00 AM.

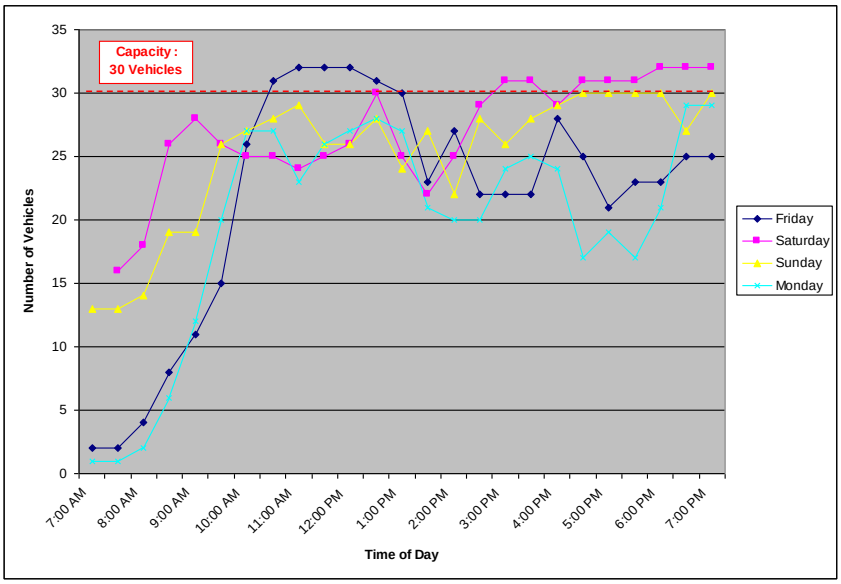
FIGURE ES-4. CATHERINE'S PASS TRAILHEAD DAILY PARKING LOT OCCUPANCY



CECRET LAKE TRAILHEAD PARKING LOT

- Parking Capacity = 30 spaces
- Average length of stay = 1.9 hours
- Parking is at or exceeds capacity for several hours of the day on weekends after 9:00 AM.

FIGURE ES-5. CECRET LAKE TRAILHEAD DAILY PARKING LOT OCCUPANCY



PILOT SHUTTLE USE

- Two to three shuttle vans (15-passenger) typically operate on weekend days with headways (time between bus arrivals at any location) ranging from 10 – 20 minutes.
- Ridership on the pilot shuttle has steadily increased since implementation of the shuttle in 2006. The 2009 season experienced an average of 460 one-way riders per day.
- Pilot shuttles traveling towards Albion Basin (in-bound) typically approach or exceed capacity between 9:00 AM and 12:00 PM. Shuttles traveling away from Albion Basin (out-bound) typically approach or exceed capacity between 1:00 PM and 5:00 PM.

TRAIL USE

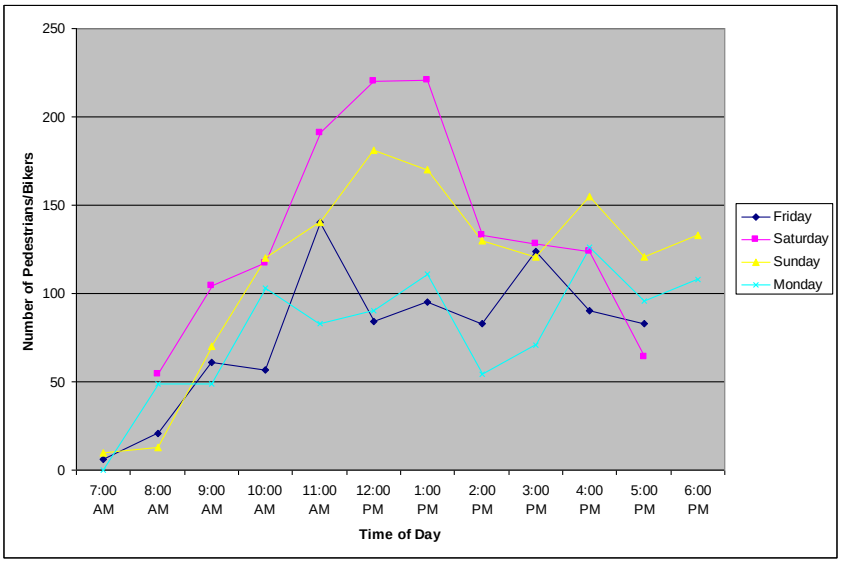
- Activity on all trails peaked on Saturday, July 18, 2009 during the 11:00 AM, 12:00 PM or 1:00 PM hour, presumably due to the Wasatch Wildflower Festival Activities. Sunday (July 19, 2009) trail use peaked on all trails during the 12:00 PM, 1:00 PM and 2:00 PM hours.
- The Cecret Lake Trail is the most highly utilized trail by hikers in the Albion Basin, and experiences nearly three times more hiker activity than the Catherine's Pass or Albion Meadows trails.

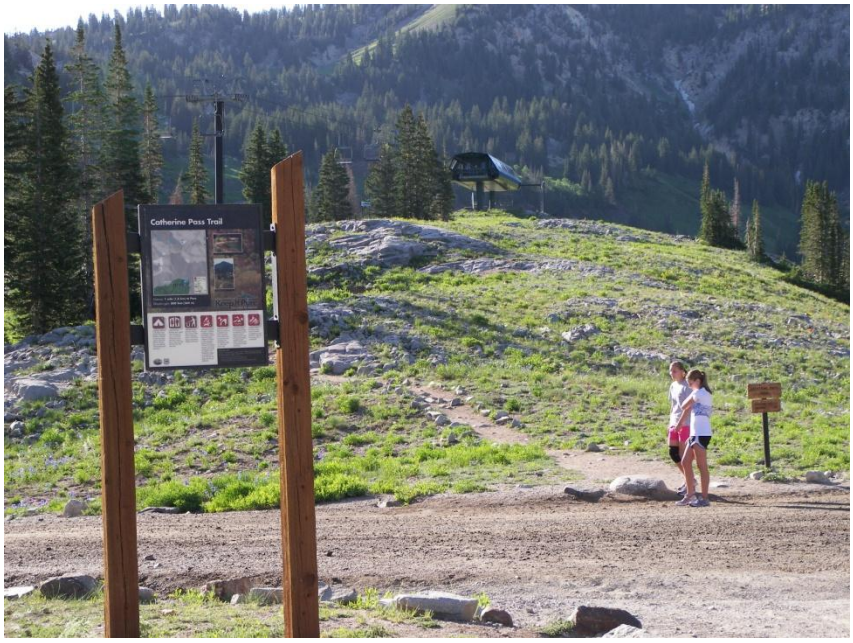
Cecret Lake Trail

CECRET LAKE TRAIL

- This trail is the most highly utilized trail in Albion Basin. A daily average of 1,370 two-way hikers (both existing and entering) on weekend days and 870 hikers on weekdays were observed.
- Although bikes are prohibited on Cecret Lake Trail, up to 25 total bicyclists were observed on the trail. Despite being the only trail that prohibits bicycle use, Cecret Lake Trail experienced the second highest level of bike activity.

FIGURE ES-6. CECRET LAKE TRAIL USE COUNTS (JULY 2009)



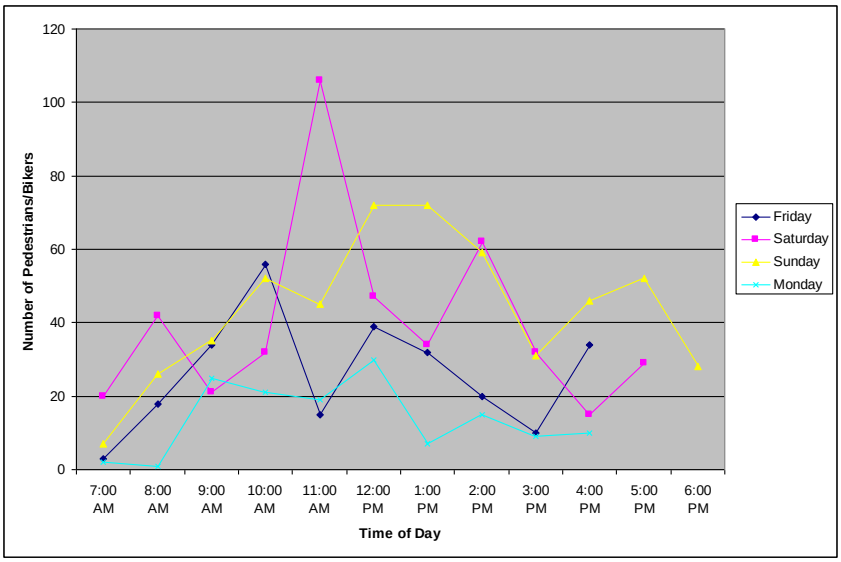


Catherine's Pass Trail

CATHERINE'S PASS TRAIL

- This trail is the second most highly utilized trail in Albion Basin. A daily average of 480 two-way hikers (both existing and entering) on weekend days and 215 hikers on weekdays was observed.
- Bicycling is allowed on this trail. Up to five bicyclists were observed on the trail.

FIGURE ES-7. CATHERINE'S PASS TRAIL USE COUNTS (JULY 2009)

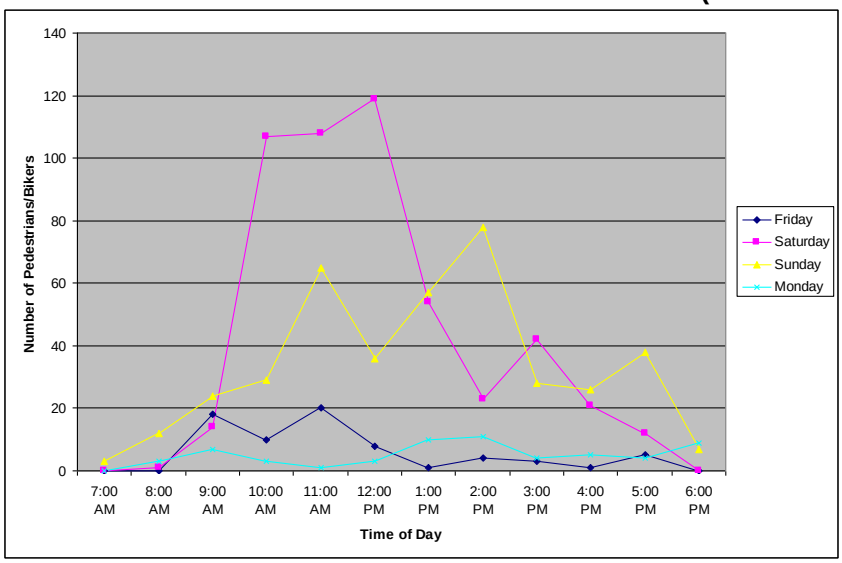


Albion Meadows Trail

ALBION MEADOWS TRAIL

- This trail is the least utilized trail in Albion Basin. A daily average of 415 two-way hikers (both existing and entering) on weekend days and 57 hikers on weekdays was observed. High use of this trail on Saturday (July 18, 2009) was likely due to the fact that it was the primary route for guided educational hikes during the Wasatch Wildflower Festival. Typical Saturday use would be less.
- Bicycling is allowed on this trail. Up to 55 bicyclists were observed on the trail, making it the most utilized trail for bicycle use in Albion Basin.

FIGURE ES-8. ALBION MEADOWS TRAIL USE COUNTS (JULY 2009)



ALBION BASIN SUMMER ROAD

Pedestrian and bicycle activity on Albion Basin Summer Road was also observed during the July 2009 data collection effort. Results indicate that a meaningful number of people choose to walk or bike up the road in lieu of using a private vehicle or shuttle service.

- Total Pedestrian/Bicyclist Activity (one-way towards Albion Basin) along Albion Basin Summer Road:
  - Friday, July 17, 2009 – 15 pedestrians/15 bicyclists
  - Saturday, July 18, 2009 – 60 pedestrians[1]/20 bicyclists
  - Sunday, July 19, 2009 – 20 pedestrians/25 bicyclists

[1]The higher number of pedestrians traveling up the road on Saturday can be attributed in part to the Wasatch Wildflower Festival, which provided guided walks along the road.

Additional detail related to the above topics, as well as to overnight accommodations and natural resources can be found in **Chapter 2**.

VISITOR SURVEY

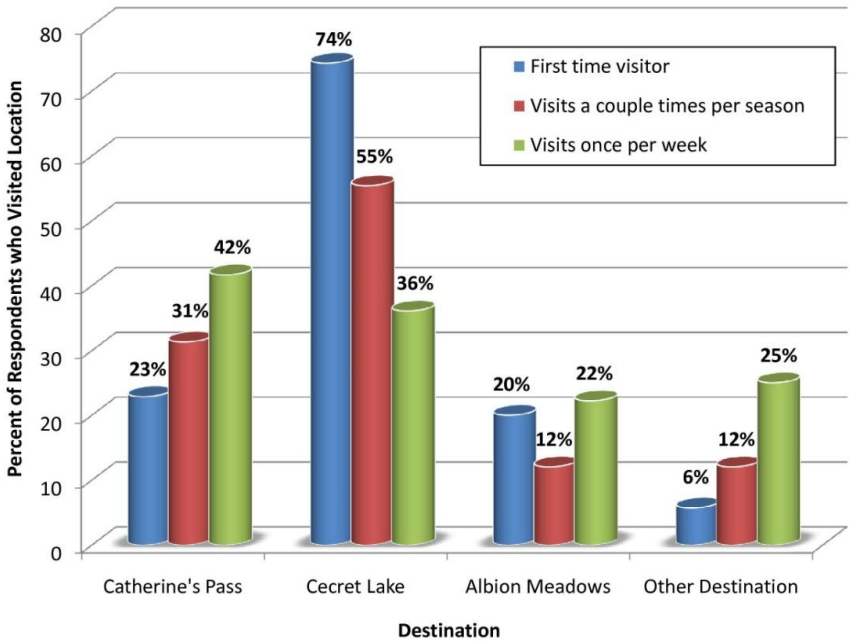
A separate Albion Basin Summer Visitor Survey was conducted during August and September 2009 in order to seek information about summer visitors, recreation activities and transportation needs in Albion Basin and the Town of Alta. The survey was made possible through a partnership between Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center. Although the visitor survey was conducted separately from this study, many of the results are relevant to this effort. Detailed methodology and results of the visitor survey can be found in **Chapter 3**. Key highlights of the survey results are provided below.

- **Residential Location:** The majority (71%) of survey participants reported being from the Salt Lake Valley. Another 24% indicated a residential location outside of the Salt Lake City area.
- **Frequency of Visitation (June through September):** Forty-eight percent (48%) of those surveyed reported visiting Albion Basin "once a month" to "a couple of times per season." Another 27% indicated that it was their first visit to the area.

FIGURE ES-9. REPORTED FREQUENCY OF VISITATION TO ALBION BASIN

- **Access to Albion Basin:** The majority (85%) of respondents indicated that they accessed Albion Basin via a private vehicle and parked within Albion Basin. Only five percent (5%) indicated that they used the pilot shuttle to access this area. However, these results may not be representative of actual mode split since the shuttle may not have been operating on the day the survey was administered.
- **Popular Destinations:** Cecret Lake was reported to be the most popular destination for those visitors on their first visit to Albion Basin. The most popular destination for those visitors who reported visiting Albion Basin once a week was Catherine's Pass. Overall, Cecret Lake was reported to be the most popular destination.

FIGURE ES-10. REPORTED OVERALL POPULAR DESTINATIONS BY FREQUENCY OF VISITATION



- **Length of Stay:** The majority (72%) of respondents reported a length of stay of two to three hours.
- **Experience of using Albion Basin Summer Road:** Eighty-six percent (86%) of those surveyed indicated that the road held a "comfortable mix of people in vehicles, on foot and on bikes." Eleven percent (11%) reported that the road was too crowded. These responses were similar for surveys completed on both weekends and weekdays.
- **Primary Elements that <u>Added</u> to Visitor Experiences:** Key elements reported include availability of parking close to the intended location of visit in Albion Basin, number of wildlife seen during the visit and the summer entrance booth.
- **Primary Elements that <u>Detracted</u> from Visitor Experiences:** Key elements reported include noise from vehicles and noise from other visitors.

- **Primary Concerns Expressed about Conditions in Albion Basin:** Key concerns reported include availability of parking, vegetation damage along Albion Basin Summer Road and along trails and watershed protection.
- **Support for further Consideration of Management Actions:** Support for further consideration of these specific management actions was reported – mandatory versus voluntary shuttle access, provision of ski lift access and restriction of private vehicles from Albion Basin Summer Road when parking spaces are filled.

Damage to natural resources can result from excess vehicular demand within Albion Basin

Additional results and observations can be found in **Chapter 3 of the Final Report**.

DEFINITION OF ALTERNATIVES

Albion Basin transportation access and visitor distribution alternatives were developed in close coordination with project partners and key stakeholders. The following project purpose and goals were developed by the project team based on public input and compilation of partner and stakeholder objectives:

PROJECT PURPOSE AND GOALS

Project Purpose: *Develop a range of sustainable recreation and transportation distribution/dispersion strategies to support residents, visitors and land managers during the Albion Basin Summer season, which assist in resource protection while balancing access and safety, and offer a quality educational and interpretive experience.*

The project goals include an aim to accommodate a diversity of uses and ability types, including families with children

Project Goals:

- Protect natural resources (watershed, wildflowers, wildlife and air quality)
- Enhance and improve visitor experience through improved/increased education, interpretation and/or orientation
- Manage and improve safety
- Manage visitor access to ensure sustainable recreation
- Accommodate a diversity of users and ability types
- Identify cost effective/financially viable solutions
- Support local economic business opportunities

ALTERNATIVES DEVELOPMENT PROCESS

Preliminary alternatives were developed jointly by the project team and key stakeholders through a team workshop attended by representatives from U.S. Forest Service (USFS), the Town of Alta, Alta Ski Lifts, Friends of Alta, Cottonwood Canyons Foundation, National Park Service (NPS) and David Evans and Associates, Inc. (DEA). Details about the format and outcomes of this workshop can be found in **Chapter 4 of the Final Report**, along with details about public involvement efforts undertaken as part of this project. The preliminary alternatives were then refined by the project team and presented to several other key stakeholders who were not in attendance at the workshop.

As part of the alternatives development process, a "design day" meant to represent a typically busy day, but not the maximum use day, was defined and detailed alternative characteristics were developed using the design day conditions. The resulting set of detailed alternatives was then evaluated based on a set of relevant factors and criteria in order to compare the benefits, deficiencies and tradeoffs among alternatives. In general, a typical traffic design condition is often identified by using 85th percentile traffic volumes (meaning that 15% of traffic count samples are higher than the design condition). However, because visitation at Albion Basin (and in public lands in general) is concentrated in a relatively short season, the project team used the 95th percentile (meaning that 5% of days have higher traffic counts than the design day) to define the design day for this project. This practice of establishing design day conditions is common for visitor access and transportation planning projects in public lands.

The process of defining design day conditions is outlined below. Additional detail related to the definition of design day conditions can be found in **Chapter 4 of the Final Report (Section 4.4)**.

- The July 2009 data collection effort resulted in traffic count data for two weekend days: Saturday, July 18, 2009 and Sunday, July 19, 2009. Sunday July 19, 2009 was selected as the sample day most representative of typical weekend day conditions because the annual Wildflower Festival was held on Saturday. The activities associated with the Wildflower Festival are concentrated in the morning hours and daily activity may not be representative of a typical weekend day.
- Sample day data is available for three modes of access: Traffic, shuttle and pedestrian/bicycle activity on Albion Basin Summer Road. Each sample day dataset was compared to related datasets available for the entire summer 2009 season.
- Sample day data was then factored up by mode to represent 95th percentile (design day) conditions.
- After the design day traffic, shuttle and pedestrian/bicycle daily counts were defined, they were distributed over a 24-hour period based on hourly counts observed on the sample day (Sunday, July 19, 2009). The resulting design day hourly counts form the basis of visitor arrival rates used to develop the alternatives.

The project team developed detailed alternatives after the final preliminary alternatives were refined and generally agreed upon by stakeholders, and after design day conditions were defined. The detailed alternatives, which include one No Action Alternative (Current Conditions) and four Action Alternatives, incorporate the final preliminary alternative concepts at a greater level of detail.

ALTERNATIVE DEFINITIONS

A total of five alternatives were developed for the purpose of this feasibility study. A Current Conditions alternative was defined to represent a No Action sceneario assuming current visitor access provisions. This alternative provides a baseline to which all alternatives will be compared in the study. The four Action Alternatives were developed to address project purpose and goals, to provide a comparison to Current Conditions and to allow a range of strategies to be compared to one another. A primary and common purpose of the Action Alternatives is to minimize adverse impacts to the natural environment. The unique aspects of each Action Alternative are listed below:

Alternative #1 – Human-Powered Access:

- Promote a human-powered and natural experience by allowing pedestrian and bicycle access only.
- Facilitate accessibility by improving and promoting trail opportunities.

Alternative #2 – Human-Powered and Ski Lift Access:

- Promote a human-powered and non-vehicular experience by accommodating pedestrian, bicycle, and ski lift access only.
- Facilitate access by providing trail opportunities and through use of the Albion or Sunnyside ski lifts.

Alternative #3 – Human-Powered and Shuttle Access:

- Promote a human-powered and non-private vehicle experience by accommodating pedestrian, bicycle, and transit shuttle access only.
- Facilitate access by providing trail opportunities and a shuttle service on the Albion Basin Summer Road.

Alternative #4 – Disperse Multi-Modal Access:

- Promote a multi-modal experience by accommodating a full range of access options including pedestrian, bicycle, shuttle, ski lift, and private vehicle.
- Facilitate access through diverse travel modes by providing trail opportunities, a shuttle service on the Albion Basin Summer Road, access via the Collins ski lift, and Albion Basin private vehicle access with permit parking for a fee.
- Create an opportunity for dispersed visitation in Collins Gulch through utilization of the Collins ski lift.

The attributes of the detailed alternatives are described in **Table ES-1**. **Figures ES-11** through **ES-15** illustrate the key components of each alternative. More detailed descriptions of alternatives can be found in **Chapter 5 of the Final Report**. The term “day-use visitors” is used to distinguish visitors traveling to and leaving Albion Basin in the same day from residents, campground users and other visitors who spend one or more nights in the area.

ELEMENTS COMMON TO ALL ALTERNATIVES

Several elements are common to all alternatives (including No Action and Action Alternatives):

- Visitor Access –
  1. Retain pedestrian and bicycle access for entrance into Albion Basin along Albion Basin Summer Road and on Albion Meadows Trail.
  2. Campground visitors and residents would retain unrestricted access to Albion Basin Summer Road.
- Transportation Infrastructure –
  1. Retain the same two-lane configuration and gravel surface for Albion Basin Summer Road. Continue to provide summer road maintenance for dust mitigation.
  2. Retain three USFS designated trails in the Basin (Cecret Lake, Catherine's Pass and Albion Meadow trails).

Pedestrian access along Albion Basin Summer Road would be retained under all alternatives

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

Several elements are common to all action alternatives (Alternatives #1 through #4) that would be targeted to address transportation access on specific weekend days, holidays and/or high-use during the summer season:

- Purpose of the Alternative –
  - Minimize adverse impacts to the natural environment.
- Staging Area and Associated Elements –
  - Provide manned or automated access management station at the entrance to Albion Basin Summer Road. Control could be achieved through implementation of a staffed booth, electronic gate, variable message signs or other means used alone or in combination.
- Transportation Infrastructure –
  - Restrict and re-vegetate undesired roadside parking areas.
  - Under a separate decision-making process, consider and/or evaluate formal USFS designation of additional trails in the Albion Basin.
- Opportunities for Visitor Orientation, Interpretation and Education –
  - Develop orientation signing near arrival at Alta base area and entrance location to Albion Basin Summer Road, with possible partner involvement.
  - Provide information that highlights existing designated trails to better direct users and distribute hikers more effectively.

  - Implement wayfinding signs and Intelligent Transportation Systems (ITS) information sources in Little Cottonwood Canyon in coordination with other possible partners.

- Management Actions and Strategies –
  - The operating season/implementation days were considered to be 20 days over approximately 10 weeks (e.g. high-use weekends and holidays) between mid-July and mid-September.
  - Improvements and actions associated with the alternatives would have the potential for phasing and expansion to additional days as part of an adaptive management strategy.
  - Campground reservations would be required. However, any unreserved or vacant sites could be administrated at the control point (gate or booth) on first-come, first-served basis.

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TABLE ES-1. ABBREVIATED ALTERNATIVES DEFINITION TABLE

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Purpose	• Represent current visitor access provisions. • Provide a baseline to which all alternatives will be compared in the feasibility study.	• Minimize adverse impacts to the natural environment. • Promote a human-powered and natural experience by allowing pedestrian and bicycle access only. • Facilitate accessibility by improving and promoting trail opportunities.	• Minimize adverse impacts to the natural environment. • Promote a human-powered and non-vehicular experience by accommodating pedestrian, bicycle, and ski lift access only. • Facilitate access by providing trail opportunities and through use of the Albion or Sunnyside ski lifts.	• Minimize adverse impacts to the natural environment. • Promote a human-powered and non-private vehicle experience by accommodating pedestrian, bicycle, and transit shuttle access only. • Facilitate access by providing trail opportunities and a shuttle service on the Albion Basin Summer Road.	• Minimize adverse impacts to the natural environment. • Promote a multi-modal experience by accommodating a full range of access options including pedestrian, bicycle, shuttle, ski lift, and private vehicle. • Facilitate access through diverse travel modes by providing trail opportunities, a shuttle service on the Albion Basin Summer Road, access via the Collins ski lift, and Albion Basin private vehicle access with permit parking for a fee. • Create an opportunity for dispersed visitation in Collins Gulch through utilization of the Collins ski lift.
Primary Staging Area	• Summer entrance booth and roadside parking lot near the entrance to the Albion Basin Summer Road. • Informal orientation provided by summer entrance booth staff, when time allows.	• Albion Lift Base Area (near Albion Day Lodge) would serve as the primary staging area for visitor access. The facilities in this area are owned by Alta Ski Lifts. • The staging area could serve as an orientation/information center.	• Same as Alternative #1. • The staging area could serve as an orientation/information center, as well as the location of ticket sales for the ski lift.	• Wildcat Lift Base Area (near Goldminer's Daughter Lodge) would serve as the primary staging area for visitor access. Some facilities in this area are not owned by Alta Ski Lifts. • The staging area could serve as an orientation/information center, as well as the location of ticket sales for the shuttle.	• Same as Alternative #3. • The staging area could serve as an orientation/information center, as well as the location of ticket/permit sales.
Pedestrian/Bicycle Access	• Pedestrian/bicycle access to Albion Basin along Albion Basin Summer Road and Albion Meadows Trail.	• Same as Current Conditions Alternative	• Same as Current Conditions Alternative	• Same as Current Conditions Alternative	• Same as Current Conditions Alternative
Private Vehicle Access to Albion Basin via Albion Basin Summer Road	• Campground visitors and residents retain full access. • Day-use private vehicle access is unrestricted, but cars often line up waiting for limited parking spaces during times of peak visitation.	• No day-use private vehicle access except for residents, campground visitors and those with ADA and special mobility needs only, as well as for special events.	• Same as Alternative #1.	• Same as Alternative #1.	• Day-use private vehicle access would be restricted to those visitors with valid parking permits, as well as residents, campground visitors and those with ADA and special mobility needs. Special access provisions could be provided for selected special events. • Parking at Cecret Lake and Catherine's Pass trailhead parking lots would be available by permit for a fee.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Shuttle Access to Albion Basin	• Pilot shuttle was provided along Albion Basin Summer Road in the 2006 through 2009 summer seasons. Shuttles are temporary in nature and are permitted on an annual basis by the USFS. Service is free, and has operated during varying days and times in the summer season, primarily on weekends only. Shuttles provide access to Catherine's Pass and Cecret Lake trailheads. • Pilot shuttle operates at approximately 10 to 20 minute headways (depending on whether there are two or three vehicles in use)	• No shuttle access.	• No shuttle access.	• Shuttle access along Albion Basin Summer Road would be provided (with required ADA provisions). Shuttles would provide access to trailheads near Town of Alta, as well as Catherine's Pass and Cecret Lake trailheads. • Shuttle would operate at approximately 3 to 5 minute headways (depending on vehicle type). • Frequency of service could be tailored as a management strategy to deliver sustainable number of visitors.	• Shuttle access along Albion Basin Summer Road would be provided (with required ADA provisions). Shuttles would provide access to trailheads near Town of Alta, as well as Catherine's Pass and Cecret Lake trailheads. • Shuttle would operate at approximately 15 minute headways. • Frequency of service could be tailored as a management strategy to deliver sustainable number of visitors.
Ski Lift Access to Albion Basin	• N/A	• N/A	• Albion or Sunnyside ski lift access would be provided. Gondolas for ADA access could be considered. • Estimated ski lift demand/arrival rate: 240 persons per hour • Estimated ski lift capacity: 400-600 persons per hour • Lift speed and loading schedules could be tailored as a management strategy to deliver sustainable number of visitors.	• N/A	• N/A
Ski Lift Access to Collins Gulch	• N/A	• N/A	• N/A	• N/A	• Collins ski lift access would be provided. Gondolas for ADA access could be considered. • Estimated ski lift demand/arrival rate: 90 persons per hour • Estimated ski lift capacity: 1,000 persons per hour • Lift speed and loading schedules could be tailored as a management strategy to deliver sustainable number of visitors.
Day-Use Parking at Staging Area	• 225 parking spaces are currently available near the summer entrance booth and in the Town of Alta and base area. These spaces can be used for either short- or long-term parking.	• Available in existing lots at the primary staging area. • Additional/overflow parking would be available near the entrance to Albion Basin Summer Road and at Wildcat Lift Base Area. • Reconfiguration and re-striping of parking may be required. • Long-term parking requirement: 280 spaces • Short-term parking requirement: No parking would be specified as short-term	• Same as Alternative #1.	• Available at the primary staging area. • Reconfiguration and re-striping of parking may be required. • Long-term parking requirement: 280 spaces • Short-term parking requirement: No parking would be specified as short-term	• Available at the primary staging area. • Reconfiguration and re-striping of parking may be required. • Long-term parking requirement: 200 spaces (for shuttle and ski lift users, as well as pedestrians /bicyclists) • Short-term parking requirement: 40 to 50 spaces (for vehicles obtaining parking permits)

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Day-Use Parking in Albion Basin	• Retain parking lots at Cecret Lake and Catherine's Pass trailheads (total of 54 spaces) • Retain designated roadside parking (25 spaces)	• Provide parking at Cecret Lake and Catherine's Pass by permit for ADA and others with special mobility needs only. May require reconfiguration and delineation of dedicated spaces. • Re-vegetate undesired roadside parking areas. Number of affected parking spaces yet to be determined.	• Same as Alternative #1.	• Provide parking at Cecret Lake and Catherine's Pass by permit for ADA and others with special mobility needs if the shuttle was determined to be insufficient to meet this particular need or demand level. May require reconfiguration and delineation of dedicated spaces. • A minimum of two to four parking spaces would be available in Cecret Lake and Catherine's Pass parking lots for those with special mobility needs, in compliance with ADA regulations. • Reconfigure Cecret Lake Trailhead parking lot to facilitate shuttle vehicle turnaround. • Re-vegetate undesired roadside parking areas. Number of affected parking spaces yet to be determined.	• Provide parking by permit only for a fee at Cecret Lake and Catherine's Pass, as well as for ADA and others with special mobility needs (may need reconfiguration and delineation of dedicated spaces). • A minimum of two to four parking spaces would be available in Cecret Lake and Catherine's Pass parking lots for those with special mobility needs, in compliance with ADA regulations. • Reconfigure Cecret Lake Trailhead parking lot to facilitate shuttle vehicle turnaround. • Re-vegetate undesired roadside parking areas. Number of affected parking spaces yet to be determined. • Add improved delineation and signing to roadside parking areas to accommodate permit holders.
Staffing Requirements	Town of Alta currently provides the following general staffing in support of operations at Albion Basin: • Staffing of summer entrance booth	• Would generate slightly more general staffing needs as compared to the Current Conditions Alternative. Would require the following general staffing in support of operations at Albion Basin: • May require staffing of summer entrance booth at the entrance to Albion Basin Summer Road. Alternately, automatically controlled gates could be used. • May require staffing of orientation/information center at staging area. Alternately, volunteers and/or partners could be used to staff the center. • Would require staff to support distribution of parking permits for ADA and others with special mobility needs.	• Would generate slightly more general staffing needs as compared to the Current Conditions Alternative and Alternative #1. Would require the following general staffing in support of operations at Albion Basin: • May require staffing of summer entrance booth gate to Albion Basin Summer Road. Alternately, automatically controlled gates could be used. • May require staffing of orientation/information center at staging area. Alternately, volunteers and/or partners could be used to staff the center. • Would require staff to support sales of ski lift tickets. • Would require staff to support distribution of parking permits for ADA and others with special mobility needs.	• Similar to Alternative #2, except that it would require staff to support sales of shuttle tickets, not ski lift tickets.	• Would generate the most general staffing needs as compared to the Current Conditions Alternative and all alternatives. Would require the following general staffing in support of operations at Albion Basin: • May require staffing of summer entrance booth at the entrance to Albion Basin Summer Road. Alternately, automatically controlled gates could be used. • May require staffing of orientation/information center at staging area. Alternately, volunteers and/or partners could be used to staff the center. • Would require staff to support sales of both shuttle and ski lift tickets. • Would require staff to support distribution of parking permits for ADA and others with special mobility needs. • Would require staff to support sales of parking permits to general visitors. • Would require staff to manage parking activity and permit use.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Seasonal Operating Costs* Costs DO NOT INCLUDE the following: ○ Insurance ○ Taxes ○ Depreciation Note: All costs are in 2010$; See **Table 5-1 in the Final Report** for more detailed information	• Approximately $50,000 Note: This value is not representative of the actual amount spent in 2009. The value represents the approximate amount that would be spent using theoretical conditions.	• Approximately $30,000 to$35,000	• Approximately $150,000 to $155,000 depending on which ski lift (Albion or Sunnyside) is used to provide access to Albion Basin.	• Approximately $200,000 to $385,000 depending on shuttle vehicles and frequency, as well as contracted cost of service.	• Approximately $245,000 to $260,000 depending on shuttle vehicles and frequency, as well as contracted cost of service.
Capital Investment Requirements* Note: Capital investment costs were developed using the National Park Service's Class C estimate model. See **Table 5-1 in the Final Report** for more detailed information.	• No capital investments are required until existing facilities require replacement (i.e. summer entrance booth).	Fundamental Capital Cost Components • No critical capital cost investments required to support human-powered transportation access. Other Potential Capital Investment Requirements listed in **Table 5-1**.	Fundamental Capital Cost Components: • Passenger amenities at ski lift termini (benches and shelters): $20,000 to $24,000 • TOTAL FOR ALL NOTED ESTIMATED COSTS: $20,000 to $24,000 Other Potential Capital Investment Requirements listed in **Table 5-1**.	Fundamental Capital Cost Components: • Passenger amenities at shuttle termini and stops (benches and shelters): $41,000 to $49,000 • Shuttle vehicles: $600,000 to $1,530,000 • Reconfiguration of Cecret Lake parking lot (for shuttle vehicle turnaround): $28,000 to $33,000 • TOTAL FOR ALL NOTED ESTIMATED COSTS: $770,000 to $1,610,000 Other Potential Capital Investment Requirements listed in **Table 5-1**.	Fundamental Capital Cost Components: • Passenger amenities at ski lift termini and shuttle termini/stops (benches and shelters): $61,000 to $73,000 • Shuttle vehicles: $220,000 to $360,000 • Reconfiguration of Cecret Lake parking lot (for shuttle vehicle turnaround): $28,000 to $33,000 • TOTAL FOR ALL NOTED ESTIMATED COSTS: $310,000 to $470,000 Other Potential Capital Investment Requirements listed in **Table 5-1**.

Source: Project Team, 2010.

Notes:

*All costs are presented in 2010$. Inflation could increase costs in subsequent years. Data from the U.S. Department of Labor, Bureau of Labor Statistics indicates that the 12-month consumer price index (CPI) for the Salt Lake City area is 2.0%. Data also indicates that annual inflation has ranged from 1.6% to 3.8% between 2000 and 2008. Based on a maximum annual inflation rate of 4.0%, operating costs could increase up to 18% over a five-year period.

FIGURE ES-11. CURRENT CONDITIONS ALTERNATIVE

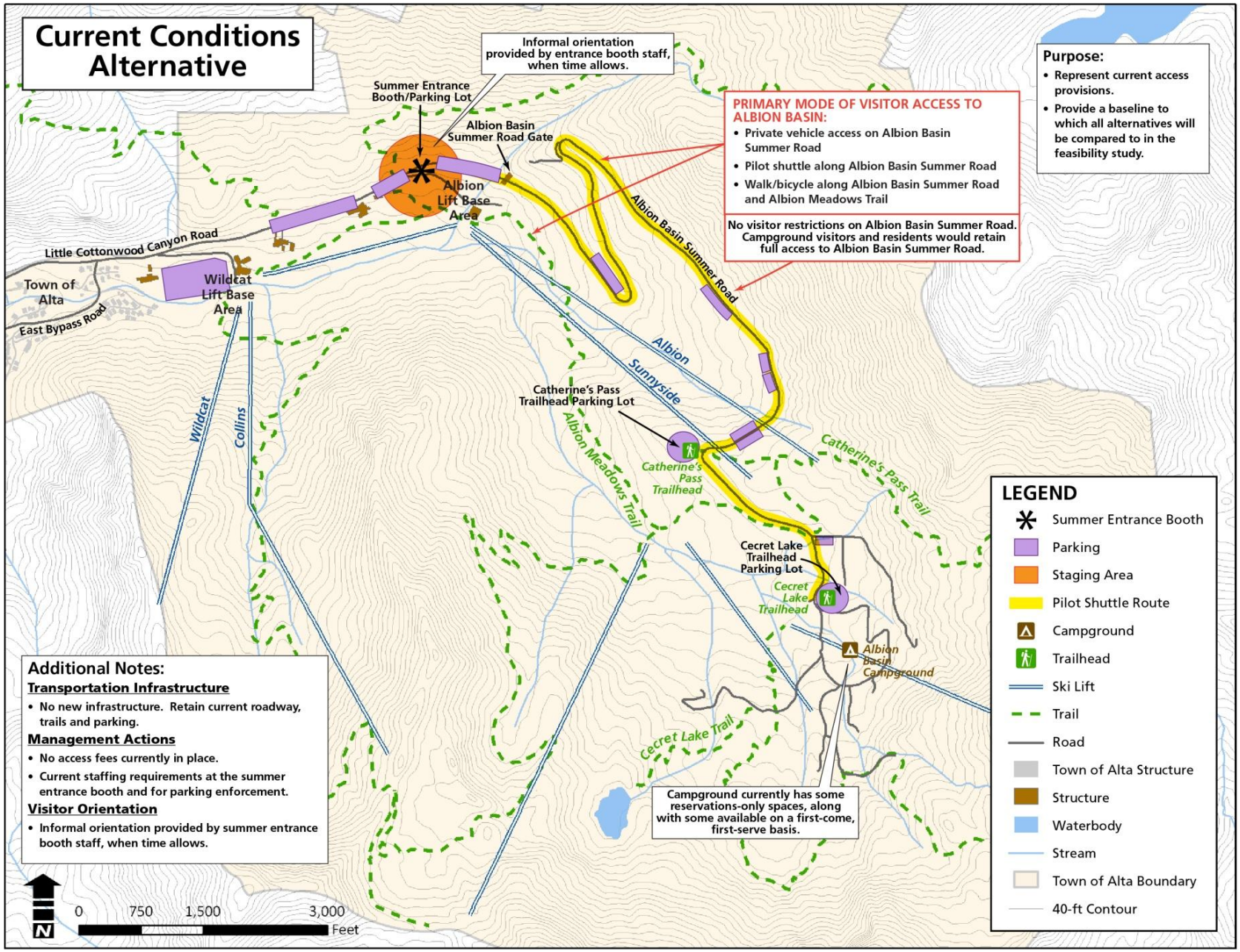


FIGURE ES-12. ALTERNATIVE #1 – HUMAN-POWERED ACCESS

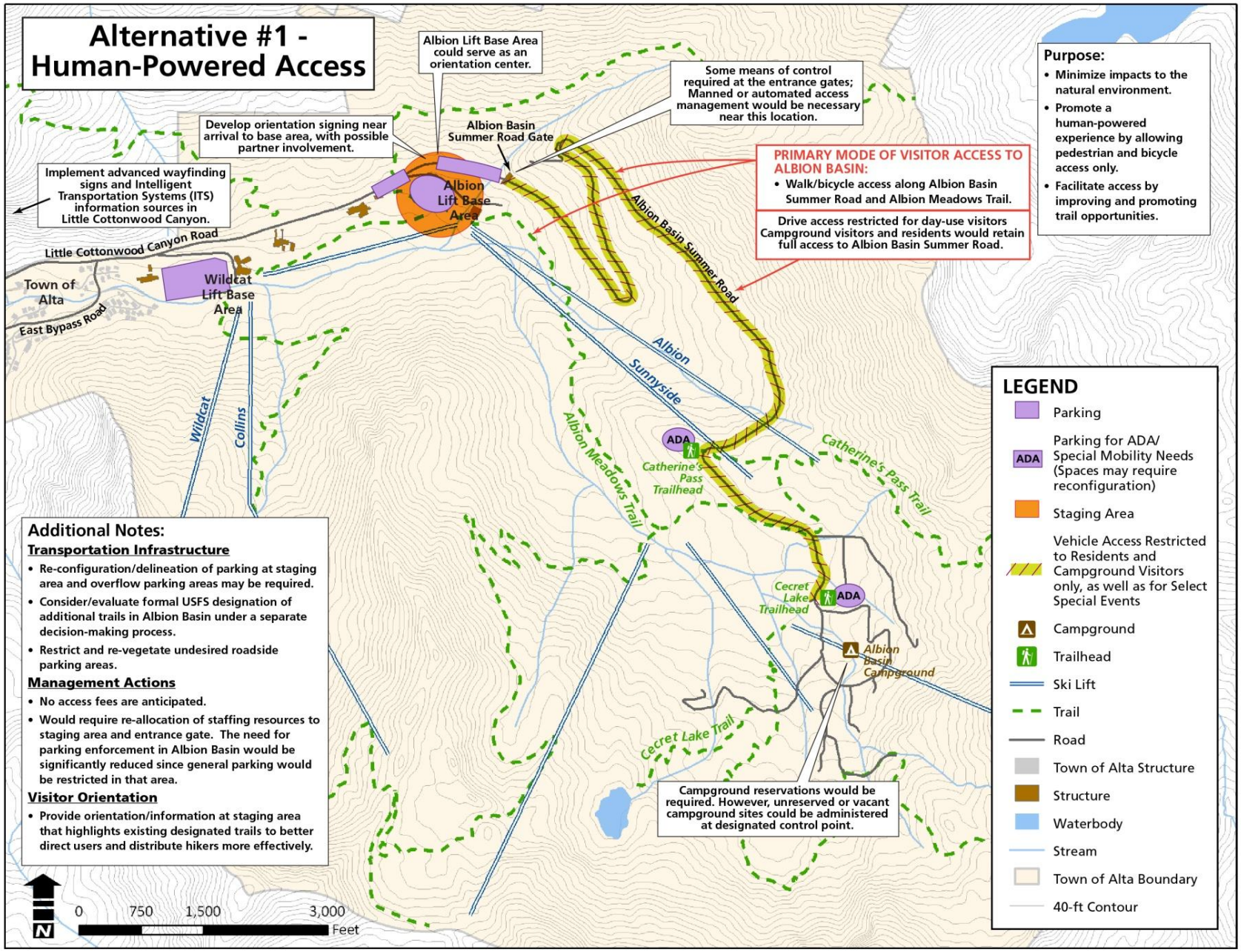


FIGURE ES-13. ALTERNATIVE #2 – HUMAN-POWERED AND SKI LIFT ACCESS

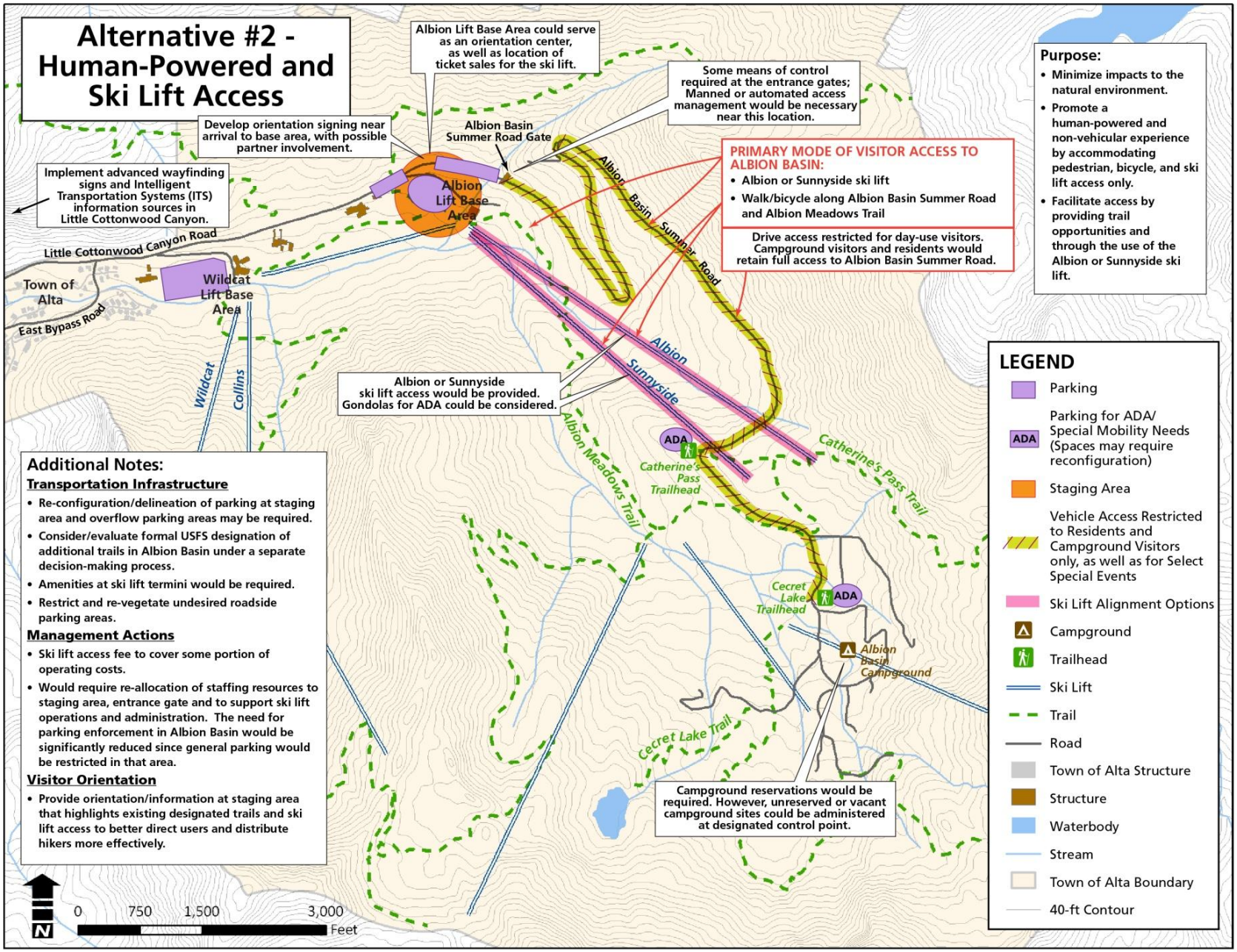


FIGURE ES-14. ALTERNATIVE #3 – HUMAN-POWERED AND SHUTTLE ACCESS

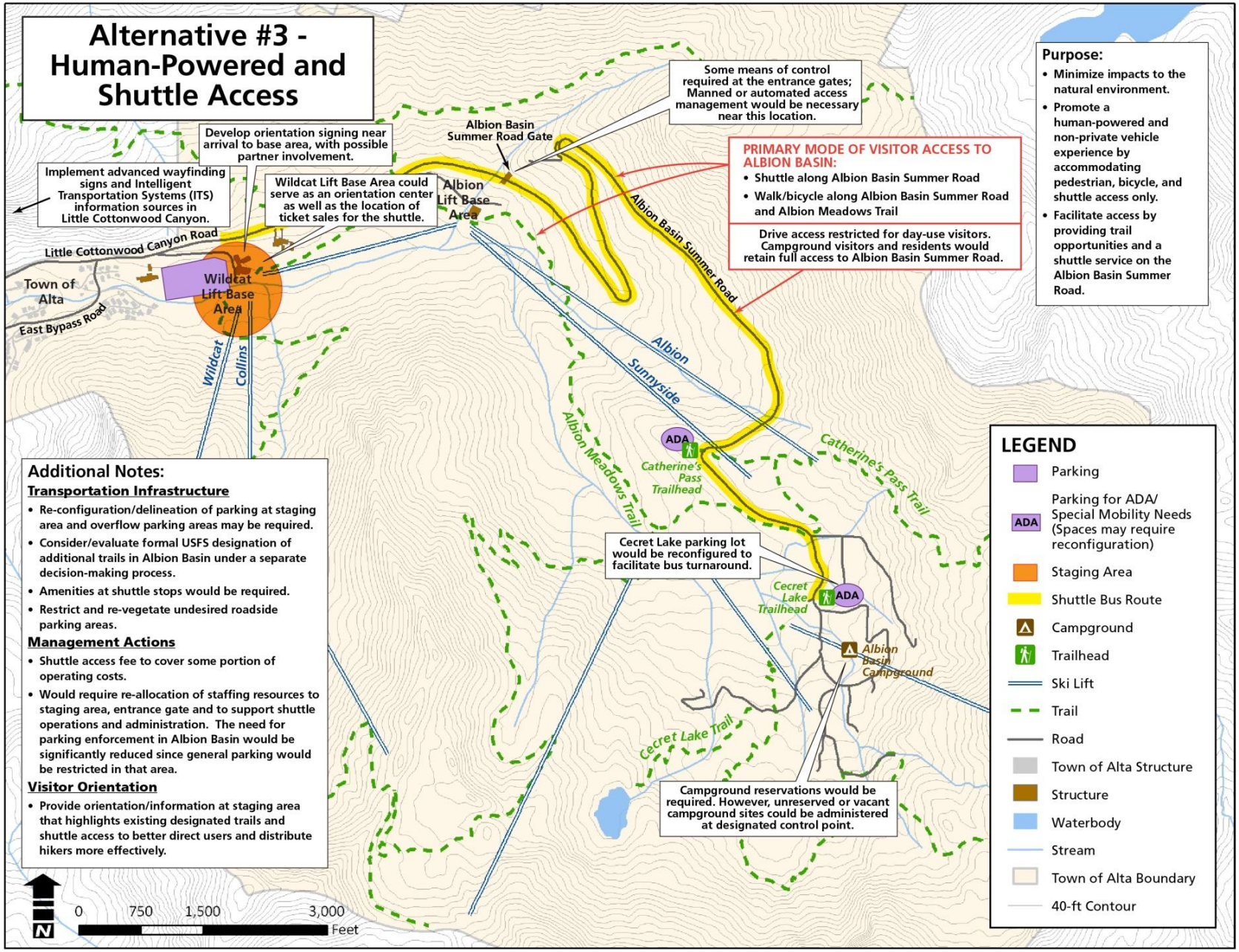
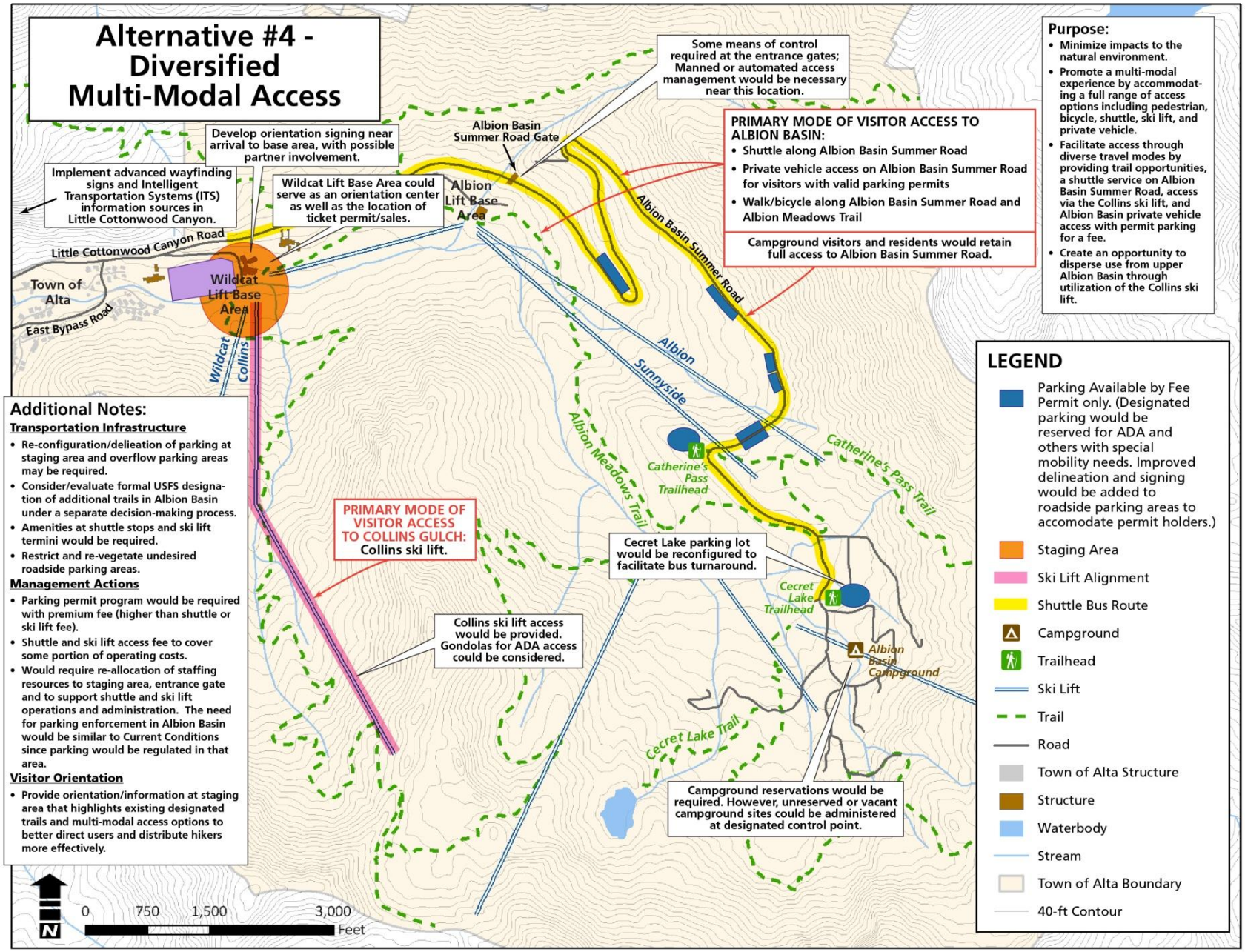


FIGURE ES-15. ALTERNATIVE #4 – DISPERSED MULTI-MODAL ACCESS



EVALUATION OF ALTERNATIVES

The detailed alternatives were evaluated based on a set of relevant factors and criteria in order to compare the benefits and challenges among alternatives. The project team developed evaluation criteria to link closely with project purpose and goals. In addition, issues voiced by stakeholders and members of the public were used to develop criteria, and evaluation categories used for similar visitor access and transportation projects in public lands were also incorporated.

The evaluation of alternatives is not intended to result in the selection of a preferred alternative, but is instead meant to provide an initial assessment and contrast the advantages and disadvantages of each alternative, and how alternatives may affect or influence natural resources, visitor experience and access, safety, local businesses and other elements. A brief description of the benefits and challenges associated with each alternative is provided below along with **Table ES-2**, which provides a summary of alternative evaluation results. A more detailed description of alternatives evaluation results, as well as a description of the benefits and challenges associated with each alternative is located in **Chapter 6 of the Final Report**.

CURRENT CONDITIONS ALTERNATIVE

Benefits:

- Provides day-use visitor parking within Albion Basin, directly adjacent to existing trailheads when available, which is likely to be perceived as the most direct and easiest method of access to popular destinations.
- Accommodates a wide range of types of users and ability levels.
- No capital investments are required (except for future facility replacement).
- Seasonal operating costs are second lowest of all alternatives.

Current Conditions would continue to accommodate a wide range of types of users and ability levels

Challenges:

- Highest level of overall potential adverse impacts to natural resources.
- Parking demand at popular day-use destinations often exceeds supply.
- Highest risk to the safety of pedestrian, bicyclists and motorists.
- It is becoming increasingly difficult for the Town of Alta to manage summer visitation to Albion Basin, particularly in relation to parking, traffic, visitor services and enforcement. Operating schedule for both the pilot shuttle and

summer entrance booth are currently limited by available funding from the Town of Alta and Friends of Alta, and do not meet current demand.

ALTERNATIVE #1 – HUMAN-POWERED ACCESS

Benefits:

- Lowest level of potential adverse impacts to natural resources.
- Most significant improvement in safety of pedestrians, bicyclists and motorists.
- Lowest level of capital investment of all action alternatives.
- Would assist in dispersing use through increased utilization of the Albion Meadows Trail as an alternative to driving on Albion Basin Summer Road.

Alternative #1 would be effective in protecting natural resources, including wildflowers

Challenges:

- Would accommodate only some types of users and ability levels.
- Visitors may perceive access conditions as significantly less convenient.

ALTERNATIVE #2 – HUMAN-POWERED AND SKI LIFT ACCESS

Benefits:

- Second lowest level of potential adverse impacts to natural resources.
- Significant improvement in the safety of pedestrians, bicyclists and motorists.
- Higher levels of capital investment than Alternative #1, but lower levels than Alternatives #3 and #4.
- Third lowest seasonal operating costs of all action alternatives.
- Could result in better utilization of the Albion Meadows Trail to disperse use.

Challenges:

- Would accommodate more types of users and ability levels than Alternative #1, but less than other alternatives.
- Visitors may perceive access conditions as less convenient to popular destinations.

Alternative #2 would provide ski lift access to Albion Basin

ALTERNATIVE #3 – HUMAN-POWERED AND SHUTTLE ACCESS

Benefits:

- Would improve the safety of pedestrians, bicyclists and motorists, but not to the same level as under Alternatives #1 and #2.
- Locating the staging area in Wildcat Lift Base Area could provide expanded and alternate recreation opportunities.

Alternative #3 would provide shuttle access to Albion Basin, similar to other services provided in public lands (such as the Glacier National Park Going-to-the-Sun Road shuttle, shown above)

Challenges:

- Would accommodate more types of users and ability levels than Alternatives #1 and #2, but less than Current Conditions Alternative and Alternative #4.
- Visitors may perceive access conditions as less convenient.
- Would require the highest level of capital investment of all the action alternatives.
- Seasonal operating costs would be second highest to highest of all alternatives, depending on the specific operating conditions.
- Second highest level of potential adverse impacts to natural resources (along with Alternative #4) among all the alternatives.

ALTERNATIVE #4 – DISPERSED MULTI-MODAL ACCESS

Benefits:

- Would accommodate a similar range of types of users and ability levels as Current Conditions Alternative.
- Would provide a broad and diverse range of recreational opportunities by redistributing some visitors to Collins Gulch and provided multi-modal access.
- Would improve the safety of pedestrians, bicyclists and motorists, although to a lesser degree than all other action alternatives.
- Locating the staging area in Wildcat Lift Base Area could provide expanded and alternate recreation opportunities.

Alternative #4 would accommodate a similar range of types of users and ability levels as Current Conditions

Challenges:

- Would require a higher level of management and enforcement.
- Visitors may perceive access conditions as less convenient than current conditions, but to a lesser degree than the other action alternatives.
- Would require the second highest level of capital investment of all the action alternatives.
- Seasonal operating costs would be second highest to highest of all the action alternatives, depending on specific operating conditions.
- Second highest level of potential adverse impacts to natural resources (along with Alternative #3) among all the alternatives.

TABLE ES-2. SUMMARY OF ALTERNATIVES EVALUATION RESULTS

LEGEND

} **Potential to Satisfy Evaluation Criteria Objectives**

Evaluation Criteria	Current Conditions Alternative	Alternative #1 - Human-Powered Access	Alternative #2 - Human-Powered and Ski Lift Access	Alternative #3 - Human-Powered and Shuttle Access	Alternative #4 - Dispersed Multi-Modal Access
Protection of Natural Resources ○ Watershed ○ Wildflowers and Vegetation ○ Wildlife ○ Air Quality ○ Natural Soundscapes ○ Visual					
Enhance/Improve Visitor Experience ○ Address Elements That Add to Visitor Experience ○ Address Elements That Detract From Visitor Experience ○ Opportunities for Increased Orientation ○ Opportunity for Interpretation, Environmental Stewardship and Education					
Manage and Improve Safety ○ Human-Powered (Pedestrian and Bicycle) ○ Vehicular (Shuttle Vehicles, Administrative Vehicles, Privately Owned Vehicles)					

LEGEND

} **Potential to Satisfy Evaluation Criteria Objectives**

Evaluation Criteria	Current Conditions Alternative	Alternative #1 - Human-Powered Access	Alternative #2 - Human-Powered and Ski Lift Access	Alternative #3 - Human-Powered and Shuttle Access	Alternative #4 - Dispersed Multi-Modal Access
Ability to Manage Visitor Access to Ensure Sustainable Recreation ○ Ability to Meet Projected Design Day Visitor Demand ○ Ability to Accommodate Increased Visitor Demand Levels ○ Ability to Serve Diverse Types of Recreational Users ○ Effectiveness/Ease of Access to Most Popular Destinations ○ Ability to Accommodate Administrative Activities and Access ○ Potential to Connect with Other Public/Private Transportation Services					
Ability to Accommodate a Diversity of Users and Ability Types ○ Ability to Serve Diverse Ability Levels					

LEGEND

} **Potential to Satisfy Evaluation Criteria Objectives**

Evaluation Criteria	Current Conditions Alternative	Alternative #1 - Human-Powered Access	Alternative #2 - Human-Powered and Ski Lift Access	Alternative #3 - Human-Powered and Shuttle Access	Alternative #4 - Dispersed Multi-Modal Access
Cost Effectiveness and Financial Viability ○ Capital Investment Requirements ○ Seasonal Operating Costs ○ Operating Cost per Design Day Visitor ○ Fee Considerations ○ Range of Potential Funding Sources ○ Opportunities for partnerships					
Support Local Economic Business Opportunities ○ Support of Local Economic Opportunities (Public/Private)					
Ability to Implement as part of Adaptive Management Strategy ○ Implementation Considerations ○ Complexity of Implementation (Required Staffing, Law Enforcement, etc.)					

Source: Project Team, 2010.

NEXT STEPS

The *Albion Basin Transportation Feasibility Study* provides the information and analysis necessary to advance the selection of preferred strategies or approaches to address natural resource protection, visitor access and circulation in Albion Basin. Several next steps would be required to continue project development, including additional plans and/or studies which may be necessary to provide more detailed alternative definition and to more fully analyze and document the benefits and consequences of implementation of the alternatives. Finally, all action alternatives would require some future infrastructure improvements.

Next steps in project development, recommended future plans and/or studies, and recommended future infrastructure improvements are outlined below. See **Chapter 7** for additional detail.

NEXT STEPS IN PROJECT DEVELOPMENT

- Select a preferred strategy or set of strategies.
- Conduct further coordination with project partners and agencies regarding support for the preferred strategy, including investigation of funding mechanisms, management concepts and administrative aspects for implementation.
- Identify any compliance requirements consistent with the National Environmental Policy Act (NEPA).
- Initiate a pilot program using an adaptive management approach in order to test the effectiveness of the preferred strategy.

RECOMMENDED FUTURE PLANS AND/OR STUDIES

- Plans/studies in support of required NEPA environmental compliance.
- Implementation plans for shuttle and/or ski lift access. If either or both are selected as part of the preferred alternative.
- Identification of possible funding needs and sources.
- Undertaking of separate decision-making process that considers and evaluates formal USFS designation of additional trails in Albion Basin.
- An Interpretive Plan for Town of Alta and Albion Basin.
- A separate planning process that evaluates the legal authority and mechanisms for a parking fee, and assesses the benefits and challenges of implementing such a fee.
- Establishment of routine monitoring of resource conditions and visitor experience to identify trends of change from baseline conditions.

RECOMMENDED FUTURE INFRASTRUCTURE IMPROVEMENTS

- Elements that would need to be considered under any action alternative include the following:
    - Improvements associated with the preferred staging area.

  - Implementation of an orientation/information center at the staging area.
  - Electronic access management gate device.
  - Possible restriction and re-vegetation of undesirable parking along Albion Basin Summer Road.
  - Possible orientation/interpretive improvements to the existing trail system.

- Elements that would need to be considered if selected as part of the preferred alternative include the following:
  - Delineation of dedicated ADA parking in Albion Basin.
  - Amenities at ski lift termini and/or shuttle stops.
  - Upgraded chairlift/gondola carriages that meet needs for both winter and summer pedestrian use, as well as for ADA access.
  - Re-configuration of Cecret Lake parking lot to accommodate shuttle vehicle turnaround.
  - Purchase of shuttle vehicles (alternative fuel vehicles should be considered in compliance with USFS mandates and recommendations).
  - Investigation of legal issues and planning requirements for parking in Albion Basin through a fee-permit system.
  - Delineation of parking spaces in existing lots and along Albion Basin Summer Road.
  - Concepts for parking management control and permit allocation.

ADAPTIVE MANAGEMENT STRATEGIES AND OPPORTUNITIES

Adaptive management refers to a method for incremental or phased implementation of alternatives. It is considered to be a systematic process for continually improving management policies and practices by learning from the outcomes of past operating programs. The process can be effective in testing, monitoring, optimizing and maximizing effectiveness of new strategies. All action alternatives could be implemented as part of an adaptive management strategy, although the method and ease of doing so varies by alternative. See **Chapter 7** for more detailed information about adaptive management strategies and opportunities.

CHAPTER 1: INTRODUCTION

1.1 PROJECT PARTNERS

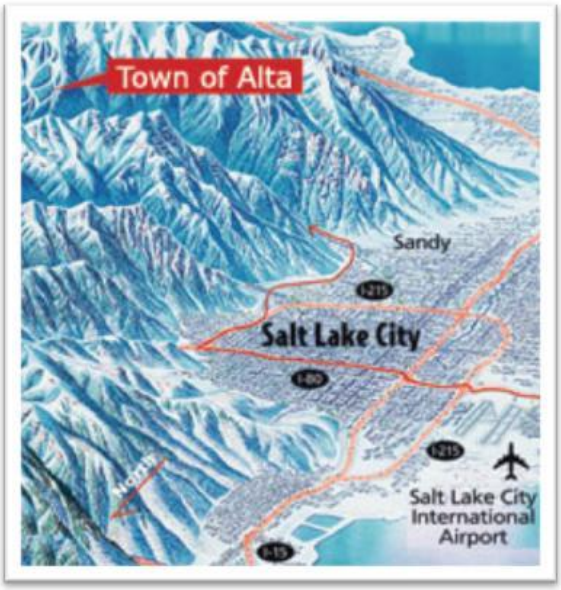
The United States Forest Service (USFS) partnered with the Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center to develop the *Albion Basin Transportation Feasibility Study*. In support of this effort, the USFS retained transportation planners from the National Park Service (NPS) and David Evans and Associates, Inc. (DEA) to develop candidate visitor access and transportation solutions for Albion Basin. Project partners and key stakeholders were instrumental to the data collection and alternatives development aspects of this project. In addition to those listed above, the stakeholders that were consulted as part of the planning process including the following:

- Salt Lake City Watershed
- Cottonwood Canyons Foundation
- Utah Department of Transportation
- Envision Utah/Wasatch Canyons Tomorrow
- Alta Community Enrichment
- Alta Residents
- Other Interested Citizens

1.2 PROJECT SETTING

The Albion Basin is located in Little Cottonwood Canyon, one of the "Tri-Canyons" located immediately to the east of the Salt Lake City area (see **Figure 1-1)**. The Albion Basin is less than a one-hour drive from much of the Salt Lake County metropolitan region.

FIGURE 1-1. OVERVIEW MAP



Source: Town of Alta website

Little Cottonwood Canyon Road extends seven miles from the Salt Lake County metropolitan area boundary ending at the top of the canyon near the Town of Alta. The 1,700-acre Albion Basin envelops the small municipality of Alta and much of the Alta Ski Area. Most of the land in Albion Basin is managed by the USFS and contains wildlife habitat; the headwaters of Little Cottonwood Creek, which provides a substantial portion of the Salt Lake Valley's water supply; and over 300 species of wildflowers. The area offers world-class skiing in the winter season and an array of summertime activities including hiking, world-renowned wildflower viewing, mountain biking, and camping opportunities for residents and tourists. In addition, private property and full or part time residences also exist within Albion Basin.

Heavy visitation to the Albion Basin during the summer months has become a significant concern and is creating challenges due to limited parking near trailheads or convenient options for using alternative modes. The area is highly publicized in local tourism campaigns and multiple visitor guides, and this popularity and promotion contributes to the challenges associated with overcrowding. The annual Wasatch Wildflower Festival is a premier event for the area that results in a high concentration of visitation. Visitor use also spikes on weekends, holidays and warm days throughout the year as people retreat to higher elevations and scenic surroundings.

According to data provided by the Demographic and Economic Analysis section of the State of Utah Governor's Office for Planning and Budget, population is expected to increase substantially between 2010 and 2040 for both Salt Lake County and the State of Utah. **Table 1-1** summarizes these findings.

TABLE 1-1. ESTIMATED POPULATION GROWTH STATISTICS

Geography	2010 Population	2040 Population	Percent Change between 2010 and 2040
Salt Lake County	1,079,679	1,671,627	54.8%
State of Utah	2,927,643	5,171,391	76.6%

Source: Governor's Office of Planning and Budget, 2008 Demographic and Economic Baseline Projects, January 2008.

Population growth for the region is important to consider in regards to recreation and transportation planning, since increased population is likely to translate into future increases in visitation to Little Cottonwood Canyon and Albion Basin.

1.3 PURPOSE OF THE REPORT

Due to the current popularity of Albion Basin and projected increases in area population and tourism, there is growing concern about user demand with regard to sustainable visitation levels, recreation, transportation, and natural resource protection. As a result, the USFS identified the need to develop strategies for improved transportation access and visitor distribution. The specific purpose of this project is to develop an understanding of baseline conditions through detailed data collection efforts and preliminary resource analysis, as well as to develop a range of summer season recreation and transportation

alternatives for Albion Basin that aim to protect resources and distribute visitors in a sustainable manner. The definition of baseline conditions included a study of existing roads, trails and transit systems, a visitor survey administered by project partners, and a preliminary review of natural resources. Baseline conditions were used to establish a starting point for monitoring future trends and for testing transportation alternatives, which were developed to address both near-term and long-term management strategies for visitor access. Alternatives development also considered the recreational attractiveness and economic considerations for the Town of Alta. This project serves as an initiation of public involvement steps and alternatives evaluation analysis. The effort is intended to support possible subsequent planning phases in compliance with National Environmental Policy Act (NEPA) and future project development steps for implementation. This project also presents an opportunity to serve as a model for assessing alternative transportation in other local areas with natural ecologically sensitive conditions and high visitation.

Damage to natural resources can result from excess vehicular demand within Albion Basin

1.4 PROJECT PROCESS AND REPORT STRUCTURE

This project entailed several key steps to set the foundation for the planning process. First, data was collected and analyzed to support the definition of baseline conditions. As part of this effort, transportation infrastructure (roadways, trails, parking, transit and other elements) characteristics and conditions were inventoried, along with information on overnight accommodations and natural resources. A large data collection effort was also undertaken during a five-day period in July 2009 (July 16 – 21). Data sampling and analysis included traffic volumes, parking utilization, trail activity, shuttle ridership, visitor accumulation and vehicle characteristics. A summary of baseline conditions is detailed in **Chapter 2**. Several related plans and studies were also consulted as part of the baseline conditions effort. These plans, including their objectives and key findings, are summarized in **Appendix A**. A visitor survey was developed by the project partners and conducted by volunteers in August and September 2009 in order to seek input about summer recreation activities and transportation needs in Albion Basin and the Town of

Alta. Visitor survey methodology and results are summarized in **Chapter 3**. After completion of the baseline conditions analysis and public meetings, the project team and key stakeholders worked to define the project purpose statement, as well as project goals. The project purpose and goals provided a framework for the development of a range of visitor access and transportation solutions, which were developed based on stakeholder input. The resulting five alternatives, including the Current Conditions Alternative and four action alternatives, were evaluated based on an agreed-upon set of screening criteria. The alternatives development process is summarized in **Chapter 4**. Alternative definitions and evaluation of those alternatives are presented in **Chapters 5** and **6**, respectively. Finally, **Chapter 7** provides an overview of recommended next steps.

CHAPTER 2: BASELINE CONDITIONS

2.1 TRANSPORTATION INFRASTRUCTURE

The following section documents the existing transportation system facilities and operations in the Albion Basin, including roadways, parking, bus routes, and hiking/biking trails. **Figure 2-1** provides an overview of the project study area.

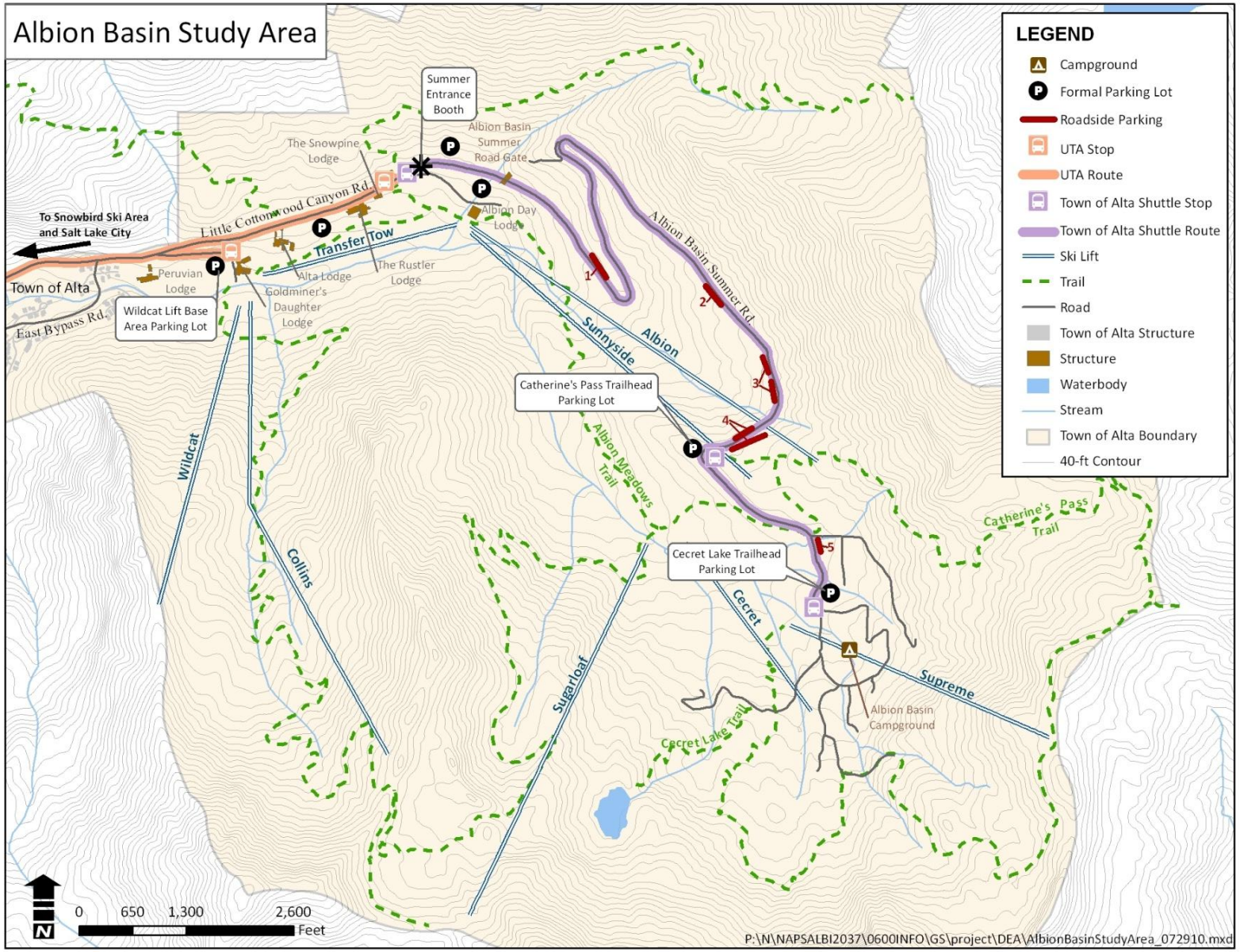
2.1.1 ROADWAYS

Access to the Albion Basin is provided via the Albion Basin Summer Road (FR 028), a two-way unpaved Forest Service road in the eastern portion of the Town of Alta.

The 2.5-mile roadway extends from the end of the Little Cottonwood Canyon Road (Utah SR 210) to the Albion Basin Campground. The road is approximately 20 feet wide. The Forest Service has no plans to pave the road in the future. No other roadways provide access to the Albion Basin.

The roadway is opened when the snow melts in early summer and is maintained by the Town of Alta under an agreement with the USFS, Town of Alta and Alta Ski Lifts. An entrance gate at the end of SR 210 controls access along the Albion Basin Summer Road. Magnesium chloride is applied to Albion Basin Road to control dust prior to the gate opening for the summer season. Outside of the summer season, the roadway is gated and vehicle access is restricted to private property owners and Alta Ski Lifts operations staff. From approximately November through mid-June the road is typically covered by snow.

FIGURE 2-1. PROJECT STUDY AREA OVERVIEW



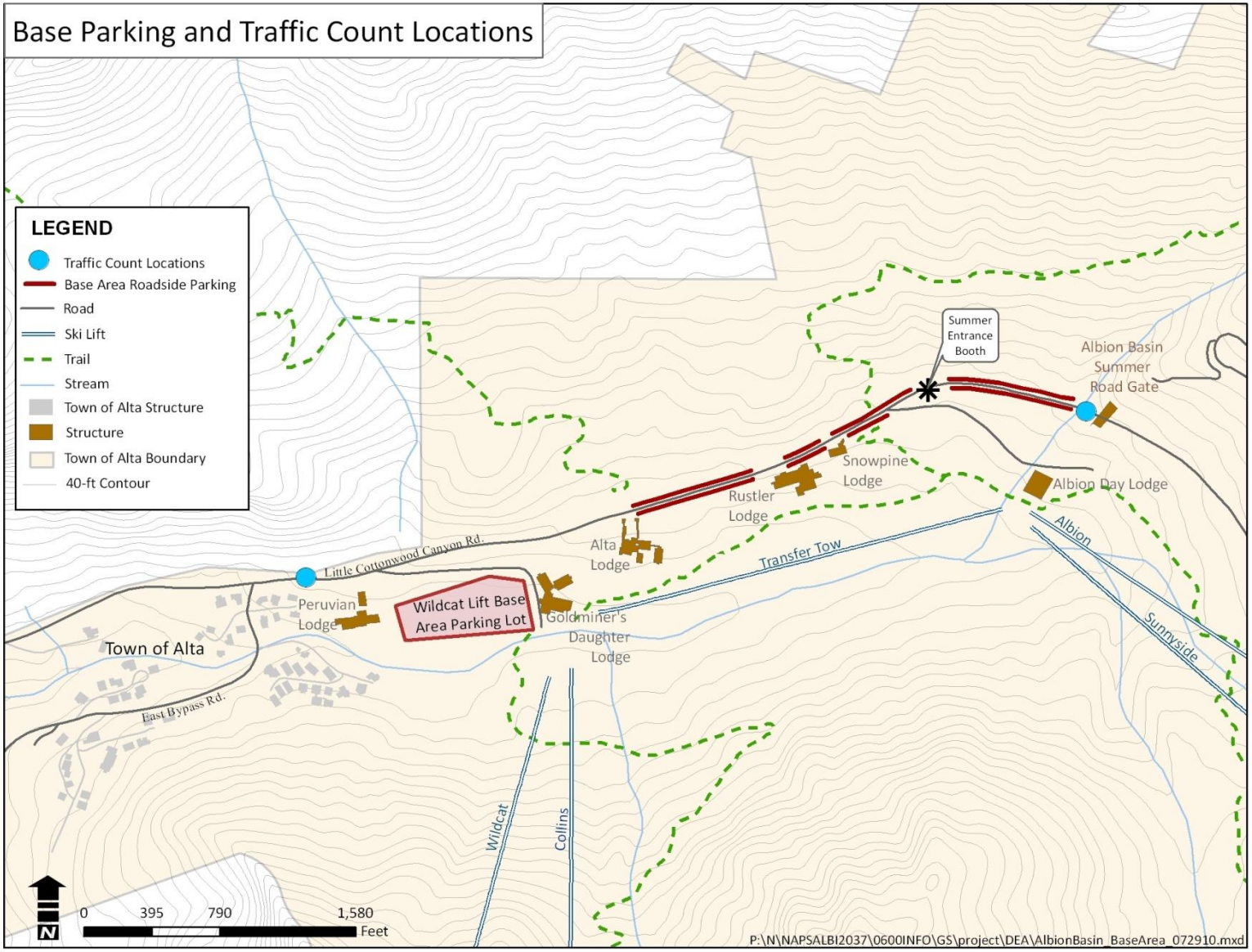
2.1.2 PARKING AND ACCESS INFORMATION

Albion Basin Campground is located at the end of the Albion Basin Summer Road. The U.S. Forest Service campground provides 19 sites with camping available by both reservation and on a first come, first served basis. Campground use requires a fee; however, there is currently no fee for day-use activities in Albion Basin. In addition to the campground, parking is provided in two designated trailhead lots: Catherine's Pass Trailhead parking lot, approximately 1.9 miles up the road; and Cecret Lake Trailhead parking lot, at the end of the road. Approximately 54 total spaces exist in the two parking lots combined. Parking often overflows outside of the designated parking lots, infringing on the natural resources, creating safety conflicts between vehicles and pedestrians, and impeding access for public safety vehicles (such as police, fire, an medical response). The allowable roadside parking along the Albion Basin Summer Road is approximately 25 spaces in designated segments. Roadside parking is currently managed by the Town Marshall of the Town of Alta Town. Improper parking in restricted areas is enforced through ticketing. The Wasatch-Cache National Forest (WCNF) Revised Forest Plan completed in 2003 states that parking supply in the Tri-Canyons will not be increased except for transit facilitation or watershed protection purposes.

In the early 1990s, the Town of Alta implemented a summer season visitor entrance booth near the entrance gate of Albion Basin Summer Road. The summer entrance booth is typically staffed five to seven days per week from 9:00 AM to 5:00 PM, with extended hours on holidays; however, the schedule may vary each summer based on available funding. The booth staff offers visitor information and advises visitors of parking conditions and access options before they enter the Albion Basin. When parking reaches capacity, visitors are advised that parking is unavailable until other vehicles depart. Visitors are also advised of parking options near the booth, from which they can walk or bike into Albion Basin. Since mid-summer 2006, the Town of Alta has funded a free voluntary pilot van shuttle system from the parking area near the summer entrance booth on weekends and holidays. Vehicle and shuttle passenger counts are recorded at the booth during its hours of operation. However, a significant amount of traffic activity also occurs before 8:00 AM and after 5:00 PM.

West of the Albion Basin Summer Road gate, parking is available along a wide paved section of Utah SR 210. This extends back to the summer entrance booth. Additional roadside parking is located west of the summer entrance booth including a wider paved parking area adjacent to the road. Roadside parking is also available along Utah SR 210 through the Town of Alta and at the Wildcat Lift Base Area parking lot, the main Alta Ski Area parking facility. **Figure 2-2** illustrates parking lot and roadside parking locations west of the Albion Basin Summer Road at the base of the Alta Ski Area.

FIGURE 2-2. ALBION BASIN AND TOWN OF ALTA BASE AREA



2.1.3 TRANSIT SYSTEM

2.1.3.1 UTAH TRANSIT AUTHORITY SERVICE

The Utah Transit Authority (UTA) provides year-round bus service between Salt Lake County and Little Cottonwood Canyon. Two routes (Routes 983 and 990) provide limited service during the summer months. Only one morning and one evening trip are provided by each route. These services are primarily oriented towards workers who live in Salt Lake County and work in Little Cottonwood Canyon. Ridership is minimal. **Table 2-1** outlines service characteristics for both of these routes.

TABLE 2-1. SUMMER BUS SERVICE PROVIDED BY UTA

	Route 983 **7200 S TRAX/Snowbird Ski Area**	**Route 990** **6200 S Wasatch/** **Snowbird/Alta Ski Areas**
Fare	One-way - $3.50 Day Pass - $7.00	Same as Route 983
Stops Served	• South Midvale Fort Union TRAX Station • 6600 South 950 East Park & Ride • Fort Union Blvd & 2000 East • 9400 South 2000 East Park & Ride • Little Cottonwood Canyon Park & Ride • Snowbird Entrance 1 • Creekside Day Lodge • Snowbird Entrance 2 • Snowbird Center • Snowbird Entrance 4 • Cliff Lodge – Snowbird	• 6200 South Wasatch Park & Ride • Big Cottonwood Canyon Park & Ride • 8200 South Wasatch Park & Ride • Little Cottonwood Canyon Park & Ride • Snowbird Entrance 1 • Creekside Day Lodge • Snowbird Entrance 2 • Snowbird Center • Snowbird Entrance 4 • Cliff Lodge – Snowbird • Goldminer's Daughter Lodge • Alta
Span of Service	One morning trip per day (up-canyon): • Departs South Midvale Fort Union TRAX Station at 6:45 AM • Arrives Cliff Lodge at 7:46 AM One evening trip per day (down-canyon): • Departs Cliff Lodge at 5:15 PM • Arrives South Midvale Fort Union TRAX Station at 6:16 PM	One morning trip per day (up-canyon): • Departs South Wasatch Park & Ride at 7:10 AM • Arrives Alta at 7:58 AM One evening trip per day (down-canyon): • Departs Alta at 5:03 PM • Arrives South Wasatch Park & Ride at 5:51 PM

Source: UTA, 2009

In the winter months, four routes provide much more frequent service to Snowbird and Alta. This winter bus service is very well-utilized by visitors for winter recreation. Park

& Ride lots at the base of Little Cottonwood Canyon are used for both summer and winter transit access, and for carpooling.

Summer UTA bus service to Alta

2.1.3.2 PILOT VAN SHUTTLE SERVICE

The Town of Alta implemented a pilot van shuttle service in 2006 in order to offer an alternative to private vehicle access into Albion Basin on weekends and holidays. The shuttle operates on weekends from approximately July 11 through September 13 during the hours of 10:00 AM and 4:30 PM, and often until 5:30 PM. During the Wasatch Wildflower Festival in July, a separate Wildflower Festival shuttle operates during the morning/early afternoon. The pilot shuttle begins at the summer entrance booth and makes stops at the Catherine's Pass Trailhead and Cecret Lake Trailhead. The shuttle is voluntary and is free of charge to visitors. The Town of Alta currently funds the summer shuttle operation. It typically provides service every 20 to 30 minutes using two 14 passenger vans. The vans are not compliant with the American Disabilities Act. A third vehicle has been deployed on busy days, resulting in service frequencies of 10 to 15 minutes. Informal interpretation of the area is often provided by shuttle drivers. Travel time from the summer entrance booth to Cecret Lake and back is approximately 40 minutes. As shown in **Table 2-2**, ridership has steadily increased from an average of 263 riders per day in 2007 to an average of 461 riders per day in 2009. The pilot shuttle was

not in operation for the whole 2006 season. Consequently, total ridership levels are much lower for that year.

TABLE 2-2. HISTORIC VAN SHUTTLE RIDERSHIP

Year	Total Days of Operation	Total Ridership (up and down)	Average Riders per Day
2006	13 days	3,404 riders	262 riders/day
2007	25 days	6,568 riders	263 riders/day
2008	22 days	7,325 riders	333 riders/day
2009	22 days	10,144 riders	461 riders/day

Source: Town of Alta, 2009

2009 Pilot shuttle loading at the Summer Entrance Booth

ALTA SKI LIFTS

Alta Ski Lifts (ASL) operates seven chair lifts that serve the Alta Ski Area during the winter season only. Lifts do not currently operate during the summer months. The seven lifts are named as follows: Albion, Cecret, Collins, Sugarloaf, Sunnyside, Supreme, and Wildcat. A transfer tow also connects the Sunnyside/Albion and Collins/Wildcat lifts. Two of these lifts, the Albion and Sunnyside lifts, extend from the Albion Lift Base Area to areas near the Catherine's Pass Trailhead, which is most proximate to the Albion Basin Summer Road.

The Albion lift operates at 440 feet per minute (fpm) for skiers with a capacity of approximately 800 skiers per hour, and would likely operate at about half that speed (220 fpm) for foot traffic with a capacity of approximately 400 pedestrians per hour. The Sunnyside lift operates at 600 fpm for skiers with a capacity of 1,200 skiers per hour, and would likely operate at 300 fpm for foot traffic with a capacity of approximately 600 pedestrians per hour.

Sunnyside Lift

2.1.4 TRAIL SYSTEM

The USFS-maintained trail system in Albion Basin includes the Albion Meadows Trail, Catherine's Pass Trail, and Cecret Lake Trail. The Albion Meadows Trail begins at the Wildcat Lift Base Area parking lot and ascends approximately 2.5 miles (elevation gain of 1,200 feet) to the Albion Basin Campground. The Catherine's Pass Trail originates approximately 1.9 miles from the Albion Basin Summer Road entrance gate at the Catherine's Pass Trailhead parking lot. It extends one mile (elevation gain of 800 feet) to the top of the pass overlooking Big Cottonwood Canyon. The Cecret Lake Trail begins near the campground at the end of the Albion Basin Summer Road. Approximately 0.75 miles in length (elevation gain of 420 feet), the trail extends along old mining road switchbacks through lush meadows to a view above Cecret Lake. This popular trail often has a steady stream of hikers on a busy day. Interpretive signs along the trail highlight flora, fauna and geology. A portion of the Cecret Lake Trail also provides vehicular access to private cabins. Several other designated and undesignated trails exist in the area, and may be described inconsistently depending on the various trail maps available for reference. These include service roads utilized by Alta Ski Area, game trails used by hikers, trails to rock climbing sites, and other user-created trails that have emerged over

time. Bicycles are allowed on all trails except for Cecret Lake Trail, and are primarily used by advanced riders due to their level of difficulty.

Albion Meadows Trail

2.2 DATA COLLECTION SUMMARIES

Traffic, parking activity, trail use, shuttle use, and vehicle characteristics were observed over a five-day period in July, 2009. This period included weekday and weekend activity as well as peak visitation activity associated with the Wasatch Wildflower Festival, an annual event that attracts more prominent attention throughout the region. The three day festival at Brighton, Solitude, Alta and Snowbird Ski Areas includes guided wildflower walks (beginner, intermediate, and kid's walks), live music, kid's art activities, and vendor booths. Traditionally, Saturday's activities feature Alta and other festival days are rotated through each resort.

2.2.1 TRAFFIC DATA

2.2.1.1 TRAFFIC VOLUME COUNTS

Daily traffic volume counts were collected in the Albion Basin to document and support the evaluation of summer visitor activity. The methodology and results of these counts are described in the following text. Detailed traffic counts can be found under separate cover in Appendix A of the *Albion Basin Transportation Feasibility Study Baseline Conditions Report (Final Draft, March 2010)*.

METHODOLOGY, LOCATIONS, AND TIMES

Automatic traffic counters were placed at two locations in the Albion Basin (as shown in **Figure 2-2)**. The first location was along State Highway 210 (SR 210), Little Cottonwood Canyon Road, just east of the intersection with East Bypass Road (E. Bypass Road) and gate E. This counter was located to capture traffic activity prior to reaching the lodges in the Town of Alta. The second location was just west of the end of pavement near the entrance gate where the Albion Basin Summer Road begins. See **Figure 2-2** for traffic counter locations.

The automatic traffic counters recorded volumes in one-hour increments for each directional movement. The counters collected data for a 120-hour period from midnight Thursday, July 16th through midnight Tuesday, July 21st, 2009.

RESULTS

For each of the locations, counts were summarized into 24-hour volumes, as shown in **Table 2-3** and **Figure 2-3**. The average weekday and weekend traffic volumes are also shown in **Table 2-3**.

TABLE 2-3. DAILY 24-HOUR TRAFFIC VOLUMES

Day	SR 210 East of E. Bypass Road			Entrance to Albion Basin Summer Road		
	East-bound	West-bound	2-Way	East-bound	West-bound	2-Way
Friday	857	831	1,688	518	496	1,014
Saturday (Wasatch Wildflower Festival)	1,406	1,403	2,809	591	603	1,194
Sunday	1,342	1,465	2,807	724	725	1,449
Monday	799	803	1,602	424	420	844
Tuesday	758	758	1,516	412	418	830
Weekday Average	805	797	1,602	451	445	896
Weekend Average	1,374	1,434	2,808	658	664	1,322

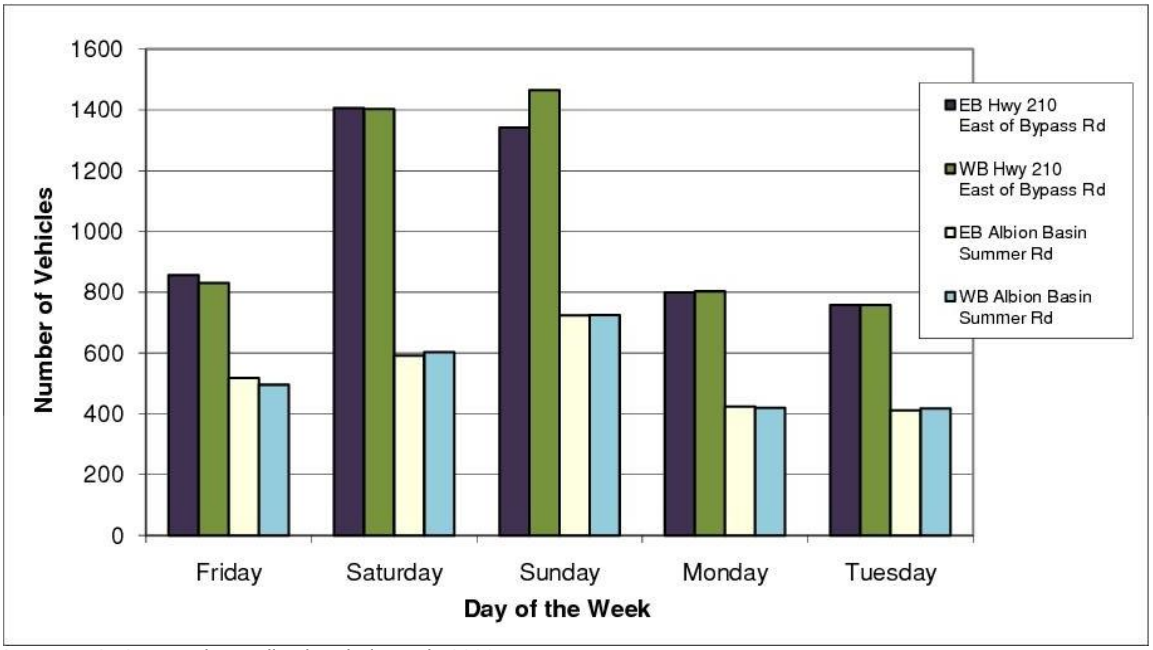
Source: USFS; DEA data collection during July 2009

On SR 210 east of E. Bypass Road, the highest traffic in the eastbound direction occurred on Saturday with 1,406 vehicles counted. On SR 210 east of E. Bypass Road, the highest traffic in the westbound direction occurred on Sunday with 1,465 vehicles counted. On Albion Basin Summer Road, the highest traffic volumes occurred on Sunday in both the eastbound and westbound directions with 724 and 725 vehicles respectively. On Saturday of the Wasatch Wildflower Festival, extra shuttle vans were available and visitors participating in guided walks were required to park at the base area and board shuttle vans.

Traffic on Albion Basin Summer Road

The large difference in traffic volumes at the two counter locations is because many vehicles are destined for the Town of Alta or destinations short of the summer entrance booth and the beginning of the Albion Basin Summer Road. Many visitors destined for the Albion Basin stop short of the entrance gate and ride the shuttle, hike, or bike the remaining distance to their ultimate destination. This is especially true on weekends when high visitation results in parking areas along Albion Basin Summer Road reaching capacity. The summer entrance booth staff will advise visitors to park in the parking lot near the summer entrance booth rather than drive up the Albion Basin Summer Road.

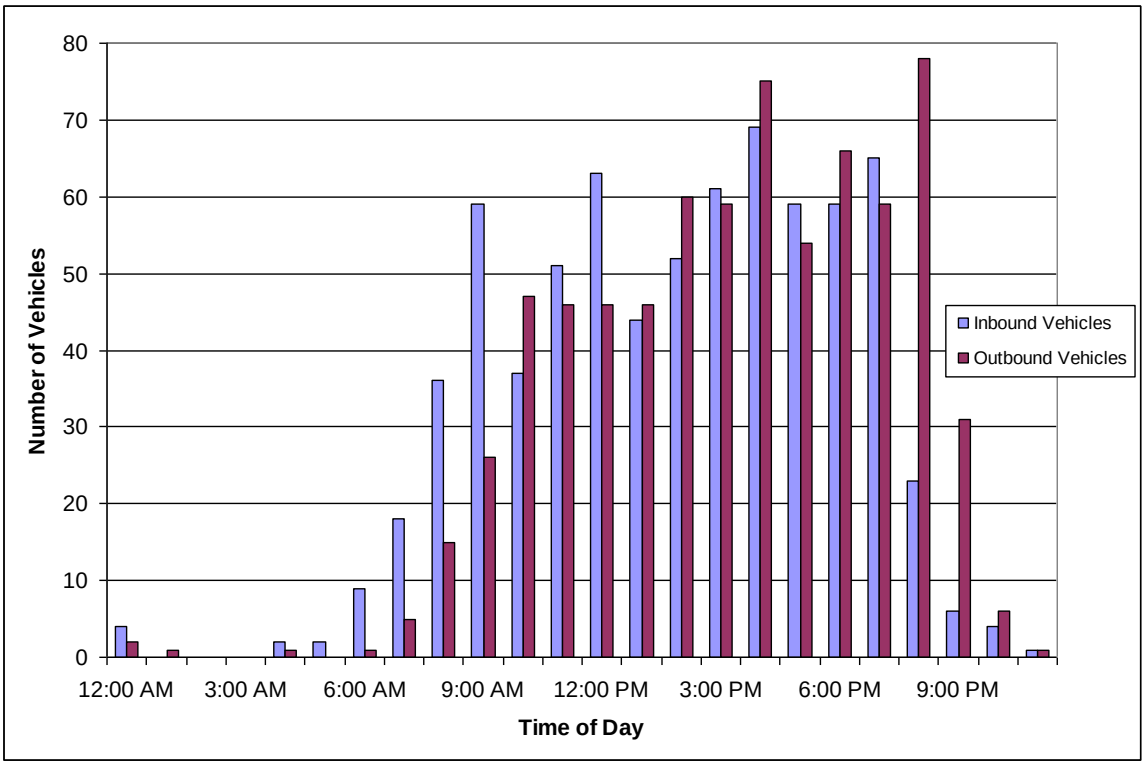
FIGURE 2-3. DAILY 24-HOUR TRAFFIC VOLUMES



Source: USFS; DEA data collection during July 2009

For the peak traffic day (Sunday, July 19, 2009) along Albion Basin Summer Road, traffic counts were summarized on an hourly basis for eastbound (inbound) and westbound (outbound) movements. **Figure 2-4** illustrates this activity. The hourly count data indicates that the hours of 9:00 AM to 6:00 PM represent hourly volumes typically ranging from 50 to 70 vehicles, with a maximum eastbound hourly volume between 4:00 PM and 5:00 PM. The hours of 2:00 PM to 9:00 PM represent the peak outbound time period, with the highest hourly volume of 78 vehicles from 8:00 PM to 9:00 PM. Early morning hourly volumes are minimal before 8:00 AM, and in the evening traffic volumes drop off considerably after 9:00 PM.

FIGURE 2-4. HOURLY TRAFFIC COUNTS ALONG ALBION BASIN SUMMER ROAD - SUNDAY, JULY 19, 2009



Source: USFS; DEA data collection during July 2009

VEHICLE ACCUMULATION

Hourly vehicle accumulation in Alta and the Albion Basin was calculated beginning at midnight Thursday, July 16th and ending midnight Tuesday, July 21st. This information was developed to determine how many vehicles were present in the areas at a given time. The accumulation is based on the two traffic counter locations and on assumptions for the number of vehicles already in the Town of Alta and the Albion Basin at the beginning of the 120-hour time period.

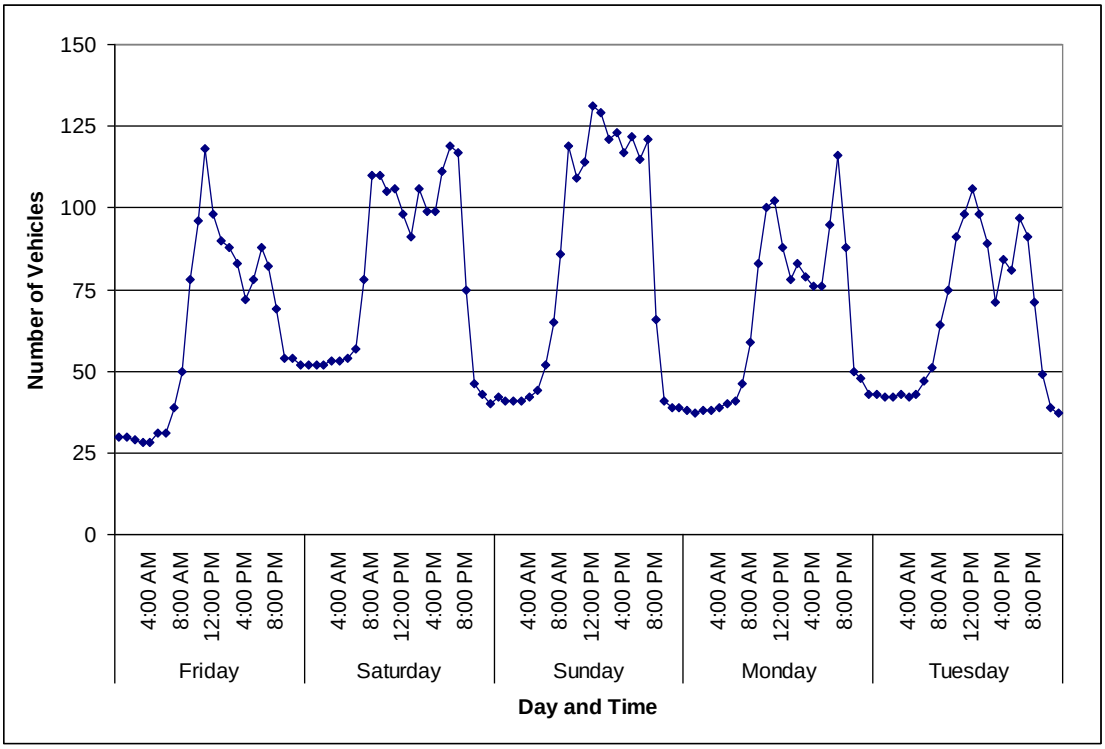
The Albion Basin Summer Road provides access to 34 homes in the Albion Basin and Grizzly Gulch area. It is estimated that approximately one-third of these homes are occupied at any given time during the summer. The road also provides access to 19 campsites at the Albion Basin Campground including two double sites and one triple site which hold up to 16 and 24 people, respectively. It is estimated that the campsites were

approximately two-thirds full on Thursday night. Overall, it is estimated that approximately 30 private vehicles were east of the traffic counter in areas served by Albion Basin Summer Road at midnight on Thursday, July 16th.

East of the SR 210 intersection with the E. Bypass Road, it is assumed that approximately 150 vehicles total were present at midnight on Thursday, July 16th. The additional 120 vehicles are assumed to be employees, residents, and visitors staying in accommodations within the Town of Alta.

Figure 2-5 illustrates the hourly vehicle accumulation east of the Albion Basin Summer Road gate.

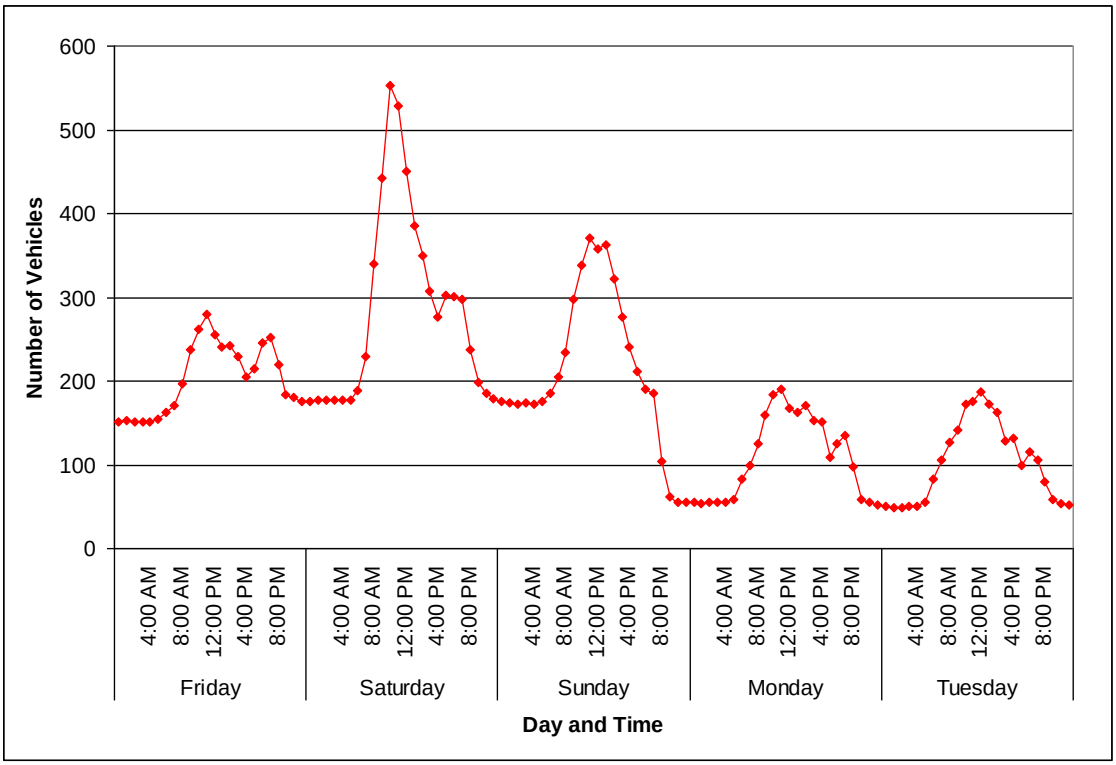
FIGURE 2-5. ALBION BASIN SUMMER ROAD - ACCUMULATED VEHICLES*



Source: USFS; DEA data collection during July 2009
Note: *Accumulated vehicle totals assume 30 vehicles east of the beginning of the Albion Basin Summer Road at midnight Thursday 16th, 2009 and 150 vehicles east of E. Bypass Road at midnight Thursday 16th, 2009.

Figure 2-6 illustrates the hourly vehicle accumulation east of E. Bypass Road on SR 210.

FIGURE 2-6. EAST OF E. BYPASS ROAD ON SR 210 - ACCUMULATED VEHICLES



Source: USFS; DEA data collection during July 2009

The peak accumulation of over 550 vehicles beyond E. Bypass Road occurred on Saturday at 10:00 AM. This corresponds with Wildflower Festival activities near the summer entrance booth area west of the Albion Basin Summer Road entrance gate. The peak accumulation of over 130 vehicles beyond the entrance gate of the Albion Basin Summer Road occurred on Sunday at 12:00 PM. Peak accumulation volumes are shown in **Table 2-4**.

TABLE 2-4. PEAK ACCUMULATION OF VEHICLES

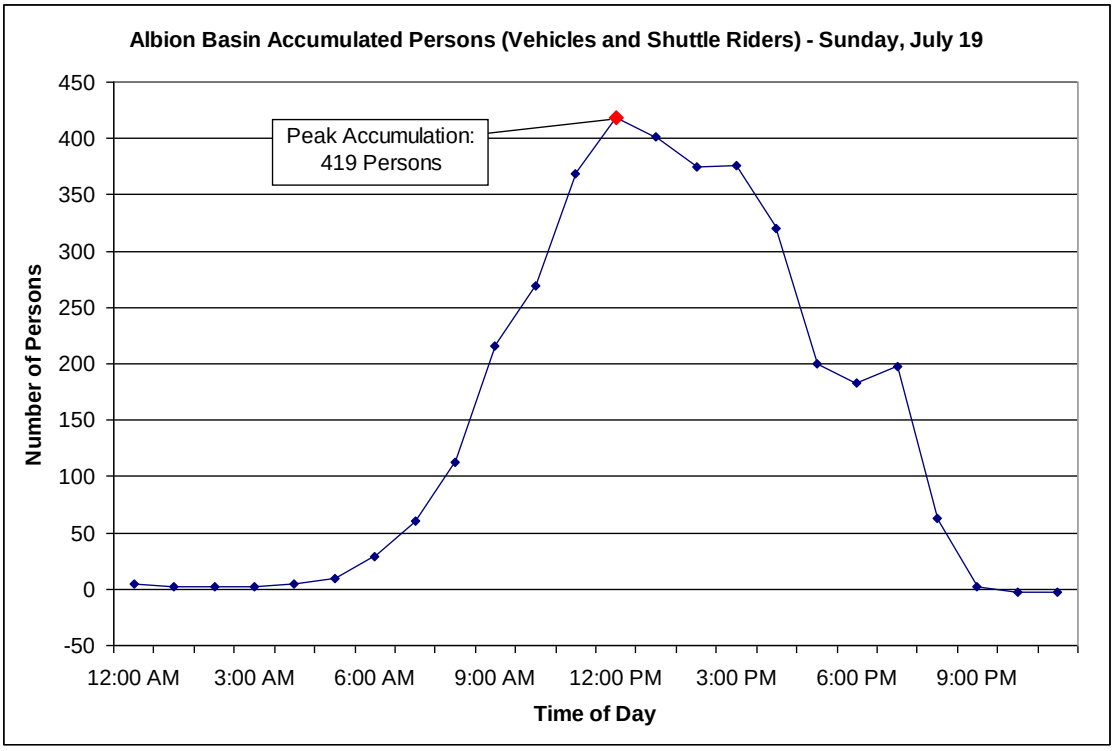
Day	SR 210 East of E. Bypass Road		Beginning of Albion Basin Summer Road	
	Time of Day	Peak Vehicle Accumulation*	Time of Day	Peak Vehicle Accumulation*
Friday	11:00 AM	280	11:00 AM	118
Saturday	10:00 AM	553	6:00 PM	119
Sunday	11:00 AM	370	12:00 PM	131
Monday	11:00 AM	190	7:00 PM	116
Tuesday	12:00 PM	187	12:00 PM	106

Source: USFS; DEA data collection during July 2009
Note: *Accumulated vehicle totals assume 30 vehicles east of the beginning of the Albion Basin Summer Road at midnight Thursday 16th, 2009 and 150 vehicles east of E. Bypass Road at midnight Thursday 16th, 2009.

VISITOR ACCUMULATION

Visitor accumulation was computed based on an observed average vehicle occupancy of 2.4 persons, and visitors who entered the area on the pilot van shuttle system. The number of persons accumulated in Albion Basin on Sunday, July 19, 2009 in any given hour peaked at about 12:00 PM with approximately 420 persons, as shown in **Figure 2-7**. In addition to the people arriving by private vehicle and shuttle, 20 to 30 people were observed walking/running or biking up Albion Basin Summer Road just prior to or during the noon hour. It was also estimated that approximately 75 to 100 residents and campers were staying in Albion Basin at that time. When those walking, biking, or staying at private residences and campgrounds are accounted for, the peak accumulated persons is estimated to be between 500 and 550 people.

FIGURE 2-7. PEAK ACCUMULATED PERSONS



Source: USFS; DEA data collection during July 2009

2.2.2 PARKING DATA

2.2.2.1 PARKING OCCUPANCY AND DURATION

Parking occupancy and duration data were collected at parking lots and numerous formal and informal roadside parking areas in the Albion Basin. The purpose of this information is to document parking area utilization by time of day, and to determine the average length of stay by visitors. This section describes the methodology, the locations, and the results. Detailed parking occupancy and duration data can be found under separate cover in Appendix B of the *Albion Basin Transportation Feasibility Study Baseline Conditions Report (Final Draft, March 2010).*

METHODOLOGY, LOCATIONS, AND TIMES

Parking occupancy and duration data were collected during 12-hour periods from Friday, July 17th to Monday July 20th. Data collection generally began at 7:00 AM and was completed by 7:00 PM. Parking activities were observed at the following lots and roadside parking areas:

Locations East of Albion Basin Summer Road Entrance Gate

- Cecret Lake Trailhead parking lot
- Catherine's Pass Trailhead parking lot
- Albion Basin Summer Road roadside parking areas

Locations West of Albion Basin Summer Road Entrance Gate Roadside/parking lot between the beginning of the Albion Basin Summer Road (entrance gate) and the summer entrance booth

- Roadside/parking lot between the summer entrance booth and the Snowpine Lodge
- Roadside/parking lot between the Snowpine Lodge and the Rustler Lodge
- Roadside/parking lot between the Rustler Lodge and the Alta Lodge
- Wildcat Base Area parking lot

Figure 2-2 on page 8 illustrates the locations of these parking areas in the Albion Basin.

All parking activities were recorded manually by field technicians stationed at the parking lots or driving a predetermined route to monitor the roadside parking. Data summaries were prepared based on field data sheets. Field technicians generally recorded data every 30 minutes.

For parking occupancy, the number of vehicles within a parking lot or roadside parking area at a given time was recorded. Because parking spaces are not clearly designated with striping, the parking capacity available in each lot was estimated. These estimates were based on observations of parking activity without the assistance of a parking attendant. The number of actual parking spaces may vary slightly if parking configurations are managed or more clearly designated. For example, some roadside areas change from parallel to head-in parking, the latter accommodating more vehicles. Also note that parking utilization includes all vehicles present, even though the spaces used may not be authorized or acceptable due to resource and/or safety issues.

For parking duration, license plates of vehicles within a lot were recorded every half-hour. All vehicles were given an estimated parking duration rounded to the half-hour. The durations of vehicles parked in the spaces were then placed into categories: 0 to 1 hour, 1 hour to 2 hours, and so on. The average parking duration was calculated for all vehicles that both arrived and departed during the 12-hour monitoring period. Vehicles that arrived before or departed after the monitoring were not included in the calculation of average parking duration.

CATHERINE'S PASS AND CECRET LAKE TRAILHEAD PARKING OCCUPANCY

Catherine's Pass and Cecret Lake Trailhead parking lots are located approximately 1.9 and 2.5 miles respectively beyond the beginning of the Albion Basin Summer Road. The Cecret Lake Trailhead parking lot is at the end of the Albion Basin Summer Road prior to the campground entrance.

The parking occupancy in the Catherine's Pass and Cecret Lake Trailhead parking lots is summarized in **Table 2-5**. The table shows the peak occupancy and the time it occurred. The table also includes all times at which the parking lot reached or exceeded the estimated parking lot capacity.

TABLE 2-5. CATHERINE'S PASS AND CECRET LAKE PARKING LOT OCCUPANCY

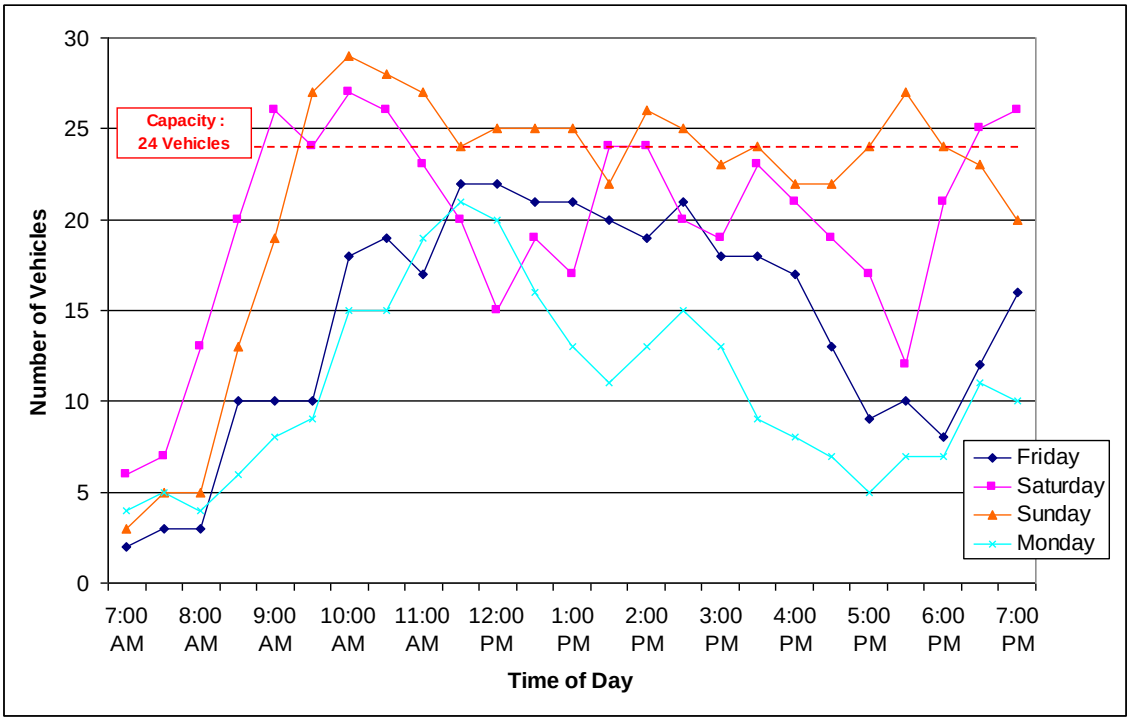
Parking Lot	Day	Capacity	Peak Occupancy		At or Exceeding Capacity
			Number of Vehicles	Time	Time
Catherine's Pass Trailhead	Friday	24	22	11:30AM-12:00PM	NA
	Saturday	24	27	10:00AM	9-10:30AM, 1:30-2:00PM, 6:30-7:00PM
	Sunday	24	29	10:00AM	9:30AM-1:00PM, 2:00-2:30PM, 3:30PM, 5:00-6:00PM
	Monday	24	21	11:30AM	NA
Cecret Lake Trailhead	Friday	30	32	11:00AM-12:00PM	10:30AM-1:00PM
	Saturday	30	32	6:00PM-7:00PM	12:30PM, 3-3:30PM, 4:30-7:00PM
	Sunday	30	30	4:30PM-6:00PM, 7:00PM	4:30-6:00PM, 7:00PM
	Monday	30	29	6:30PM-7:00PM	6:30-7:00PM

Source: USFS; DEA data collection during July 2009

Figure 2-8 and **Figure 2-9** illustrate the 12-hour parking occupancy for each day during the study period for Catherine's Pass and Cecret Lake Trailhead parking lots respectively. The figures show that parking occupancy in both lots approaches or exceeds capacity beginning around 9:00 to 10:00 AM on the weekend. Friday and Monday occupancy generally are lower than the weekend occupancy, although the Cecret Lake Trailhead parking lot was close to full for most of the day on Friday. Parking occupancy tends to decrease in the late afternoon before increasing again around 6:00 to7:00 PM.

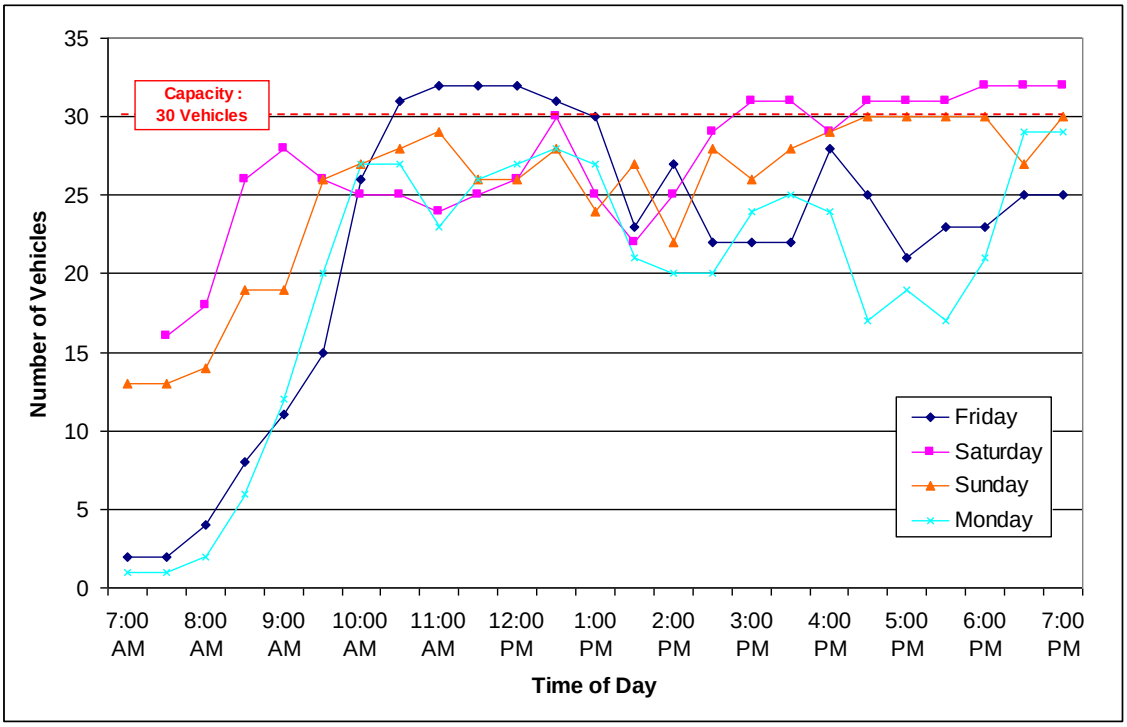
Cecret Lake parking lot

FIGURE 2-8. CATHERINE'S PASS TRAILHEAD DAILY PARKING LOT OCCUPANCY



Source: USFS; DEA data collection during July 2009

FIGURE 2-9. CECRET LAKE TRAILHEAD DAILY PARKING LOT OCCUPANCY

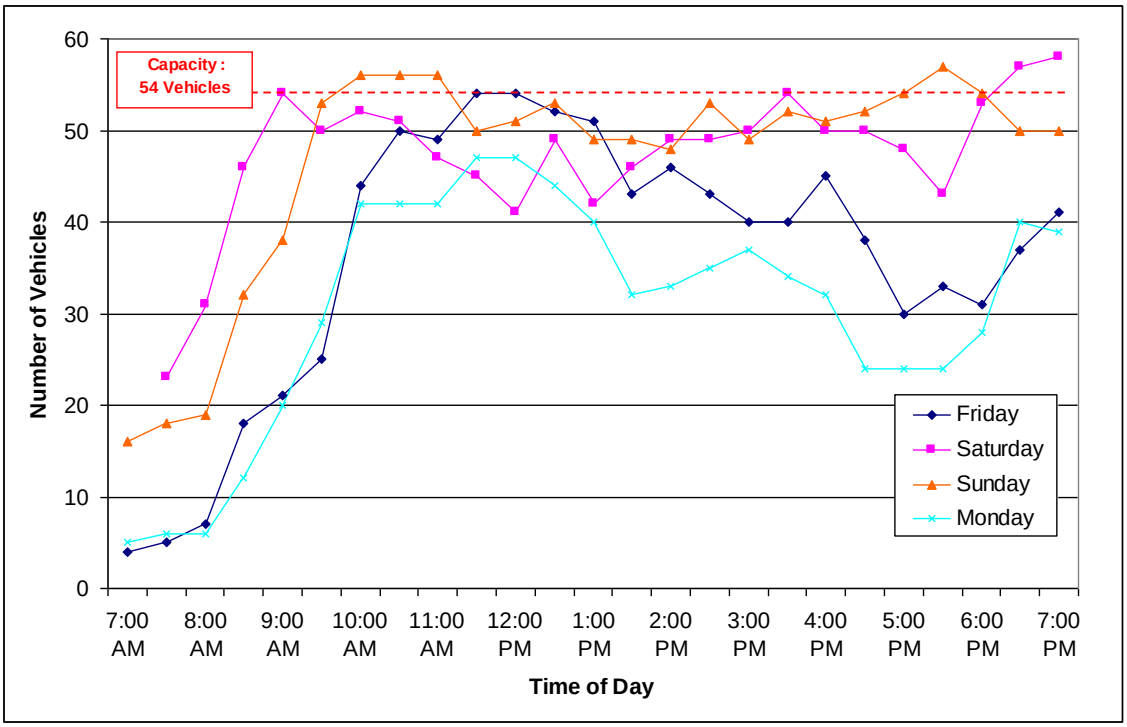


Source: USFS; DEA data collection during July 2009

Figure 2-10 illustrates the combined 12-hour parking occupancy for Catherine's Pass and Cecret Lake Trailhead parking lots for all sample days. **Figure 2-11** illustrates the

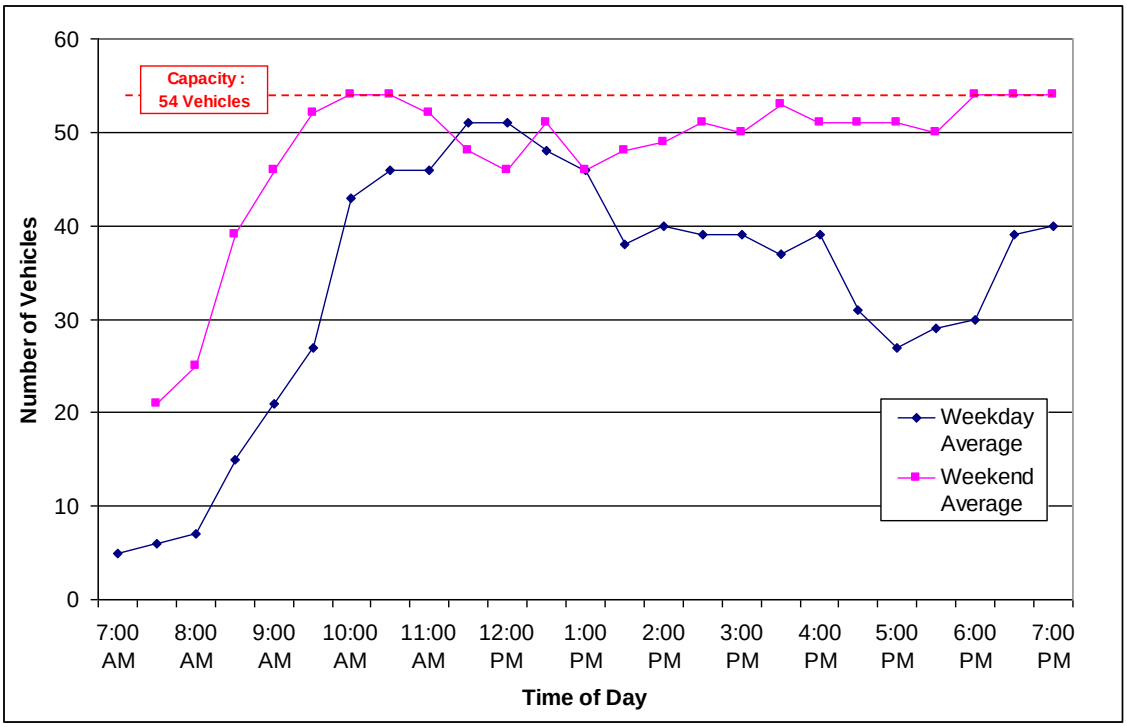
average combined parking occupancy for weekday and weekend days separately. The figures show that the combined parking occupancy approaches or exceeds capacity by 9:00 to 10:00 AM on the weekend and stays at or near capacity throughout the observed time period. Friday and Monday parking occupancy approach or reach capacity at noon, before a decline throughout the afternoon followed by an increase after 6:00 PM.

FIGURE 2-10. CATHERINE'S PASS AND CECRET LAKE TRAILHEAD LOTS - COMBINED DAILY PARKING OCCUPANCY



Source: USFS; DEA data collection during July 2009

FIGURE 2-11. CATHERINE'S PASS AND CECRET LAKE TRAILHEAD LOTS – COMBINED AVERAGE WEEKEND AND WEEKDAY PARKING OCCUPANCY



Source: USFS; DEA data collection during July 2009

ALBION BASIN SUMMER ROAD ROADSIDE PARKING OCCUPANCY

Formal roadside parking areas along the Albion Basin Summer Road are illustrated in **Figure 2-1** on page 3. Roadside parking is currently managed by the Town Marshall from Town of Alta. Parking in restricted areas is enforced through ticketing. The roadside parking occupancy is summarized in **Table 2-6**. The table shows the time and total vehicles at peak occupancy. The table also includes all times at which the parking lot reached or exceeded the assumed parking lot capacity.

Overflow roadside parking at Catherine's Pass Trailhead

The roadside parking areas at the lower road switchback, the area accessing Memorial Grove, and the area just up the road from the Memorial Grove, identified in **Figure 2-1** as areas 1, 2, and 3, are grouped into the Lower Albion Basin Summer Road roadside parking in **Table 2-6** and in **Figure 2-12**. Roadside parking areas 4 and 5, generally used as overflow parking for the Catherine's Pass and Cecret Lake Trailhead parking lots, are grouped into the Upper Albion Basin Summer Road roadside parking in **Table 2-6** and in **Figure 2-13**. Although roadside parking is allowed in selected areas, some roadside overflow parking areas are not necessarily desired and have created safety, natural resource and visual quality concerns.

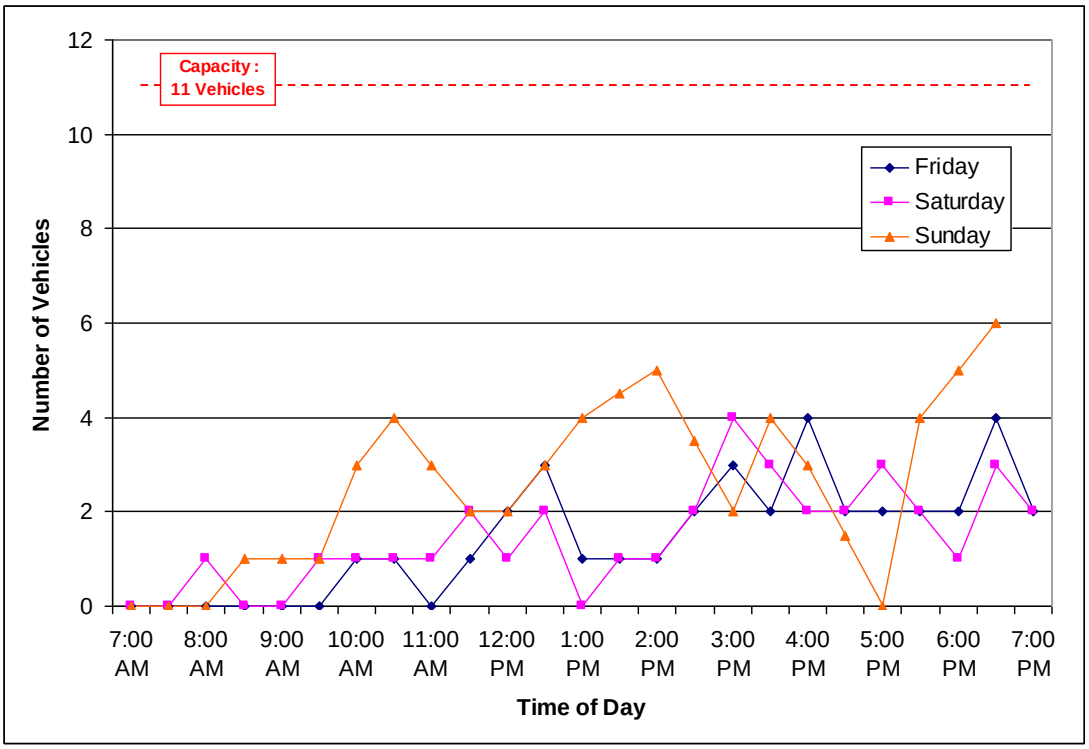
TABLE 2-6. ROADSIDE PARKING OCCUPANCY

Parking Area	Parking Capacity	Day	Peak Occupancy		At or Exceeding Capacity
			Number of Vehicles	Time	Time
Lower Albion Basin Summer Road	11	Friday	4	4:00PM, 6:30PM	NA
		Saturday	4	3:00PM	NA
		Sunday	6	6:30PM	NA
Upper Albion Basin Summer Road	14	Friday	14	12:30PM	12:30PM
		Saturday	15	8:30AM-10:30AM	8:30AM-10:30AM
		Sunday	13	10:00AM, 12:00PM	NA

Source: USFS; DEA data collection during July 2009

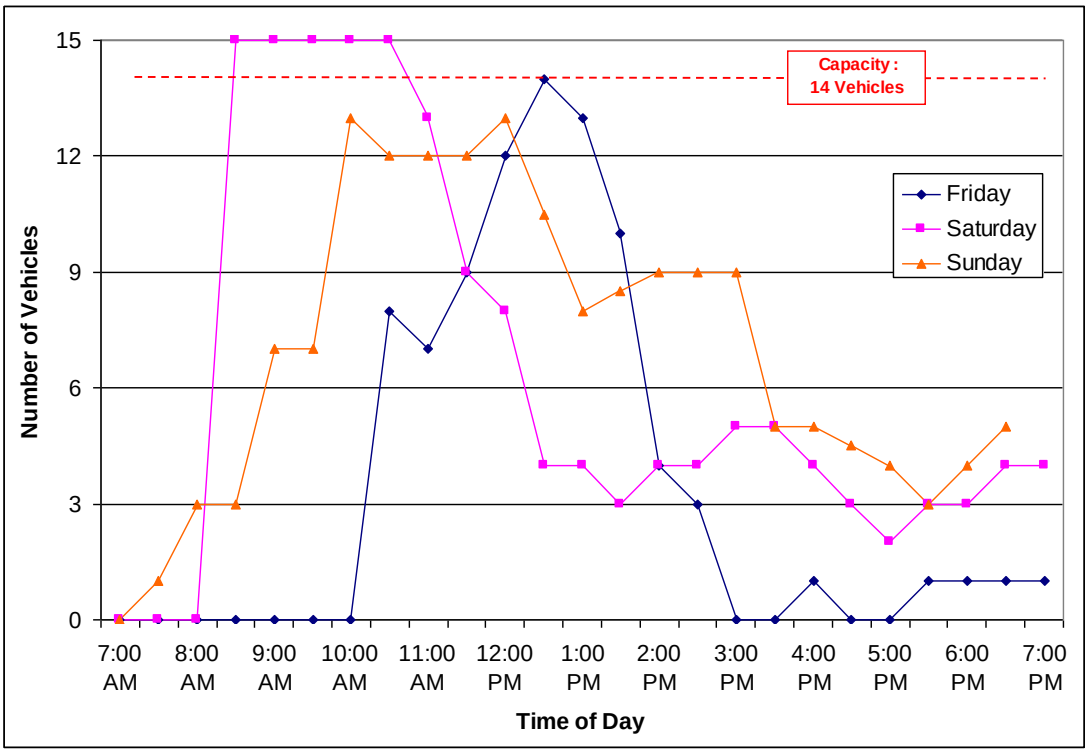
Roadside parking occupancy along the Lower Albion Basin Summer Road (shown in **Figure 2-1)** generally reached peak occupancy in the late afternoon/early evening. The roadside parking areas did not reach or exceed capacity throughout the data collection time period. Roadside parking occupancy along the Upper Albion Basin Summer Road reached peak occupancy in the morning or early afternoon each day. On Saturday, capacity was reached by 8:30 AM.

FIGURE 2-12. LOWER ALBION BASIN SUMMER ROAD – ROADSIDE PARKING OCCUPANCY



Source: USFS; DEA data collection during July 2009

FIGURE 2-13. UPPER ALBION BASIN SUMMER ROAD – ROADSIDE PARKING OCCUPANCY



Source: USFS; DEA data collection during July 2009

LOTS NEAR TOWN OF ALTA AND SR 210 ROADSIDE PARKING OCCUPANCY

The base area lots and SR 210 roadside parking areas located east and west of the summer entrance booth are illustrated in **Figure 2-1**. The parking occupancy is summarized in **Table 2-7**. The table shows the number of vehicles and time at peak occupancy. The table also includes all times at which the parking lot reached or exceeded the assumed parking lot capacity.

TABLE 2-7. LOTS NEAR TOWN OF ALTA AND SR 210 ROADSIDE PARKING OCCUPANCY

Parking Area	Capacity	Day	Peak Occupancy		At or Exceeding Capacity
			Number of Vehicles	Time	Time
Lot between Albion Basin Summer Road Gate and Summer Entrance Booth	75	Saturday	75	12:00PM	12:00PM
		Sunday	24	2:00PM	NA
Lot between Summer Entrance Booth and Snowpine Lodge	150	Saturday	128	11:00AM	11:00AM*
		Sunday	86	1:00PM	NA
Roadside between Snowpine Lodge and Rustler Lodge	50	Saturday	43	11:00AM	NA
		Sunday	2	1:00PM-3:00PM	NA
Lot between Rustler Lodge and Alta Lodge	180	Saturday	87	11:00AM	NA
		Sunday	45	1:00PM-2:00PM	NA
		Sunday	15	5:00PM-6:00PM	NA
All Lots near Town of Alta and Roadside Parking Areas	455	Saturday	337	11:00AM	NA
		Sunday	165	1:00PM	NA

Source: USFS; DEA data collection during July 2009
Note:* Wasatch Wildflower Festival tents and booths filled part of the parking lot, resulting in a lower capacity on Saturday.

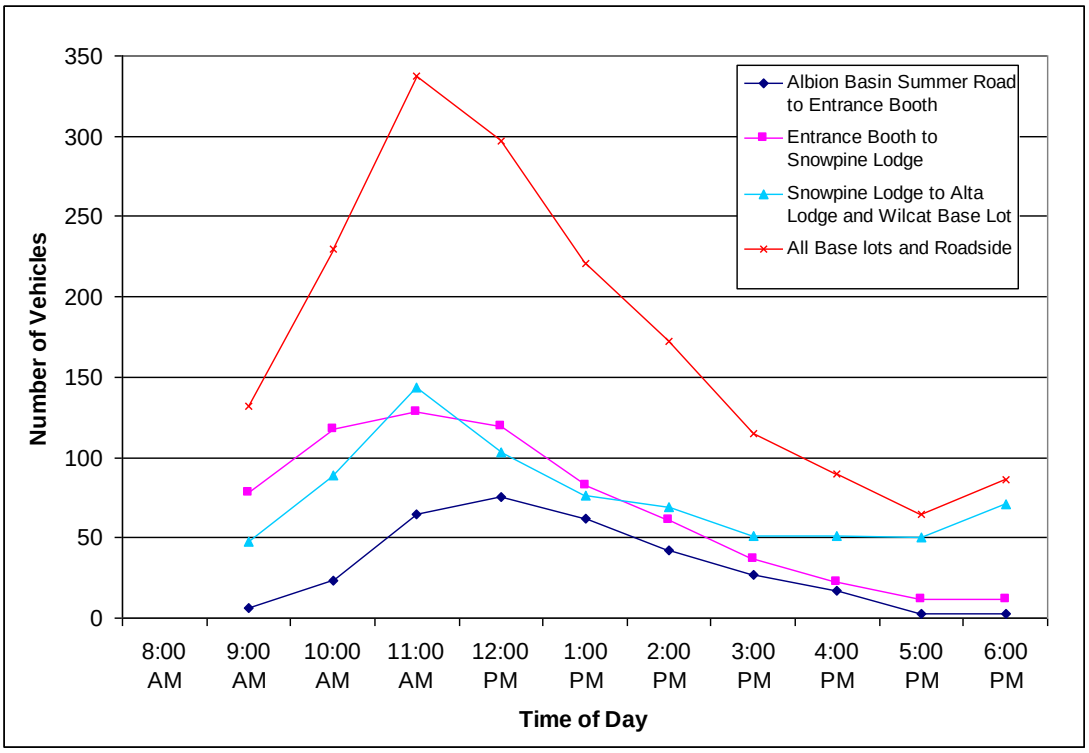
The parking lots near Town of Alta (shown in **Figure 2-2**) and roadside parking areas are used by shuttle patrons, as well as hikers and bicyclists who may utilize this parking when the upper lots are full. The two parking areas on either side of the summer entrance booth are most commonly used by Albion Basin day-use visitors.

Parking lot near Summer Entrance Booth

Parking occupancy in the parking lots near Town of Alta and roadside parking areas is illustrated in **Figure 2-14** and **Figure 2-15**. Parking occupancy on Saturday reached a peak of 337 vehicles at 11:00 AM, due primarily to the Wasatch Wildflower Festival visitation. Areas closest to the summer entrance booth ranged from 85% to 100% peak occupancy on Saturday. Sunday occupancy reached a peak of 165 vehicles at 1:00 PM. Areas on either side of the summer entrance booth had a combined peak occupancy of about 50% on Sunday.

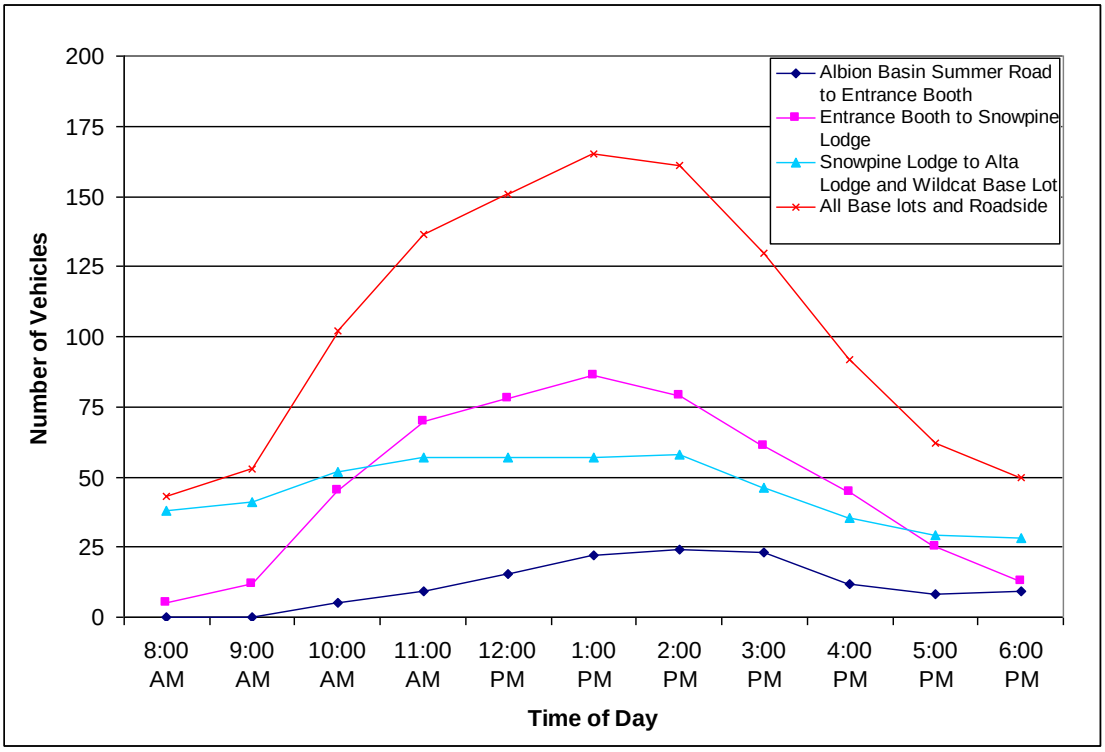
The Wildcat Lift Base Area parking lot at the base of the Alta Ski Area had a maximum utilization of 15 vehicles each day. The capacity of this lot is approximately 750 vehicles. Parking occupancy in the parking lots and roadside parking near Town of Alta was not collected on Friday or Monday.

FIGURE 2-14. SATURDAY LOT NEAR TOWN OF ALTA AND ROADSIDE PARKING OCCUPANCY



Source: USFS; DEA data collection during July 2009

FIGURE 2-15. SUNDAY LOT NEAR TOWN OF ALTA AND ROADSIDE PARKING OCCUPANCY



Source: USFS; DEA data collection during July 2009

CATHERINE'S PASS AND CECRET LAKE TRAILHEAD PARKING DURATION

Parking duration data were collected at the Catherine's Pass Trailhead parking lot and is summarized in **Table 2-8**. Vehicles parked in the lot before 7:00 AM or after 7:00 PM were not included in the parking duration calculations.

Average duration of stay at the lot ranged between 1.9 hours on Monday to 2.4 hours on Saturday. Nearly half of all visitors (48%) stayed less than two hours, while 29% stayed two to three hours and 23% stayed over three hours.

TABLE 2-8. PARKING DURATION – CATHERINE'S PASS TRAILHEAD PARKING LOT

Time Period	Duration (hrs)										
	0-1 hour		1-2 hours		2-3 hours		3-4 hours		4+ hours		Average Duration
	Veh.	%	Veh.	%	Veh.	%	Veh.	%	Veh.	%	
Friday	18	25%	16	22%	18	25%	13	18%	6	9%	2.2
Saturday	14	18%	17	21%	23	29%	16	20%	9	12%	2.4
Sunday	25	22%	33	28%	37	32%	14	12%	7	6%	2.1
Monday	16	26%	20	32%	17	27%	7	11%	3	4%	1.9
Average	18	22%	21	26%	23	29%	12	15%	6	8%	2.1

Source: USFS; DEA data collection during July 2009
Note: Vehicles parked in parking lots before 7:00 AM or after 7:00 PM are not included in the parking duration calculations.

Parking duration data were collected at the Cecret Lake parking lot and is summarized in **Table 2-9**. Vehicles parked in the lot before 7:00 AM or after 7:00 PM were not included in the parking duration calculations.

Average duration of stay at the lot ranged between 1.8 hours on Friday and Monday to 2.1 hours on Saturday. Over half of all visitors (58%) stayed less than two hours, while 28% stayed two to three hours and only 14% stayed over three hours.

TABLE 2-9. PARKING DURATION – CECRET LAKE TRAILHEAD PARKING LOT

Time Period	Duration (hrs)										
	0-1 hour		1-2 hours		2-3 hours		3-4 hours		4+ hours		Average Duration
	Veh.	%	Veh.	%	Veh.	%	Veh.	%	Veh.	%	
Friday	28	24%	42	36%	33	28%	12	10%	3	2%	1.8
Saturday	21	18%	39	34%	32	28%	16	14%	7	6%	2.1
Sunday	29	25%	41	35%	30	26%	9	8%	7	6%	1.9
Monday	24	22%	40	36%	35	32%	11	10%	1	1%	1.8
Average	25	22%	40	35%	32	28%	12	10%	4	4%	1.9

Source: USFS; DEA data collection during July 2009
Note: Vehicles parked in parking lots before 7:00 AM or after 7:00 PM are not included in the parking duration calculations.

2.2.3 TRAIL USE DATA

2.2.3.1 TRAIL USE COUNTS

Trail use count data were collected at trails in Albion Basin to document and support the evaluation of summer trail use activity. This section describes the methodology, the locations, and the results. Detailed trail use data can be found under separate cover in Appendix C of the *Albion Basin Transportation Feasibility Study Baseline Conditions Report (Final Draft, March 2010).*

METHODOLOGY, LOCATIONS, AND TIMES

Trail use counts were collected during 12-hour periods from Friday, July 17th to Monday July 20th. Data collection generally began at 7:00 AM and was completed by 7:00 PM. Trail use activities were observed at the following locations:

Cecret Lake Trail – Trailhead located to the southwest of the Cecret Lake parking lot

Catherine's Pass Trail – Trailhead located to the east of the Catherine's Pass Trailhead parking lot

Albion Meadows Trail – Trail junction just north of Alf's Restaurant near the base of the Cecret and Sugarloaf ski lifts

The Cecret Lake Trail and Catherine's Pass Trail have fairly well defined entry points with other informal access locations. The Albion Meadows Trail has multiple entry and exit points, therefore a common area was observed. In order to capture all trail use, the counts include users moving in both directions at trailheads or along the trails at a common location. Both pedestrians and bicyclists are included in the counts. In addition to those locations listed above, pedestrian and bicycling activity was also observed on Albion Basin Summer Road near the entrance gate.

RESULTS

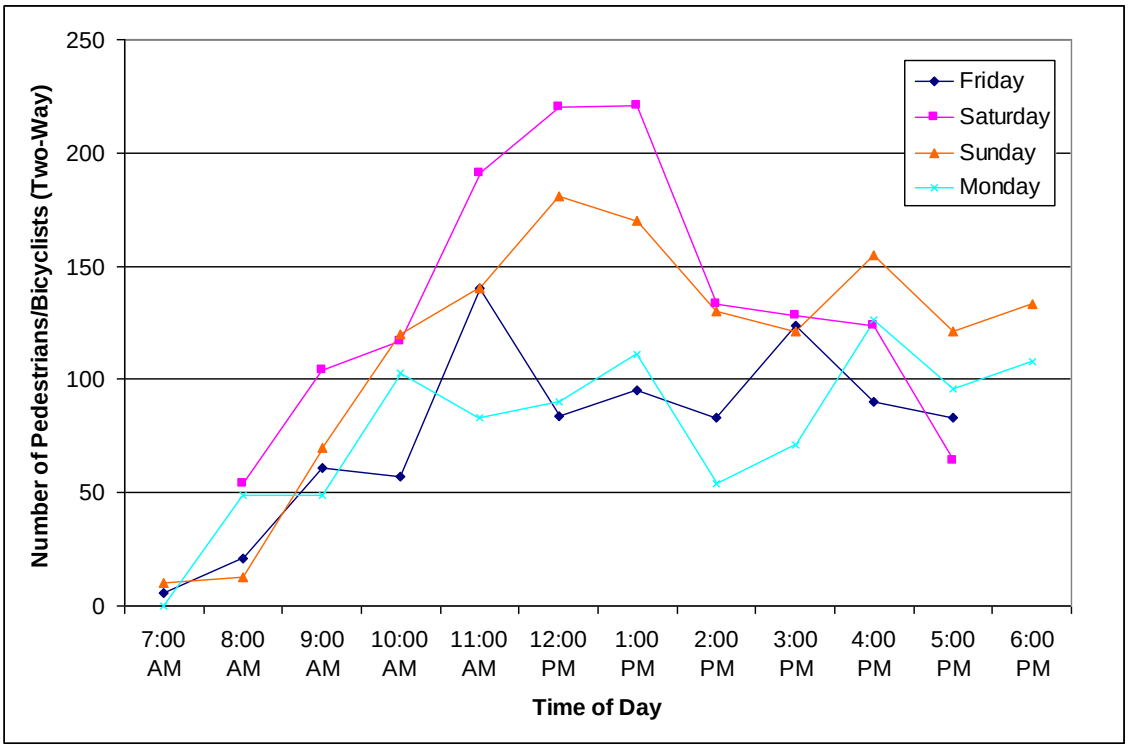
Trail use on Cecret Lake Trail, Catherine's Pass Trail, and Albion Meadows Trail is illustrated in **Figure 2-16**, **Figure 2-17**, and **Figure 2-18**, respectively. Activity on all trails peaked on Saturday during the 11:00 AM, 12:00 PM, or 1:00 PM hour, presumably due to the Wasatch Wildflower Festival activities. Sunday trail use peaked on all trails during the 12:00 PM, 1:00 PM, and 2:00 PM hours. Over the data collection period, a number of large organized groups ranging in size from 20 to 45 people were observed using the Cecret Lake Trail, which is typically the destination for large groups visiting Albion Basin.

Cecret Lake Trail

Trail use on Cecret Lake Trail, as illustrated in **Figure 2-16**, exceeded 220 two-way movements during the 12:00 PM and 1:00 PM hours on

Saturday. Trail use exceeded 125 two-way movements during a given hour on each of the four observation days. Trail use generally peaked during the early afternoon but remained high into the early evening on all four days.

FIGURE 2-16. CECRET LAKE TRAIL USE COUNTS



Source: USFS; DEA data collection during July 2009

Table 2-10 provides an overview of total daily activity on Cecret Lake Trail. A daily average of 1,370 two-way hikers (both exiting and entering) on weekend days and 870 hikers on weekdays was observed. This translates to about 685 persons observed using the trail on weekend days and 435 persons on weekdays. Although bikes are prohibited on Cecret Trail, up to 25 total bicyclists were observed on the trail (on Monday). The number of hikers and bicyclists observed to be entering the trail is not equal to the number observed exiting, likely due to the fact that some hikers and bicyclists choose to travel a loop configuration, and that some hikers/bicyclists may have exited after observations ended. The Cecret Lake Trail is the most highly utilized trail by hikers in the Albion Basin, and experiences nearly three times more hiker activity than the Catherine's Pass or Albion Meadows trails. Despite being the only trail that prohibits bicycle use, Cecret Lake Trail also experienced the second highest level of bike activity.

TABLE 2-10. TOTAL DAILY ACTIVITY ON CECRET LAKE TRAIL

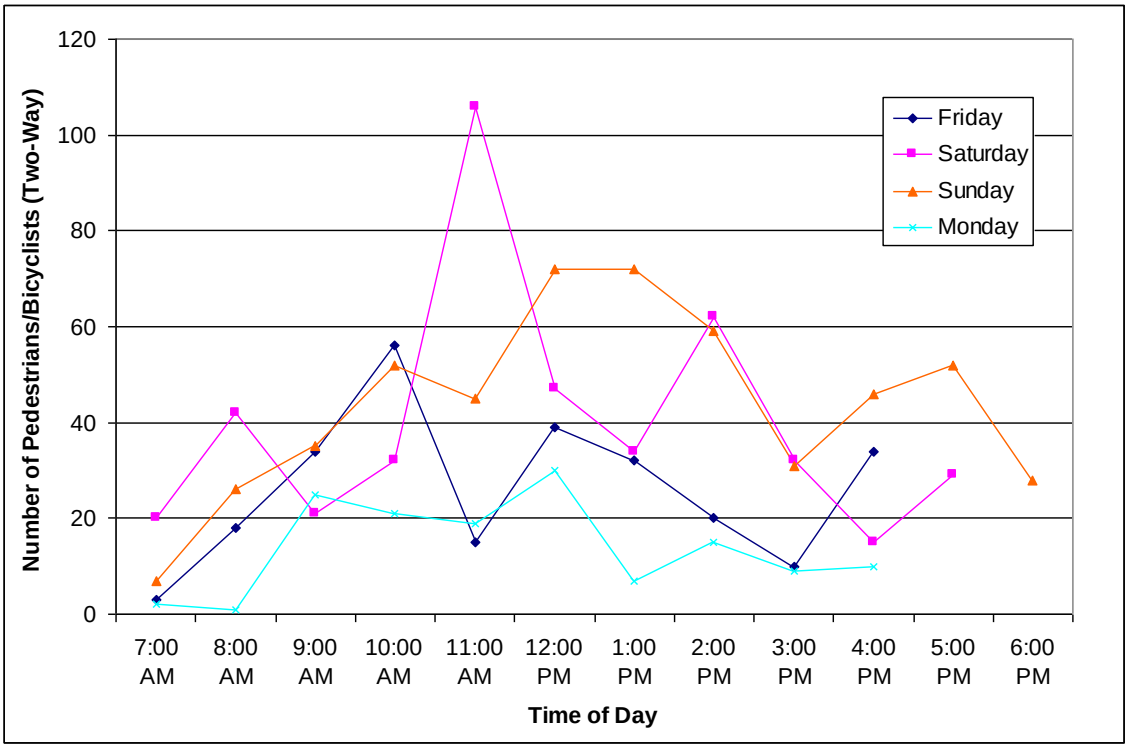
	Friday	Saturday	Sunday	Monday	Approximate Range
Hikers Entering	429	805	777	482	430 to 805
Hikers Exiting	398	581	577	433	400 to 580
Bicyclists Entering	12	0	10	19	0 to 20
Bicyclists Exiting	5	0	0	6	0 to 5
Total Hiker Activity	827	1,386	1,354	915	825 to 1,385
Total Bicyclist Activity	17	0	10	25	0 to 25

Source: USFS; DEA data collection during July 2009
Note: "Total Daily Activity" is between 7:00 AM and 7:00 PM. During this 12-hour time period, 60 minutes of trail activities were not recorded on Friday and Saturday.

Trail use on Catherine's Pass Trail, as illustrated in **Figure 2-17**, reached 106 two-way movements during the 11:00 AM hour on Saturday. Trail use on Monday peaked at 30 two-way movements during the 12:00 PM hour. Trail use peaked between the 10:00 AM and 1:00 PM hours each day. Trail use activity experienced an increase after 3:00 PM or 4:00 PM each day.

Catherine's Pass Trail

FIGURE 2-17. CATHERINE'S PASS TRAIL USE COUNTS



Source: USFS; DEA data collection during July 2009

Table 2-11 provides an overview of total daily activity on Catherine's Pass Trail. A total average of 480 two-way hikers (both exiting and entering) on weekend days and 215 hikers on weekdays was observed. This translates to about 240 persons using the trail on weekend days and 108 persons on weekdays. Up to 5 total bikes were observed on the trail (on Saturday). The number of hikers and bicyclists observed to be entering the trail is not equal to the number observed exiting, likely due to the fact that some hikers and bicyclists choose to travel a loop configuration, and that some hikers/bicyclists may have exited after observations ended. The Catherine's Pass Trail is the second most highly utilized trail by hikers in the Albion Basin. Although Catherine's Pass Trail allows bicycle use, a maximum of five bicyclists were observed on the trail compared with a maximum of 25 bikes on Cecret Lake Trail where bikes are prohibited.

TABLE 2-11. TOTAL DAILY ACTIVITY ON CATHERINE'S PASS TRAIL

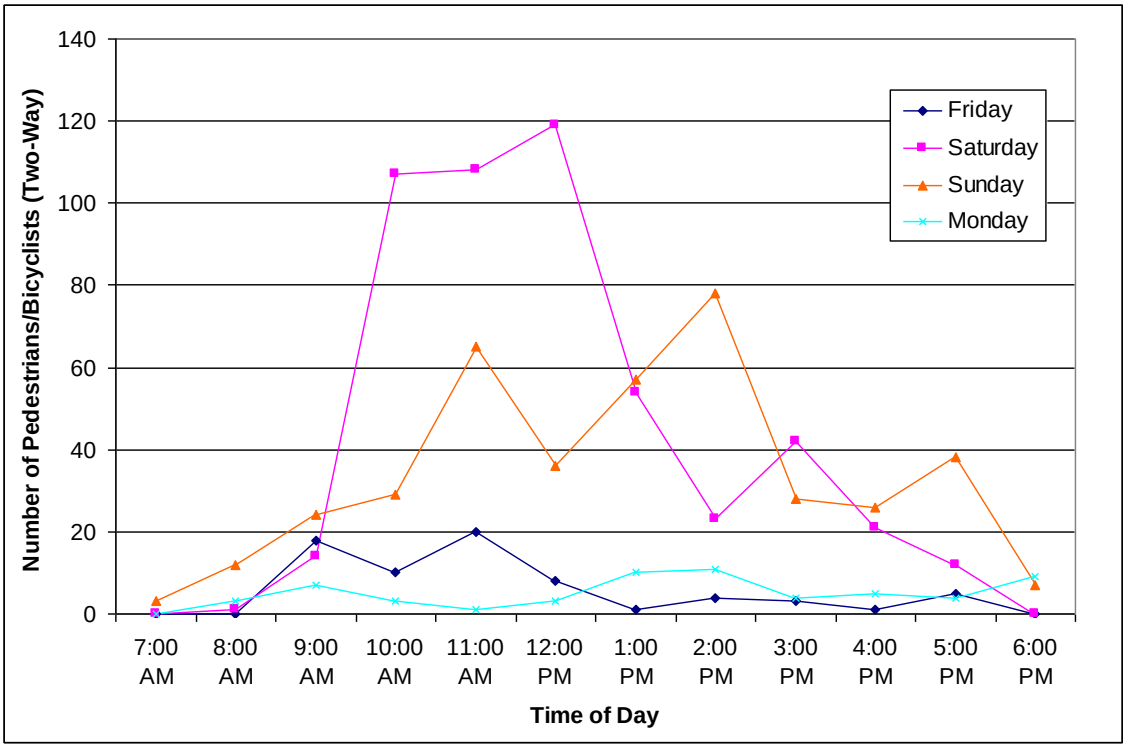
	Friday	Saturday	Sunday	Monday	Approximate Range
Hikers Entering	161	241	297	84	85 to 295
Hikers Exiting	106	200	226	78	80 to 225
Bicyclists Entering	2	2	2	1	0 to 5
Bicyclists Exiting	0	3	0	0	0 to 5
Total Hiker Activity	267	441	523	162	160 to 525
Total Bicyclist Activity	2	5	2	1	0 to 5

Source: USFS; DEA data collection during July 2009
Note: "Total Daily Activity" is between 7:00 AM and 7:00 PM. During this 12-hour time period, trail activities of up to 90 minutes were not recorded on Friday, Saturday, and Monday.

Albion Meadows Trail

Trail use on Albion Meadows Trail, as illustrated in **Figure 2-18**, peaked at 119 two-way movements during the 12:00 PM hour on Saturday. Trail use activity was significantly greater during the weekend on the trail. Trail use activity never exceeded more than 20 two-way movements during a given hour on Friday or Monday.

FIGURE 2-18. ALBION MEADOWS TRAIL USE COUNTS



Source: USFS; DEA data collection during July 2009

Table 2-12 provides an overview of total daily activity on Albion Meadows Trail. Trail activity is reported in total two-way activity and not as entering and exiting hikers because the trail can be accessed from either end of the trail. A total average of 415 two-way hikers on weekend days and 57 hikers on weekdays was observed. This translates to about 208 persons observed using the trail on weekend days and 29 persons on weekdays, assuming each hiker is counted twice, while moving in each direction along the trail. Up

to 55 total bikes were observed on the trail (on Sunday). The Albion Meadows Trail experiences the lowest utilization by hikers in the Albion Basin. However, Albion Meadows Trail experienced close to the same number of two-way hikers as Catherine's Pass Trail on the weekend days sampled in this data collection effort (415 compared to 480, respectively). The high use of this trail on Saturday was due to the fact that it was the primary route for guided educational hikes during the Wasatch Wildflower Festival. Typical Saturday use would be less than use of Catherine's Pass Trail, but the Albion Meadows Trail experienced far fewer than Catherine's Pass Trail on the weekdays sampled (57 compared to 215). Of note is that this trail was improved in 1998 to reduce congestion on the road. This data shows it is underutilized; therefore, not meeting the intent. Albion Meadows Trail experienced the highest level of utilization by bicyclists, with a maximum of 55 bikes observed.

TABLE 2-12. TOTAL DAILY ACTIVITY ON ALBION MEADOWS TRAIL

	Friday	Saturday	Sunday	Monday	Approximate Range
Total Hiker Activity (2-Way Hikers)	66	482	348	47	45 to 480
Total Bicyclists Activity (2-Way Bicyclists)	4	19	55	13	5 to 55

Source: USFS; DEA data collection during July 2009
Note: "Total Daily Activity" is between 7:00 AM and 7:00 PM.

In addition to trail use counts at Cecret Lake, Catherine's Pass, and Albion Meadows trails, pedestrian and bicycling activity was observed at the Albion Basin Summer Road entrance gate on Friday, Saturday, and Sunday (July 17th through 19th, 2009) between 7:00 AM and 6:15 PM. On Friday, approximately 15 pedestrians and 15 bicyclists were observed traveling up the road. Saturday experienced much higher numbers with about 60 pedestrians and 20 bicyclists observed. The higher number of pedestrians traveling up the road on Saturday can be attributed in part to the Wasatch Wildflower Festival, which provided guided wildflower viewing hikes on the road. On Sunday, approximately 20 pedestrians and 25 bicyclists were observed traveling up the Albion Basin Summer Road. These numbers indicate that a meaningful number of people choose to walk or bike up the road, in lieu of using a private vehicle or shuttle service.

2.2.4 SHUTTLE VAN USE DATA

2.2.4.1 SHUTTLE BOARDINGS AND ALIGHTINGS

Shuttle boardings and alightings were collected at three stop locations in the Albion Basin. The shuttle route extends from the summer entrance booth at the beginning of the Albion Basin Summer Road, to the Cecret Lake Trailhead near the Albion Basin Campground.

This section describes the methodology and the results of the shuttle passenger data collection effort. Detailed shuttle use data can be found under separate cover in Appendix

D of the *Albion Basin Transportation Feasibility Study Baseline Conditions Report (Final Draft, March 2010).*

METHODOLOGY, LOCATIONS, AND TIMES

Shuttle boardings and alightings were collected during the hours of shuttle operations on Saturday, July 18th and Sunday, July 19th. The Albion Shuttle operated on Saturday from 9:00 AM to 5:00 PM and on Sunday from 9:30 AM to 5:00 PM. A separate dedicated Wasatch Wildflower Festival Shuttle service operated on Saturday from 9:00 AM to 12:30 PM. Two additional vehicles were deployed for this purpose. As many as five total shuttles were operating during peak hours on Saturday while three were operating during peak hours on Sunday.

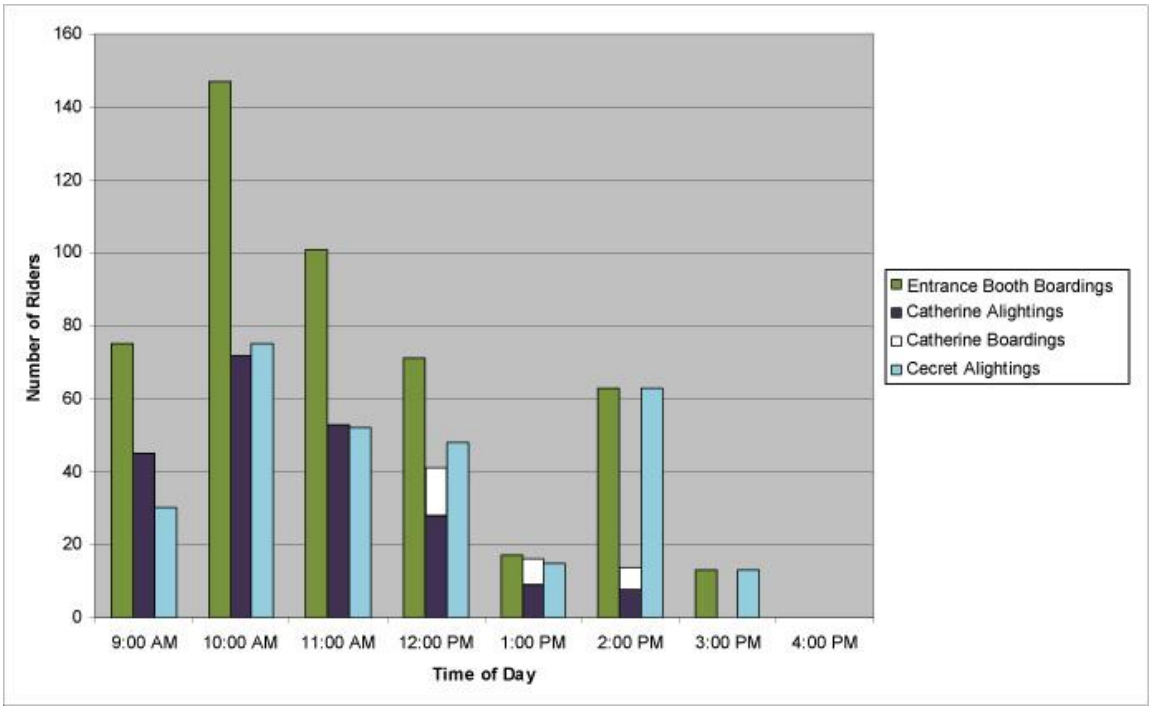
At the beginning of each trip up or down the Albion Basin Summer Road, shuttle drivers documented their departure time. Drivers then recorded the number of riders boarding and alighting at each of the three stops: the summer entrance booth area stop, the Catherine's Pass stop, and the Cecret Lake stop.

RESULTS

Shuttle boardings and alightings for Saturday are illustrated by direction in **Figure 2-19** and **Figure 2-20**. The figures include boardings and alightings for both the Albion Shuttle and Wasatch Wildflower Festival Shuttle. As was noted above, the two Wasatch Wildflower Festival Shuttles were deployed only from 9:00 AM to 12:30 PM. Shuttle boardings for inbound trips peaked during the 10:00 hour. Boarding activity for outbound trips peaked during the 1:00 PM hour, with steady activity between 12:00 PM and 4:00 PM.

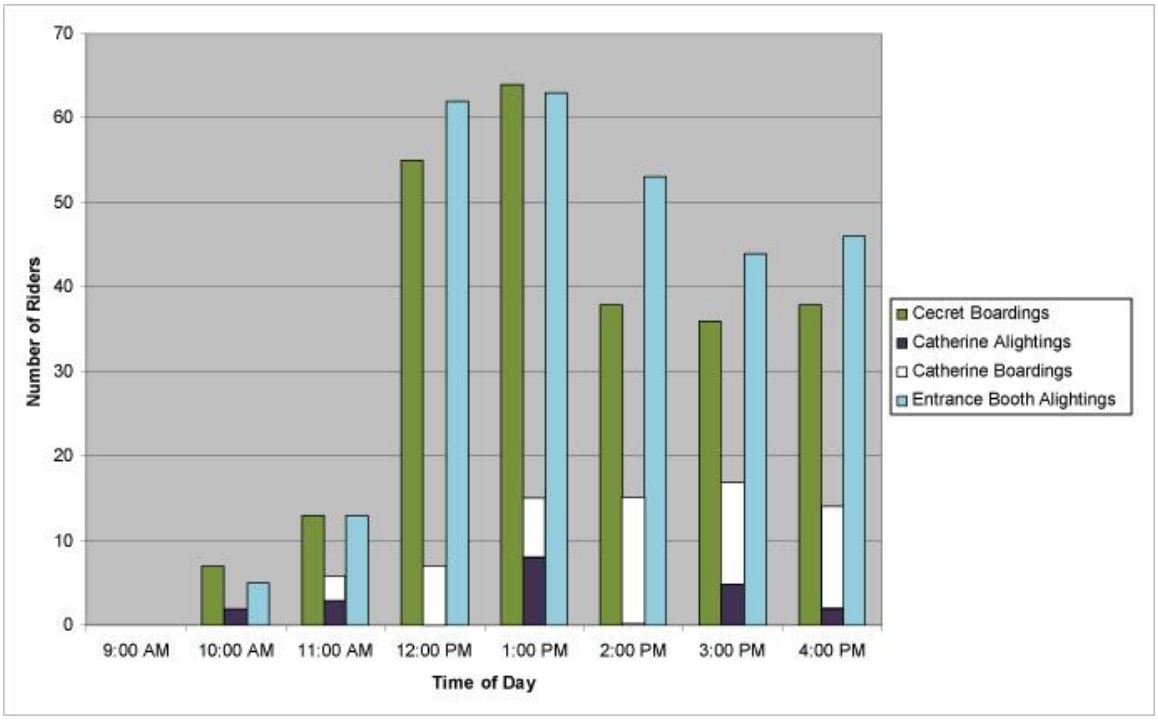
On Saturday, inbound shuttle boardings at the summer entrance booth were at or near capacity from 9:00 AM to 12:00 PM. From 10:00 AM to 12:00 PM, the average boardings per shuttle reached the 14 person capacity. Outbound shuttle boardings were at or near capacity from 1:00 PM to 5:00 PM. From 4:00 PM to 5:00 PM boardings at Cecret Lake and Catherine's Pass reached shuttle capacity.

FIGURE 2-19. SATURDAY INBOUND SHUTTLE BOARDINGS & ALIGHTINGS



Source: USFS; DEA data collection during July 2009

FIGURE 2-20. SATURDAY OUTBOUND SHUTTLE BOARDINGS & ALIGHTINGS

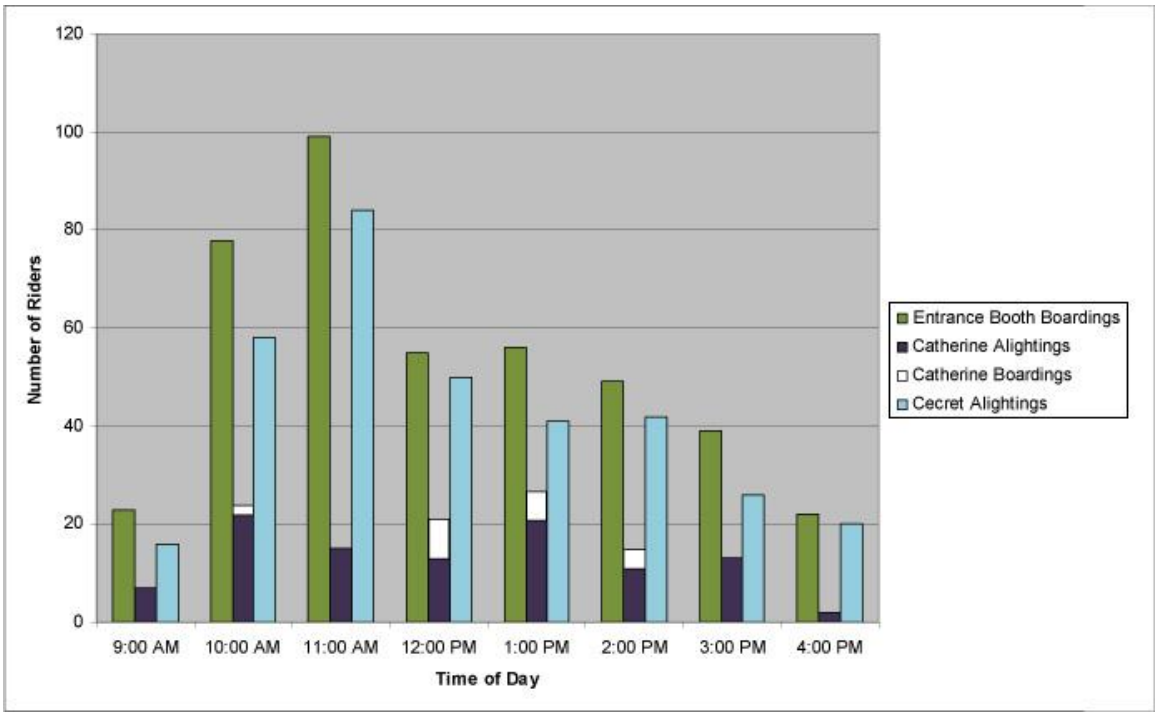


Source: USFS; DEA data collection during July 2009

Shuttle boardings and alightings for Sunday are illustrated by direction in **Figure 2-21** and **Figure 2-22**. Shuttle boardings for inbound trips peaked during the 11:00 AM hour. Boarding activity for outbound trips peaked at 1:00 PM with steady activity between 12:00 PM and 4:00 PM.

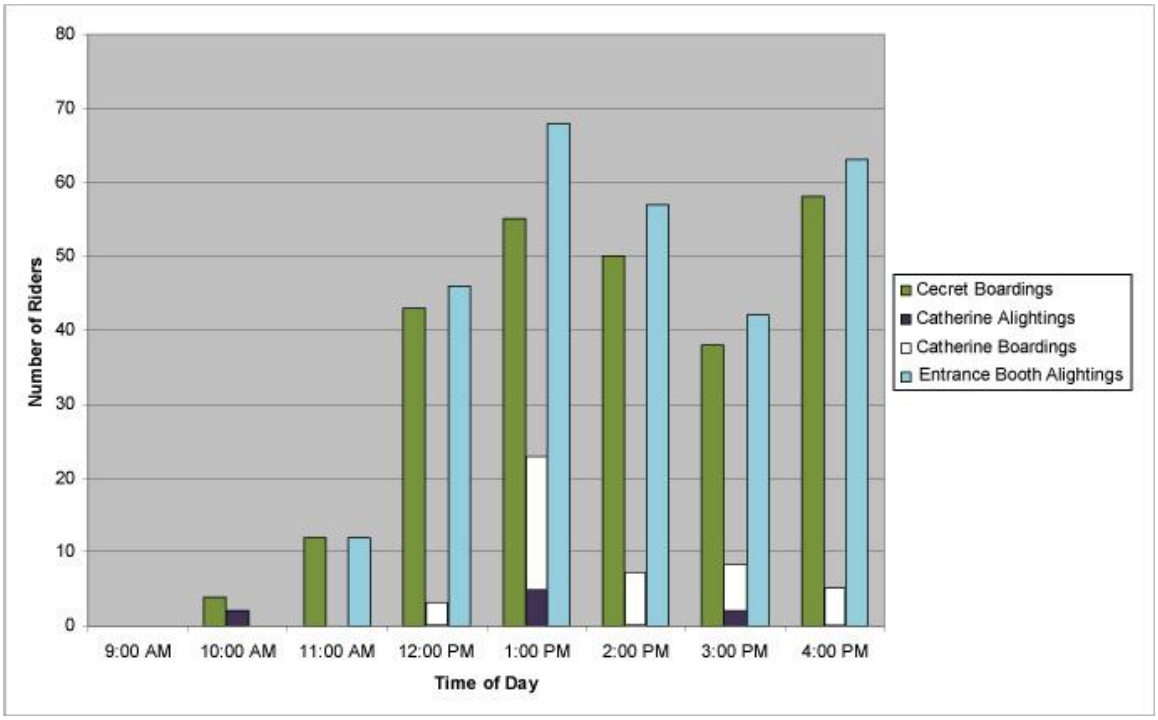
On Sunday, inbound shuttles at the summer entrance booth average 11 boardings or more from 9:00 AM to 4:00 PM. Outbound shuttle boardings at Cecret Lake and Catherine's Pass approach or reach capacity from 1:00 PM to 5:00 PM with only the 1:00 PM hour slightly below capacity.

FIGURE 2-21. SUNDAY INBOUND SHUTTLE BOARDINGS & ALIGHTINGS



Source: USFS; DEA data collection during July 2009

FIGURE 2-22. SUNDAY OUTBOUND SHUTTLE BOARDINGS & ALIGHTINGS



Source: USFS; DEA data collection during July 2009

Shuttle stop activity indicates that the Cecret Lake stop is utilized much more than the Catherine's Pass stop. Activity at the Cecret Lake shuttle stop was consistently greater except for Saturday morning when alightings were distributed fairly evenly between the two stops. Over the two-day data collection period, the Cecret Lake shuttle stop experienced over twice as many boardings and alightings as the Catherine's Pass shuttle stop.

2.2.5 VEHICLE CHARACTERISTICS

Data were collected on vehicle classification and passenger occupancy in Albion Basin to identify the mix of different vehicle types and the average vehicle occupancy.

2.2.5.1 VEHICLE CLASSIFICATIONS

Vehicle type or classification data were collected at the beginning of the Albion Basin Summer Road near the entrance gate. This section describes the data collected, the methodology, and the results. All vehicle classification data can be found under separate cover in Appendix E of the *Albion Basin Transportation Feasibility Study Baseline Conditions Report (Final Draft, March 2010)***.**

METHODOLOGY, LOCATIONS, AND TIMES

Vehicle classification data were manually recorded by field technicians located at the beginning of the Albion Basin Summer Road. The data were collected from Friday, July 17th to Sunday, July 19th between 7:00 AM and 7:00 PM. Approximately 1,200 vehicles were sampled during the data collection effort.

Vehicles classifications included the following:

Passenger vehicle, pickup, or SUV
Motorcycle
Recreational Vehicle (RV)
Private Van
Commercial/Tour Van

The Albion Van Shuttle and Wildflower Festival Shuttle vehicles were excluded from the counts.

Vehicle types on Albion Basin Summer Road

RESULTS

The percentage breakdown of each vehicle type is illustrated in **Table 2-13**.

TABLE 2-13. VEHICLE CLASSIFICATION

Day	Vehicle Type				
	Passenger Car, Pickup, SUV	Motorcycle	RV	Private Van	Commercial/ Tour Van
Friday	90%	2%	0%	7%	1%
Saturday	89%	2%	0%	9%	0%
Sunday	92%	3%	0%	5%	0%
Overall	91%	2%	0%	7%	0%

Source: USFS; DEA data collection during July 2009

Variation in vehicle classification is minimal from day to day. Overall, passenger vehicles, pickups, and SUV's make up approximately 91% of vehicles accessing the Albion Basin Summer Road. Motorcycles make up approximately 2% of vehicles and private vans approximately 7%. Only one RV was counted during the entire data collection period.

2.2.5.2 VEHICLE OCCUPANCY

Vehicle occupancy data were collected in Albion Basin at the beginning of the Albion Basin Summer Road. This section describes the data collected, the methodology, and the results. All vehicle occupancy data can be found under separate cover in Appendix E of the *Albion Basin Transportation Feasibility Study Baseline Conditions Report (Final Draft, March 2010)***.**

METHODOLOGY, LOCATIONS, AND TIMES

Vehicle occupancy data were manually recorded by field technicians located at the beginning of the Albion Basin Summer Road. The data were collected from Friday, July 17th to Sunday, July 19th between 7:00 AM and 7:00 PM. Approximately 1,200 vehicles were sampled during the data collection effort.

The vehicle occupancy results are illustrated in **Table 2-14**.

TABLE 2-14. NUMBER OF OCCUPANTS PER VEHICLE

Day	Persons Per Vehicle				
	1	2	3	4	5+
Friday	20%	45%	18%	11%	5%
Saturday	19%	47%	14%	16%	5%
Sunday	16%	48%	17%	15%	4%
Overall	18%	47%	16%	14%	5%

Source: USFS; DEA data collection during July 2009

The average vehicle occupancy for vehicles accessing the Albion Basin Summer Road was 2.4. It is assumed that the actual average vehicle occupancy could be slightly higher than this value since some occupants of vehicles may not have been visible and were not included.

Less than 20% of vehicles had a single occupant, nearly 50% of vehicles had two occupants, and approximately 35% had 3 or more occupants. Only 5% of vehicles had 5 or more occupants.

2.3 OVERNIGHT ACCOMMODATIONS

2.3.1 ALTA LODGING

Lodging options in the Town of Alta include the following:

Alta Lodge
Peruvian Lodge
Snowpine Lodge
Rustler Lodge
Goldminer's Daughter Lodge

General characteristics associated with the available lodging in the Town of Alta are summarized in **Table 2-15**. Seasonality, number of rooms, number of beds, and average occupants per room is presented in the table.

TABLE 2-15. ALTA LODGING

	Lodging			
	Operating Season	**Number of Rooms**	**Number of Beds**	**Average Occupants per Room**
Alta Lodge	Year-round	57 (winter); 42 (summer)	57 to 104 (winter) 42 to 74 (summer)	2 per room
Peruvian Lodge	12/23/09-4/17/10	76 private rooms 4 dorm rooms	156 private room beds 100 dorm beds	2 per private room 4 per dorm room
Snowpine Lodge	Approx Dec 1 to April 1	18 rooms	43 beds	2 per private room 6 in 1 dorm 12 in 1 dorm
Rustler Lodge	Approx Nov 20 to April 20 Sometimes open in summer for spec. events	83 private 2 dorm rooms	Approx 140	2.1 per room
Goldminer's Daughter Lodge	Approx Nov 20 to April 20	92 rooms	Approx 160	2 per room
Totals	N/A	308 private and 6 dorm (winter); 293 private and 6 dorm (summer)	Approximately 610 to 660 (winter); 600 to 630 (summer)	N/A

Source: Town of Alta; Alta Lodging Providers

SUMMER LODGING

During the summer season, only the Alta Lodge is regularly open. The Rustler Lodge has traditionally been open in the summer for special events, such as weddings. It was not open during the summer of 2009 due to economic conditions.

The Alta Lodge typically only has visitors on weekends during the summer season. Weekend occupancy can be full, but only when associated with a wedding or other event where the entire hotel is rented. "Normal" weekends are usually not very busy, with less than 10% occupancy on average. Summer lodging is also available in Snowbird.

2.3.2 CAMPGROUNDS

The only campground within the Albion Basin is the Albion Basin Campground located at the end of the Albion Basin Summer Road. There are 19 campsites available at the campground, including two double sites and one triple site which hold up to 16 and 24 people, respectively.

During the summer, the campsites are typically at capacity during the weekends. Campsites are available by both reservation and on a first come, first served basis.

The campground was constructed in 1937. Due to its high elevation and snowfall, the campground operating season is generally limited to July 1 through Labor Day. The alpine setting, wildflowers, and trail access make Albion Basin a popular campground.

2.4 RESOURCE DATA

The silver mining, timber harvesting, and sheep grazing industries prevalent in the late 1800s and early 1900s had lasting environmental impacts on the area near Alta. By the 1900s, the area was entirely clear of timber and vulnerable to erosion and avalanches. After the establishment of the Alta Ski Area in 1938, the USFS and Civilian Conservation Corps undertook large-scale reforestation which has restored much of the natural ecosystem. The Alta Ski Lifts continues to protect and restore the natural environment through many sustainability and restoration efforts (ASL 2004).

Information on existing environmental conditions in the Little Cottonwood Canyon was gathered from a variety of existing sources including the following:

Final Environmental Impact Statement for the Alta Ski Area Master Development Plan Update (U.S. Forest Service, 1997)

Vegetation Management Plan for the Alta Ski Area (Alta Ski Lifts, 2002 and 2008)

Transportation Observations, Considerations, and Recommendations for the Tri-Canyons Area of the Salt Lake Ranger District (Transportation Assistance Group, December 2006)

Project Summary Statement: Hydrologic Investigations of the Albion Basin, Utah – unpublished. Wisconsin: University of Wisconsin-Parkside (Friends of Alta/Skalbeck, April 2009) [Alta, UT: Paper is part of Albion Basin Eco-Geographical Study Program sponsored by Friends of Alta]

Geographic Information Systems (GIS) data provided by the Town of Alta in July 2009.

2.4.1 WATER/WETLANDS

Albion Basin forms the headwaters of the Little Cottonwood Creek drainage. Several small intermittent streams feed into Little Cottonwood Creek through the Alta area. Cecret Lake is the only flat-water body in the area (USFS 1997). GIS data indicates that there are approximately 10 miles of streams in the Town of Alta, approximately 8.5 miles of which are streams within the Alta Ski Area (TOA GIS 2009). According to the 1997 Alta Ski Area Master Development Plan (MDP), the streams are in good condition with well-vegetated channel banks and dense stands of willow in riparian areas (USFS 1997). Little Cottonwood Creek provides 12 to 14% of the culinary drinking water supply for the Salt Lake County service area (Briefer, Salt Lake City 2009) and 25% of Sandy City's drinking water (Pace, Sandy City

Wetland Area

2009). Its water quality is the highest of the drainages used for Salt Lake County's water supply (USFS 1997).

GIS data indicates that approximately 470 acres of wetlands exist in the Town of Alta, and of those, approximately 450 acres exist within the Alta Ski Area (TOA GIS 2009). A study conducted in 2009 indicated that the high variability in water levels at the Albion Basin Fen wetlands complex suggest a precipitation-dominated wetland, while the declining water levels at Catherine's Pass and Sugarloaf/Collins wetland complexes suggest a groundwater-dominated wetland (Friends of Alta/Skalbeck 2009).

2.4.2 WILDFLOWERS/VEGETATION

Wildflowers in Albion Basin

The diverse ecosystem of Little Cottonwood Canyon has become an attraction for hikers and wildflower viewing. The USFS has identified 17 distinct vegetation communities within the subalpine zone of Alta (ASL 2002 and 2008). **Table 2-16** outlines these communities, dominant plant species found in each community, the corresponding wildlife Management Indicator Species (MIS) or Common Species and the percentage of the Alta Ski Area in which the community can be found.

TABLE 2-16. ALTA PLANT COMMUNITIES

Community Type	Wildlife MIS or Common Species	Dominant Plant Species	% of Ski Area
Tall Forb (TF)	Broadtailed Hummingbird	Leafy Polemonium, Sticky Geranium, Scarlet Paintbrush	14%
Conifer/Tall Forb (C/TF)	Stellar's Jay	Sub Alpine Fir, Engelmann Spruce, Colorado Columbine	16%
C/TF or TF	Hummingbirds	Mountain Bluebells, Sticky Geranium, Colorado Columbine	14%
C/TF or Willow/TF	Dark Eyed Juncos	Drummond's Willow, Cow Parsnip, Richardson's Geranium	2%
W/TF	MacGillivray's Warbler	Drummond's Willow, False hellebore, Mountain Bluebells	8%
Aspen/TF	Yellow-Bellied Sapsucker	Aspen, One Head Sunflower, Mountain Lupine	.05%
Snowberry/TF	Mule Deer	Snowberry, Mountain Lupine, Nettleleaf Horsemint	.04%
Short Forb	Broadtailed Hummingbird	Scarlet Gilia, Gordon's Ivesia, Stonecrop	6%
Alpine Forb	Water Pipit	Nutall's Flaxflower, Green Gentian, Arctic Willow	4%
Plainleaf Willow/Water Sedge	Moose	Plainleaf Willow, Water Sedge, Marsh Marigold	.04%
Misc. Wetlands	Water Pipit	Water Sedge, Plainleaf Willow, Bluejoint Reedgrass	.02%
Conifer/Rock	Clark's Nutcracker	Sub Alpine Fir, Engelmann Spruce, Mountain Boxwood	.08%
Krummholz	Mountain Chickadee	Sub Alpine Fir, Mountain Lupine, Nettleleaf Horsemint	3%
Seeded Grass	American Robin	Smooth Brome, Orchard Grass, Beartongue species	4%
Developed Base Area	Mountain Bluebird	Smooth Brome, Orchard Grass, Beardtongue species	5%
Rock & Talus	Wasatch Pika	Gordons Ivesia, Mountain Sorrel, Beardtongue species	14%
Glacial Polish Rock	Yellow-Bellied Marmot	Yarrow	3%

Source: Final Environmental Impact Statement for the Alta Ski Area Master Development Plan Update, Wasatch-Cache National Forest (April 1997)

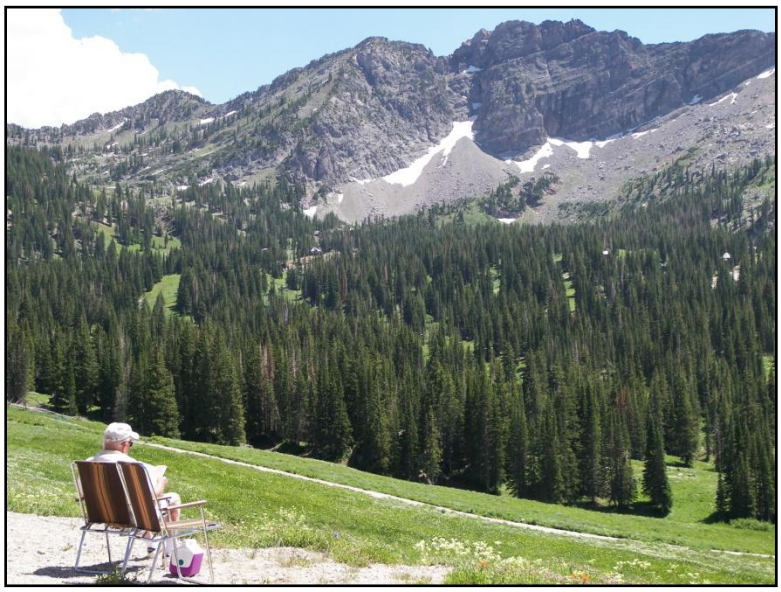
There is an ongoing effort to reestablish native species in the Alta Ski Area. Native species being reseeded include: Sage, Gray aster, Yarrow, Smallwing sedge, Fireweed, Sticky geranium, Rush, and Horsetail. A number of non-native invasive species are also found at Alta and are being removed on an ongoing basis. These include Jointed goatgrass, Cheatgrass, Flixweed, Common sunflower, Perennial pepperweed, Dalmation toadflax, Prostrate knotweed, Erect knotweed, Salsify, and Mullein (ASL 2002 and 2008).

2.4.3 WILDLIFE

Moose

Surveys conducted as part of the 1997 Wasatch MDP indicate that no Threatened and Endangered Species are found in the upper Little Cottonwood Canyon area, although suitable habitat for such species does exist in the canyon. Suitable habitat also exists in the area for two Sensitive Species, the Spotted bat and Western big-eared bat. Other wildlife known to be present in Little Cottonwood Canyon includes: a variety of birds and small mammals, moose, black bears, mule deer, elk, mountain goats, and mountain lions (USFS 1997).

2.4.4 SOILS



Geology indicative of glacial activity

Little Cottonwood Canyon contains a drainage area of 27.4 square miles with an elevation range of 5,200 to 11,200 feet. The canyon is U-shaped due to glacial activity and contains two distinct areas: Albion Basin and Collins Gulch. Albion Basin is composed of several separate cirque basin, bottomland, morainal, and trough bench complexes. Enriched topsoil and redoximorphic features present in these areas could be indicative of hydric conditions. Highly erosive soils are found throughout the Albion Basin. Mine tailings with heavy metals such as cadmium and zinc are also found throughout the base area facilities and have the potential to be released if disturbed. Wetland characteristics have been found to cover over half of the subwatershed areas in the Albion Basin.

Collins Gulch is composed of three reaches. The upper portion is composed of north-facing, high mountain crests containing glacial cirques and steep ridges formed as a result of intensive glaciation. Soils within the cirques are typically colluvial and residual deposits derived from Tintic quartize, Mineral Fork tillite, and shale of the Ophir formation. The middle portion of Collins Gulch is composed of a simple U-shaped glacial trough with diluvial and alluvial deposits derived from Wisconsin aged glacial till. The gulch narrows in the lower reach as it passes through very steep ridges composed of shallow, non-hydric residual and colluvial soil materials derived from Deseret/Madison limestone and Tintic quartzite (USFS 1997).

CHAPTER 3: VISITOR SURVEY

The Albion Basin Summer Visitor Survey was conducted during August and September 2009 in order to seek information about summer visitors, recreation activities and transportation needs in Albion Basin and the Town of Alta. The survey was made possible through a partnership between the Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center. Although the visitor survey was conducted separately from this study, many of the results are relevant to this effort.

3.1 ELEMENTS OF THE VISITOR SURVEY

The visitor survey was developed in order to collect information related to visitor use, visitor opinions and recreation and transportation needs. This information was not currently available from other sources. The visitor survey for Albion Basin was developed jointly by project partners and was based on examples from surveys used in other public lands. Information requested in the survey included the following:

- Demographic Information
  - Number of people in group
  - Age of visitor
  - Residential location
- Factors related to Visitation, Recreation and Transportation
  - Frequency of visitation to Albion Basin
  - Reasons for visiting Albion Basin (including identification of "primary" reason for visiting)
  - Mode of access to Albion Basin
  - Other areas visited as part of the same trip
  - Expected length of stay in Albion Basin and/or Town of Alta
  - Location where visitor stayed the evening of the trip
  - Consultation of trail maps
- Visitor Opinions
  - Experience with trail systems
  - Experience with Albion Basin Summer Road
  - Aspects that were most and least enjoyable about the visit
  - Factors related to overall experience in Albion Basin
  - Concerns related to Albion Basin
  - Possible USFS management actions aimed to protect the quality of visitor experiences, preserve natural resources and protect the watershed
  - Facilities and services that are or could be provided at Albion Basin and in the Town of Alta

3.2 SURVEY METHODOLOGY

Visitors were provided the survey at three locations (Catherine's Pass trailhead, Cecret Lake trailhead and the summer entrance booth) as they returned from their day's activities or were preparing to exit the Albion Basin area. A sample size of 400

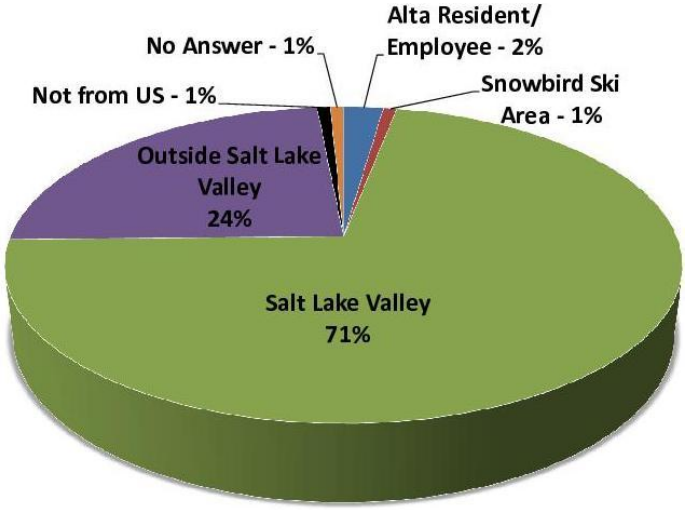
respondents was targeted. However, a total of 265 surveys were successfully completed. Volunteer groups from partner organizations distributed the visitor survey. Surveys were distributed from approximately 10:00 AM to sunset on both weekdays and weekend days. Although good sample sizes were achieved on Fridays and Saturdays, very few surveys were collected on Sundays, which also represent high visitation volumes. Visitors and campers completed the survey instrument themselves and returned it to one of the volunteers. On-site completion was strongly recommended in order to maximize response rates; however, some surveys were returned via mail. An attempt was made to gather a cross-section of recreational users (hikers, bikers, families, young, elderly, residents, etc.) and the targeting of specific interest groups was avoided. Partner volunteer groups were also responsible for data entry, compilation of visitor survey results and analysis of findings.

Visitor Survey Results

Key observations from the visitor survey results are summarized below. A full report under separate cover provides a comprehensive summary of survey results.

- Residential Location (see **Figure 3-1**)
    - The majority (71%) of survey participants reported being from Salt Lake Valley.
    - Another 24% indicated being from outside of Salt Lake City.

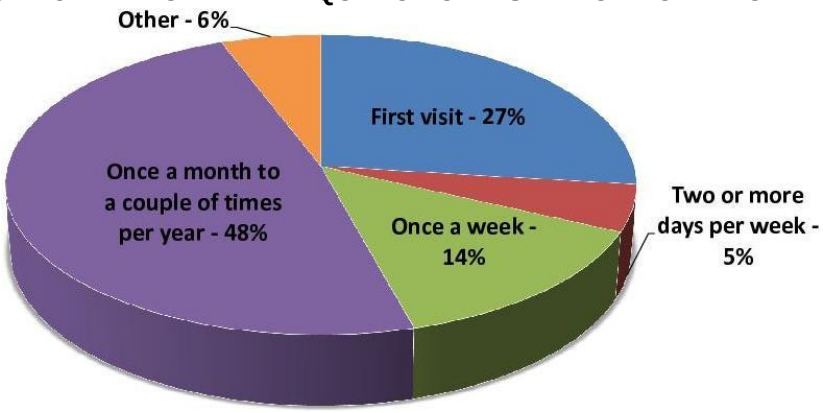
FIGURE 3-1. REPORTED ALBION BASIN VISITOR RESIDENTIAL LOCATION



Source: 2009 Visitor Survey, Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center

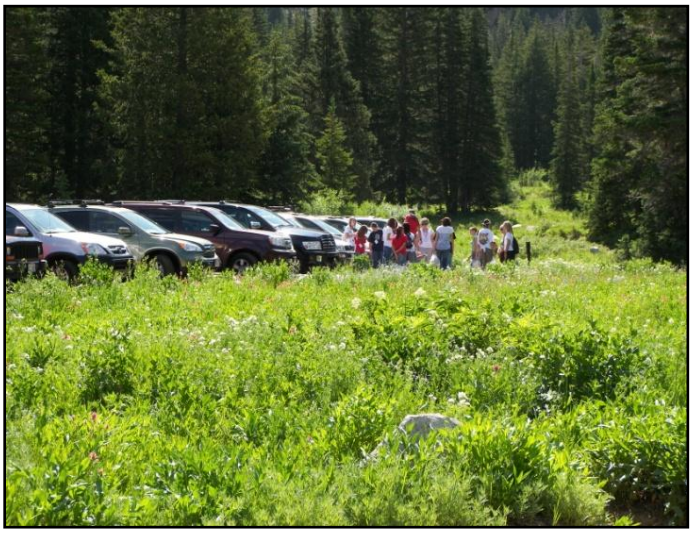
- Frequency of Visitation to Albion Basin from June through September (see **Figure 3-2**)
    - A large number (48%) of respondents reported visiting Albion Basin from once a month to “a couple of times per season”
    - Another 27% of respondents reported that it was their first visit to Albion Basin.
    - Eighteen percent of respondents reported visiting Albion Basin once to three times per week.

FIGURE 3-2. REPORTED FREQUENCY OF VISITATION TO ALBION BASIN



Source: 2009 Visitor Survey, Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center

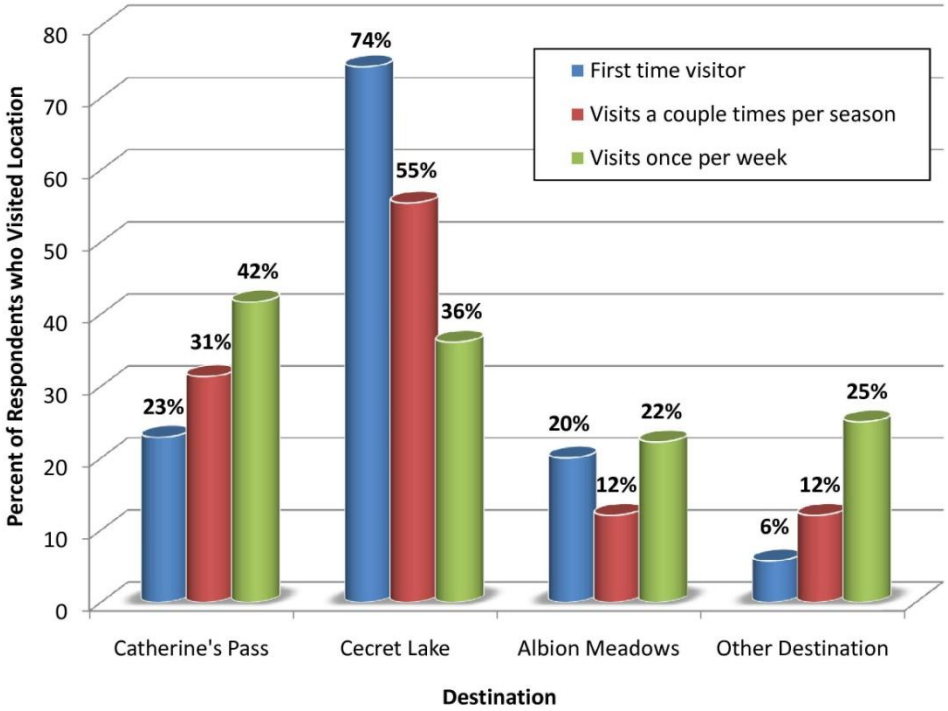
- Access to Albion Basin
  - The majority (85%) of respondents reported accessing Albion Basin via private vehicle and parked within Albion Basin.
  - Only five percent of respondents reported taking the pilot shuttle to access Albion Basin. However, these results may not be representative of actual mode split since the shuttle may not have been operating on the day the survey was administered.



Most visitors reported accessing Albion Basin via private vehicle parking in Albion Basin

- Popularity of destinations (see **Figure 3-3**)
  - Cecret Lake was the most popular destination for those visitors making their first visit to Albion Basin. The most popular destination for those visitors who reported visiting Albion Basin once a week was Catherine's Pass.
  - Overall, Cecret Lake was reported to be the most popular destination.

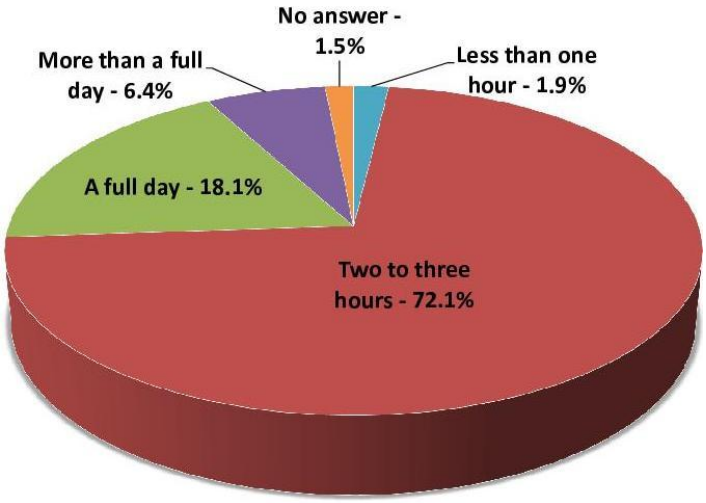
FIGURE 3-3. REPORTED POPULAR DESTINATIONS BY FREQUENCY OF VISITATION



Source: 2009 Visitor Survey, Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center

- Length of stay (see **Figure 3-4**)
  - The majority (72%) of respondents reported a length of stay of two to three hours. This is consistent with the findings of parking conditions sampled as part of this project, from which the average length of stay was calculated to be just over two hours (see **Chapter 2** for more information).

FIGURE 3-4. REPORTED LENGTH OF STAY



Source: 2009 Visitor Survey, Town of Alta, Friends of Alta and Alta Ski Lifts/Alta Environmental Center

- Visitor opinions about the trail system
  - The majority (74%) of responses indicated that there are "a good amount of trails."

- Ten percent of first-time visitors indicated that the "trail designations are unclear."

- Overall experience while using the Albion Basin Summer Road
  - Eighty-six percent of respondents indicated that the road held a "comfortable mix of people in vehicles, on foot and on bikes." Eleven percent of respondents indicated that the road was too crowded. These responses were similar for surveys completed on both weekends and weekdays.

Typical mix of uses currently found on Albion Basin Summer Road

- Primary elements that added to respondent's experiences in Albion Basin
  - Availability of parking close to the intended location of visit in Albion Basin
  - Number of wildlife seen during visit
  - Summer entrance booth
  - Availability of public restrooms
  - Information about ecology, geology, natural history and watershed
  - Ability to take a self-guided walk or hike in a remote alpine setting

Visitors report that wildlife sightings and the summer entrance booth add to their experience in Albion Basin

- Primary elements that detracted from respondent's experiences in Albion Basin
    - Sounds made by vehicles
    - Sounds made by other visitors

Line of cars during peak visitation – Visitors report sounds made by vehicles detract from their experience in Albion Basin

- Primary concerns expressed about conditions in Albion Basin (50% or more of respondents expressed some level of concern, listed from most to least concern)
    - Availability of parking
    - Vegetation damage along Albion Basin Summer Road
    - Vegetation damage along trails
    - Watershed protection
    - Amount of litter
    - Amount of noise
    - Crowding on trail

- Items reported to be of least concern (45% or fewer respondents expressed some level of concern, listed from least to most concern)
    - Availability of public restrooms
    - Safety while walking on Albion Basin Summer Road
    - Options for physically disabled visitors

- Responses to specific management actions for further consideration
    - Required day-use reservations to visit Albion Basin – The majority (76%) of respondents expressed some level of disagreement with this action. Fifty percent strongly disagree.
    - Ski lift access – Just over half of all respondents expressed some level of agreement with the provision of ski lift access to Albion Basin (for a fee), in addition to allowing car, bike and foot traffic.
    - <u>Mandatory versus voluntary shuttle access</u> – The majority (65%) of respondents expressed *agreement* with provision of a voluntary shuttle to Albion Basin. However most (52%) of respondents expressed *disagreement* with a mandatory shuttle.

- Private vehicle access – The majority (56%) expressed disagreement with instituting a fee for private vehicle access. The majority (54%) also expressed *disagreement* with allowing only shuttle, ski lift, bike and pedestrian access to Albion Basin. However, approximately half of respondents expressed some level of *agreement* with the restriction of cars from Albion Basin Summer Road when available parking spaces are filled.
- Limitations to the number of daily visitors into Albion Basin – Although a majority of respondents agreed that restrictions on the number of cars traveling on Albion Basin Summer Road should be considered, the majority (60%) of respondents expressed some level of *disagreement* with limiting the number of daily visitors into Albion Basin. This finding indicates that visitors may be open to some restriction of private vehicles along with the provision of alternative modes of access.

- Transportation-related facilities that were identified as important (over 50% of respondents indicated "moderate," "very" or "of utmost" importance)
  - Maintained trails
  - Summer entrance booth
  - Access for those with special mobility needs
  - Information exhibits and signs

Visitors report that maintained trails are important to their experience at Albion Basin

- Overall, a new visitor information center was viewed as less important than other transportation facilities. The distribution of results are as follows:
  - Twenty-six percent of respondents indicated that a new visitor center was "Not Important."
  - Twenty-two percent indicated that it was "Slightly Important."
  - Twenty-seven percent indicated that it was "Moderately Important."
  - Thirteen percent indicated that it was "Very Important."

- The majority of general written comments reiterated the results of the visitor survey that are presented above. Consistent themes found in written comments are summarized below:
    - Respondents consistently reported that natural beauty and solitude were the largest contributors to their positive experiences at Albion Basin, especially in consideration of the basin's close proximity to large population centers. Some respondents indicated that measures should be taken to protect the sense of solitude.
    - Respondents indicated that help with parking provided by summer entrance booth staff was helpful and added to their experience.
    - Construction activity and related noise detracted from some respondent's experiences. Respondents also indicated that noise from other visitors detracted from their experiences.
    - Respondents reported witnessing the damage of natural resources by other visitors, and indicated that this detracted from their experiences.
    - Respondents consistently indicated an interest in minimizing future development in Albion Basin.
    - Several respondents noted the lack of food service and indicated interest in the provisions of a simple food stand.

- Other observations made by those who administered surveys
    - General comments seem to indicate that respondents visiting during peak hours are aware that there will be high levels of traffic and noise due to increased activity during these times.
    - Comments also seem to indicate that respondents are already taking measures to avoid visiting Albion Basin during peak hours, or considering alternate recreational destinations during these time periods. This phenomenon, known as recreation displacement, indicates that those visiting at peak times may have expectations of increased traffic, noise and high visitation.

CHAPTER 4: ALTERNATIVES DEVELOPMENT PROCESS

Albion Basin transportation access and visitor distribution alternatives were developed in close coordination with project partners and key stakeholders. The first step in the alternatives development process was the definition of project purpose and project goals. These were established based on public input and compilation of partner and stakeholder objectives, and were vetted through a team workshop forum. After purpose and goals were defined, the project team and stakeholders developed a range of preliminary transportation access and visitor distribution alternatives. These preliminary alternatives were then further refined into a set of detailed alternatives, which were evaluated based on specific screening criteria. Detailed alternatives are described in **Chapter 5**. Results of the evaluation of the detailed alternatives are outlined in **Chapter 6**.

4.1 STAKEHOLDER INVOLVEMENT

Project partners and stakeholders (listed below) were closely involved throughout the baseline conditions and alternatives development process.

- U.S. Forest Service (USFS)
- National Park Service (NPS)
- Town of Alta
- Friends of Alta
- Alta Environmental Center
- Salt Lake City Watershed
- Alta Community Enrichment
- Alta residents
- Other interested citizens
- Cottonwood Canyons Foundation
- Utah Department of Transportation

Partners and stakeholders were involved in the following ways:

- Interviews conducted by project planning team during a scoping visit held in October 2008.
- Participation in Public Open House #1, held on July 20, 2009
- Assistance with baseline conditions data collection in July 2009 and administration of the visitor survey in August and September 2009
- Review of the Draft Baseline Conditions Report (included as Chapter 2 of this report)
- Participation in Alternatives Development Workshop held on October 27, 2009
- Participation in Public Open House #2, held on October 28, 2009
- Review of the preliminary range of alternatives

A summary of key stakeholder activities is provided below.

4.1.1 PUBLIC OPEN HOUSE #1

Public Open House #1 was held on July 20, 2009 in the Town of Alta during the field data collection period. The purpose of this meeting was to familiarize stakeholders and members of the public with the project and to gather input on concerns and potential solutions. A summary of Public Open House #1 is provided in **Appendix B-1**. A public comment sheet with five open-ended questions and a solicitation for general comments was provided at the Public Open House #1 in order to help understand the values held about Albion Basin, common issues and concerns, and possible approaches to planning for Albion Basin. A total of 23 individuals and organizations provided comments. The following is a summary of public comments that were received subsequent to the open house. In some cases, individuals and organizations provided more than one response for each question so the total number of responses summarized under each question exceeds the total number of comment sheets submitted.

Question #1: What do you value most about Albion Basin in the Summer Season?

Response	# of Related Responses
Scenery/recreation/camping	18
Access to private home	4
Solitude/remote alpine experience	2
Wildlife protection	1
Watershed protection	1
Total Number of Responses	**26**

Question #2: Which summer season issues affecting Albion Basin concern you the most?

Response	# of Related Responses
Transportation issues (parking/congestion)	17
Environmental degradation	15
Visitor crowding/overuse	12
Too many bicyclists	4
Access private homes/conflicts between public use and private property	2
Not enough facilities	1
Total Number of Responses	**51**

Question #3: What approach to summer season recreation, transportation, and resource protection planning is most appropriate in Albion Basin?

Response	# of Related Responses
Limit private vehicle access	17
Enhance public transportation, including shuttle and summer UTA service	13
Provide additional orientation/signage	5

Response	# of Related Responses
Use ski lifts for transportation	4
Improve trail system and encourage bicycling and hiking	4
Implement fee/toll Albion Basin Summer Road	2
Restrict roadside parking	1
Implement mandatory shuttle	1
Encourage carpooling	1
Keep Albion Basin Summer Road open	1
Implement speed restrictions	1
Add facilities	1
Total Number of Responses	**51**

Question #4: Looking forward into the future, what is the right summer season transportation mix for access into Albion Basin?

Response	# of Related Responses
Implement enhanced public transportation, including access to other areas in canyon	12
Focus on bicycle/pedestrian access	11
Open ski lifts for summer use	5
Restrict private vehicles	5
Allow for ADA accessibility	5
Keep access to private homes	3
“Multimodal” solutions	3
Consolidate parking to Alta Ski Lifts lots	1
Total Number of Responses	**45**

Question #5: Please provide general suggestions and comments regarding this project below.

Investigate a fee/tolling system (four comments)

Institute a stakeholder committee to guide the process

General recommendations for improvements to public transportation

Encourage mountain bike use

Private property development and access issues (including concerns voiced by private property owners about visitors encroaching on their property)

Close the road to the public (keep private access)

Concerns about an increase in visitation as a result of increased shuttle access

Educate visitors better

4.1.2 ALTERNATIVES DEVELOPMENT WORKSHOP

An alternatives development workshop was held on October 27, 2009 in the Town of Alta. The purpose of this meeting was to present results from the data collection effort undertaken in July 2009, to provide a framework for the development of alternatives, and to enlist those in attendance to assist in developing the project purpose, project goals and

preliminary alternatives. A summary of case studies presenting various visitor access services currently operated within public lands was presented as part of this workshop (see **Appendix C**). Initial alternative concepts resulting from this workshop were subsequently presented at Public Open House #2 held on October 28, 2009. A summary of the alternatives development workshop is provided in **Appendix B-2**.

4.1.3 PUBLIC OPEN HOUSE #2

Public Open House #2 was held on October 28, 2009 in the Town of Alta with representatives from USFS, the Town of Alta, Alta Ski Lifts, Friends of Alta, Cottonwood Canyons Foundation, NPS and DEA in attendance. The purpose of this meeting was to present results from the data collection effort undertaken in July 2009 and to present the project purpose, goals, and preliminary alternatives developed as part of the alternatives development workshop held on October 27, 2009. Stakeholders and members of the public had the opportunity to provide feedback on purpose, goals and preliminary alternatives, as well as to ask questions and voice concerns. A summary of Public Open House #2 is provided in **Appendix B-3**.

Open House #2 – October 2009

4.2 DEFINITION OF PROJECT PURPOSE AND GOALS

4.2.1 PROJECT PURPOSE

The project team developed a preliminary project purpose statement that was presented at the October 2009 Alternatives Development Workshop. Workshop participants provided a series of refinements to the statement, which was finalized to read:

Develop a range of sustainable recreation and transportation distribution/dispersion strategies to support residents, visitors and land managers during the Albion Basin Summer season, which assist in resource protection while balancing access and safety, and offer a quality educational and interpretive experience.

4.2.2 PROJECT GOALS

The project team also developed a list of project goals that were refined by the participants of the October 2009 Alternatives Development Workshop, as well as by stakeholders who were consulted subsequent to the workshop. The final project goals are listed below:

- Protect natural resources (watershed, wildflowers, wildlife and air quality)
- Enhance and improve visitor experience through improved/increased education, interpretation and/or orientation
- Manage and improve safety
- Manage visitor access to ensure sustainable recreation
- Accommodate a diversity of users and ability types
- Identify cost effective/financially viable solutions
- Support local economic business opportunities

The project goals include an aim to accommodate a diversity of users and ability types, including families with children

The project purpose and project goals provide a foundation and framework from which the preliminary and detailed alternatives were developed. Both the purpose and goals also helped to guide the development of the set of criteria used to evaluate the detailed alternatives.

4.3 PRELIMINARY ALTERNATIVES DEVELOPMENT

The project team and key stakeholders developed initial concepts for the preliminary alternatives at the October 2009 Alternatives Development Workshop at which representatives from USFS, the Town of Alta, Alta Ski Lifts, Friends of Alta, Cottonwood Canyons Foundation, NPS and DEA were in attendance. A series of "building blocks" for alternatives were presented at the workshop in order to guide development and compilation of alternative strategies. Many of these building blocks, listed below, are the elements that should be considered as part of any transportation alternative in a similar setting. The complete handout distributed at the workshop is provided in **Appendix D**.

- Orientation
- Education and interpretation
- Desired experiences and user groups
- Dispersal of use objectives
- Access management actions
- Shuttle access strategy and vehicle type
- Ski lift access strategy and configuration
- Level of service (shuttle and/or ski lift)
- Parking location and supply
- Pedestrian and bicycle access
- Trail access and organization
- Facilities and amenities
- American with Disabilities Act (ADA) provisions
- Emergency response provisions

The project team and workshop participants also identified the elements that should be included in the No Action Alternative, which is the alternative that provides a baseline for which all alternatives are compared. The initial list of No Action Alternative elements are identified below. It should be noted that these elements were subsequently refined during the development of detailed alternatives.

- No restrictions to day-use visitor access, as currently exists in the summer
- Current parking capacity and parking management and enforcement
- No permanent shuttle in place
- Population growth will occur and visitor levels could increase somewhat proportionately. The estimate currently being utilized for the revision of Salt Lake County's *Wasatch Canyons Master Plan* update process projects that population will double by 2030.

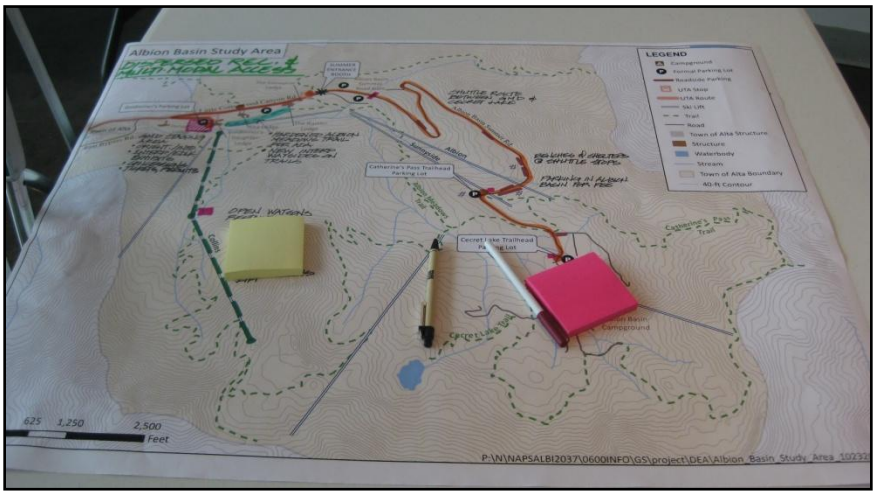
A set of key assumptions to be considered as "givens" in the alternative development process were also defined as part of the workshop. These givens are listed below.

- Recognize regional 2030 population projections
- Maintain vehicular access for homeowners, service vehicles, Alta Ski Lifts maintenance operations and emergencies
- No additional parking capacity as per the Revised Forest Plan Wasatch-Cache National Forest (2003)
- No extension/expansion of road system
- Acknowledge popularity of Cecret Lake and maintain access to this key destination
- Maintain current restroom facilities
- Alternative concepts/strategies are defined to address Friday through Sunday visitor demand conditions

After the project team and workshop participants defined elements to be included in the action alternatives, components of the No Action Alternative and the set of key

assumptions and givens, participants were organized into three groups. Each of these groups was assigned to develop one alternative based on the following concepts:

- Minimal vehicular access
- Mandatory transit
- Dispersed recreation and multi-modal



Alternatives development mapping as part of the October 2009 Alternatives Development Workshop

Participants crafted alternatives for each of the themes using the defined set of building blocks. The initial concepts for preliminary alternatives are contained in **Appendix E**. The initial concepts were then refined by the project team and presented to several other key stakeholders who were not in attendance at the alternatives development workshop. Subsequent to the workshop, the project team added an additional alternative and revised the name of the No Action Alternative so that it is referred to as the "Current Conditions" Alternative. The full set of preliminary alternatives included the following:

- Current Conditions Alternative
- Alternative #1 – Human-Powered Access
- Alternative #2 – Human-Powered and Ski Lift Access
- Alternative #3 – Human-Powered and Shuttle Access
- Alternative #4 – Dispersed Multi-Modal Access

4.4 DESIGN DAY DEFINITION

Prior to the development of detailed alternative characteristics, the project team defined a "design day" condition that represents a typically busy day, but not the maximum use day. The project team then used the design day conditions to define operating characteristics for each of the alternatives. In general, a typical traffic design condition is often identified by using 85th percentile traffic volumes (meaning that 15% of traffic count samples are higher than the design condition). However, because visitation at Albion Basin (and in public lands in general) is concentrated in a relatively short season, the project team used the 95th percentile (meaning that 5% of days have higher traffic counts than the design day) to define the design day for this project. This practice of

establishing design day conditions is common for visitor access and transportation planning projects in public lands.

The process of defining design day conditions is outlined below. **Table 4-1** also provides an overview of the design day definition process.

- The July 2009 data collection effort resulted in traffic count data for two weekend days: Saturday, July 18, 2009 and Sunday, July 19, 2009. Sunday July 19, 2009 was selected as the sample day most representative of typical weekend day conditions because the annual Wildflower Festival was held on Saturday. The activities associated with the Wildflower Festival are concentrated in the morning hours and daily activity may not be representative of a typical weekend day.
- Sample day data is available for three modes of access: Traffic, shuttle and pedestrian/bicycle activity on Albion Basin Summer Road. Although some visitors may use the Albion Meadows Trail to access Albion Basin via a trail that connects to the ski area base, no data was collected to provide information about this activity. Therefore, only pedestrian/bicycle activity along the road is accounted for here. Each sample day dataset was compared to related datasets available for the entire summer 2009 season. The following determinations were made:
    - Sample day traffic counts represented the 87th percentile of the inbound counts taken at the summer entrance booth for the entire 2009 summer season.
    - Sample day shuttle counts represented the 77th percentile of shuttle counts taken at the summer entrance booth for the entire 2009 summer season.
    - No trail count data was recorded for the entire 2009 summer season. Therefore, sample day pedestrian/bicycle counts were assumed to represent the 82nd percentile of the summer 2009 traffic counts (developed by taking an average of sample day traffic count and shuttle count percentiles).
- Sample day data was then factored up by mode to represent 95th percentile (design day) conditions. The following determinations were made:
    - Traffic counts: Sample day data (87th percentile) indicated that 423 vehicles were recorded inbound on Albion Basin Summer Road. Design day data (95th percentile) indicated that 528 vehicles were recorded inbound on Albion Basin Summer Road (three days experienced more traffic than the design day). Therefore, sample day traffic data was factored up by 24.8% to attain design day levels, resulting in approximately 900 vehicles inbound one-way vehicles on Albion Basin Summer Road during a 24-hour period.
    - Shuttle counts: Sample day data (77th percentile) indicated that 726 shuttle passengers were recorded traveling towards Albion Basin. Design day data (95th percentile) indicated that 914 shuttle passengers were recorded traveling toward Albion Basin (one day experiences more shuttle passengers than the design day). Therefore, sample day shuttle passenger data was factored up by 25.9% to attain design day levels, resulting in

approximately 530 inbound one-way passenger trips to Albion Basin during shuttle operating hours (approximately 10:00 AM to 4:30 PM).

- Pedestrian/bicycle counts: No pedestrian/bicycle count data was recorded for the entire 2009 summer season. Therefore, traffic count data taken at the summer entrance booth for the entire summer season was used to develop design day conditions. Sample day data (82nd percentile) indicated that 376 vehicles were recorded inbound on Albion Basin Summer Road. Design day data (95th percentile) indicated that 528 vehicles were recorded inbound on Albion Basin Summer Road (three days experienced more traffic than the design day). Therefore, sample day pedestrian/bicycle count data was factored up by 40.4% to attain design day levels, resulting in 72 pedestrian/ bicyclists) traveling inbound on Albion Basin Summer Road during a 24-hour period.

- After the design day traffic, shuttle and pedestrian/bicycle daily counts were defined, they were distributed over a 24-hour period based on hourly counts observed on the sample day (Sunday, July 19, 2009). The resulting design day hourly counts form the basis of visitor arrival rates and demand used to develop the alternatives

TABLE 4-1. SUMMARY OF DESIGN DAY DATA SOURCES, CALCULATION PROCESS, AND VALUES

	Design Day Calculation Data Sources		Design Day Calculation Values			
	Sample day data source	**Data used to define ratio between sample day and design day**	**Step 1: Define the sample day's ranking in overall Summer 2009 activity**	**Step 2: Define the design day's target in overall Summer 2009 activity**	**Step 3: Define the percent difference between sample day and design day values**	**Step 4: Compute design day conditions by applying percent difference to sample day dataset**
Traffic Counts	Traffic count data collected on July 19, 2009 (Sunday) as part of the Summer 2009 data collection effort	1) Sample day data (traffic counts) 2) Traffic counts collected at the summer entrance booth for the entire 2009 season[1]	87th percentile – 423 inbound vehicles	95th percentile – 528 inbound vehicles	Traffic counts on the design day are 24.8% higher than on the sample day	Result: Approximately 900 inbound (one-way) vehicles on Albion Basin Summer Road during 24-hour period
Shuttle Passenger Counts	Shuttle passenger count data collected on July 19, 2009 (Sunday) as part of the Summer 2009 data collection effort	1) Sample day data (shuttle counts) 2) Shuttle passenger counts collected at the summer entrance booth for the entire 2009 season	77th percentile – 726 shuttle passengers traveling towards Albion Basin	95th percentile – 914 shuttle passengers traveling towards Albion Basin	Shuttle passenger counts on the design day are 25.9% higher than on the sample day	Result: Approximately 530 inbound (one-way) shuttle passengers traveling towards Albion Basin during shuttle operating hours (approx. 10:00 AM to 4:30 PM)

	Design Day Calculation Data Sources		Design Day Calculation Values			
	Sample day data source	**Data used to define ratio between sample day and design day**	**Step 1: Define the sample day's ranking in overall Summer 2009 activity**	**Step 2: Define the design day's target in overall Summer 2009 activity**	**Step 3: Define the percent difference between sample day and design day values**	**Step 4: Compute design day conditions by applying percent difference to sample day dataset**
Pedestrian/ Bicycle Counts	Pedestrians/bicycle count data collected on July 19, 2009 (Sunday) as part of the Summer 2009 data collection effort	1) Sample day data (traffic counts) 2) Traffic counts collected at the summer entrance booth for the entire 2009 season[1]	82nd percentile – 376 inbound vehicles[2]	95th percentile – 528 inbound vehicles	Traffic counts on the design day are 40.4% higher than on the sample day	Result: Approximately 72 inbound (one-way) pedestrians/ bicycles on Albion Basin Summer Road during 24-hour period

[1]Traffic counts collected at the summer entrance booth are only collected during operating hours of the booth (not a 24-hour period), but were used to assess the general magnitude of sample days (using a consistent schedule of entrance booth operating hours) compared to other days during the course of the season.
[2]No trail use data was collected for the entire 2009 season; therefore, traffic count data was used under the assumption that trail activity on the sample day represented the 82nd percentile of 2009 traffic count data (developed by taking an average of the sample day traffic counts and shuttle passenger count percentiles).

4.5 DETAILED ALTERNATIVES DEVELOPMENT

The project team developed detailed alternatives after the final preliminary alternatives were refined and generally agreed upon by stakeholders, and after the design day was defined. Detailed alternatives, discussed in **Chapter 5** incorporate the final preliminary alternative concepts at a greater level of detail. Key elements defined in the detailed alternatives include the following:

- Details related to the proposed staging area, including location, the number of parking spaces required, and visitor information and services provided
- Access management strategies at the entrance gate to Albion Basin Summer Road
- Modes of day-use visitor access, including the number of total daily visitor arrivals by mode and average daily peak arrival rate (persons per hour) by mode
- Operating season and operating hours
- Frequency of shuttle service and fleet requirements (if applicable)
- Hourly ski lift capacity and operating requirements (if applicable)
- Details related to transportation infrastructure including Albion Basin Summer Road, trails and parking in Albion Basin at designated parking lots and along the road
- Opportunities for visitor orientation, interpretation and education
- Staffing requirements including general staffing (summer entrance booth, orientation/information center and ticket/permit sales staff), administrative support, contractor and/or Alta Ski Lift staffing requirements and enforcement staffing requirements
- Management strategies including parking management, campground operations and possible fees
- Overview of capital investment requirements
- Estimated seasonal operating cost details

4.6 ALTERNATIVES EVALUATION PROCESS

Detailed alternatives were evaluated based on a set of relevant factors and criteria in order to compare the benefits and challenges among alternatives, as discussed in **Chapter 6**. The project team developed evaluation criteria to link closely with project purpose and goals. In addition, issues voiced by stakeholders and members of the public were used to develop criteria, and evaluation categories used for similar visitor access and transportation projects in public lands were also incorporated.

Criteria used to evaluate alternatives are listed below:

- Protection of Natural Resources
    - Watershed
    - Wildflowers and vegetation

  - Wildlife
  - Air quality[1]
  - Natural soundscapes

    [1] Note: The Town of Alta, Alta Ski Lifts/Alta Environmental Center, Friends of Alta and Alta Community Enrichment have recently worked together to promote the Idle Free Utah program in Little Cottonwood Canyon in order to reduce pollution from vehicle emissions.

- Enhance/Improve Visitor Experience
  - Opportunities for increased/improved orientation
  - Ability of the alternative to retain the transportation-related elements reported to add to visitor experience in the 2009 Visitor Survey
  - Ability of the alternative to address the transportation-related elements reported to detract from visitor experience, as well as concerns expressed in the 2009 Visitor Survey
  - Opportunity for interpretation, environmental stewardship and education

- Manage and Improve Safety
  - Human-powered (pedestrian and bicycles)
  - Vehicular (shuttle vehicles, administrative vehicles, privately owned vehicles)

- Ability to Manage Visitor Access to Ensure Sustainable Recreation
  - Ability to meet projected design day visitor demand
  - Ability to accommodate increased visitor demand levels if desired
  - Effectiveness/ease of access to the most popular destinations
  - Ability to accommodate administrative activities and access
  - Potential to connect with other public/private transportation services

- Ability to Accommodate a Diversity of Users and Ability Types
  - Ability to serve diverse types of recreational users
  - Ability to serve diverse ability levels

- Cost Effectiveness and Financial Viability
  - Capital investment requirements
  - Seasonal operating costs
  - Fee considerations
  - Range of potential funding sources
  - Opportunities for partnerships

- Support Local Economic Business Opportunities
  - Support of local economic opportunities (public/private)

- Ability to Implement as Part of Adaptive Management Strategy
  - Implementation considerations (including phasing opportunities)
  - Complexity of implementation (required staffing, law enforcement, etc.)

Evaluation criteria included considerations for implementation, including the level of law enforcement that would be necessary under each alternative.

CHAPTER 5: ALTERNATIVE DEFINITIONS

As detailed in **Chapter 4**, the Albion Basin alternatives were developed in close coordination with project partners and key stakeholders by defining project purpose and goals, developing a range of preliminary transportation access and visitor distribution alternatives and further refining them into a set of detailed alternatives. These detailed alternatives, which include one No Action Alternative and four Action Alternatives, are described in detail below and in the supporting tables. Results of the evaluation of the alternatives are summarized in **Chapter 6**.

Table 5-1 on page 91 provides a detailed description of the alternatives. The detailed alternatives advanced through the definition and evaluation process include the following:

- Current Conditions Alternative (which serves as the No Action Alternative)
- Alternative #1 – Human-Powered Access
- Alternative #2 – Human-Powered and Ski Lift Access
- Alternative #3 – Human-Powered and Shuttle Access
- Alternative #4 – Dispersed Multi-Modal Access

Several categories are used in the table to fully describe all aspects of the proposed alternative. These categories are listed below.

- Purpose of the Alternative
- Staging Area and Associated Elements
- Modes of Day-Use Visitor Access
- Transportation Infrastructure
- Opportunities for Visitor Orientation, Interpretation and Education
- Staffing and Administrative Support Requirements
- Management Actions and Strategies
- Estimate of Probable Costs

Elements common to all alternatives and elements common to all action alternatives are briefly described below along with a description of the key elements of all alternatives. More detailed description of the alternatives can be found in **Table 5-1**. Capacities for each transportation mode and prescribed operating characteristics are included in the definition of alternatives. The operational characteristics are based on the documented use of current modes and respective access patterns, particularly arrival/departure rates and parking capacities, which are driving variables. The allocation of visitor demand to each mode does not represent a precise prediction of patterns that will occur, but instead represent the ability of each mode to provide anticipated visitor carrying capacity under each alternative and provide insight into the level of use each mode might experience. For purposes of this study, the operating season was considered to be 20 days over approximately 10 weeks between mid-July and mid-September. The access provisions

detailed below would only be implemented for the identified 20 days of high visitation; however, future implementation considerations may warrant additional operating days depending on the actual number of selected weekend days, holidays or other high-visitation days. This study uses the term "day-use visitors" to distinguish visitors arriving at and departing from the Albion Basin area on the same day from residents, campground users and other visitors who spend one or more nights in the area.

5.1 ELEMENTS COMMON TO ALL ALTERNATIVES

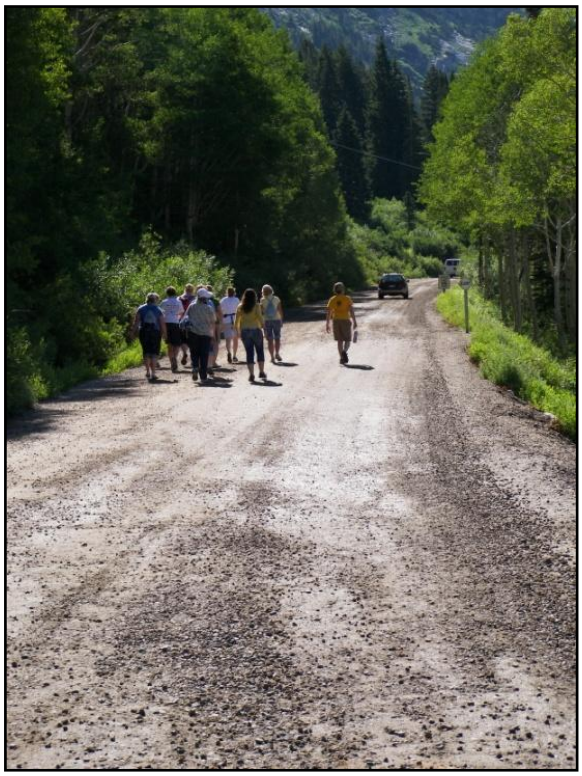
Several elements are common to all alternatives (including No Action and Action alternatives). These elements are described below.

Visitor Access:

- Retain pedestrian and bicycle access for entrance into Albion Basin along Albion Summer Road and on Albion Meadows Trail.
- Campground visitors and residents would retain unrestricted access to Albion Basin Summer Road.

Transportation Infrastructure:

- Retain the same two-lane configuration and gravel surface for Albion Basin Summer Road. Continue to provide summer road maintenance for dust mitigation.
- Retain three USFS designated trails in the Basin Cecret Lake, Catherine's Pass and Albion Meadow trails).



Pedestrian access along Albion Basin Summer Road would be retained under all alternatives

5.2 ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

Several elements are common to all action alternatives (Alternatives #1 through #4) that would be targeted to address transportation access on specific weekend days, holidays and/or high-use days during the summer season. These elements are described below.

Purpose of the Alternative:

- Minimize adverse impacts to the natural environment.

Staging Area and Associated Elements:

- Provide manned or automated access management station at the entrance to Albion Basin Summer Road. Control could be achieved through implementation of a staffed booth, electronic gate, variable message signs or other means used alone or in combination.

Transportation Infrastructure:

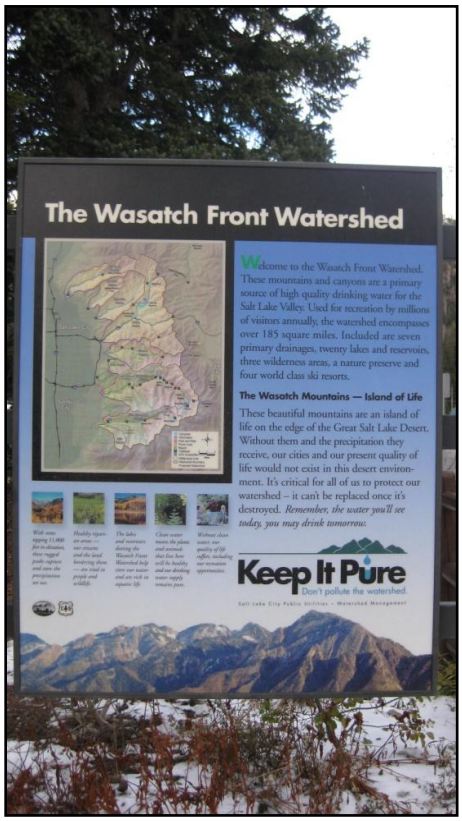
- Restrict and re-vegetate undesired roadside parking areas.
- Under a separate decision-making process, consider and/or evaluate formal USFS designation of additional trails in the Albion Basin.

Opportunities for Visitor Orientation, Interpretation and Education:

- Develop orientation signing near the arrival at Alta base area and entrance location to Albion Basin Summer Road, with possible partner involvement.
- Provide information that highlights existing designated trails to better direct users and distribute hikers more effectively.
- Implement wayfinding signs and Intelligent Transportation Systems (ITS) information sources in Little Cottonwood Canyon in coordination with other possible partners.

Management Actions and Strategies:

- The operating season/implementation days were considered to be 20 days over approximately 10 weeks (e.g. high-use weekends and holidays) between mid-July and mid-September.
- Improvements and actions associated with the alternatives would have the potential for phasing and expansion to additional days as part of an adaptive management strategy.
- Campground reservations would be required. However, any unreserved or vacant sites could be administrated at the control point (gate or booth) on first-come, first-served basis.



Orientation signage and educational waysides such as these shown from Silver Lake Interpretive Trail in nearby Big Cottonwood Canyon would be provided under all action alternatives

5.3 CURRENT CONDITIONS ALTERNATIVE

A brief description of the Current Conditions Alternative is provided below. **Figure 5-1** depicts key elements of the Current Conditions Alternative. Additional details can be found in **Table 5-1 on page 91**.

The purpose of this alternative is to represent current access provisions and to provide a baseline to which all alternatives will be compared. The current primary staging area is the summer entrance booth and roadside parking lot near the entrance to Albion Basin Summer Road. Informal orientation is provided at this location by summer entrance booth staff, when time allows. Summer entrance booth staff members also alert visitors when the parking lots within Albion Basin are full, based on communication with support staff who monitor the facilities. When parking is full, visitors are encouraged to park near the booth and use alternative means of access, but are not prohibited from traveling along the road.

The current primary modes of access under the Current Conditions Alternative are as follows:

- Unrestricted private vehicle access for day-use and campground visitors with parking in designated parking lots and designated roadside parking areas. It should be noted that parking warnings and citations are administered for use of non-designated areas.
- Pilot shuttle along Albion Basin Summer Road – The pilot shuttle is temporary in nature and is permitted on an annual basis by USFS. It operates at approximately 10 to 20 minute headways (time between bus arrivals at any point along the route), depending on whether two or three vehicles are in use. The pilot shuttle operates weekends only during the summer season, for approximately 20 operating days. It is assumed to operate 8 hours per day. It is currently free and voluntary.
- Pedestrian and bicycle access to Albion Basin via Albion Basin Summer Road and Albion Meadows Trail

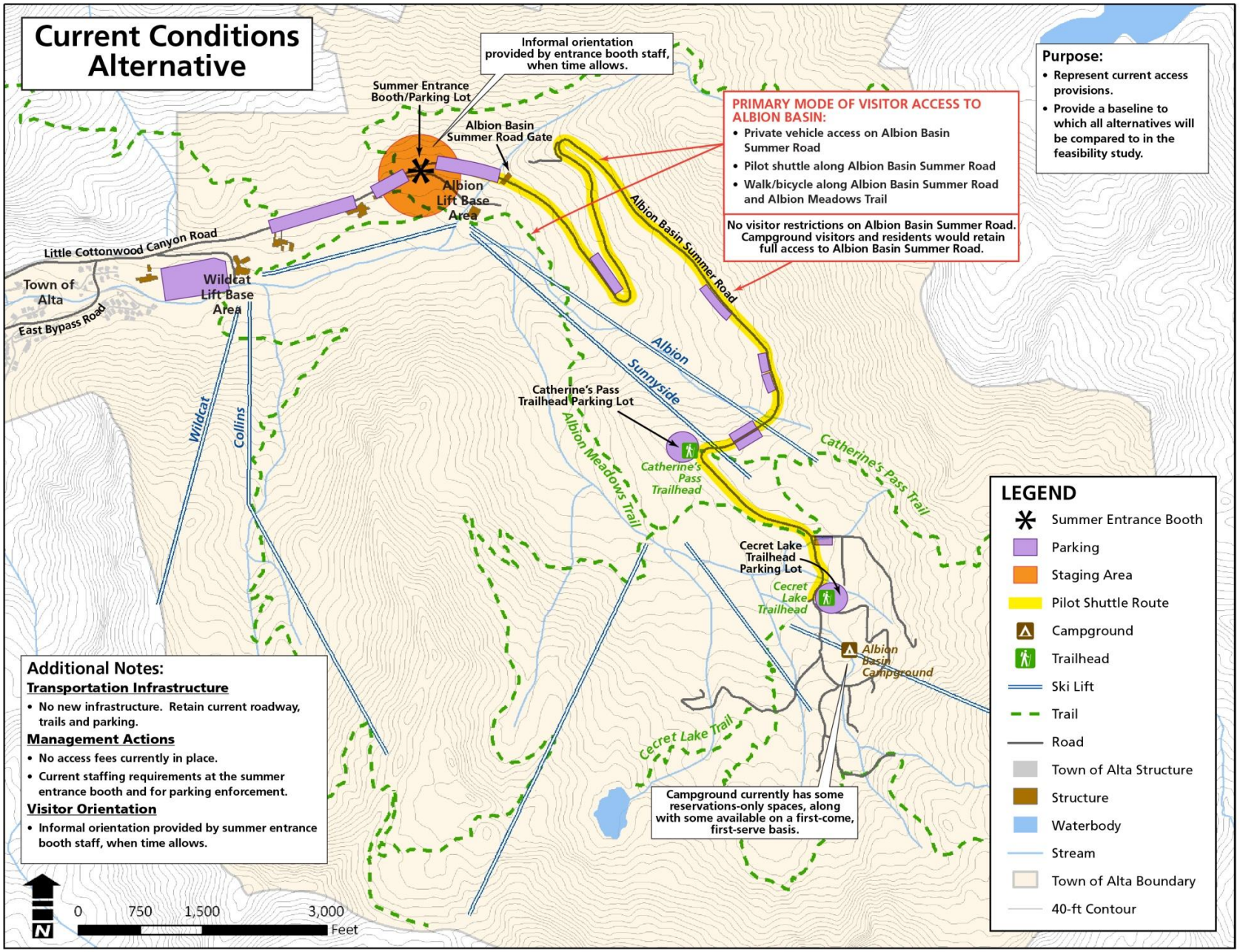
Parking at Cecret Lake and Catherine's Pass can be used for those with special mobility needs. One designated ADA space is currently provided at each lot. The pilot shuttle does not provide ADA access. This alternative requires staffing of the summer entrance booth, administrative support for shuttle operations and road maintenance and staffed enforcement for parking and trail activities. Seasonal operating costs for this alternative are approximately $50,000 (2010$) and are associated with summer entrance booth staffing,

2010 Pilot Shuttle

parking monitoring and enforcement, pilot shuttle operations, road maintenance and administrative support. Shuttle costs are based on recent costs paid to the shuttle contractor by the Town of Alta. However, future unit costs could be different depending on specific costs negotiated with service providers in future contracts. No capital investments are required until existing facilities require replacement.

The Town of Alta bears a significant responsibility for management of Albion Basin Summer Road and summer visitation in the Town of Alta and Albion Basin. The Town of Alta funds road maintenance, law enforcement, shuttle operations, and staffs and operates the summer entrance booth. The nonprofit organization Friends of Alta provides funding for most of the costs associated with the summer entrance booth. Increasing levels of support for visitor management efforts are required by the partners each season. Demands for these visitor management efforts are likely to grow due to projected increases in visitation and projected population growth for the Salt Lake City metropolitan area. Future funding for current operations is uncertain and long-term visitor management will be difficult to sustain under the Current Conditions Alternative.

FIGURE 5-1. CURRENT CONDITIONS ALTERNATIVE



5.4 ALTERNATIVE #1 – HUMAN-POWERED ACCESS

A brief description of Alternative #1 is provided below. **Figure 5-2** depicts key elements of the Alternative #1. Additional details can be found in **Table 5-1 on page 91**.

The primary strategy and purpose for this alternative is to promote a human-powered and more natural experience by allowing pedestrian and bicycle access only. This alternative would restrict day-use private vehicle access on Albion Basin Summer Road, with exceptions for residents, campground visitors and those with special mobility needs. The Albion Lift Base Area associated with the Alta Ski Area would serve as the primary staging area for visitor access, and facilities at that location could also serve as an orientation and visitor information center. There would be one primary mode of day-use visitor access to Albion Basin – pedestrian and bicycle access via Albion Basin Summer Road and Albion Meadows Trail.

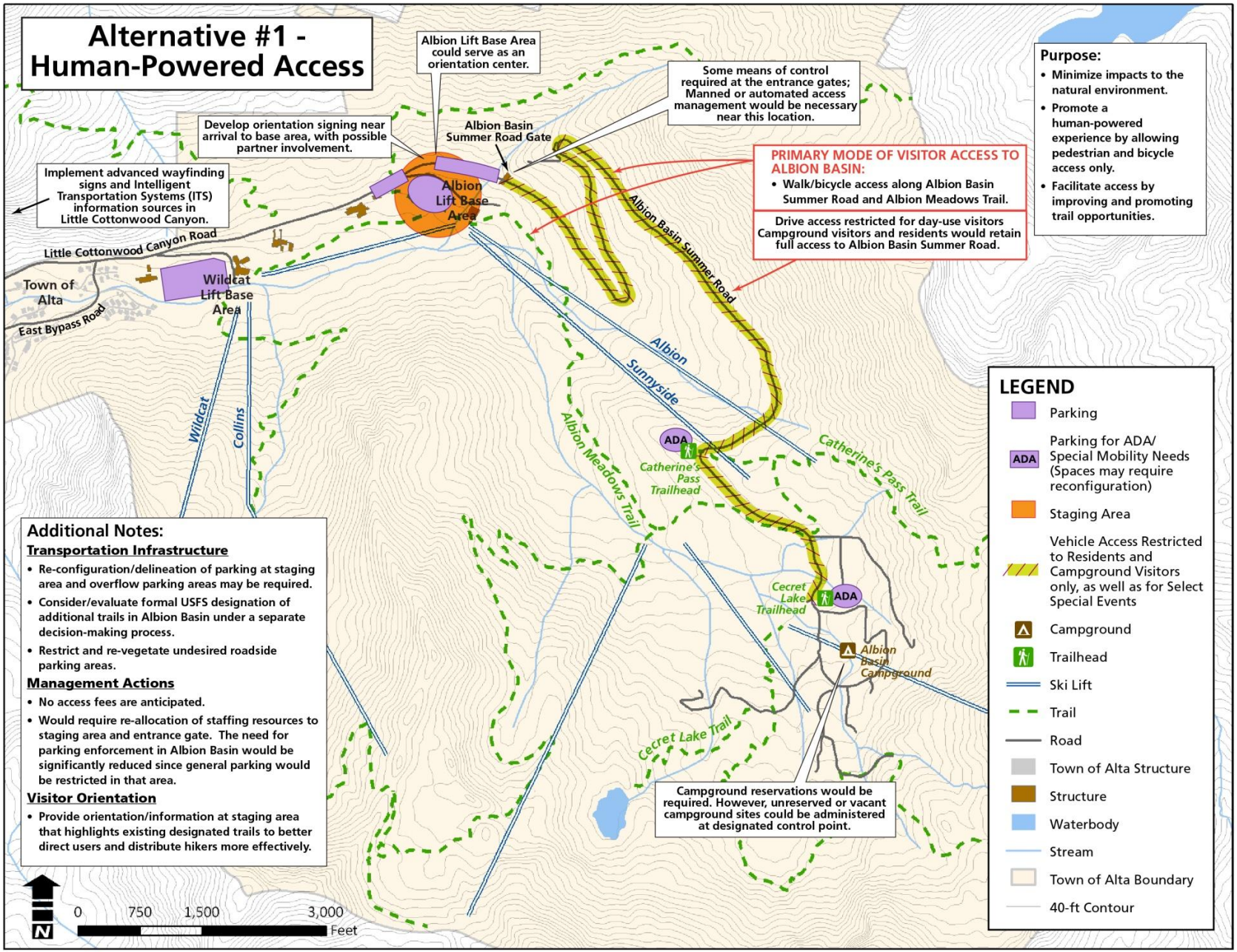
No day-use visitor parking would be permitted in Albion Basin (with exceptions made for residents and campground visitors). ADA parking at Cecret Lake and Catherine's Pass would be allowed and provided for day-use visitors with special mobility needs.

This alternative could require staffing at the entrance gate and orientation/visitor information center. It would require slightly less general administrative support and considerably less staffed enforcement for parking activities as compared to the Current Conditions Alternative.

Seasonal operating costs for this alternative would be the lowest of all alternatives at approximately $30,000 to $35,000 (2010$) and include costs associated with summer entrance booth staffing, parking monitoring and enforcement, road maintenance and administrative support. Unit costs are based on expenditures currently realized by the Town of Alta and could vary based on how necessary services are staffed, contracted or delivered as part of future management arrangements. A 15% contingency was also added to represent the range. No fundamental capital cost investments would be required under this alternative. Additional information on capital investment requirements can be found in **Table 5-1**.

Alternative #1 would emphasize human-powered access to Albion Basin

FIGURE 5-2. ALTERNATIVE #1



5.5 ALTERNATIVE #2 – HUMAN-POWERED AND SKI LIFT ACCESS

A brief description of Alternative #2 is provided below. **Figure 5-3** depicts key elements of the Alternative #2. Additional details can be found in **Table 5-1 on page 91**.

The primary strategy and purpose for this alternative is to promote a human-powered and non-vehicular experience by accommodating pedestrian, bicycle and ski lift access only. As under Alternative #1, this alternative would restrict day-use private vehicle access on Albion Basin Summer Road, with exceptions for residents, campground visitors and those with special mobility needs. The Albion Lift Base Area associated with Alta Ski Area would serve as the primary staging area for visitor access and facilities at that location could serve as an orientation and visitor information center. The primary modes of day-use visitor access for Alternative #2 would be as follows:

- Ski lift access to Albion Basin via the Albion or Sunnyside lifts – The pedestrian hourly capacity of ski lift access is approximately 400 to 600 persons per hour for the Albion and Sunnyside lifts, respectively. Minimum hourly demand using either ski lift is estimated to be approximately 240 persons per hour. This demand was developed based on the number of visitors per hour that would need to be accommodated if only ski lift access is provided, and no day-use visitors are able to park in Albion Basin. Levels of pedestrian and bicycle access were assumed to remain constant. However, the distribution of visitor demand could shift between modes based on visitor preference for desired activities or convenience of access to Albion Basin. A fee would be applied for ski lift access to cover some portion of the operating cost. See **Appendix C** for examples of fee levels applied in other settings. Ski lift operating schedule and capacity could be used as a management tool to deliver a sustainable number of visitors to Albion Basin.
- Pedestrian and bicycle access to Albion Basin via Albion Basin Summer Road and Albion Meadows Trail.

As under Alternative #1, no day-use visitor parking would be permitted in Albion Basin (with exceptions for residents and campground visitors). ADA parking at Cecret Lake and Catherine's Pass would be allowed and provided for day-use visitors with special mobility needs. Chairlift and/or gondola designs to accommodate ADA access would be considered.

Alta Ski Lifts will be assessing future upgrades, rehabilitation and/or replacement needs for existing ski lifts, including the Sunnyside, Albion, Cecret and Supreme lifts. Currently there are no summer ski lift operations; however, this study evaluates the utilization of ski lifts as a means to reduce vehicle congestion, parking demand in Albion Basin, noise, air pollution and wildlife disturbance. If summer ski lift access is determined to be a viable and preferred strategy for Albion Basin, appropriate lift configurations that offer safe and comfortable pedestrian access should be considered. These may include detachable chair lifts, which slow down the chairs for calmer loading and unloading, and gondola configurations that allow for walk-on and walk-off access at slow speeds. These

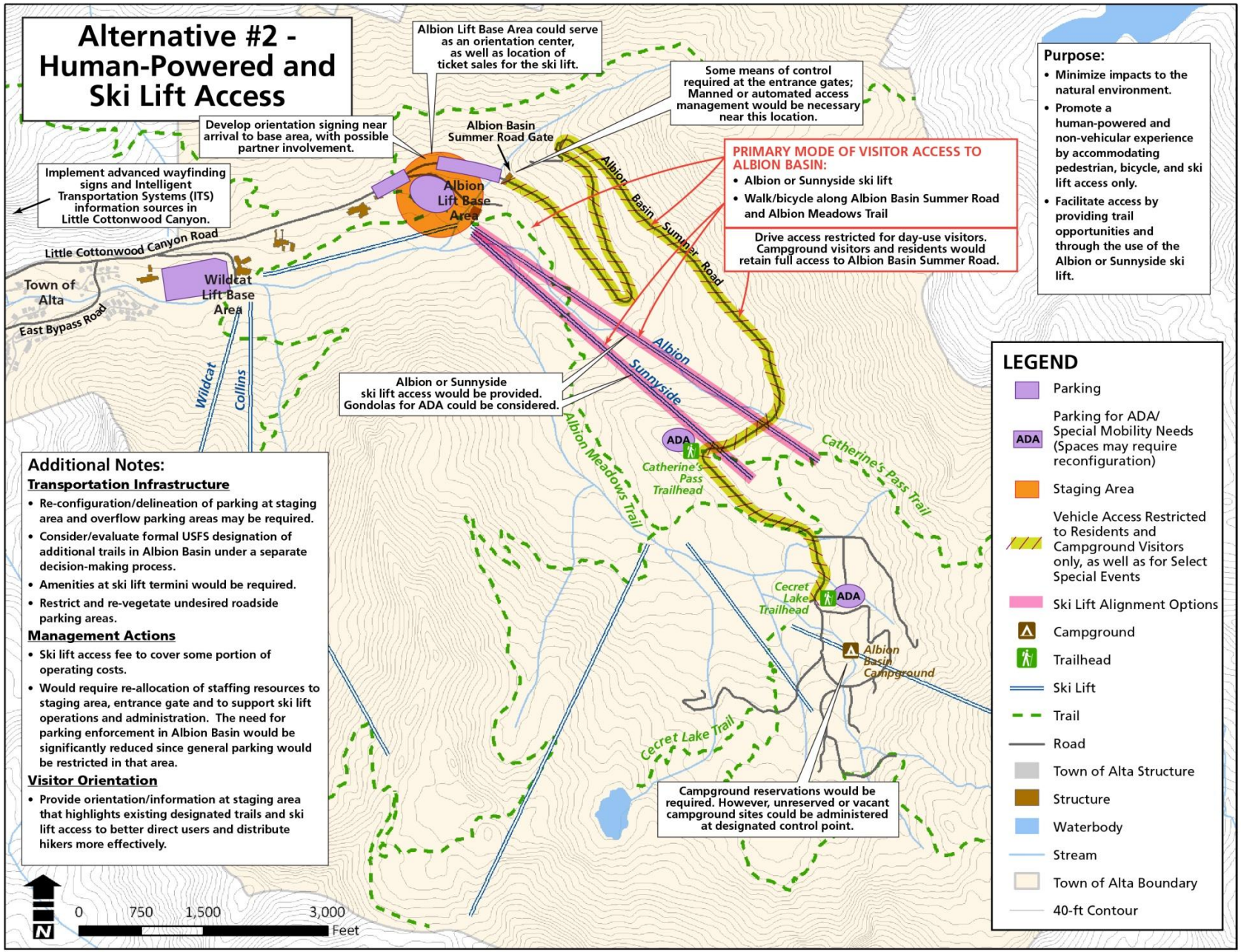
technologies have been used independently or combined in other ski area settings for summer pedestrian access. **Appendix G** provides illustrations and examples of various types of these configurations.

This alternative could require staffing at the entrance gate and orientation/visitor information center, as well as staffing for lift operations and ticket sales. It would require similar levels of administrative support as compared to the Current Conditions Alternative and considerably less staffed enforcement for parking and trail activities as compared to the Current Conditions Alternative.

Seasonal operating costs for this alternative would be considerably more than Alternative #1 and Current Conditions Alternative, but less than the other alternatives at approximately $150,000 to $155,000 (2010$) and includes costs associated with ski lift operations, summer entrance booth staffing, parking monitoring and enforcement, road maintenance and administrative support. A 15% contingency was also added to these costs. Seasonal operating costs are representative of gross costs, and do not account for any revenue sources, including user fees. The range of costs represents the differences between use of the Albion ski lift (which would be less expensive at approximately $315/operating hour) and the Sunnyside ski lift (approximately $335/operating hour). Ski lift operating costs were developed using information provided by Alta Ski Lifts based on their winter ski lift operation experiences. Costs are inclusive of operating, maintenance and labor costs, but do not include any taxes, insurance fees or depreciation costs that may apply. Other unit costs are based on expenditures currently realized by the Town of Alta and could vary based on how necessary services are staffed, contracted or delivered as part of future management arrangements. Fundamental capital cost investments (amenities at ski lift termini) would likely range from $20,000 to $24,000. Costs for upgrades, reconfiguration or replacement of the existing ski lifts have not been estimated at this time, as this may not be a critical requirement to implement this alternative and may be undertaken separately to accommodate both winter and summer uses. Additional information on capital investment requirements can be found in **Table 5-1 on page 91**.

Alternative #2 would provide ski lift access to Albion Basin

FIGURE 5-3. ALTERNATIVE #2



5.6 ALTERNATIVE #3 – HUMAN-POWERED AND SHUTTLE ACCESS

A brief description of Alternative #3 is provided below. **Figure 5-4** depicts key elements of the Alternative #3. Additional details can be found in **Table 5-1 on page 91**.

The primary strategy and purpose for this alternative is to promote a human-powered and non-private vehicular experience by accommodating pedestrian, bicycle and transit shuttle access only. As under Alternatives #1 and #2, this alternative would restrict day-use private vehicle access on Albion Basin Summer Road, with exceptions for residents, campground visitors and those with special mobility needs. The Wildcat Lift Base Area associated with Alta Ski Area would serve as the primary staging area for visitor access and facilities at that location could serve as an orientation and visitor information center. Use of this staging area has the potential to shift some use from upper Albion Basin to areas that can better accommodate use. The primary modes of day-use access for Alternative #3 would be as follows:

- Shuttle access to Albion Basin via the Albion Basin Summer Road – The shuttle would need to depart the staging area approximately every three to five minutes in order to meet estimated design day demand. However, shuttle frequency could be tailored and used as a management strategy to deliver a sustainable number of visitors to Albion Basin. A fee would be applied for shuttle access to cover some portion of the operating costs. See **Appendix C** for examples of fee levels applied in other public land settings. Alternative fuel vehicles should be considered in compliance with USFS Executive Order 13423 ("Guidance on Greenhouse Gas Reduction Requirements for Fleet"), which mandates an increase in nonpetroleum-based fuel use and recommends the purchase of alternative fuel, hybrid and plug-in hybrid electric vehicles for USFS when commercially available.
- Pedestrian and bicycle access to Albion Basin via Albion Basin Summer Road and Albion Meadows Trail.

It should be noted that the distribution of visitor demand could shift between modes based on visitor preference for desired activities or convenience for entering Albion Basin.

As under Alternative #1 and #2, no day-use visitor parking would be permitted in Albion Basin (with exceptions for residents and campground visitors). ADA parking at Cecret Lake and Catherine's Pass would be allowed and provided for day-use visitors with special mobility needs. Shuttle vehicles would accommodate ADA access. **Appendix F** provides illustrations and examples of various vehicle types that could be appropriate for this application.

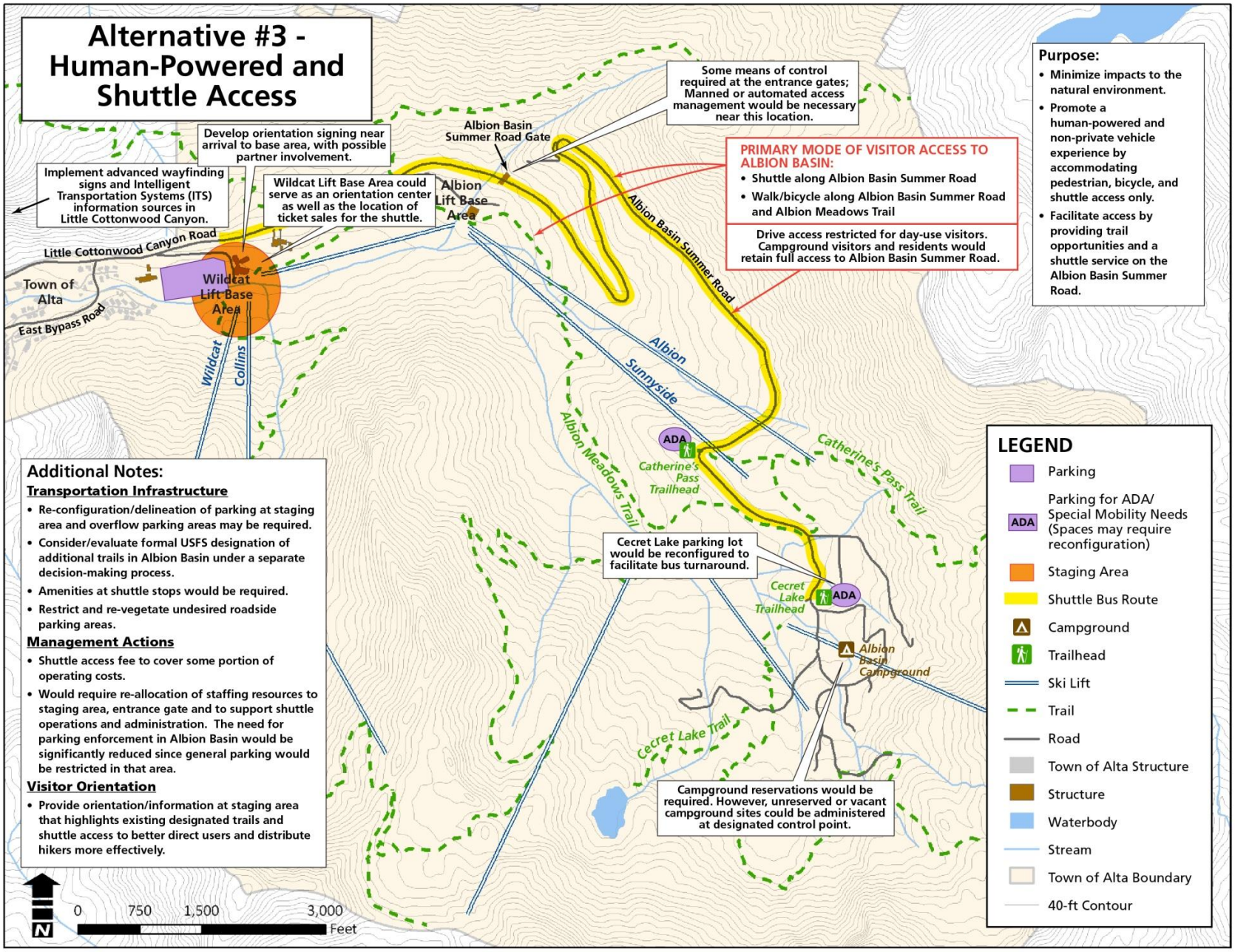
This alternative could require staffing at the entrance gate and orientation/information center, as well as staffing for shuttle operations and ticket sales. It would require similar levels of administrative support as compared to the Current Conditions Alternative and

considerably less staffed enforcement for parking and trail activities as compared to the Current Conditions Alternative.

Seasonal operating costs for this alternative would be the highest or second highest of all alternatives at approximately $200,000 to $385,000 (2010$), including costs associated with shuttle operations, summer entrance booth staffing, parking monitoring and enforcement, road maintenance and administrative support. A 15% contingency was also added to all costs except for shuttle operations. Seasonal operating costs are representative of gross costs, and do not account for any revenue sources, including user fees. The range of costs represents the difference between the range of units costs used ($60 to $80 per vehicle service hour), as well as the frequency of service (three to five minutes). Shuttle operating costs were developed to represent a range of potential service hour costs with a private transit contractor and are likely to vary depending on the service provider and the terms of the contract. Other unit costs are based on expenditures currently realized by the Town of Alta and could vary based on how necessary services are staffed, contracted or delivered as part of future management arrangements. Fundamental capital cost investments (re-configuration of the Cecret Lake parking lot for shuttle turnaround, shuttle vehicles, and amenities at shuttle stops and shuttle termini) would likely range from $670,000 to $1,610,000. Additional information on capital investment requirements can be found in **Table 5-1 on page 91**.

Alternative #3 would provide shuttle access to Albion Basin, similar to other services provided in public lands (such as the Glacier National Park Going to the Sun Road Shuttle, shown above)

FIGURE 5-4. ALTERNATIVE #3



5.7 ALTERNATIVE #4 – DISPERSED MULTI-MODAL ACCESS

A brief description of Alternative #4 is provided below. **Figure 5-5** depicts key elements of the Alternative #4. Additional details can be found in **Table 5-1 on page 91**.

The primary strategy and purpose for this alternative is to promote a multi-modal experience by accommodating a full range of access options including pedestrian, bicycle, shuttle, ski lift, and private vehicle, as well as to create an opportunity to disperse use from upper Albion Basin. Both Albion Basin and the Collins Gulch area within Alta Ski Area would be accessible through the utilization of transit shuttle and ski lift access to those destinations, respectively. Unlike Alternatives #1 through #3, this alternative would permit day-use private vehicle access on Albion Basin Summer Road for those visitors with valid parking permits obtained for a fee (exceptions would be made for residents, campground visitors and those with special mobility needs). The concept of requiring a parking fee is preliminary. The legal authority and mechanism would require further review and evaluation through a separate planning process. The concept of parking permit fees is explored in this study in order to compare a full range of alternatives. The Wildcat Lift Base Area associated with Alta Ski Area would serve as the primary staging area for visitor access, and facilities at that location could serve as an orientation and visitor information center. The primary modes of day-use access for Alternative #3 would be as follows:

- Private vehicle access to Albion Basin with for-fee parking permits.
- Shuttle access to Albion Basin via the Albion Basin Summer Road – The shuttle would need to depart the staging area approximately every fifteen minutes in order to provide a convenient level of service and meet a portion of design day demand levels. However, shuttle frequency could also be tailored and used as a management strategy to deliver a sustainable number of visitors to Albion Basin. A fee would be applied for shuttle access to cover some portion of the operating costs. See **Appendix C** for examples of fee levels applied in other public land settings. Alternative fuel vehicles should be considered in compliance with USFS Executive Order 13423 ("Guidance on Greenhouse Gas Reduction Requirements for Fleet"), which mandates an increase in nonpetroleum-based fuel use and recommends the purchase of alternative fuel, hybrid and plug-in hybrid electric vehicles for USFS when commercially available.
- Ski lift access to Collins Gulch via the Collins ski lift – The pedestrian hourly capacity of ski lift access is approximately 1,000 persons per hour. Minimum hourly demand is estimated to be approximately 90 persons per hour. This demand was developed based on the number of visitors per hour that would need to be accommodated if parking in Albion Basin is at capacity, and if shuttles operating on 15 minute frequencies are full. Levels of pedestrian and bicycle access were assumed to remain constant. However, the distribution of visitor demand could shift between modes based on visitor preference for desired activities or convenience of access to Albion Basin or Collins Gulch. A fee would be applied for ski lift access to cover some portion of the operating costs. Ski lift operating schedule and capacity could be used as a management strategy to deliver a sustainable number of visitors to Albion Basin.

- Pedestrian and bicycle access to Albion Basin via Albion Basin Summer Road and Albion Meadows Trail.

Unlike the other three alternatives, a permit for day-use visitor parking in Albion Basin would be required (with exceptions for residents and campground visitors). Special access provisions may be provided for selected special events and ADA parking would be allowed and provided for those with special mobility needs. Shuttle vehicles would accommodate ADA access and chairlift and/or gondola designs to accommodate ADA access would be considered. **Appendix F** provides illustrations and examples of various shuttle vehicle types that could be appropriate for this application. **Appendix G** provides illustrations and examples of various types of chairlift and gondola lift configurations that could be considered.

This alternative generates the highest level of staffing needs, including staff for the entrance gate and orientation/information center, staffing for ski lift and shuttle operations and ticket sales, staff for parking permit sales, and staffing for parking management. It would require higher levels of administrative support as compared to the Current Conditions Alternative. Approximately the same level of law enforcement staff used under the Current Conditions Alternative would be required for monitoring parking and trail activities.

Seasonal operating costs for this alternative would be the highest or second highest of all alternatives at approximately $245,000 to $260,000 (2010$), depending on the level of service provided by the shuttle including costs associated with shuttle and ski lift operations, summer entrance booth staffing, parking monitoring and enforcement, road maintenance and administrative support. A 15% contingency was also added to all costs except for shuttle operations. Seasonal operating costs are representative of gross costs, and do not account for any revenue sources, including user fees. The range of total operating costs represents the difference between the estimated range of shuttle operating costs ($60 to $80 per vehicle service hour). Shuttle operating costs were developed to represent a likely range of costs and are likely to vary depending on the service provider and the terms of the contract. Ski lift operating costs were developed using information provided by Alta Ski Lifts based on their winter ski lift operation experiences. Costs associated with the ski lifts are inclusive of operating, maintenance and labor costs, but do not include any taxes, insurance fees or depreciation costs that may apply. Other unit costs are based on expenditures currently realized by the Town of Alta and could vary based on how necessary services are staffed, contracted or delivered as part of future management arrangements. Fundamental capital cost investments (re-configuration of the Cecret Lake parking lot for shuttle turnaround, shuttle vehicles, and amenities at shuttle termini/stops and ski lift termini) would likely range from $310,000 to $470,000. No costs have been estimated for ski lift upgrades at this time, as this is not a critical requirement for implementation of this alternative. Additional information on capital investment requirements can be found in **Table 5-1 on page 91**.

Alternative #4 would provide private vehicle access to Albion Road
with parking permitted for a fee

FIGURE 5-5. ALTERNATIVE #4

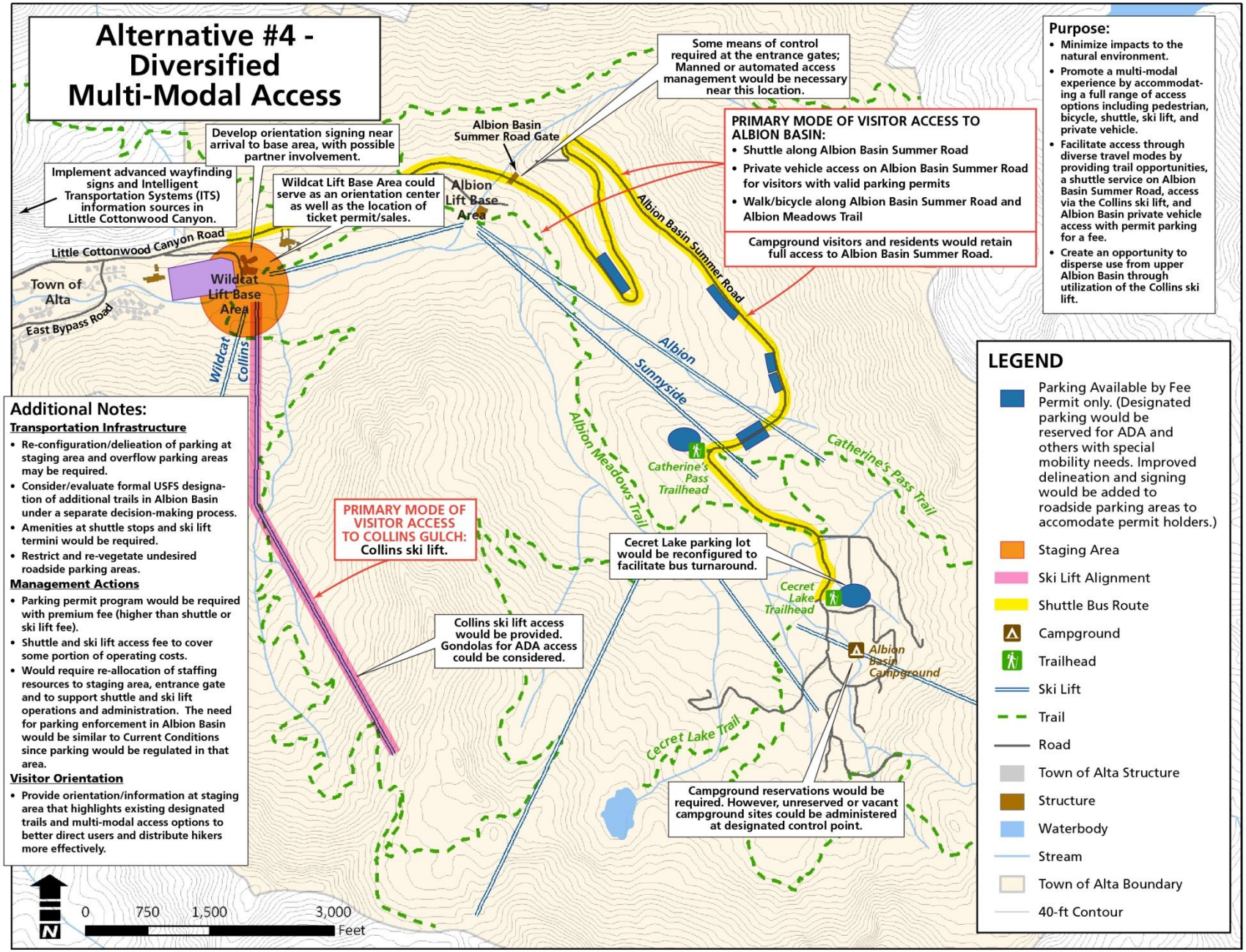


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TABLE 5-1. ALTERNATIVES DEFINITION MATRIX

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Purpose of Alternative	• Represent current visitor access provisions. • Provide a baseline to which all alternatives will be compared in the feasibility study.	• Minimize adverse impacts to the natural environment. • Promote a human-powered and natural experience by allowing pedestrian and bicycle access only. • Facilitate access by improving and promoting trail opportunities.	• Minimize adverse impacts to the natural environment. • Promote a human-powered and non-vehicular experience by accommodating pedestrian, bicycle, and ski lift access only. • Facilitate access by providing trail opportunities and through use of the Albion or Sunnyside ski lifts.	• Minimize adverse impacts to the natural environment. • Promote a human-powered and non-private vehicle experience by accommodating pedestrian, bicycle, and transit shuttle access only. • Facilitate access by providing trail opportunities and a shuttle service on the Albion Basin Summer Road.	• Minimize adverse impacts to the natural environment. • Promote a multi-modal experience by accommodating a full range of access options including pedestrian, bicycle, shuttle, ski lift, and private vehicle. • Facilitate access through diverse travel modes by providing trail opportunities, a shuttle service on the Albion Basin Summer Road, access via the Collins ski lift, and Albion Basin private vehicle access with permit parking for a fee. • Create an opportunity to disperse use from upper Albion Basin through utilization of the Collins ski lift.
Staging Area and Associated Elements					
Staging Area Location	• Summer entrance booth and roadside parking lot near the entrance to the Albion Basin Summer Road.	• Albion Lift Base Area (near Albion Day Lodge) would serve as the primary staging area for visitor access. The facilities in this area are owned by Alta Ski Lifts.	• Same as Alternative #1.	• Wildcat Lift Base Area (near Goldminer's Daughter Lodge) would serve as the primary staging area for visitor access. Select facilities in this area are not owned by Alta Ski Lifts.	• Same as Alternative #3.
Access Management Strategies	• Summer entrance booth staff provides access information, when possible, but does not prohibit travel on Albion Basin Summer Road.	• Provide manned or automated access management station at the entrance to the Albion Basin Summer Road. Control could be achieved through implementation of staffed booth, electronic gate, variable message signs or other means used alone or in combination.	• Same as Alternative #1.	• Same as Alternative #1.	• Same as Alternative #1.
Visitor Information/Services at Staging Area	• Informal orientation provided by summer entrance booth staff, when time allows.	• The staging area could serve as an orientation/information center.	• The staging area could serve as an orientation/information center, as well as the location of ticket sales for the ski lift.	• The staging area could serve as an orientation/information center, as well as the location of ticket sales for the shuttle.	• The staging area could serve as an orientation/information center, as well as the location of ticket/permit sales.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Staging Area Parking	• 225 parking spaces are currently available near the summer entrance booth and in the Town of Alta and base area. These spaces can be used for either short- or long-term parking.	• Available in existing lots at the primary staging area. • Additional/overflow parking would be available near the entrance to Albion Basin Summer Road and at Wildcat Lift Base Area. • Reconfiguration and re-striping of parking may be required. • Long-term parking requirement: 280 spaces • Short-term parking requirement: No parking would be specified as short-term	• Same as Alternative #1.	• Available at the primary staging area. • Reconfiguration and re-striping of parking may be required. • Long-term parking requirement: 280 spaces • Short-term parking requirement: No parking would be specified as short-term	• Available at the primary staging area. • Reconfiguration and re-striping of parking may be required. • Long-term parking requirement: 200 spaces (for shuttle and ski lift users, as well as pedestrians /bicyclists) • Short-term parking requirement: 40 to 50 spaces (for vehicles obtaining parking permits)
Modes of Visitor Access					
Albion Basin Summer Road Access	• Would remain accessible for pedestrian/bicycle access. • Campground visitors and residents would retain full access. • Day-use private vehicle access is unrestricted, but cars often line up waiting for limited parking spaces during times of peak visitation.	• No day-use private vehicle access, with exceptions for residents, campground visitors and those with ADA and special mobility needs only, as well as for special events.	• Same as Alternative #1.	• Same as Alternative #1.	• Private vehicle access would be restricted to those visors with valid day-use parking permits, as well as residents, campground visitors and those with ADA and special mobility needs. Special access provisions may be provided for select special events.
Primary Mode of Day-Use Visitor Access	• Pedestrian/ bicycle access along Albion Basin Summer Road and Albion Meadows Trail • Private vehicle access via Albion Basin Summer Road • Pilot shuttle access along Albion Basin Summer Road was provided in the 2006 through 2009 summer seasons. Shuttles are temporary in nature and are permitted on an annual basis by the USFS. Service is free, and has operated during varying days and times in the summer season, primarily on weekends only. Shuttles provide access to Catherine's Pass and Cecret Lake trailheads.	• Pedestrian/ bicycle access along Albion Basin Summer Road and Albion Meadows Trail	• Pedestrian/ bicycle access along Albion Basin Summer Road and Albion Meadows Trail • Albion or Sunnyside ski lift access would be provided. Gondolas for ADA access could be considered.	• Pedestrian/ bicycle access along Albion Basin Summer Road and Albion Meadows Trail • Shuttle access along Albion Basin Summer Road would be provided (with required ADA provisions). Shuttles would provide access to trailheads near Town of Alta, as well as Catherine's Pass and Cecret Lake trailheads.	• Pedestrian/ bicycle access along Albion Basin Summer Road and Albion Meadows Trail • Shuttle access along Albion Basin Summer Road would be provided (with required ADA provisions). Shuttles would provide access to trailheads near Town of Alta, as well as Catherine's Pass and Cecret Lake trailheads. • Collins ski lift access would be provided. Gondolas for ADA access could be considered. • Private vehicle access via Albion Basin Summer Road would be provided for those visitors with valid parking permits. Parking at Cecret Lake and Catherine's Pass trailhead parking lots would be available by permit only for a fee.
Total Daily Visitor Arrivals Estimated by Mode (persons) Note: Total daily ADA visitor arrivals were not calculated, but are represented as a component of total arrivals.	• All Modes – 2,770 persons • Unrestricted Vehicle Access – 2,170 persons • Shuttle Access – 530 persons • Pedestrian and Bicycle Access – 70 persons	• All Modes – 2,770 persons • Pedestrian and Bicycle Access – 2,770 persons	• All Modes – 2,770 persons • Ski Lift Access – 2,700 persons • Pedestrian and Bicycle Access – 70 persons	• All Modes – 2,770 persons • Shuttle Access – 2,700 persons • Pedestrian and Bicycle Access – 70 persons	• All Modes – 2,770 persons • Permitted Vehicle Access – 1,300 persons • Ski Lift Access – 920 persons • Shuttle Access – 500 persons • Pedestrian and Bicycle Access – 70 persons

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Average Daily Peak Arrival Rate by Mode (persons per hour) Note: The values assigned to each mode have been defined for analysis purposes only. A variety of factors may influence the distribution of visitors among modes, including visitor's personal preference, ease of access, convenience, visitor experience and potential fees.	• All Modes – 245 persons/hour • Unrestricted Vehicle Access – 170 persons/hour • Shuttle Access – 70 persons/hour • Pedestrian and Bicycle Access – 5 persons/hour	• All Modes – 245 persons/hour • Pedestrian and Bicycle Access – 245 persons/hour	• All Modes – 245 persons/hour • Ski Lift Access – 240 persons/hour • Pedestrian and Bicycle Access – 5 persons/hour *(Note: additional demand for pedestrian and bicycle access could occur depending on a variety of factors)*	• All Modes – 245 persons/hour • Shuttle Access 240 persons/hour • Pedestrian and Bicycle Access – 5 persons/hour *(Note: additional demand for pedestrian and bicycle access could occur depending on a variety of factors)*	• All Modes – 245 persons/hour • Permitted Vehicle Access – 100 persons/hour • Ski Lift Access – 90 persons/hour • Shuttle Access – 50 persons/hour • Pedestrian and Bicycle Access – 5 persons/hour *(Note: additional demand for pedestrian and bicycle access could occur depending on a variety of factors)*
Operating Season/ Implementation Days	• Assumed shuttle operating season: mid-July through mid-September (approx. 10 weeks, 20 days) • Actual 2009 pilot shuttle operating season was July 11 through September 14	• Assumed operating season: Mid-July through mid-September (approx. 10 weeks, 20 days)	• Assumed ski lift operating season: Mid-July through mid-September (approx. 10 weeks, 20 days)	• Assumed shuttle operating season: Mid-July through mid-September (approx. 10 weeks, 20 days)	• Assumed shuttle, ski lift and parking permit program operating season: Mid-July through mid-September (approx. 10 weeks, 20 days)
Operating Hours	• 2009 pilot shuttle operating hours: 9:00 AM to 5:00 PM	• Assumed operating hours: 7:00 AM to 9:00 PM (14 hours).	• Assumed ski lift operating hours: 7:00 AM to 9:00 PM (14 hours). Note: Operating hours for ski lift were developed based on design day activity levels. Actual operating hours would be defined by the ski lift operator.	• Assumed shuttle operating hours: 7:00 AM to 9:00 PM (14 hours). Note: Operating hours for shuttle service were developed based on design day activity levels. Actual operating hours would be defined by the shuttle operator.	• Assumed shuttle and ski lift operating hours: 7:00 AM to 9:00 PM (14 hours). • Vehicle parking permits required from: 7:00 AM to 9:00 PM (14 hours) Note: Operating hours for ski lift and shuttle service were developed based on design day activity levels. Actual operating hours would be defined by the ski lift and shuttle operators.
Shuttle Access – Frequency	2009 Pilot Shuttle Frequency: • Approximately 10 to 20 minutes (depending on whether two or three vehicles are in use)	• N/A	• N/A	• Approximately 3 to 5 minute frequencies (depending on vehicle type and passenger capacity)	• Approximately 15 minutes
Shuttle Access – Fleet Requirements Note: Alternative fuel vehicles should be considered in compliance with USFS Executive Order 13423 ("Guidance on Greenhouse Gas Reduction Requirements for Fleet"), which mandates an increase in nonpetroleum-based fuel use and recommends the purchase of alternative fuel, hybrid and plug-in hybrid electric vehicles for USFS when commercially available.	2009 Pilot Shuttle Fleet Information: • Vehicle Type: Van • Vehicle Capacity: 14 passengers • Number of Peak Vehicles: 2 to 3 • Number of Back-up Vehicles: Unknown (operated by contractor) • ADA Provisions: None	• N/A	• N/A	• Assumptions: • Vehicle Type: Small to mid-sized transit vehicle or van • Vehicle Capacity: 12 to 22 passengers • Number of Peak Vehicles: 9 to 15 (depending on vehicle type) • Back-up Vehicles: 1 to 2 (depending on vehicle type) • ADA Provisions: Required ADA seating would be provided	• Assumptions: • Vehicle Type: Small transit vehicle or van • Vehicle Capacity: 12 passengers • Number of Peak Vehicles: 3 • Number of Back-up Vehicles: 1 vehicle • ADA Provisions: Required ADA seating would be provided
Ski Lift Access – Hourly Capacity	• N/A	• N/A	• Estimated ski lift access hourly demand: 240 persons/hour • Albion ski lift hourly pedestrian capacity: 400 persons/hour • Sunnyside ski lift hourly pedestrian capacity: 600 persons/hour	• N/A	• Estimated ski lift access hourly demand: 90 persons/hour • Collins ski lift hourly pedestrian capacity: 1,000 persons/hour

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Ski Lift Access – Operating Requirements	• N/A	• N/A	Albion Ski Lift • Maximum Operating Speed: 220 feet per minute • Carriage Type/Capacity: 2-person chair lift • ADA Provisions: None currently • Lift is under consideration for upgrade and should incorporate design features that allow for winter and summer pedestrian travel. Sunnyside Ski Lift • Maximum Operating Speed: 300 feet per minute • Carriage Type/Capacity: 3-person chair lift • ADA Provisions: None currently • Lift is under consideration for upgrade and should incorporate design features that allow for winter and summer pedestrian travel.	• N/A	Collins Ski Lift • Maximum Operating Speed: 500 feet per minute • Carriage Type/Capacity: 4-person chair lift • ADA Provisions: None currently • Any future upgrades should incorporate design features that allow for winter and summer pedestrian travel.
Shuttle and Ski Lift Access – Service Hours and Miles Note: Annual statistics were estimated using weekend days only (20 operating days in a season). These statistics could be scaled for additional holiday or high-use weekdays as needed.	2009 Pilot Shuttle Information • Daily Service Hours: Approx. 20 hours (assuming 8 hour days and an average of 2.5 vehicles per day) • Annual Service Hours: Approx. 400 hours (assuming 20 operating days) • Daily Service Miles: Approx. 190 miles (assuming 8 hour days, 4 trips/hour and 6-mile round trips) • Annual Service Miles: Approx. 3,840 miles (assuming 20 operating days)	• N/A	Ski Lift Access • Daily Service Hours: Approx. 15 hours • Annual Service Hours: Approx. 280 hours (assuming 20 day season)	Shuttle Access • Daily Service Hours: Approx. 125 to 210 hours • Annual Service Hours: Approx. 2,520 to 4,200 hours (assuming 20 day season) • Daily Service Miles: Approx. 1,140 to 1,904 miles • Annual Service Miles: Approx. 22,840 to 38,080 miles (assuming 20 day season)	Shuttle Access • Daily Service Hours: Approx. 40 hours • Annual Service Hours: Approx. 840 hours (assuming 20 day season) • Daily Service Miles: Approx. 380 miles • Annual Service Miles: Approx. 7,620 miles (assuming 20 day season) Ski Lift Access • Daily Service Hours: Approx. 14 hours • Annual Service Hours: Approx. 280 hours (assuming 20 day season)
Transportation Infrastructure					
Albion Basin Summer Road	• Would be retained with same two-lane configuration and gravel surface. • Summer road maintenance for dust mitigation would be provided.	• Same as Current Conditions Alternative.	• Same as Current Conditions Alternative.	• Same as Current Conditions Alternative.	• Same as Current Conditions Alternative.
Trails	• Retain three formal USFS designated trails in Albion Basin: Cecret Lake, Catherine's Pass and Albion Meadow trails.	• Under a separate decision-making process, consider/evaluate formal USFS designation of additional trails in Albion Basin.	• Same as Alternative #1.	• Same as Alternative #1.	• Same as Alternative #1.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Parking – Designated Parking Lots	• Retain parking lots at Cecret Lake and Catherine's Pass trailheads (total of 54 spaces)	• Provide parking at Cecret Lake and Catherine's Pass by permit for ADA and others with special mobility needs. May require reconfiguration and delineation of dedicated spaces.	• Same as Alternative #1.	• Provide parking at Cecret Lake and Catherine's Pass by permit for ADA and others with special mobility needs if the shuttle was determined to be insufficient at meeting this particular need or demand level. May require reconfiguration and delineation of dedicated spaces. • Reconfigure Cecret Lake Trailhead parking lot to facilitate shuttle vehicle turnaround.	• Provide parking by permit only for a fee at Cecret Lake and Catherine's Pass, as well as for ADA and others with special mobility needs (may need reconfiguration and delineation of dedicated spaces). • A minimum of two to four parking spaces would be available in Cecret Lake and Catherine's Pass parking lots for those with special mobility needs, in compliance with ADA regulations. • Reconfigure Cecret Lake Trailhead parking lot to facilitate shuttle vehicle turnaround.
Parking – Designated Roadside Parking	• Retain designated roadside parking (25 spaces)	• Re-vegetate undesired roadside parking areas. Number of spaces yet to be determined.	• Same as Alternative #1.	• Same as Alternative #1.	• Re-vegetate undesired roadside parking areas. Number of spaces yet to be determined. • Add improved delineation and signing to roadside parking areas to accommodate permit holders. Number of spaces yet to be determined.
Opportunities for Visitor Orientation, Interpretation and Education					
Advanced Visitor Orientation	• Informal orientation and environmental awareness communication is provided by summer entrance booth staff, as time allows.	• Develop orientation signing near arrival to staging area, with possible partner involvement. • Provide information that highlights existing designated trails to better direct users and distribute hikers more effectively. • Implement wayfinding signs and Intelligent Transportation Systems (ITS) Information sources in Little Cottonwood Canyon (LCC), with possible partner involvement.	• Same as Alternative #1.	• Same as Alternative #1.	• Same as Alternative #1.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Opportunity for Environmental Stewardship and Education Related to Preservation of Natural Resources (specifically watershed and wildflowers)	• Informal environmental awareness communication is provided as possible by the summer entrance booth staff, when time allows.	• Albion Lift Base Area, where staging would occur, could serve as an interpretive center with opportunities to educate visitors on destinations, resource protection and interpretive themes in Albion Basin, as well as promote environmental stewardship. • Improved wayfinding, interpretive signage and educational waysides could be located along existing trails to improve environmental stewardship and education. • Note: Alta Ski Lifts/Environmental Center has secured grant funding for the implementation of interpretive signage within Albion Basin.	• Same as Alternative #1.	• Similar to Alternative #1, except for the following: • The Wildcat Lift Base Area, where staging would occur, would be used instead of the Albion Lift Base Area. • Shuttle access could include an interpretive component in which drivers provide education during shuttle rides.	• Same as Alternative #3.
Staffing and Administrative Support Requirements					
General Staffing Requirements Note: Costs associated with staffing requirements are discussed later in this table.	Town of Alta currently provides the following general staffing in support of operations at Albion Basin: • Staffing of summer entrance booth	• Would generate slightly more general staffing needs as compared to the Current Conditions Alternative. Would require the following general staffing in support of operations at Albion Basin: • May require staffing of summer entrance booth at the entrance to Albion Basin Summer Road. Alternately, automatically controlled gates could be used. • May require staffing of orientation/information center at staging area. Alternately, volunteers and/or partners could be used to staff the center. • Would require staff to support distribution of parking permits for ADA and others with special mobility needs.	• Would generate slightly more general staffing needs as compared to the Current Conditions Alternative and Alternative #1. Would require the following general staffing in support of operations at Albion Basin: • May require staffing of summer entrance booth gate to Albion Basin Summer Road. Alternately, automatically controlled gates could be used. • May require staffing of orientation/information center at staging area. Alternately, volunteers and/or partners could be used to staff the center. • Would require staff to support sales of ski lift tickets. • Would require staff to support distribution of parking permits for ADA and others with special mobility needs.	• Similar to Alternative #1, except that it would require staff to support sales of shuttle tickets, not ski lift tickets.	• Would generate the most general staffing needs as compared to the Current Conditions Alternative and all alternatives. Would require the following general staffing in support of operations at Albion Basin: • May require staffing of summer entrance booth at the entrance to Albion Basin Summer Road. Alternately, automatically controlled gates could be used. • May require staffing of orientation/information center at staging area. Alternately, volunteers and/or partners could be used to staff the center. • Would require staff to support sales of both shuttle and ski lift tickets. • Would require staff to support distribution of parking permits for ADA and others with special mobility needs. • Would require staff to support sales of parking permits to general visitors. • Would require staff to manage parking activity and permit use.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Administrative Support	Town of Alta currently provides the following administrative support of operations at Albion Basin: • Support of Albion Basin Summer Road maintenance • Support of pilot shuttle operations	Would require slightly less administrative support as compared to Current Conditions Alternative. Would require the following administrative support functions: • Support of Albion Basin Summer Road maintenance	Would require similar levels of administrative support as compared to Current Conditions Alternative. Would require the following administrative support functions: • Support of Albion Basin Summer Road maintenance • Support of ski lift operations.	• Similar to Alternative #2, except that it would require administrative support of shuttle operations, not ski lift operations.	Would require more administrative support than Current Conditions Alternative and all alternatives. Would require the following administrative support functions: • Support of Albion Basin Summer Road maintenance • Support of shuttle and ski lift operations. • Support of vehicle parking permit program.
Contractor/Alta Ski Lift Staffing Requirements	• A contractor currently provides staffing for the pilot shuttle.	• No contractor or Alta Ski Lift staffing would be required.	• Would require Alta Ski Lift staff for ski lift operations.	• Would require contractor staff for shuttle operations.	• Would require Alta Ski Lift staff for ski lift operations. • Would require contractor staff for shuttle operations.
Enforcement Staffing Requirements	Town of Alta estimates that 35-40% of the Town Marshall and staff's time is devoted to enforcement in Albion Basin. Town of Alta currently provides the following enforcement functions: • Enforcement of roadside parking • Enforcement of ADA parking in Albion Basin • Enforcement of trail activities	Would require less enforcement staffing as compared to the Current Conditions Alternative since general parking would not be allowed in Albion Basin. Would require the following enforcement functions: • Enforcement of ADA parking in Albion Basin • Enforcement of trail activities	• Same as Alternative #1.	• Same as Alternative #1.	Would require similar levels of enforcement staffing as Current Conditions Alternative since parking in Albion Basin would be formalized through a parking permit program. Would require the following enforcement functions: • Enforcement of permitted parking lot and roadside parking • Enforcement of ADA parking in Albion Basin • Enforcement of trail activities
Road Maintenance	• Town of Alta currently provides staff for seasonal maintenance of Albion Basin Summer Road for dust mitigation.	• Town of Alta would continue to provide staff for seasonal maintenance of Albion Basin Summer Road for dust mitigation.	• Same as Alternative #1.	• Same as Alternative #1.	• Same as Alternative #1.
Management Actions and Strategies					
Parking Management	• Requires enforcement of parking at staging area and within designated lots in Albion Basin (Cecret Lake and Catherine's Pass lots), as well as informal parking along Albion Basin Summer Road.	• Would require management of staging area parking, as well as parking for ADA and others with special mobility needs in Albion Basin.	• Same as Alternative #1.	• Same as Alternative #1.	• Would require management of staging area parking, as well as parking for ADA and others with special mobility needs in Albion Basin. • Would require advanced methods of managing the parking permit program. Strategies could include monitoring of parking activity by staff, a reservation system, or time window entries.
Campground Operations	• Would remain the same (some reservations-only spaces, along with some available on a first-come, first-served basis).	• Reservations would be required for all sites. However, any unreserved or vacant sites could be administrated at the control point (gate or booth) on a first-come, first-served basis.	• Same as Alternative #1.	• Same as Alternative #1.	• Same as Alternative #1.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Fees Note: See **Appendix C** for examples of fee levels applied in other public land settings.	• No fees in place for access to Albion Basin. • Fees in place for campground use.	• Same as Current Conditions Alternative.	• Ski lift access fee to cover some portion of operating costs. • Fees in place for campground use.	• Shuttle access fee to cover some portion of operating costs. • Fees in place for campground use.	• Shuttle access fee to cover some portion of operating costs. • Ski lift access fee to cover some portion of operating costs. • Premium parking fee for Albion Basin (higher than shuttle or ski lift fee). • Fees in place for campground use.
Estimate of Probable Costs					
Capital Investment Requirements* Note: Capital investment costs were developed using the National Park Service's Class C estimate model. Costs account for the following: • Direct construction costs (design, labor and materials) • Location factor (for Salt Lake County) • Remoteness factor • Design contingencies (15%) • Contracting method	• No capital investments are required until existing facilities require replacement (i.e. summer entrance booth).	Fundamental Capital Cost Components: • No critical capital cost investments required to support human-powered transportation access. Other Potential Capital Investment Requirements: • Costs associated with staging area parking (striping parking spaces, pavement improvements, etc.) • Kiosk/booth or automated access control gate device at entrance to Albion Basin Summer Road. • Costs related to orientation/ information center including any required renovations or reconfiguration to existing structure • Implementation of elements related to visitor orientation (static and/or variable message) as well as other information dissemination methods (brochures or printed materials). Other means of dissemination (internet website, advisory radio, etc.) could be considered as additional operating expenses. • Costs associated with restriction and re-vegetation of undesirable roadside parking.	Fundamental Capital Cost Components: • Passenger amenities at ski lift termini (benches and shelters): $20,000 to $24,000 • TOTAL FOR ALL NOTED ESTIMATED COSTS: $20,000 to $24,000 Other Potential Capital Investment Requirements: • Same as listed under Alternative #1. • Potential rehabilitation or upgrade to Albion or Sunnyside ski lifts (ski lift modifications would address winter and summer operational needs). Note: Gondola ski lift carriages may be deemed desirable for summer pedestrian use. Costs associated with gondola carriages are not currently included in capital costs for Alternative #2. Further consultation with Alta Ski Lifts would be necessary to discuss feasibility and potential cost sharing arrangements.	Fundamental Capital Cost Components: • Passenger amenities at shuttle termini and stops (benches and shelters): $41,000 to $49,000 • Shuttle vehicles: $600,000 to $1,530,000 • Reconfiguration of Cecret Lake parking lot (for shuttle vehicle turnaround): $28,000 to $33,000 • TOTAL FOR ALL NOTED ESTIMATED COSTS: $770,000 to $1,610,000 Other Potential Capital Investment Requirements: • Same as listed under Alternative #1.	Fundamental Capital Cost Components: • Passenger amenities at ski lift termini and shuttle termini/stops (benches and shelters): $61,000 to $73,000 • Shuttle vehicles: $220,000 to $360,000 • Reconfiguration of Cecret Lake parking lot (for shuttle vehicle turnaround): $28,000 to $33,000 • TOTAL FOR ALL NOTED ESTIMATED COSTS: $310,000 to $470,000 Other Potential Capital Investment Requirements: • Same as listed under Alternative #2. Note: Gondola ski lift carriages may be deemed desirable for summer pedestrian use. Costs associated with gondola carriages are not currently included in capital costs for Alternative #2. Further consultation with Alta Ski Lifts would be necessary to discuss feasibility and potential cost sharing arrangements.

Alternatives Definition	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Seasonal Operating Costs* *Assumptions for All Alternatives:* • *10 weeks (70 days) in a season* • *Only 20 days per season are assumed to be actively managed and realize the operating costs for each alternative presented in this document. Costs could be scaled for additional holiday or high-use days as desired or determined necessary and cost effective.* • *Costs do not include any insurance, taxes or depreciation costs that may apply* • *All costs are in 2010 dollars*	Total Seasonal Operating Costs: $50,000 • Shuttle Operating Costs: $16,000 • Ski Lift Operating Costs: N/A • Staffing of Summer Entrance Booth:$10,200 • Staffing of Orientation Center: N/A • Staffing for Ticket Sales: N/A • Staffing for Parking Permit Sales: N/A • Staffing to Manage Parking in Albion Basin: N/A • Staffing for Enforcement: $15,500 • Administrative Support: $800 • Road Maintenance: $9,000 *Sources:* • *Staffing, administrative support, enforcement and road maintenance costs are derived from information provided by Town of Alta (2009).* • *Shuttle costs are based on current pilot shuttle contractor costs provided by Town of Alta (2009).* *Assumptions:* • *Summer entrance booth is assumed to be staffed each day in the season (70 days).*	Total Seasonal Operating Costs: $30,000 to $35,000 • Shuttle Operating Costs: N/A • Ski Lift Operating Costs: N/A • Staffing of Summer Entrance Booth: $10,200 • Staffing of Orientation Center: $8,330 • Staffing for Ticket Sales: N/A • Staffing for Parking Permit Sales: N/A • Staffing to Manage Parking in Albion Basin: N/A • Staffing for Enforcement: $10,500 • Administrative Support: $600 • Road Maintenance: $9,000 *Sources:* • *Staffing, administrative support, enforcement and road maintenance costs are derived from information provided by Town of Alta (2009).* *Assumptions:* • *Summer entrance booth and orientation center would be staffed each day in the season (70 days).* • *A 15% contingency was applied to staffing, administrative support and road maintenance costs.*	Total Seasonal Operating Costs: $150,000 to $155,000 • Shuttle Operating Costs: N/A • Ski Lift Operating Costs: $88,500 to $93,500 • Staffing of Summer Entrance Booth: $10,200 • Staffing of Orientation Center: $8,300 • Staffing for Ticket Sales: $2,400 • Staffing for Parking Permit Sales: N/A • Staffing to Manage Parking in Albion Basin: N/A • Staffing for Enforcement: $10,600 • Administrative Support: $800 • Road Maintenance: $9,000 *Sources:* • *Staffing, administrative support, enforcement and road maintenance costs are derived from information provided by Town of Alta (2009).* • *Ski lift costs are derived from information provided by Alta Ski Lifts (2009).* *Assumptions:* • *Summer entrance booth and orientation center would be staffed each day in the season (70 days).* • *Ski lift and associated ticket sales would operate 20 days per season.* • *A 15% contingency was applied to ski lift operation, staffing, administrative support and road maintenance costs.*	Total Seasonal Operating Costs: $200,000 to $385,000 • Shuttle Operating Costs: $151,200 to $336,000 • Ski Lift Operating Costs: N/A • Staffing of Summer Entrance Booth: $10,200 • Staffing of Orientation Center: $8,300 • Staffing for Ticket Sales: $2,400 • Staffing for Parking Permit Sales: N/A • Staffing to Manage Parking in Albion Basin: N/A • Staffing for Enforcement: $10,500 • Administrative Support: $800 • Road Maintenance: $9,000 *Sources:* • *Staffing, administrative support, enforcement and road maintenance costs are derived from information provided by Town of Alta (2009).* • *Shuttle costs were developed in order to represent a likely range of costs ($60 to $80 per hour).* *Assumptions:* • *The summer entrance booth and orientation center would be staffed each day in the season (70 days).* • *Shuttle service and associated ticket sales would operate 20 days per season.* • *A 15% contingency was applied to staffing, administrative support and road maintenance costs.* • *The range of shuttle costs represents the difference between the range of unit costs used ($60 to $80 per hour), as well as the frequency of service (3 to 5 minute frequencies)*	Total Seasonal Operating Costs: $245,000 to $260,000 • Shuttle Operating Costs: $50,400 to $67,200 • Ski Lift Operating Costs: $110,000 • Staffing of Summer Entrance Booth: $10,200 • Staffing of Orientation Center: $8,300 • Staffing for Ticket Sales: $2,400 • Staffing for Parking Permit Sales: $2,400 • Staffing to Manage Parking in Albion Basin: $8,800 • Staffing for Enforcement: $15,500 • Administrative Support: $1,300 • Road Maintenance: $9,000 *Sources:* • *Staffing, administrative support, enforcement and road maintenance costs are derived from information provided by Town of Alta (2009).* • *Shuttle costs were developed in order to represent a likely range of costs ($60 to $80 per hour).* • *Ski lift costs are derived from information provided by Alta Ski Lifts (2009).* *Assumptions:* • *The summer entrance booth and orientation center would be staffed each day in the season (70 days).* • *Shuttle, ski lift and the parking permit program, along with associated ticket sales would operate 20 days per season.* • *A 15% contingency was applied to ski lift operation, staffing, administrative support and road maintenance costs.* • *The range of shuttle costs represents the difference between the range of unit costs used ($60 to $80 per hour).*

Source: Project Team, 2010.
*All costs are presented in 2010$. Inflation could increase costs in subsequent years. Data from the U.S. Department of Labor, Bureau of Labor Statistics indicates that the 12-month consumer price index (CPI) for the Salt Lake City area is 2.0%. Data also indicates that annual inflation has ranged from 1.6% to 3.8% between 2000 and 2008. Based on a maximum annual inflation rate of 4.0%, operating costs could increase up to 18% over a five-year period.

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CHAPTER 6: ALTERNATIVES EVALUATION

The alternatives (defined in **Chapter 5**) were evaluated based on a detailed set of relevant factors and criteria, which were developed in order to compare the benefits, challenges and tradeoffs among alternatives. A discussion of these criteria is provided in this chapter, along with the detailed evaluation of alternatives and a summary of the results of that evaluation.

The evaluation of alternatives is not intended to result in the selection of a preferred alternative, but is instead meant to provide an initial assessment of the advantages and disadvantages of each alternative and how alternatives may affect or influence natural resources, visitor experience and access, safety, local businesses, and other factors.

6.1 EVALUATION CRITERIA

The screening criteria used to evaluate alternatives is linked closely to the defined project purpose and goals (outlined in **Chapter 4**), as well as to issues voiced by stakeholders and members of the public. The evaluation criteria also include factors typically used in the "Choosing by Advantages" process, a decision-making tool frequently used by the USFS and NPS for similar visitor access and transportation projects in public lands. The criteria used to evaluate the alternatives are organized into the following categories, each with several associated factors:

- Protection of Natural Resources
- Enhance and Improve Visitor Experience
- Manage and Improve Safety
- Ability to Manage Visitor Access to Ensure Sustainable Recreation
- Ability to Accommodate a Diversity of Users and Ability Types
- Cost Effectiveness and Financial Viability
- Support Local Economic Business Opportunities
- Ability to Implement as part of Adaptive Management Strategy[1]

Screening criteria for alternatives included protection of natural resources, including wildflowers

[1]Note: Adaptive management strategies refer to methods for incremental or phased implementation of alternatives which can be used to test, monitor, optimize and maximize their effectiveness.

6.2 SUMMARY OF ALTERNATIVES EVALUATION RESULTS

The key benefits and challenges for each alternative are documented below. **Table 6-1** provides a brief summary of the key discriminators identified in the detailed alternative evaluation. A more detailed evaluation table is provided in **Appendix H**.

6.2.1 CURRENT CONDITIONS ALTERNATIVE

Benefits: This alternative provides day-use visitor parking within Albion Basin directly adjacent to existing trailheads when available, which is likely to be perceived as the most direct and easiest method of accessing popular destinations and accommodates a wide range of types of users and ability levels. No capital investments are required, except for future replacement costs of the summer entrance booth. Seasonal operating costs are the second lowest of all alternatives. This alternative does not currently have visitor fees. However, the Town of Alta and Friends of Alta make investments to support the operation and management of the summer entrance booth and pilot van shuttle. Donations are also accepted at the summer entrance booth to support summer operations.

Challenges: The Current Conditions Alternative represents the highest level of overall potential adverse impacts to natural resources. Private vehicles and pilot shuttles operating on Albion Basin Summer Road create dust and emissions, and also create a risk of watershed and visual degradation due to overflow roadside parking that is difficult to manage. This alternative also represents the highest risk to the safety of pedestrian, bicyclists and motorists. This alternative is not supportive of local economic business opportunities and has limited ability to implement any additional adaptive management strategies due to uncertain funding levels. It is becoming increasingly difficult for the Town of Alta to manage summer visitation to Albion Basin, particularly in relation to parking, traffic, visitor services and enforcement. Operating schedules for both the pilot shuttle and summer entrance booth are currently limited by available funding from the Town of Alta and Friends of Alta and do not meet current demand. Additional financial resources and staffing are needed to meet current and future demand based on projected increases in the Salt Lake Valley population.

The Current Conditions Alternative accommodates a wide range of types of users and ability levels

6.2.2 ALTERNATIVE #1 – HUMAN-POWERED ACCESS

Benefits: This alternative represents the lowest level of potential adverse impacts to natural resources. The elimination of day-use visitor private vehicle and pilot shuttle activity along Albion Basin Summer Road would significantly reduce dust and emissions and would substantially reduce the risk of watershed degradation. Alternative #1 also represents the most significant improvement in the safety of pedestrians, bicyclists and motorists. Alternative #1 would require the lowest level of capital investment of all action alternatives and would incur the lowest seasonal operating cost of all alternatives. No fees are anticipated. Improved opportunities for education and interpretation at a formal staging area could enhance visitor experience. This alternative could be implemented as a test case using designated "car-free" days to assess acceptance and effectiveness. This alternative would assist in dispersing use through increased utilization of the Albion Meadows Trail as an alternative to driving on Albion Basin Summer Road. It would require extra effort to reach popular destinations such as Cecret Lake and Catherine's Pass trailheads, which might serve to improve the visitor experience at over-utilized areas.

Challenges: Although this alternative could improve the experience of those visitors seeking a solitude experience, it would accommodate only some types of users and ability levels. Visitors may perceive access conditions as significantly less convenient, due to extended hikes or bicycle trips that would be necessary to reach popular destinations.

Alternative #1 would be effective in protecting natural resources

6.2.3 ALTERNATIVE #2 – HUMAN-POWERED AND SKI LIFT ACCESS

Benefits: This alternative represents the second lowest level of potential overall adverse impacts to natural resources. The elimination of day-use visitor private vehicle and pilot shuttle activity along Albion Basin Summer Road would significantly reduce dust and emissions and would substantially reduce the risk of watershed degradation. Alternative #2 also represents a significant improvement in the safety of pedestrians, bicyclists and motorists, although slight risk for pedestrians may be associated with use of ski lifts. This alternative would require greater levels of capital investment than Alternative #1, but lower levels than Alternatives #3 and #4 and would require the third lowest seasonal operating costs of all alternatives. Improved opportunities for education and

interpretation at a formal staging area could enhance visitor experience. This alternative may create opportunities for local businesses through the provision of a ski lift service at a formal staging area. This alternative would require some additional effort to access Cecret Lake Trailhead, but could result in better utilization of the Albion Meadows Trail to disperse use. The ski lift operating schedule and capacity could be used as a management strategy to deliver a sustainable number of visitors to Albion Basin.

Challenges: This alternative could improve the experience of those visitors seeking a solitude experience and would accommodate more types of users and ability levels than Alternative #1, but less than other alternatives. Visitors may perceive access conditions as less convenient especially since ski lift access would not directly serve Cecret Lake Trailhead. User fees may be required to fund some portion of ski lift operations. This alternative could be implemented incrementally as part of an adaptive management strategy if advanced scheduling and other considerations are addressed with Alta Ski Lifts. An initial season or selected days of ski lift operation could serve as an adaptive management test case.

6.2.4 ALTERNATIVE #3 – HUMAN-POWERED AND SHUTTLE ACCESS

Benefits: This alternative would improve the safety of pedestrians, bicyclists and motorists, although shuttle activity could create some conflicts between modes along Albion Basin Summer Road. Improved opportunities for education and interpretation at a formal staging area could enhance visitor experience. This alternative may create opportunities for local businesses near the staging area. Shuttle scheduling and frequency could be tailored and used as a management strategy to deliver a sustainable number of visitors to Albion Basin while protecting natural resources and the recreation experience. Locating the staging area at Wildcat Lift Base Area could provide alternate recreation opportunities. Offering guided walks on the existing interpretive trail and other trails near the fairly accessible historic Alta town site at Wildcat Lift Base Area could disperse some use from upper Albion Basin. This alternative may create opportunities for local businesses near the staging area. Shuttle schedules could be tailored and used as a management strategy to deliver a sustainable number of visitors to Albion Basin while protecting natural resources and the recreation experience.

Challenges: This alternative could improve the experience of those visitors seeking a solitude experience and would accommodate more types of users and ability levels than alternative #1 and #2, but less than the Current Conditions Alternative and Alternative #4. Visitors may perceive access conditions as less convenient since they would not have the convenience of private vehicle parking at Cecret Lake or Catherine's Pass trailheads. Alternative #3 would require the highest level of capital investment requirements of all the action alternatives and seasonal operating costs would be second highest to highest of all alternatives, depending on specific operating conditions. User fees may be required to fund some portion of shuttle operations. This alternative represents the second highest level of potential adverse impacts to natural resources among the alternatives (along with Alternative #4), but would incur fewer impacts to natural resources than Current Conditions Alternative. A shuttle operating at high frequencies along Albion Basin Summer Road would create greater dust and emissions than the current pilot shuttle, although the elimination of most private vehicle access on the road would mitigate this

impact to some degree. The risk of watershed degradation would be higher than Alternatives #1 and #2, but would be lower than Current Conditions Alternative. Specific allowances for flexibility in operations would have to be built into the contract with a shuttle operator in order for this alternative to be implemented incrementally as part of an adaptive management strategy.

6.2.5 ALTERNATIVE #4 – DISPERSED MULTI-MODAL ACCESS

Benefits: This alternative would accommodate a similar or greater range of types of users and ability levels as the Current Conditions Alternative, and would provide a broad and diverse range of recreational opportunities by redistributing some visitors to Collins Gulch and providing multi-modal access. Albion Basin could become less likely to provide a solitude experience under Alternative #4; however, Collins Gulch could provide new opportunities for those visitors seeking such an experience. This alternative would improve the safety of pedestrians, bicyclists and motorists, although private vehicle and shuttle activity could create conflicts between modes along Albion Basin Summer Road. Slight risks for pedestrians may be associated with use of ski lifts. Improved opportunities for education and interpretation at a formal staging area could enhance visitor experience. Locating the staging area at Wildcat Lift Base Area could provide alternate recreation opportunities. Offering guided walks on the existing interpretive trail and other trails near the fairly accessible historic Alta town site at Wildcat Lift Base Area could disperse some use from upper Albion Basin. This alternative may create opportunities for local businesses near the staging area. Shuttle and ski lift operating schedules could be tailored and used as a management strategy to deliver a sustainable number of visitors to Albion Basin while protecting natural resources and the recreation experience.

Challenges: Although parking near popular destinations would be provided, a parking fee program would be studied. If implemented, it would require a much higher level of management and enforcement. Visitors may perceive these and other access conditions as less convenient or less desirable. Alternative #4 would require the second highest level of capital investment as compared to all other alternatives and seasonal operating costs would be second highest to highest of all alternatives, depending on specific operating conditions. User fees may be required for ski lift and shuttle service to fund some portion of operating costs. This alternative represents the second highest level of potential adverse impacts to natural resources among the alternatives (along with Alternative #3), but would incur fewer impacts to natural resources than the Current Conditions Alternative. A shuttle operating at moderate frequencies along Albion Basin Summer Road, along with permitted private vehicle activity would create dust and emissions, but to a lesser degree than under Current Conditions Alternative. The risk of watershed degradation would be higher than Alternatives #1 and #2, but would be lower than Current Conditions Alternative. In order for this alternative to be implemented incrementally as part of an adaptive management strategy, specific allowance for flexibility in operations would have to be built into the contract with a shuttle operator and advanced scheduling and other considerations would need to be addressed with Alta Ski Lifts. An initial season or selected days of ski lift operation and facilitating access to the Collins Gulch area for visitor access would serve as an adaptive management test case.

6.2.6 SUMMARY OF ALTERNATIVES EVALUATION

Table 6-1 provides a summary of the alternatives evaluation outcomes. See **Table H-1** in **Appendix H** for the more detailed alternatives evaluation matrix.

For purposes of this study, the operating season was considered to be 20 days over approximately 10 weeks between mid-July and mid-September. However, future implementation considerations may warrant additional operating days depending on the actual number of selected weekend days, holidays or other high-use visitation days. Therefore, the access provisions and resulting affects identified in **Table 6-1** would only be realized for the identified implementation days. Access changes would not be apparent on non-implementation days (non-implementation days are identified in this study as primarily weekdays from mid-July to mid-September and all days outside of those months).

Although the alternatives have been defined to meet design day demand so that they can be effectively compared to each other, shuttle and/or ski lift frequencies and related capacities (included in Alternatives #2 through #4) could be used as a management strategy to deliver a sustainable number of visitors to Albion Basin. In addition, the demand values assigned to each mode of access have been defined for analysis purposes only. A variety of factors may influence the actual distribution of visitors among modes, including visitor's personal preference, ease of access, convenience, visitor experience and potential fees.

TABLE 6-1. SUMMARY OF ALTERNATIVES EVALUATION

Evaluation Criteria Category	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Protection of Natural Resources	 OVERALL ASSESSMENT: • Represents the highest level of overall potential adverse impacts to natural resources due to the presence of unrestricted private vehicle activity in Albion Basin and the pilot shuttle. OVERVIEW OF POTENTIAL ADVERSE IMPACTS: • Watershed – Highest Impact • Wildflowers and vegetation – Highest Impact • Wildlife – Highest Impact • Air Quality – Highest Impact • Natural Soundscapes – Highest Impact • Visual – Highest Impact	 OVERALL ASSESSMENT: • Represents the lowest level of potential adverse impacts to natural resources due to the elimination of most motorized activity along Albion Basin Summer Road. OVERVIEW OF POTENTIAL ADVERSE IMPACTS: • Watershed – Lowest Impact • Wildflowers and vegetation – Lowest Impact • Wildlife – Lowest Impact • Air Quality – Lowest Impact • Natural Soundscapes – Lowest Impact • Visual –Lowest Impact	 OVERALL ASSESSMENT: • Represents the second lowest level of potential adverse impacts to natural resources due to the elimination of most vehicular activity along Albion Basin Summer Road. OVERVIEW OF POTENTIAL ADVERSE IMPACTS: • Watershed – Lowest Impact • Wildflowers and vegetation – Lowest Impact • Wildlife – Second Lowest Impact • Air Quality – Lowest Impact • Natural Soundscapes – Second Lowest Impact • Visual – Second Lowest Impact	 OVERALL ASSESSMENT: • Represents the second highest level of potential adverse impacts (along with Alternative #4) to natural resources due to the presence of high frequency shuttle service along Albion Basin Summer Road. OVERVIEW OF POTENTIAL ADVERSE IMPACTS: • Watershed – Second Highest Impact • Wildflowers and vegetation – Lowest Impact • Wildlife – Second Highest Impact • Air Quality – Second Highest Impact* • Natural Soundscapes – Second Highest Impact • Visual – Third Lowest Impact *Note: Air quality impacts could be reduced if alternative fuel vehicles are selected for the shuttle operation.	 OVERALL ASSESSMENT: • Represents the second highest level of potential adverse impacts (along with Alternative #3) to natural resources due to the presence of private vehicles and a shuttle service along Albion Basin Summer Road and due to increased recreational opportunities in an area that currently experiences very low levels of visitation (Collins Gulch). However, redistribution of some visitation to Collins Gulch could reduce the concentration of visitors in Albion Basin, and related resource impacts. OVERVIEW OF POTENTIAL ADVERSE IMPACTS: • Watershed – Second Highest Impact • Wildflowers and vegetation – Second Highest Impact • Wildlife – Second Highest Impact • Air Quality – Second Highest Impact* • Natural Soundscapes – Second Highest Impact • Visual – Second Highest Impact *Note: Air quality impacts could be reduced if alternative fuel vehicles are selected for the shuttle operation.

Potential to Satisfy Evaluation Criteria Objectives

Evaluation Criteria Category	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Enhance/Improve Visitor Experience	 OVERALL ASSESSMENT: • Visitors report an overall good experience at Albion Basin, but identify some key detractors and concerns. Informal interpretation and education is provided at summer entrance booth, when time allows. OVERVIEW OF AFFECT: • Contains many elements that are reported in the 2009 Visitor Survey to add to visitor experience, including availability of parking in close proximity to popular destinations, access to experiences in an alpine setting and wildlife viewing. • Does not address many of the concerns and visitor experience detractors identified in the 2009 Visitor Survey including traffic noise, crowding and adverse impacts to natural resources. • Day-use visitor parking is available near popular destinations but demand exceeds capacity.	 OVERALL ASSESSMENT: • Would address concerns and visitor experience detractors expressed in 2009 Visitor Survey, but would eliminate parking near popular destinations, an element visitors express satisfaction with. Improved opportunities for education and interpretation could enhance visitor experience. OVERVIEW OF AFFECT: • Provides some elements that are reported in the 2009 Visitor Survey to add to visitor experience including provision of formal interpretive and education information, access to experiences in an alpine setting and wildlife viewing. This alternative eliminates the availability of parking in close proximity to popular destinations, which is reported to be important to visitors. • Addresses concerns and visitor experience detractors identified in the 2009 Visitor Survey including traffic noise and adverse impacts to natural resources.	 OVERALL ASSESSMENT: • Would address concerns and visitor experience detractors expressed in 2009 Visitor Survey, but would eliminate parking near popular destinations, an element visitors express satisfaction with. Ski lift access to or near those destinations would be provided. Improved opportunities for education and interpretation could enhance visitor experience. OVERVIEW OF AFFECT: • Provides some elements that are reported in the 2009 Visitor Survey to add to visitor experience including provision of formal interpretive and education information, access to experiences in an alpine setting and wildlife viewing. This alternative eliminates the availability of parking in close proximity to popular destinations, which is reported to be important to visitors; however, ski lift access would be provided to or near those destinations. • Addresses concerns and visitor experience detractors identified in the 2009 Visitor Survey including traffic noise and adverse impacts to natural resources.	 OVERALL ASSESSMENT: • Would address concerns and visitor experience detractors expressed in 2009 Visitor Survey, but would eliminate parking near popular destinations, an element visitors express satisfaction with. Direct shuttle access to those destinations would be provided. Improved opportunities for education and interpretation could enhance visitor experience. OVERVIEW OF AFFECT: • Provides some elements that are reported in the 2009 Visitor Survey to add to visitor experience including provision of formal interpretive and education information, access to experiences in an alpine setting and wildlife viewing. This alternative eliminates the availability of parking in close proximity to popular destinations, which is reported to be important to visitors; however, shuttle access would be provided to those destinations. • Addresses concerns and visitor experience detractors identified in the 2009 Visitor Survey including traffic noise and adverse impacts to natural resources, but to a lesser degree than Alternatives #1 and #2.	 OVERALL ASSESSMENT: • Would address concerns and visitor experience detractors expressed in 2009 Visitor Survey. Would retain parking near popular destinations, but would charge a fee. Direct shuttle access to those destinations and ski lift access to new destinations would be provided. Improved opportunities for education and interpretation, and ski lift access to Collins Gulch could enhance visitor experience. OVERVIEW OF AFFECT: • Provides some elements that are reported in the 2009 Visitor Survey to add to visitor experience including provision of formal interpretive and education information, access to experiences in an alpine setting and wildlife viewing. This alternative provides parking in close proximity to popular destinations, which is reported to be important to visitors, but would charge a fee for parking. Additional shuttle access would be provided to those destinations. • Addresses concerns and visitor experience detractors identified in the 2009 Visitor Survey including traffic noise and adverse impacts to natural resources, but to a lesser degree than Alternatives #1 and #2.

Potential to Satisfy Evaluation Criteria Objectives

Evaluation Criteria Category	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Manage and Improve Safety	 OVERALL ASSESSMENT: • Pedestrian, bicycle and vehicular safety can be comprised due to conflicts among modes and high vehicle volumes along Albion Basin Summer Road.	 OVERALL ASSESSMENT: • Pedestrian, bicycle and vehicular safety would significantly improve, since no day-use motorized activity would be permitted on Albion Basin Summer Road. Visitors would be required to walk greater distances (up to 2.5 miles, one-way) in order to access popular trailheads, resulting in a greater risk of exhaustion.	 OVERALL ASSESSMENT: • Same as Alternative #1, except that slight risks for pedestrians may be associated with use of ski lifts. Visitors would be required to walk from ski lift termini in order to access popular trailheads, resulting in a greater risk of exhaustion.	 OVERALL ASSESSMENT: • Pedestrian, bicycle and vehicular safety would improve, since no day-use private vehicular activity would be permitted on Albion Basin Summer Road. Shuttle activity could create some conflicts between modes, but vehicle volumes would be reduced.	 OVERALL ASSESSMENT: • Pedestrian, bicycle and vehicular safety would improve due to managed day-use private vehicle access, but to a lesser degree than the other action alternatives. Shuttle and private vehicle activity could create conflicts between modes along Albion Basin Summer Road and slight risks for pedestrians may be associated with use of ski lifts.

Potential to Satisfy Evaluation Criteria Objectives

Evaluation Criteria Category	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Ability to Manage Visitor Access to Ensure Sustainable Recreation	 OVERALL ASSESSMENT: • Visitors are likely to perceive private vehicles as the most direct and easiest method of accessing popular destinations (Cecret Lake Trail is the most heavily visited destination). Increased demand would be more difficult to accommodate compared to other alternatives. OVERVIEW OF AFFECT: • All alternatives are able to accommodate projected design day demand. • Increased demand could only be accommodated with larger shuttle vehicles or increased frequencies, which is not currently feasible based on available funding. Future demand during peak hours is unlikely to be met by private vehicle since parking is typically at-capacity. • Visitors are likely to perceive private vehicles as the most direct and easiest method of accessing popular destinations if parking is available. The pilot shuttle provides direct access to those destinations, but visitors may have to wait for shuttle arrivals and available seats.	 OVERALL ASSESSMENT: • Visitors may perceive changes as significantly less convenient. Increased demand could be accommodated compared to other alternatives. Increased non-motorized use of Albion Basin Summer Road and Albion Meadows Trail could decrease use of Cecret Lake Trail. OVERVIEW OF AFFECT: • All alternatives are able to accommodate projected design day demand. • Increased demand could be accommodated if no restrictions were placed on trail use volumes. • Visitors would be required to walk or bicycle up to 2.5 miles to reach popular trailheads, which may be perceived as significantly less convenient.	 OVERALL ASSESSMENT: • Visitors may perceive changes as less convenient. Increased demand could be accommodated compared to other alternatives. This alternative would disperse some use from Cecret Lake Trail to Albion Meadows Trail, Catherine's Pass Trail and pedestrian/bicycle use of Albion Basin Summer Road. OVERVIEW OF AFFECTS: • All alternatives are able to accommodate projected design day demand. • Increased demand could be accommodated by the Albion or Sunnyside ski lifts and/or pedestrian and bicycling access. • Visitors would be required to walk or bicycle up to 2.5 miles, or to take a ski lift to or near popular destinations, which may be perceived to be less convenient.	 OVERALL ASSESSMENT: • Visitors may perceive changes as less convenient. Increased demand could be accommodated, but less easily compared to other alternatives. This alternative could disperse some use from Cecret Lake Trail to Albion Meadows Trail, Catherine's Pass Trail and pedestrian/bicycle use of Albion Basin Summer Road, although not to the same extent as the other action alternatives. OVERVIEW OF AFFECT: • All alternatives are able to accommodate projected design day demand. • Increased demand could be accommodated, but to a more limited extent than other action alternatives due to shuttle capacity. • Visitors would be required to walk or bicycle up to 3.0 miles, or to take a shuttle to popular destinations, which may be perceived to be less convenient.	 OVERALL ASSESSMENT: • Visitors may perceive changes as less convenient. Increased demand could be accommodated compared to other alternatives. • More broad and diverse recreational opportunities would be provided with use of Collins Gulch and multi-modal access OVERVIEW OF AFFECT: • All alternatives are able to accommodate projected design day demand. • Increased demand could be accommodated by the shuttle, Collins ski lift and/or pedestrian and bicycling access. Future demand could not be met by private vehicle since parking would be finitely limited by permit for a fee. • Visitors without a parking permit would be required to walk or bicycle up to 3.0 miles, or to take a shuttle to popular destinations, which may be perceived to be less convenient. Visitors would also be able to take a ski lift to the Collins Gulch area and experience a new destination. • Redistribution of some visitors to Collins Gulch could relieve visitor concentrations in Albion Basin and offer broader recreational opportunities.

Potential to Satisfy Evaluation Criteria Objectives

Evaluation Criteria Category	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Ability to Accommodate a Diversity of Users and Ability Types	OVERALL ASSESSMENT: • Accommodates a range of user types and ability levels. OVERVIEW OF AFFECT: • Accommodates a range of recreational users and age groups, but is less conducive to those seeking a solitude experience. • Accommodates a range of ability levels.	OVERALL ASSESSMENT: • Would accommodate only some types of users and ability levels due to increased physical requirements. OVERVIEW OF AFFECT: • More conducive to those seeking a solitude experience and more physical activity, but less conducive for families with young children and some elderly visitors and those who do not wish to hike longer distances. • Would require a moderate physical ability level to reach upper Albion Basin. Those with special mobility needs would be able to obtain permits to park in Albion Basin.	OVERALL ASSESSMENT: • Would accommodate more types of users and ability levels than Alternative #1, but less than Current Conditions Alternative. OVERVIEW OF AFFECT: • More conducive to those seeking a solitude experience, but less conducive for families with young children, some elderly visitors and for those who do not wish to hike longer distances. • Would require some physical ability to use ski lifts and walk short distances. Those with special mobility needs would be able to obtain permits to park in Albion Basin.	OVERALL ASSESSMENT: • Would accommodate more types of users and ability levels than Alternative #1, but less than Current Conditions Alternative. OVERVIEW OF AFFECT: • More conducive to those seeking a solitude experience, but less conducive for those who do not wish to hike. • Would require some physical ability to walk short distances. Shuttles would be ADA accessible. Those with special mobility needs would be able to obtain permits to park in Albion Basin.	OVERALL ASSESSMENT: • Would accommodate a similar range of types of users and ability levels as Current Conditions Alternative. OVERVIEW OF AFFECT: • Albion Basin could become less likely to provide a quiet/solitude experience; however, Collins Gulch could provide opportunities for those visitors seeking such an experience. Access to Collins Gulch would also present new recreational opportunities. Could accommodate families and elderly visitors and those who do not wish to hike. • Would accommodate a range of ability levels.
Cost Effectiveness and Financial Viability	OVERALL ASSESSMENT: • Operating costs are higher for this alternative than for Alternative #1, but are lower than for the remaining action alternatives. No capital investments are required until existing facilities require replacement (i.e. summer entrance booth). No fees in place. OVERVIEW OF AFFECT: • Capital investment requirements – None that have not already been invested. • Seasonal operating costs – Approximately $50,000 • Operating cost per design day visitor – Approximately $0.82 • No fees in place.	OVERALL ASSESSMENT: • Lowest operating cost of all alternatives. Some capital investment would be required, but less than the other action alternatives. No fees in place. OVERVIEW OF AFFECT: • Capital investment requirements – Would be required, but at much lower cost than other action alternatives. • Seasonal operating costs – Approximately $30,000 to $35,000 • Operating cost per design day visitor – Approximately $0.55 • No fees in place.	OVERALL ASSESSMENT: • Third lowest operating cost of all alternatives. Some capital investment would be required. Transportation fee utilized. OVERVIEW OF AFFECT: • Capital investment requirements – Would be required, but at same higher levels than Alternative #1, but less than Alternatives #3 and #4 (unless ski lifts were rehabilitated or upgraded). • Seasonal operating costs – Approximately $150,000 to $155,000 • Operating cost per design day visitor – Approximately $2.44 to $2.55 • Ski lift access fee to cover some portion of operating costs.	OVERALL ASSESSMENT: • Second highest to highest operating cost, depending on specific operating conditions. Higher level of capital investment would be required. Transportation fee utilized. OVERVIEW OF AFFECT: • Capital investment requirements – More investment would be required than all other action alternatives. • Seasonal operating costs – Approximately $200,000 to $385,000 • Operating cost per design day visitor – Approximately $3.34 to $6.67 • Shuttle access fee to cover some portion of operating costs.	OVERALL ASSESSMENT: • Second highest to highest operating cost, depending on specific operating conditions. Highest level of capital investment would be required. Premium parking fee for Albion Basin would be explored. OVERVIEW OF AFFECT: • Capital investment requirements – More investment would be required than Alternatives #1 and #2, but less than Alternative #3 (unless ski lifts were rehabilitated or upgraded). • Seasonal operating costs – Approximately $245,000 to $260,000 • Operating cost per design day visitor – Approximately $4.15 to $4.45 • Ski lift and shuttle access fees to cover some portion of operating costs. Premium parking fee for Albion Basin.

Potential to Satisfy Evaluation Criteria Objectives

Evaluation Criteria Category	Current Conditions Alternative	Alternative #1 – Human-Powered Access	Alternative #2 – Human-Powered and Ski Lift Access	Alternative #3 – Human-Powered and Shuttle Access	Alternative #4 – Dispersed Multi-Modal Access
Support Local Economic Business Opportunities	OVERALL ASSESSMENT: • Temporary nature of the pilot shuttle is not supportive of local business opportunities.	OVERALL ASSESSMENT: • Could provide for business opportunities due to creation of designated formal staging area.	OVERALL ASSESSMENT: • Could provide for business opportunities due to creation of designated formal staging area, and through provision of ski lift service.	OVERALL ASSESSMENT: • Could provide for business opportunities due to creation of designated formal staging area and through provision of shuttle service.	OVERALL ASSESSMENT: • Could provide for business opportunities due to creation of designated formal staging area and through provision of shuttle service and ski lift service. The ability to drive and park in Albion Basin may reduce opportunities marginally compared to other action alternatives.
Ability to Implement as Part of Adaptive Management Strategy	OVERALL ASSESSMENT: • Budgetary constraints limit the ability to implement the pilot shuttle every season, and present additional days of pilot shuttle service from being implemented. Requires considerable staffing resources. OVERVIEW OF STAFFING AFFECT: • Requires general staffing for the summer entrance booth, which has been provided in the past. • Requires administrative support for pilot shuttle operations and road maintenance, which has been provided in the past. • Requires law enforcement staff for parking and trail activities, which has been provided in the past.	OVERALL ASSESSMENT: • Could be implemented as a test case using designated "car-free" day to assess acceptance and effectiveness. Could be implemented on different days of the week. OVERVIEW OF STAFFING AFFECT: • Could generate slightly more general staffing needs than Current Conditions Alternative. • Would require slightly less administrative support than Current Conditions Alternative. • Would require less law enforcement than Current Conditions Alternative.	OVERALL ASSESSMENT: • Would be difficult to implement incrementally. Could be implemented on different days of the week, but would require additional coordination to schedule operations in advance. • An initial season of ski lift operation would serve as an adaptive management test case. OVERVIEW OF STAFFING AFFECT: • Would generate slightly more general staffing needs than Alternative #1. • Would require similar levels of administrative supports as Current Conditions Alternative. • Would require same levels of law enforcement as Alternative #1.	OVERALL ASSESSMENT: • Would be difficult to implement incrementally. Could be implemented on different days of the week, but would require additional coordination in advance due to contracting arrangements. OVERVIEW OF STAFFING AFFECT: • Would generate same levels of general staffing as Alternative #2. • Would generate same level of administrative support as Alternative #2. • Would generate the same level of law enforcement as Alternative #1.	OVERALL ASSESSMENT: • Would be difficult to implement incrementally. Could be implemented on different days of the week, but would require additional coordination and additional support from the Town of Alta. • An initial season of ski lift operation would serve as an adaptive management test case. OVERVIEW OF STAFFING AFFECT: • Would generate the most general staffing needs of all alternatives. • Would require more administrative support than all alternatives. • Would require similar levels of law enforcement as Current Conditions Alternative.

CHAPTER 7: NEXT STEPS

The *Albion Basin Transportation Feasibility Study* provides the information and analysis necessary to advance the selection of preferred strategies or approaches to address resource protection, visitor access and circulation in Albion Basin. The next steps in project development are as follows:

- Select a preferred strategy or set of strategies. Further evaluate the preferred strategy or set of strategies using the Choosing-By-Advantages (CBA)/Value Analysis process. Clarify/refine the preferred strategy.
- Conduct further coordination with project partners and agencies regarding support for the preferred strategy. In addition, coordination among project partners can be undertaken to explore funding mechanisms, management concepts and administrative aspects for implementation.
- Identify any environmental compliance requirements consistent with the National Environmental Policy Act (NEPA). Complete the environmental clearance process, if necessary, for the preferred strategy.
- Initiate a pilot program using an adaptive management approach in order to test the effectiveness of the preferred strategy.

7.1 RECOMMENDED FUTURE PLANS AND STUDIES

Once the preferred strategy has been determined, several additional plans and/or studies may be necessary to provide a more detailed definition of the alternatives and to document the benefits and consequences of implementing the alternatives. Future plans and/or studies that may be required include the following:

- Any plans or studies in support of required NEPA environmental compliance.
- If shuttle access is included in the preferred strategy, an implementation plan that includes the following elements would be required: detailed operating plans, service levels, detailed schedules, fleet requirements, facility requirements, support staffing needs and operating cost estimates. In addition, approaches to contracting, performance monitoring requirements, provision and type of vehicles and a communication plan should be developed. As part of this planning process, identification of potential contractors should be initiated. A solicitation document for contracting services should also be developed.
- If ski lift access is included in the preferred strategy, an operating plan that includes similar elements described above for shuttle access would be required. As part of this planning process, immediate coordination with Alta Ski Lifts should be initiated.
- Identification of possible funding needs and sources would also be required as part of a financial analysis study. Funding could include local sources, state

and/or federal grants, and partnership arrangements. Different funding sources may be available for capital investments and operating costs, depending on the preferred strategy.

- This study identifies the need for a separate decision-making process that considers and evaluates the formal USFS designation of additional trails in Albion Basin beyond the three existing USFS designated trails (Cecret Lake, Catherine's Pass and Albion Meadows trails).
- An Interpretive Plan for Town of Alta and Albion Basin that is integrated with the Cottonwood Canyons Scenic Byways Interpretive Plan is needed. This would ensure consistency in design, interpretive themes, media, and programs.
- Undertake a separate planning process that evaluates the legal authority and mechanisms for a parking fee, and assesses the benefits and challenges of implementing such a fee.
- Routine monitoring should be established using the data presented in **Chapter 2** as a baseline to assess how activity is changing over time. Monitoring programs are a key component to successful adaptive management.

7.2 RECOMMENDED FUTURE INFRASTRUCTURE IMPROVEMENTS

All action alternatives contain some requirements for future infrastructure improvements. These elements are outlined below by alternative.

The following infrastructure should be considered for any action alternative:

- Evaluate necessary improvements associated with the preferred staging area (Albion or Wildcat Lift Base areas).
- Consider implementation of an orientation/information center at the staging area and any associated renovations to existing structures that may be necessary.
- If automated access management at the entrance to Albion Basin Summer Road is desired, evaluate options for an automated access management gate device.
- Consider implementation of visitor orientation/information elements.
- Develop options for re-vegetation of undesirable parking along Albion Basin Summer Road.
- If permitted parking in Albion Basin for those with special mobility needs is included in the preferred strategy, identify specific locations for the delineation of dedicated ADA parking in Albion Basin.
- Consider possible improvements to the existing trail system, including educational and interpretive waysides, designated photography locations and hardened trail segments for ADA access, potentially in partnership with Alta Ski Lifts and other partners.

If the preferred strategy includes ski lift access, the following infrastructure needs would apply:

- Evaluate options for chairlift or gondola carriages that meet needs for both winter and summer pedestrian use, as well as for ADA access.
- Implementation of amenities at ski lift termini.

If the preferred approach includes shuttle access, the following infrastructure needs would apply:

- Develop concepts for the re-configuration of the Cecret Lake parking lot to accommodate shuttle vehicle turnaround.
- Investigate shuttle vehicle types to best meet capacity, maneuverability, convenience, visual and mobility needs. Consider options and tradeoffs for purchase of vehicles versus leased vehicles or provision of vehicles through contracted service. Alternative fuel vehicles should be considered in compliance with USFS Executive Order 13423 ("Guidance on Greenhouse Gas Reduction Requirements for Fleet"), which mandates an increase in nonpetroleum-based fuel use and recommends the purchase of alternative fuel, hybrid and plug-in hybrid electric vehicles for USFS when commercially available.
- Implementation of amenities at shuttle stops.

If the preferred alternative includes evaluation of parking in Albion Basin through a fee-permit system, the following would apply:

- Investigate legal authorities, options and planning requirements.
- Initiate concepts for better defining parking spaces in existing lots and along Albion Basin Summer Road.
- Develop concepts for parking management control, time allocation for permits and permit distribution systems.

7.3 STRATEGY AND OPPORTUNITIES FOR ADAPTIVE MANAGEMENT

Adaptive management can be an effective method for incremental or phased implementation of alternatives. It is considered to be a systematic process for continually improving management policies and practices by learning from the outcomes of past operating programs. The process is used to test, monitor, optimize and maximize the effectiveness of new strategies. All action alternatives could be implemented as part of an adaptive management strategy, although the ease of doing so varies by alternative. Alternative #1 (Human-Powered Access) could be tested on select "car-free" days when the pilot shuttle does not operate in order to test its effectiveness and public acceptance. Alternative #1 could also be easily implemented on additional days if desired. Alternative #2 (Human-Powered and Ski Lift Access) would be somewhat more difficult to implement incrementally since this alternative requires close coordination with Alta Ski

Lifts for staffing, operations and maintenance requirements. However, an initial season or select days of ski lift operation would serve as an adaptive management test case. Alternative #2 could also be implemented on additional days based on demand, although this would require close coordination and cooperation with Alta Ski Lifts to adequately schedule operations in advance. Alternative #3 (Human-Powered and Shuttle Access) would be similarly difficult to implement incrementally since it requires contracting arrangements with the shuttle operator. Alternative #3 could be implemented on additional days based on demand, although this additional action would require specific optional service agreements with the contractor. Alternative #4 (Dispersed Multi-Modal Access) would be most difficult to implement incrementally since it would require coordination with both Alta Ski Lifts and a shuttle contractor, and a well-conceived system for parking permits. Implementation of Alternative #4 on additional days would require scheduling and establishment of contract options well in advance with Alta Ski Lifts and a shuttle operator. Alternative #4 may also require the greatest level of involvement and coordination with the Town of Alta.

7.4 LIST OF POTENTIAL FUNDING SOURCES

A wide range of potential revenue and funding sources are available for transportation services in public lands. However, the sources differ in terms of their ability to fund capital and operating requirements. In addition, applicability of these finds for planning versus implementation would also require further research and consideration. These sources are summarized in the **Table 7-1** below.

TABLE 7-1. POTENTIAL FUNDING AND REVENUE SOURCES

Funding Source	Capital Funding Source?	Operating Revenue Source?
Federal Funding Sources		
Paul S. Sarbanes Transit in Parks (TRIP) Program funds	Yes	No
Federal Lands Highway Program (FLHP) funding through Utah Forest Highway Program	Yes	No
Public Lands Highway Discretionary Program and federal earmarks	Yes	No
Transportation Equity Act for the 21st Century (TEA-21) funding	Yes	No
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 1807 Non-motorized Transportation Pilot Program (currently limited to designated sites, but may eventually be available to other sites)	N/A	N/A
SAFETEA-LU Highway Safety Improvement Program (HSIP) funding available for high risk rural roads	Yes	No
Federal Transit Administration (FTA) Section 5311 funds (program to support public transportation in rural areas)	Yes	Yes

Funding Source	Capital Funding Source?	Operating Revenue Source?
Federal Transportation Enhancement Funds (program that supports community-based projects that enhance travel choice and improves the aesthetic and environmental components of transportation infrastructure)	No	Yes
Rural Intelligent Transportation System (ITS) grants	Yes	No
American Recovery and Reinvestment Act (ARRA) funding, including Transportation Investment Generating Economic Recovery (TIGER) grants	Yes	No
U.S. Department of Transportation funds available to University Transportation Centers to develop data collection and visitor surveys	N/A	N/A
State and Local Funding Sources		
State and/or local tax revenue sources	Yes	Yes
State and/or local revenue bonds (financing tool)	Yes	No
Continued funding through current sources. Town of Alta and Friends of Alta currently provide funding for summer operations and the pilot shuttle. This funding is not considered sustainable in the long-term.	Yes	Yes
Funding through current project partners, including the following: • Town of Alta • Friends of Alta • Alta Ski Lifts Company/Alta Environmental Center • Salt Lake City Watershed • Cottonwood Canyons Foundation • Utah Department of Transportation	Possibly	Possibly
Funding through possible future partners including, but not limited to: • Other local and/or state governmental agencies • Local businesses • Non-profit agencies • Other private entities	Possibly	Possibly
Other Sources		
National Forest Foundation (NFF): Through its Ski Contribution Fund, NFF partners with ski areas, lodges and resorts located on National Forest lands to raise funds through voluntary contributions from guests. Funds are matched by NFF federal funds to support on-the-ground conservation projects completed by local nonprofit organizations. The program emphasizes field projects and it therefore may have limited applicability to Albion Basin visitor use management and transportation.	Possibly	No

Funding Source	Capital Funding Source?	Operating Revenue Source?
Visitor Contributions: Town of Alta businesses could develop a voluntary visitor contribution program to raise funds for Albion Basin summer management, which could be used to fund operations, education and other projects that do not qualify for NFF support.	Yes	Yes
User fees for shuttle and/or ski lift access and parking permit fees	Yes	Yes

CHAPTER 8: PROJECT TEAM

United States Department of Agriculture – Forest Service
Uinta-Wasatch-Cache National Forest
Salt Lake Ranger District

- Carol Majeske, Recreation Manager
- Catherine's Kahlow, District Ranger

National Park Service
Denver Service Center

- Jan Burton, Project Manager/Landscape Architect
- Nola Chavez, Project Specialist/Landscape Architect

David Evans and Associates, Inc.

- Ed Schumm, Senior Associate/Transportation Planner
- Kara Luckey, Transportation Planner
- Ian Chase, Transportation Planner
- Bill Byrne, Vice President/Transportation Planner
- Debra Perkins-Smith, Vice President/Transportation Planner

Project Partners

- Town of Alta
- Friends of Alta
- U.S. Forest Service
- Alta Ski Lifts Company/Alta Environmental Center
- Salt Lake City Watershed
- Cottonwood Canyons Foundation