Public Transportation in Ski Towns: An Analysis for the Ski Town Workforce and Visiting Populations

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This is a comparative case study analysis that examines public transportation systems in the three ski towns of Park City, Utah, Vail, Colorado, and Truckee, California. This study's methods include a survey of public perceptions regarding transportation in ski towns, interviews with transportation planning professionals, and an analysis of transportation plans. These three methods support final recommendations for ways these towns might seek to improve their public transportation offerings to better serve both the environmental and financial wellbeing of their towns. Public transportation has been a hot topic in the planning world, and planning for niche transportation systems, such as those in tourism-based destinations presents a set of challenges that needs to be better addressed and researched. Extensive research exists on tourism-based transportation and the funding of transportation systems, but few studies have focused on ski towns and those aspects that make this type of tourism transportation different. Getting visitors out of their cars solves many problems like driving accidents, reducing the often-gridlocked traffic, and navigating in the snow.

Degree Type
Thesis

Degree Name
Master of City and Regional Planning (MCRP)

First Advisor
Daniels, Thomas

Second Advisor
Ammon, Francesca Russello

Keywords
ski towns, public transportation, workforce, tourism-based destination, recreation

Subject Categories
Urban, Community and Regional Planning
Comments
Concentration: Land Use and Environmental Planning
Concentration: Sustainable Transportation and Infrastructure

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PUBLIC TRANSPORTATION IN SKI TOWNS:
AN ANALYSIS FOR TRANSIT FOR THE SKI TOWN WORKFORCE AND VISITING POPULATIONS

Perry Jean Schaffner

A THESIS

in

City and Regional Planning

Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements of the Degree of

MASTER OF CITY PLANNING

2021

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Introduction

Ski towns, or towns with one or more ski resorts in proximity, have grown in popularity and population over the past 60 years both as places to live and places to visit. This growth has placed strains on existing roadway infrastructure in areas that are often limited by mountainous terrain. Steep slopes bring major obstacles to expanding transportation infrastructure. It is also more efficient to move large numbers of people through a transportation corridor by mass transit than by individual cars. In ski towns, this fact underscores the need for public transportation systems that operate reliably and efficiently. This study examines the factors that contribute to a successful public transportation system in a ski town and highlights opportunities for transportation improvements.

Since the COVID-19 pandemic erupted in the United States in March 2020, ski towns have seen a huge influx in populations as many people have sought places that offer better access to outdoor recreation (Stoker et. al). Traffic has always been a consideration for these mountainous places, but now it is essential that alternative modes of transportation become a priority for infrastructure planning in ski towns. Not only can public transportation help reduce traffic and air pollution, but it is also essential to support a service-class economy upon which ski resort visitors depend for the quality of their visits.

Ski towns operate like small cities, albeit geographically isolated ones. Historically, though, most ski towns have not had efficient public transportation systems to serve both visitors and residents. Where local governments have historically struggled to find funding to improve their public transportation systems, ski towns have an advantage: the ski resorts themselves. The consolidation of ski resorts under three main
corporate entities—Vail Resorts, Inc., Alterra Mountain Company (which acquired Intrawest in 2017 alongside Aspen Skiing Company), and Powdr Corp—provides the resorts themselves the opportunity to invest in the communities in which they are located by helping to improve public transportation locally (NSSA).

As mountain towns become even more popular places for people to live both part time and full time, public transportation investments become necessary in order to protect the environmental health of these places, and reduce pollution, and address traffic congestion. This thesis examines some of the positive aspects of public transportation in three ski towns—Vail, Colorado; Park City, Utah; and Truckee, California—and makes recommendations for improvement.

Research Questions

I. What are the main challenges that ski town transportation faces?

II. How is planning for ski town transportation systems different from those in urban environments?

III. What role do the ski resorts play in public transportation systems?

IV. What are some of the most necessary interventions for ski towns in the Western United States?

Background

Skiing came to the United States from the Scandinavians, “the first recorded reference to a modern skier was in 1841, in Beloit, Wisconsin” and was originally used as a daily means of winter transportation (Clifford 9). Skiing as a sport in the United States has since expanded into a multi-billion dollar a year industry with people traveling from all over the world to recreate at well-known resorts. Since 1960, ski resorts have been developed in several parts of the
United States: the Rockies (Colorado, Idaho, Montana, New Mexico, and Wyoming), Wasatch (Utah), Sierra Nevadas (California), Cascades (Oregon and Washington), Green Mountains (Vermont), White Mountains (New Hampshire and Maine), the Catskills and Adirondacks (New York) and along the Appalachians (Pennsylvania, Maryland, Virginia, North Carolina). Many of these ski areas began as family or community operations. But with the popularity of skiing came the recognition that as much money was to be made from real estate development near a ski area as from selling lift tickets and renting ski equipment.

As the number of ski resorts has grown, so too has the corporate ownership of these resorts. In the past two decades, only five new resorts have opened, with the existing resorts consolidating under fewer and fewer corporate entities (Wagnon). According to the National Ski Areas Association, there are now only 10 corporations that own the largest U.S. resorts. These corporations include: Aspen Skiing Company, Alterra Mountain Company, Mountain Capital Partners, Vail Resorts, Inc., Boyne USA, Inc., Wisconsin Resorts, Inc., State of New York, Pacific Group Resorts, Inc., Powdr Corp., and Sinclair Oil Corporation. Ski pass sales have actually decreased in price over time, while offering access to a greater number of resorts. For example, the Epic Pass, Vail Mountain Resorts’ season pass, has existed for 13 years. The 2021-22 season pass price is $783, in 2008 the same pass was $579 ($726 adjusted for inflation in 2021 dollars) (U.S. Bureau of Labor Statistics). The original pass offered access to only six resorts as compared to the now 60 resorts worldwide that are accessible with the epic pass (Epic Pass).

The number of skier days has fluctuated over the past two decades, but the average number of skier visits per year in the United States hovers at about 54 million as
seen in Figure 1 below. When the multi-resort passes first came out, there was an uptick in the number of annual visitors to ski resorts, although that number has been inconsistent since. It is a challenge to locate the number of skier days by resort since most of them do not publicly share this data.

![Figure 1. Estimated Skier Visits in the U.S. From 2000-2020, National Ski Area Association](image)

According to Park City Forward, the city can flex “to more than five times the local population at certain times of the year. Truckee recently conducted a visitor profile study in 2017 and found that while winter sports were one of the primary draws to town, the visitor demand extends beyond this (Town of Truckee). People made twice the number of trips in Winter and Spring as they had in Summer and Fall. Ski towns are transitioning to four season towns, but the primary attractions remain skiing and winter sports in the winter, and outdoor recreation in the summers.

Along with the growth of the corporate ski industry has come the growth and expansion of ski towns. These are the towns that are home to the people who help the
ski resort industry to function. This includes service industry workers, such as restaurant workers, lift operators, ski school instructors, groomers, retail workers, and more. This group makes up some of the largest full-time, or at least seasonal, population in ski towns. They ensure that the huge number of visitors or tourists, two terms that will be used interchangeably throughout this paper, have the services they need for a positive vacation experience. Falling into a category somewhere in between service workers and tourists is the population of second homeowners. These are people who own a permanent residence somewhere else, possibly even within a 2-3-hour drive, yet maintain a second residence in order to have easier access to skiing and other recreation.

The dynamics between these three groups in ski towns are often contentious. Tourists and second homeowners often demand a lot from service workers. The transition from independently owned ski areas to full resort style offerings has increased tensions. Service workers also typically earn significantly less than the other populations sharing space in ski towns. This is challenging to see from looking at median household incomes in these areas because people who live in ski towns and do not work in the service industry often earn significantly higher incomes. This tends to distort the median household income statistic and make it appear stable or even substantially higher than state and national averages. For example, in Park City, Utah, the median household income for 2015-2019 was $111,000 as compared to $71,621 for the state of Utah and $62,084 for the United States. In Truckee, California, the median household income is $97,092, and the figure for California is $75,235. Vail, Colorado has a median household income of $80,987 compared with all of Colorado, which has a median household income of $72,331 (census.gov).
In Europe, “Alpine skiing made the local economy more stable by enabling year-round economic activity in mountainous terrain otherwise regarded as ‘empty economic space’ and encouraging the development of a service economy” (Denning 6). Unfortunately, the cost of living has gotten so high in ski towns that most service industry workers can no longer afford to live there. For example, many people who work in Aspen live in Glenwood Springs, a drive of more than one hour away, and many who work in Park City live in Salt Lake. This is what Wyckoff describes as the “‘down-valley syndrome’ in which employees live miles away from the ski area in cheaper housing” (Wyckoff 365). So, the median income may look higher than the state average, but only because that figure does not include service workers who work in the ski town but do not live there. This is where a major transportation challenge exists because there is a lack of transportation connections between where people are working and living.

There are many challenges that ski towns face when trying to plan for transportation systems that are unique to their geographies and locations. The first unique challenge is typically a spatial restraint on roadway planning due to mountainous environments. Second, winter weather conditions make transportation planning a bigger challenge as speed limits, safety, snow plowing, and comfort all become considerations. The ability to transport people and their ski gear is another consideration. Additionally, a seasonal mismatch in population is something that public transportation systems must account for to support local workers year-round, yet also support huge population increases during the November through March busy seasons. All these factors mean that planning for reliable and accessible transit systems in ski towns is a major challenge for transportation planners.
Ski towns also naturally create a wide socioeconomic gap as the basis of their economies are service industry based. Service workers often make the minimum wage while providing for upper middle-class customers and truly wealthy visitors. Service workers in many cases cannot afford to live in the towns where they work, putting them at the mercy of often unreliable public transportation systems. Ski towns play into the larger dynamics of tourism-based travel destinations too. Park City is projected to have a 69% growth in jobs by 2050. The largest job sectors in Park City are currently Food and Accommodations (6,452), Retail (4,574), and Education and Government (4,082) (Park City Forward).

Having lived in a ski town my whole life and also having had the opportunity to travel to many other ski towns both domestically and internationally, I have seen firsthand how having access to good public transit can make a huge difference in livability. In European ski areas, both long and short distance train travel allows for skiers to reach the mountains in shorter periods of time with all of their gear and walk off the train and straight onto the slopes. Many of the European ski towns are car-free zones, meaning they operate as pedestrian villages with little to no access by vehicle. They have had to find alternative ways to transport people to and from the town, as well as provide options to get around within the town. This solution combines a walkable village and a reliable bus system.

Tourism is an essential part of many small-town economies, especially in ski towns, where outdoor recreation is the main tourism attraction. Something that I have noticed in many of the United States ski towns, is the dominance of personal automobiles. Many of the towns lack a reliable public transportation system for residents and visitors alike, or if one exists, it is likely in need of major upgrades. After recent visits
to Austria and Switzerland I witnessed how trains function as a reliable public transit option that leads skiers directly to the mountains, and I became interested in how some of these systems could potentially function better within the United States. I am interested in exploring the possibility of how to implement better public transportation systems in ski towns specifically in the U.S. Building rail is expensive and electric buses are more cost-effective and flexible in terms of the locations that can be served.

Public transportation systems are a reliable and affordable method of transportation for many who live in larger towns or cities. One of the challenges of a ski town is the way the population can shift so substantially. A busy weekend at a ski resort can see the same number of visitors as the population of the town. And big events can attract even larger crowds. Sundance Film Festival, for example, takes place in Park City, Utah, every year and has attracted over 120,000 attendees a year since 2018 (vox.com). These variable populations means that public transportation systems need to have the ability to expand their capacity to keep up with demand. Buses are the most flexible form of public transportation both in where they make stops and in adding or reducing service.

**Literature Review**

The environmental challenges brought about by the corporate ownership of ski resort towns within the past three decades have been well explored in environmentalist circles, particularly through several books published by the Sierra Club. Yet, few studies have focused on how transportation factors into the environmental well-being of ski towns like Vail, Park City, and Truckee, among others. This literature review will examine several different study areas that affect transportation in ski towns. These study areas fall under three major topics: ski culture and ski towns, transportation in tourism-based
destinations, and funding for public tranportation. These study areas will help to provide an explanation for why public transportation in ski towns has not been studied more thoroughly in the past, and what policy makers and professional planners need to know.

Ski Culture and Ski Towns:

The draw of ski towns has to do with the culture of skiing and the types of people who call these places home. Otto Schniebs, an Austrian ski pioneer had this to say about skiing:

Whatever degree of skill a skier may possess, he should never forget that his skis are after all only an instrument, a means through which he can enjoy the winter in all its glory and ruggedness, can breathe clean fresh air, can meet human beings in their true character, and can forget all the petty troubles which beset our so-called civilization. There are a few of the reasons why skiing is not merely a sport – it is a way of life. (Clifford 10)

This way of life is one of the reasons that ski towns first grew in popularity, and why they continue to attract people hoping to escape the grips of urban life today. Andrzej Ziemilski, a Polish sociologist described “skiing not as a pleasant leisure activity or a challenging form of physical exercise but rather as a vector of civilization and modernity” (Denning 5).

For many years now, ski areas have had to account for the grave reality of climate change. Climate change has led to unpredictable levels of precipitation from year to year, with many of the years in the past decade being the driest on record for all geographic regions of the United States. According to Scott, et.al., a model known as SkiSim2 has been able to predict terrain availability at 171 ski resorts in Eastern North America based on different climate changed models and has found that with the highest level of climate change only 29 ski areas would be able to maintain a 100-day ski season. This is based off the “‘100-days rule’ that a ski area can only be operated successfully if a sufficient snow cover of 30cm lasts for at least 100 days in 7 out of 10
seasons at the mean altitude of the ski area” (Steiger). With unpredictable weather patterns becoming all the more common, this could occur within the next decade or two. “Snow is a commodity, just like timber or oil or gas” as snowfall becomes less reliable, this commodity’s value only increases (Clifford 53). This is unfortunately good news for the corporate ski entities, but bad news for those who like to ski. The corporate giants in the ski industry will continue to push the limits on the number of visitors they are able to attract each year, regardless of how it impacts the surrounding communities and their transportation infrastructure.

For a ski resort to survive today, snow making is a necessity. Most ski resorts do not like “natural snow” because they cannot control it, and it places them in a vulnerable position to depend on natural weather patterns, so they prefer to make their own snow. The key is making a snow that skiers like to ski on, since the makeup of man-made snow differs so greatly from natural snow, and companies have figures this out. “American Skiing Company has recipes for nine grades of snow” and they can change this to meet the clientele’s preferences. But snowmaking not only comes at an enormous financial cost, not only for equipment and water rights but also the electricity required to operate snowmaking for long periods of time. Water availability is very important and if the climate is getting drier, then there will be more pressure on water resources. In addition, many of the water sources in a mountainous area are headwater streams. These are fragile and they are the source of water supplies for cities and rural areas downstream.

Charles T. Lingren, a master’s student at the University of Calgary, published a thesis on sustainable transportation in Whistler, British Columbia. Whistler is an extremely popular ski destination that faces many if not all of the same transportation
and environmental challenges as the ski towns that I have chosen to study. His study also examines Mammoth Lakes, California and Aspen, Colorado. The largest differences with his study sites are that he has chosen resort towns that are slightly more isolated from surrounding communities, so he is able to clearly highlight the environmental impacts that the number of visitors and their automobiles have on these towns. What is particularly unique about this dissertation is that Lingren combines the many issues that arise from lack of sustainable transportation options, yet he applies them specifically to the ski town context. Like some of my other resources, this article is outdated, as it was written prior to the 2010 Vancouver Olympics, which greatly changed Whistler’s winter and summer atmosphere by encouraging additional tourism year-round. This trend is not specific to Whistler though, most resorts in the U.S. have transitioned to year-round operations as a means of increasing their yearly revenue in part through real estate development. But this raises the question, are the negative environmental impacts worth having a couple more dollars in the stakeholders’ pockets? And at what point do we put the environmental health at the forefront of transportation planning within ski towns?

Transportation in Tourism based Destinations:

Skiing as a sport creates a unique atmosphere and set of challenges that are quite different than many other tourist-based destinations, such as amusement parks, beaches, or cruise lines. However, aside from Lingren’s study described above, there is little literature specifically combining transportation and ski towns. So, it has been necessary to look toward transportation in tourism-based destinations, as there is a significant amount of overlap in the way transportation systems function. One piece of literature that has helped my understanding of this is a study by Kaldiyarov, et.al., “An Investigation into the Scientific Methodological Foundations of Transportation
Infrastructure in the Tourism Industry” which uses the tourism industry in Kazakhstan to
discuss transportation challenges. According to the authors “as an intersectoral industry,
tourism depends on many other sectors of the national economy, with the transportation
industry having a special and ever-increasing influence on its development” which is an
understandable practice, but one that has not been commonplace with ski towns. Ski
towns seem to be focused on growth and development of real estate first, with reliable
transportation systems and roadways as afterthoughts of private development.
Kazakhstan also seems to be interested in creating transportation infrastructure systems
that accommodate both the tourism economy and full-time residents, something that ski
towns have yet to find the happy medium with.

Hal Clifford’s book *Downhill Slide: Why the Corporate Ski Industry is Bad for
Skiing, Ski Towns, and the Environment* helps affirm some of the challenges that directly
link with ski towns. Although this book is over 18 years old, many of the observations
remain true, if not more so than at the time of publishing. As ski areas have consolidated
under large corporate entities in recent decades, skiing is no longer about skiing. It is
instead a cog in the corporate ski industry wheel, that is concerned with real estate
development, and profit margins that please Wall Street investors. I actually find the
book to be useful, as now it is easy to see which impacts Clifford predicted have come
true over the last two decades. There is one thing he was certain about though: the
growth of real estate development in these ski villages would happen at a rapid rate. And
so, it has, while creating a multitude of environmental problems like clear-cutting forests,
new impervious surfaces, stormwater run-off and soil erosion, and increased energy and
water usage and sewage disposal problems.
Additionally, *How to Read the American West* by William Wyckoff contains a chapter that explores how ski towns have unique geographies and economies that make them challenging places to plan for. Wyckoff compares mining company towns with ski resorts, discussing how ski towns turn physical space into a marketable commodity (Wyckoff 364). Although ski towns are similar to old company towns in certain ways, the corporatization of ski towns has really made them more similar to theme parks where the product being sold is an experience. Clifford says that ski towns “had much more in common with a Walt Disney Company theme park” but ski towns have also been likened to cruise ships (Clifford 16). Transportation in these places serves a niche market. Disney World for example operates its own bus and gondola system to transport its guests to different areas of the parks.

Hall, et al. discuss some of the ways transportation system can be used to transport people who are participating in tourism activities. According to them, “the purpose of collective transportation is to provide publicly accessible mobility over specific parts of a city” (Hall, et al. 7). One example of tourism specific transit that their study explores is a shuttle bus service that was enacted in 2009 to help people access South Tyrol in Northern Italy. The idea was to create a parking area below the mountainous roads and only allow shuttles and vehicles of local residents and workers to drive their own vehicles to cut down on the amount of traffic on the roadways. They believe that a tourists’ use of public transportation is dependent on “(1) consumer characteristics, (2) product characteristics, and (3) situational context” (51).

Obviously, the type of transportation services available in a tourist destination must align with what the tourists need to get where they want to go. In Disney, it makes sense to have large capacity transit options available because it is a very busy
destination. But somewhere with smaller populations may benefit from micro transit, or park and ride systems. But it is absolutely possible to design public transit systems that area available and accessible to tourists. Ski towns should consider this with their transportation systems so that people do not depend on their cars while visiting and can enjoy a more pleasant transportation experience.

**Funding for Public Transportation:**

The third category of literature that is important for ski towns is the availability of transportation funding. One of the biggest barriers to improving public transportation options, is being able to fund new initiatives. Many ski towns offer free ridership on their buses, but the funding for those systems has to come from somewhere. It seems that a transient room tax has been one of the most popular ways to raise those dollars. This works well because in tourism-based destinations, hotel occupancy rates are high, so the tax is able to fund significant portions of transit.

An annotated bibliography by Jeffery J. Smith and Thomas A. Gihring, “Financing Transit Systems Through Value Capture,” focuses on the transportation-land-use connection, which cannot be ignored when planning for good transportation infrastructure. Bringing the financing aspect into the discussion is necessary, as transportation availability will impact land values on all levels. Most transportation related services, and especially public transportation have long relied on government subsidies. The authors argue that there must be a better way to fund these services. Some of their proposed solutions include a land-based property tax such as the Henry George Single Tax or Land Valuation Tax, congestion pricing, and vehicle emission permit fees, or joint development agreements with developers. This study has found that the best fit funding method differs location to location.
Methods

Comparative Case Study

Several factors drove the selection of the three locations chosen for the case study—Park City, UT; Truckee, CA; and Vail, CO—were based upon several factors. They are all located in the western half of the United States. There is a cultural similarity in many ski towns, but for ease of comparison west coast ski towns have more in common with each other than with ski towns in the East or Midwest. These towns also have similarly sized populations, and in general are smaller towns, with a larger city in close proximity. They are also each geographically restricted, with one major accessway in and out of the town. And finally, they each have a ski resort owned by the Vail Resorts Corporation nearby.

![Figure 2. Town of Vail Bus Map (vail.gov)](https://example.com/vail-bus-map)
Figure 3. Map of Park City Transit System (parkcity.org)
Population is also a significant factor to consider in the way these ski towns have grown over time. As skiing has grown in popularity, more people have made ski towns their permanent homes and the population growth has reflected this change. For each case study location, the major boom in population growth happened during a different time period. In 1970 Vail had a population of 484, but by 1980 the population had grown 367.1% to 2,261. Today Vail has a population of 5,434 (U.S. Decennial Census). Park City has had their census data tracked for much longer. Starting in 1870 Park City had a population of 164, by 1880 it had grown 840% to a population of 1,542. It then saw another large jump between 1970 and 1980 after four decades of population loss, by 1990 it had a population of 4,468. Today it has a population of 8,526. Truckee saw its
population grow the most a decade after the other two towns saw their largest growth. In 1990 Truckee had a population of 3,484, and by 2000 it had grown to 13,864. Today Truckee has an estimated 16,735 residents.

Something challenging with population measurement is identifying which home second homeowners claim as their primary residence, particularly on the census. The COVID-19 pandemic has also led to a shift in the number of full-time residents in ski towns, and this was likely a large addition to the population after March of 2020. Because the census happened prior to the COVID-19 pandemic, it may be more challenging to track the population variation over the next few years.

Along with analyzing the difference in demographics between case study sites, comparing their transportation planning documents is a key step towards understanding each town’s current and future transportation challenges and goals. Each study site has its own version of a comprehensive transportation plan, although at varied stages of completion. Vail released its Vail Transportation Master Plan Update in June of 2009. This study was put together by Felsburb Holt & Ullevig and the Town of Vail with help from the CDOT (Town of Vail). Park City is in the process of completing a new transportation plan for the town, called Park City Forward. This “transportation blueprint” is being created by Nelson Nygaard along with Park City. The final plan was set to be released in fall of 2019 following a community survey and workshopping. As of spring of 2021 the final document has not been released, however they do have a briefing book publicly available that previews focus areas for their study and future improvements (Park City Forward). Because the Town of Truckee does not operate their own transit system, the Truckee Long Range Transit Plan, along with a draft of the Tahoe Regional Planning Agency (TRPA) draft regional transportation plan were examined. The Truckee
Long Range Transit Plan was published in May of 2017 and worked with LSC Transportation Consultants, a local transportation consulting firm, to prepare the document (Town of Truckee). TRPA drafted their Regional Transportation Plan in September of 2020; a final draft is expected to be published soon (TRPA).

Survey Mechanism

This study utilized a Qualtrics online survey which included a total of 21 multiple choice and open-ended response questions to gauge public perceptions of public transportation in ski towns. These questions fell under two categories, location specific and location non-specific. The survey had both multiple choice and fill in the blank questions. A copy of the survey can be found in Appendix A, however the questions follow general themes. These include existing and ideal mode choices while visiting ski towns, and why people opted to use public transportation or not while in a ski town.

The survey was distributed through my own social media platforms. Many of the social media connections had been made throughout my life as member of the ski community. This includes people from around the world who either work in the ski industry or competed as a ski racer over the years. This survey was made sharable, so it was able to reach additional people who were not in my direct friend network.

Several questions related specifically to the case study locations. Truckee, Vail, and Park City are some of the most popular ski town destinations in the U.S. or even the world, so by including location specific questions there was high probability of receiving adequate answers. The location specific questions were very simple, they asked if people had ridden public transportation in any of the three case study locations, as well as for feedback on the survey taker’s experience with riding public transportation in the three locations. The survey also asked if the respondent had used a private shuttle
service such as the Epic Mountain Express, which is a shuttle service that provides transportation between Denver International Airport and various locations throughout Summit and Eagle Counties in Colorado.

The shuttle service question was included in the survey to see if people have had beneficial experiences with them. They are essentially a form of micro-transit, although they operate at a much higher price point than micro transit would. While these types of shuttles exist in other ski towns, the Epic Mountain Express is one of the most well-known ski shuttle options. These types of shuttles are a great option to help transport visitors to the ski town from the nearest large airport to the ski town. This reduces the likelihood of visitors needing to rent a car and also allows them to rely on in town public transit services more easily.

The results of the survey were used to create the interview questions. This helps to incorporate the feedback from the public and compare it with information from planning professionals to see how feedback varies. It was my hope that the planners would have new viewpoints to offer this study.

Interviews and Transportation Plan Analysis

Upon receiving completed surveys, the next step was to conduct interviews with transportation planning professionals in the three case study towns. Interviews were conducted with transportation planning professionals in two of the three case study locations. The first goal of the interviews was to determine if the public input from the survey was aligned with current planning goals in the town. Some of the public input held up with the town’s planning practices. The second goal was to understand if transportation planning professionals had any new perspectives to offer this study. The interviews consisted of around 20 questions, 18 of which were asked in both interviews,
and 1-2 of which were location specific. The interviews lasted between 35 and 50 minutes.

The first interview was with Alex Roy, a Senior Transportation Planner for Park City Municipal Corporation in Utah, whose job primarily focuses on transit for the town. The second interview was with Chris Southwick who is the Mobility Innovation coordinator for the Town of Vail. Because I was unable to secure an interview with a transportation planning professional in Truckee, the focus of this method shifted slightly to include analysis of current transportation plans in the case study locations. These plans include the Vail Transportation Master Plan Update (2009), the Truckee Long-Range Transit Plan (2017), Park City Forward (2018-), and the Tahoe Regional Planning Agency Regional Transportation Plan. The analysis of these plans was used to compare the interview responses with the written goals to see what might have shifted over time.

Findings

It is important to consider that two of the three case study locations were once hosts to the Winter Olympic Games. The Salt Lake City Olympics took place in 2002 and the Squaw Valley Olympics took place in 1960. This helped to set the foundation for transportation systems in two of the three case studies. Vail has also held World Championships Ski Races since 1989. Ski resort towns are no strangers to large events that draw international crowds. Ski towns’ ability to flex their transportation services to accommodate for unusually large crowds is one of the most resilient aspects of ski town transportation systems.

The public input aspect of this survey seemed like a good steppingstone prior to conducting interviews as it could confirm if some of my lines of thought were similar to others’ experiences with public transportation and ski towns. The challenge with a public
facing survey like this is the risk that some of the results may not be useful because it is so open ended. So, this is one downfall of this method. However, the opportunity for people to be fully transparent in their responses can also be seen as a benefit because it offers additional experiences that can be brought into discussions with the professionals. Some of these experiences mirror my own, and some of them are far different and I think having multiple perspectives better informs this study.

**Survey Findings**

Sharing the survey over Facebook and Instagram yielded over 100 complete responses within the first week. A goal of 300 survey responses ended up only yielding 119 total responses. Although there were far fewer responses than anticipated, the quality of responses exceeded expectations. After analyzing the data, survey respondents brought up several factors that were unexpected based on my hypothesis, yet extremely useful. I have found some additional factors to consider that I had not come up with myself. The main takeaway from the survey was that the automobile remains the primary mode choice for people in ski towns, but people seem willing to shift modes to use public transportation if it becomes easier to access.

The survey had some limitations, as it did not ask enough identifying questions to determine the demographics of those who took the survey. Based on the makeup of my social media network, however, I could determine that the largest age makeup was 18-25 and 45-60. 31.5% of those who took the survey live in a ski town, and 21% of them use public transit while the other 10.5% do not. 58% had used public transit while visiting a ski town, regardless of if they lived in that town or not. 10.5% had not used public transportation while visiting a ski town. Knowing this data helps to supplement the lack of demographic data that was gathered from the survey, because it tells us if people are
using ski town public transportation and in what ways. This also helped to determine that approximately 10% of the responses to the survey were not useful since that group had never used public transit in a ski town.

The majority of people visiting a ski town had arrived by car (48.6%), followed by airplane (35.7%), bus (6.7), and train (5.24). The mode here is likely dependent on where people were traveling from as well as ease of each mode to get from the airport to the town itself. This question does not account for multiple mode options, so it is possible that people trip-chained and used both an airplane and a car or bus. While visiting a ski town, the mode breakdown shifted significantly. 64.4% of respondents used a personal car as their main mode of transportation while visiting a ski town, followed by walking (14.4%), riding the bus (11.9%), or using a shuttle service (9.3%). The share of trips taken using public transit was significantly lower than anticipated, but perhaps is a reflection on the places where people were or were not using public transportation. In nearly every U.S. ski town, the car remains the easiest method of getting around, particularly for visitors.

The open-ended questions provided the options for people to respond about their experiences with any resorts. By the final tally, respondents had used public transit at over sixty different ski resorts and ski towns, so feedback might not always be consistent, because everyone was using transit in different ski towns. Some of the most common places that people had used transit outside of the three case study locations were Mammoth, California, Jackson Hole, Wyoming, Big Sky, Montana, Sun Valley, Idaho and Whistler, British Columbia. So, while the general feedback about public transportation in ski towns was not entirely specific to the case study locations, it does generally encompass ski resorts in Western North America.
People had many reasons as to why or why not they had chosen to use public transportation while visiting ski towns. Some of the most common answers as to why people had used public transportation included: free ridership, frequency of buses, convenience, good schedules, easy accessibility, time saving, high cost of parking or limited availability of parking, not having to worry about consumption of alcohol, and not having to drive in the snow. On the flipside, people chose not to use public transportation because car access was easier, bus services were infrequent or the schedule was inaccessible, they needed to travel too far of a distance, they wanted the freedom of their cars, there was no existing or a poorly serviced transit system, they had large amounts of gear to carry, or walking was easier. Factors that some saw as a reason to use transit, others saw as a reason not to use transit. The goal of the comparative case study analysis and the interviews was to determine what aspects of transit in ski towns help to influence higher ridership.

One key ridership factor that was very common in the survey answers was alcohol usage. This was not something I anticipated as a factor that might encourage ridership, however considering some of the aspects of ski culture, such as après skiing, it completely makes sense. While on a ski trip, people are likely to partake in alcohol use and having a bus as an option to prevent drinking and driving is a wonderful option. Alcohol use also is prevalent in the service industry in ski towns. It is a quite common practice to enjoy drinks after a day of work with coworkers or friends. This is probably more common than a happy hour in an urban environment. However, the timing would vary since most service workers are not working on a 9-5 schedule. So, people might be drinking at the end of their workday at 2 or 3 in the afternoon. Drunk driving could poorly
impact traffic patterns on the narrow mountain roads. Using transit to avoid this is something that planners should be anticipating.

Some respondents’ reasoning for choosing not to use public transportation was because they had a car and felt that was easier. People also said that there was too much time between the shuttles, or that the distance was too far. One respondent pointed out that often buses have lack of access to neighborhoods. Many were also concerned with the transportation of their gear while riding public transportation, which can certainly be an inconvenience. Others said there simply was not public transit or adequate public transportation to make it worthwhile. One thing to note is that it is unclear which ski town’s transit system the respondents were referring to, so it is possible that the experiences of people who found riding the bus to be inconvenient were taking place in locations that were different from those who found it extremely convenient to use public transportation.

Unsurprisingly, the majority of respondents chose the car as their ideal mode of transportation. This could be for many reasons but is likely due to the fact that most ski towns do not currently have sufficiently reliable public transportation. What was surprising was that walking and riding the bus received nearly the same number of responses. Interestingly, these two go hand in hand. In order for public transportation to work well, there needs to be good walkability at both the departure and arrival destinations. Those factors will encourage higher ridership.

The number of survey takers who had ridden transportation in each of my three study site areas was higher than expected; 50 survey respondents had used public transportation in Vail, or 43.5%; 44 respondents had used public transportation in Park City, or 37.9%. And 28 people, or 24.3% of survey takers had used public transportation
while in Truckee. The open answer question about their past experiences was useful as well. People were able to provide feedback about their experiences with these transportation systems. As hypothesized, Vail and Park City had the most positive responses and feedback. Tahoe on the other hand had significantly more negative feedback responses. One of the best responses received about Tahoe’s public transportation was one that said, “I live in Tahoe… do we even have busses?” I hope to bring some of these comments and data into my interviews with transportation professionals to see how they are working to make public transportation a more pleasant experience for residents and visitors in their towns.

**Interview and Plan Analysis Findings**

After completing interviews with Alex Roy and Chris Southwick, the transportation plans were analyzed to fill in gaps that interviews may have missed. The Truckee and Tahoe Regional Planning Agency (TRPA) plans helped fill in the gaps, however, an interview would have likely yielded better information. The findings are grouped by topic below.

**Transit:**

All three case study sites have actively discussed how important the role of transit is in their town’s transportation systems. Truckee’s transit plan has a guiding principle to “promote a safe and efficient transit system, including both bus and rail to reduce congestion, improve the environment, and provide viable alternatives to the automobile” (TLRTP, 1). The interviews highlighted that Vail and Park City both have similar goals for their transit systems.

Unlike Truckee’s existing transit infrastructure, Park City and Vail have been operating their free bus systems for decades. Truckee is hoping to better integrate into a
regional system, which is also a goal of TRPA, as the existing systems are rather fragmented. Park City on the other hand used to operate their transit system in conjunction with Summit County. According to Roy, Park City has recently split off from the county to focus on running their own transit system and specifically improving their in-town route services. Vail has always operated their transit system independently through the town.

Roy pointed out that Park City also has a transit goal of building more capacity; but like most ski towns, he says, building more infrastructure is a challenge. This challenge stems from unavailability to expand the land area. All three locations are situated in mountain valleys, where the mountains act as a natural barrier for roads and other infrastructure. But Southwick thinks the way Vail was built helps relieve this challenge. According to him, “the pedestrian mall aspect of town, and then, like the idea of having dedicated parking structures like, dedicated architectures, and then a transit line connecting these two pedestrian cores, I think that's pretty unique.” Because of Vail's makeup of two pedestrian villages, transit is encouraged and one of the easiest modes to get around town.

Park City is taking a unique approach to their transit network design. Roy says that they are “building out their transit separately to accommodate the needs of both locals and tourists. Looking at which travel patterns are the most common for each” which is a solution that could be useful for other ski towns. The transportation patterns for residents and visitors tend to be so different that having scheduling to accommodate both can encourage ridership from both population groups.

Seasonal shifts in bus systems are necessary for ski towns from a cost saving perspective. Truckee, Park City, and Vail shift their bus schedule four times a year. This
schedule change accounts for the reduced traffic during the shoulder seasons but increases capacity during the busiest winter months as well as the summer months which have seen increased traffic within the past decade. Park City is looking to reduce the number of shifts to two a year. According to Southwick, Vail can typically see between 450,000 to 500,000 unlinked trips in February, but only 200,000 a month in July [An unlinked trip is measured as a single time boarding and alighting a vehicle]. But in light of COVID, among other factors that have contributed to increased full time populations in ski towns, this seasonality may soon be a thing of the past.

Both Park City and Vail do collect ridership data year-round, although neither town has made it publicly available. Southwick mentioned that they will begin reporting their ridership data to the National Transit Database (NTD) starting this year. Southwick was able to share some rough ridership figures. They saw approximately 2.6 million unlinked trips per year on average. For 2020, there was a decrease in riders due to the COVID-19 pandemic, with 1.7 million unlinked trips. He attributes this to the ski season being cut short by 5-6 weeks beginning in March of 2020, along with restrictions on bus capacity being capped at 20 riders per bus due to state guidelines. In a normal year Vail sees between 450,000 and 500,000 trips a month in the main winter months, but closer to 200,000 trips in peak summer months such as July. He mentioned that Vail is slowly starting to see a shift toward year-round visitors, a change from visitors mainly coming only in the winter and summer seasons with more of a local only shoulder season in the late spring and early fall. Vail has also had to hire additional bus drivers in recent years to accommodate the influx of summer visitors they have experienced.

The lower ridership in the summer may also be attributed to the fact that Vail charges for parking in its parking garages in the winter, but not in the summer. Winter
also offers more centralized activities in a ski town, and in particular one like Vail’s that is laid out in a village type model. This means the hub of activities—skiing, shopping, ice skating, restaurants, etc.—are located at the ski resort and village itself. People will park at these garages and then ride the bus from there, and the easy access to the slopes makes the cost of parking a worthwhile investment for visitors. In the summer months, the activities are not so centralized to the ski resort itself, so this attracts fewer people to come into the village center. The funding of the buses is associated with the parking fees from the garages, although indirectly so. The fees collected from the parking garage goes into the town’s general fund, which is the source of the bus system’s budget. According to Southwick, the parking fees typically cover the cost of the bus system over the course of the year.

Parking:

While many urban transit systems can function well with walking or biking making up the last mile of trips, in ski towns, the car remains the favored mode of transportation. To influence people to get out of their cars to the greatest extent possible, people need somewhere to leave their cars while not in use. This makes park and ride or parking garages an important intervention. One of the reasons TART sees such low ridership is that the towns it serves lack parking options for people to board transit, which makes it far more convenient to use a personal automobile. And their transportation plan does not factor in future plans to construct a designated park and ride. Instead, it proposes that eventually TART could strike a deal with entities like the school district, golf courses or rodeo grounds to act as park and ride locations. While there is nothing inherently wrong with using existing spaces for parking, the plan does not propose a viable path to make this happen.
Park City also does not have a park and ride lot in town; instead, Kimball Junction, just outside of Park City, has a park and ride which is used to connect Park City and Salt Lake City. But this lacks connection with Park City’s transportation system. In fact, Roy stated that parking has the greatest room for improvement in the town. There has been discussion of paid parking at the resort itself, which could be enough of an inconvenience to some to encourage transit. But people would still need somewhere to leave their cars. Vail and Park City agree that parking policies should encourage transit use.

While this seems to be a goal for Park City, and even Truckee, it is more of a reality in Vail. Vail’s two parking structures, which have capacity for 2,500 vehicles and a goal to increase to 3,500 parking spots by 2029, are one of the factors that help the transit function smoothly (VTMPU). Southwick described the town’s goal to not have the parking structure fill up more than fifteen times in each of the summer and winter. Increasing parking capacity makes it more likely that they will meet this goal. Having parking available adjacent to the pedestrian villages allows for an enjoyable visitor experience where cars do not exist on the ground level. Vail has also found that bus ridership increases with charging for parking which is something that Park City and Truckee do not utilize in the same ways.

Truckee and Park City each have metered street parking in their downtown areas. This contributes to what Southwick describes as “the full disutility of parking,” meaning that if you choose to drive, there should be at least some aspect of inconvenience, in this case a small fee. Vail does charge for parking, but only in their garages, and only during the winter. This is a great revenue generator for the town which not only sees a higher number of visitors in the winter but also has more centralized
activity in the winter times since the villages are located at the base of the ski resort. Vail has seen that “parking really drives the transit side” which is something that the other two towns might consider exploring.

**Accommodating the Workforce:**

One of the most unique aspects of ski towns is the service economy that helps provide a seamless experience for visitors to the resorts. Unfortunately, this also makes the planners’ jobs challenging as they must design a transit system with different operating patterns than a traditional urban transportation system. Roy explained that in Park City:

> We just have such a different ridership makeup than what traditional transit systems would need to address. Like our riders aren’t from 9 to 5 you know, we couldn’t stack all our service there. Our yearly trends are radically different. You know Salt Lake City would probably have like maybe an 80%, between 80 and 100 they’re not going to flex that much. But we can go from you know thousands of people a day to like none in the shoulder seasons. So its tough building a system around those parameters.

Certainly, Vail and Truckee face many of these same challenges. Another challenging aspect is the rising land values and cost of living in a ski town. This means that service industry workers must often commute long distances to jobs in ski towns.

The seasonal mismatch also becomes a challenge for the service industry workforce, as the availability of jobs shifts with the seasons for many positions at the resorts themselves. According to Southwick of Vail, “It’s really hard finding seasonal employees. And so, yeah, we have expanded service in the summer, kind of over the last couple of years. And as a result of that, we have had to hire more full timers. And so that, but we still have issues every fall.
like hiring people” and he is only speaking to hiring bus drivers. Similar trends can be seen for the rest of the service industry.

The service workers are the population which is often overlooked by the average visitor to a ski town, but residents know they are the ones who make everything seamless behind the scenes. In non-COVID years, many of these service workers are in ski towns on a J-1 worker’s visa from places like Chile, Argentina, Brazil, New Zealand, and Australia. They often do not have access to cars while in the United States. So, making sure these groups have access to transit that suits their work schedules is of extra importance.

Roy noted that because the Park City Municipality offers its own transit system, they have historically seen challenges integrating their bus routes with Utah Transportation Authority’s bus routes. An example of this would be Park City workers who live in Salt Lake City and want to use the bus as their mode of travel to work. They would have to ride a UTA bus to Kimball Junction, and this bus has an associated cost. Then in Kimball Junction they would transfer to a Park City bus. However, the UTA buses run with less frequent service, so a rider could end up waiting up to an hour for the next bus to bring them back to Salt Lake City. This plays into the larger issue in ski towns of a live-work mismatch in land use. Most of the ski town workforce gets priced out of living in the town itself, so in the case of Park City, they rely on Salt Lake City to house much of their workforce. A large portion of Vail’s workforce lives in Leadville or Gypsum, and Truckee relies on Reno, Nevada, to take on some of the housing burden.

Affordable housing and public transit help contribute to a good land use and transportation relationship. Truckee has made strides within the past five years to create ‘affordable’ housing. Affordable housing is a percentage of the median household
income, and in ski towns where you have the mega-rich and service workers all living in the same place, the price gets driven up. Most of the people who need this housing are still priced out. Southwick has seen that in Vail, “unfortunately…it seems like in more and more places that for like, frontline people to be able to live in town, you always have to live in employee housing.” Because the town of Vail knows that much of its workforce is commuting a farther distance by car, they offer parking season passes to employees at a reduced price which come at varying price levels and offer access to different garages or employee parking lots.

Vail’s system is by no means perfect, but they have found the right balance between parking and transit usage. This is a strategy that Park City and Truckee might look to model their transportation systems after. Especially in a ski town where housing is often spread out, having centralized parking locations that double as transit stops can help encourage people to shift modes away from their personal cars. Improving the land use to accommodate workforce and affordable housing will help to drive transit usage up.

**Alcohol Use:**

Looking back to the literature, skiing has created many cultural idiosyncrasies. One of the cultural aspects of ski communities is the emphasis on alcohol use for both residents and visitors. Alcohol use was not a factor I had considered in what makes a ski town unique, however, the frequency of this theme in the survey answers led me to integrate it into the interviews. Both Roy and Southwick saw how alcohol could play a role in public transportation usage, although both mentioned they too would not have understood this prior to living in a ski town.
While this might be common in any tourist place, Après Skiing is a practice at ski resorts and in ski towns that encourages alcohol consumption following a day of skiing. Southwick explained that this practice is so common in Vail that they have scheduled services to accommodate for late night activities. He discussed how people do not want to pay for an expensive cab or Uber home after a night of drinking, but preventing drinking and driving is also really important from a safety standpoint. So, Vail has scheduled services on some of their neighborhood routes until 2am. And people utilize this service, “A big event weekend could have 40-50 people on the 2am bus.” Clearly this service is used enough that it has become a part of their transit operations.

Roy discussed how Park City should be cognizant of the fact that people might have different service needs if they work in a bar or restaurant. They do offer a guaranteed ride home program, but do not have a regularly scheduled late night service like Vail does. Utah does have some of the strictest alcohol laws in the country, partially due to the Mormon influence in the state. The state restricts alcohol percentages in grocery and convenience stores. 3.2% alcohol beer was the longtime maximum alcohol content for Utah, but it was raised to 4% in 2019. The state also limits the time when alcohol can be sold, which is until 1:00am. Utah also lowered its blood alcohol content (BAC) limit for operating a vehicle to 0.05%, which is half of the standard 0.10% (NPR). Because the legal limit is so low, Park City should look into transit services that can help the populations who drink get home safely. Although alcohol use is a smaller factor in transit usage, it is an aspect of transportation planning that should be considered to keep residents and visitors safe after drinking.
Weather and Climate:

One of the biggest challenges a transit system has to deal with in a ski town is the presence of snow. Snow is a commodity that is valuable for residents and visitors on the slopes, but it causes tremendous difficulty where transportation is involved. All three towns have priority plow agreements to make sure the transit routes are plowed early on. Truckee uses GIS to determine these plow pathways and the routes are available on their website. Vail has their plow routes broken into categories by priority as part of their snow and ice plan. Park City has agreements to get the transit lanes plowed early, as well as to create snow storage areas outside of waiting zones near the resort.

Along with weather, ski towns are historically places that care greatly about environmentally sound practices. All three towns have climate action plans that focus on carbon emission reduction goals. One of the steps toward achieving this goal has been the transition to electric buses. Park City has already transitioned a large share of their fleet to electric buses, Vail is currently transitioning their fleet from diesel and hybrid to battery electric, and Truckee’s plan has outlined this as one of their future goals. Roy mentioned that “electric buses have been tricky with the cold and the snow. They require extra charging stations than typically recommended for e-buses.” This is because the cold will drain the batteries. This is unfortunate as electric buses are seen as a great alternative in many cities but shows that they are not a one size fits all solution and might not be the best fit for ski towns. However, a key goal is still to get people out of their cars in any capacity possible and shift to higher occupancy vehicles.

Funding:

In order to propose any future solutions, understanding current funding strategies is essential. Vail and Park City are able to fund their own transit systems while keeping it
free for riders, but they have gone about it in different ways. Vail generates funding from their winter season parking garage fees. All funding within the town of Vail goes through their general fund, however Southwick stated that the parking garage fees and cost to operate their free bus system typically breaks even. Summit County, where Park City is located recently enacted a quarterly sales tax that is specifically for transit. This funding has to go through the county first and then Park City applies for access to the funding. This has created some issues since most of the tax revenue is generated in Park City.

Park City has other funding revenues as well. One of the most commonly used in ski towns is a transient room tax. This is an additional tax placed on temporary lodging like hotels. Because these rooms typically have a higher cost, the tax generated is a great funding option. Park City also has taken advantage of a state transportation bill that is used to help fund their bus system.

TART still charged a fee for ridership prior to the pandemic, although their goal since 2017 was to create funding opportunities to make this free. The COVID-19 pandemic generated funding resources that allowed TART to transition to free bus service. This was seen in many cities where paying on board was the standard in order to protect drivers. They are looking for additional funding investments from Placer County, Nevada County, and the ski resorts. Additional funding hopes to support longer hours of service and potential new routes. One new route recently added was the TART Regional Night Service. It secured funding through Placer County, the Truckee Tahoe Airport District, and a Low Carbon Transit Operations Program grant.

**Proposed Solutions and Conclusions**

These three case studies have highlighted the need to have individualized transit solutions that best suit the specific town’s needs. However, there are several factors that...
must work in conjunction to produce a good ski town transportation system. Parking needs to be available in central areas that are well serviced by transit. A maximum headway of 30 minutes should be used, but 15 minute or less headways are much more efficient. Longer headways increase the likelihood of missing a bus and having to wait for the next one which could be up to an hour somewhere like Truckee. Charging for parking can be beneficial, especially if the transit system is free, because it encourages the disutility of parking.

There are things that each one of these towns should seek to improve upon for their own transit system. As anticipated, Vail seems to have the least improvement needed, but increasing their parking is a current goal they are working towards. This is to account for new development in the town as well as higher volumes of visitors. However, Vail has laid out in their transportation plan how exactly this will be accounted for. A majority of the new parking will be located in new developments. There is also discussion of adding capacity to the Lionshead Parking Structure, but the majority of access is needed in the Vail Village Parking Structure. Increased parking capacity at Lionshead Village would also require an increase in transit service to make sure people still have good access to Vail Village, where most skiable terrain is located. Vail sees the direct correlation between parking and transit, and this is a strategy that other ski towns can try to implement as well.

Park City has shifted away from the county run transit to try to improve their own transportation systems; but, based on ideas from the Park City Forward Blueprint, they are hoping to act as a regional gateway to other nearby towns. Park City is well aware of areas for improvement with their transit system. Because of its location relative to Kimball Junction and Salt Lake City, they should focus on improving the transportation
connection with the PC-SLC connect. Increasing service on this line could help make it
easier for both Park City’s workforce that lives in Salt Lake City as well as daily skiers
who hope to access the town. Their idea of planning differently for visitors and residents
is smart, but they need to find the solution that best serves both groups at once. They
should also try to implement some solutions that make driving less convenient to help
force a mode shift. The future public engagement efforts of the Park City Forward Plan
should help them to identify what aspects the residents value the most.

Truckee has the most room for suggested improvements, but they also face the
greatest number of barriers. Because Truckee fits into a larger regional transportation
operator by using TART, there is less room for them to implement their own transit
solutions without creating an entirely new transit system which would be costly and
ineffective. While TART serves many of the destinations to which people need access,
like the ski resorts, its schedule still remains underserved. Hour long headways are not
efficient enough to encourage bus ridership as a primary use. Driving a single
occupancy vehicle will be faster than the bus every time. Funding has been one of the
greatest challenges, and Truckee’s Long Range Transit Plan does not provide enough
solutions to improve transit.

TRPA has understood the challenges that Truckee faces with their transit, as it is
similar to the transportation challenges faced by all of Lake Tahoe’s towns. There is not
currently one transportation company or service that operates around the entire lake.
They have planned for a regional transit system that they hope to have operating by
2045. This extensive transportation plan addresses the aspects that every good
transportation system in a ski town should have. Primarily its focus is solutions to get
people out of their cars. Additionally, because Truckee has so much land area that
needs to be serviced, supplementing fixed bus routes with micro-transit could be a solution to long headways. The missing factor here seems to be the regional integration. It seems like Truckee is not working with other agencies to prioritize these necessary changes.

Overall, it seems that all three towns understand the importance of prioritizing transit services to benefit the workforce. This is the population that absolutely needs better access to transit resources. Improving parking and transit services can help get more in each population group out of their single occupancy vehicles by providing time saving options that are easier to use.

**Future Work**

Future work for this project should compile a list of necessary factors that ski town transit systems *must* have. This will detail which are primary factors and which should be considered secondary factors when improving transit system infrastructure. I would like this to be a concise sharable document that could easily be distributed to transportation planning professionals in ski towns. I hope to compile an additional list of options for funding transit in ski towns that work particularly well and propose solutions that have worked in these case study sites.

Next, this list will be shared with ski town transportation planners. Ideally, I will set up meetings with planners in ski towns across the U.S. to distribute these findings and provide suggestions for future implementations. This project may likely become more extensive with input from other locations, and there are likely additional factors that work in other ski towns not considered in the scope of this project.
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https://doi.org/10.29358/sceco.v0i25.377.


Appendices

Appendix A:

Perceptions on Public Transportation Ridership in Ski Towns

Survey

Q1 Have you ever traveled to a ski resort town? (i.e., Vail, Park City, Aspen, Truckee, South Lake Tahoe, Mammoth, Stowe, etc.)

☐ Yes (1)

☐ No (2)
Q2 How did you travel to your destination when getting to the ski resort town?

☐ By Airplane (1)
☐ By Car (2)
☐ By Train (3)
☐ By Rideshare/Taxi (4)
☐ By Bus (5)
☐ Other (please indicate) (6)

Q3 While visiting, what was the main mode of travel that you used within town?

☐ Walking (1)
☐ Biking (2)
☐ Riding the Bus (3)
☐ Shuttle Service (4)
☐ Personal Car (5)
☐ Rideshare/Taxi (6)
Q4 Have you ever used public transportation, such as a shuttle service or a bus, while visiting or living in a ski town? select all that apply.

☐ Yes, while visiting a ski town other than my own (1)
☐ Yes, I live in a ski town and use public transportation (2)
☐ No, I have not used public transportation while visiting a ski town (3)
☐ No, I have not used public transportation while living in a ski town (4)

Q5 If you have ridden public transportation while visiting a ski town in the past, what factors have influenced you to use this mode choice? (cost, access, etc.)

________________________________________________________________

Q6 If you have NOT ridden public transportation while visiting a ski town in the past, what factors have influenced this?

________________________________________________________________

________________________________________________________________
Q11 What is your ideal mode of transportation while living in or visiting a ski town?

- Train (1)
- Bus (2)
- Car (3)
- Bike (4)
- Walking (5)

Q7 What ski towns have you used public transportation in? Please list all that you can remember.

________________________________________________________________________________________

Q8, Have you ridden public transportation in Vail, Colorado?

- Yes (1)
- No (2)
Q15 If you have used public transportation in Vail, please provide any feedback here.

__________________________________________________________________________

Q9, Have you ridden public transportation in Park City, Utah?

☐ Yes (1)
☐ No (2)

__________________________________________________________________________

Q16 If you have used public transportation in Park City, please provide any feedback here.

__________________________________________________________________________

Q10, Have you ridden public transportation in Lake Tahoe, California?

☐ Yes (1)
☐ No (2)

__________________________________________________________________________
Q17 If you have used public transportation in Lake Tahoe, please provide any feedback here.

________________________________________________________________

Q20 Have you ever used a private shuttle service such as the Epic Mountain Express (formerly the Colorado Mountain Express)?

- Yes (1)
- Maybe (2)
- No (3)

________________________________________________________________

Q21 What was your experience with the Epic Mountain Express?

________________________________________________________________

Q12 Which ski town's public transportation system has been the most memorable for you, and why?

________________________________________________________________
Q14 What factors would influence you to ride public transportation in ski towns more often?

☐ More frequent service (1)
☐ More reliable service (2)
☐ Park and Ride options (3)
☐ Free or low-cost fares (4)
☐ Expanded route services (5)
☐ Other (6) ________________________________

Q13 How much does your personal carbon footprint factor into your transportation mode choices?

☐ A great deal (1)
☐ A lot (2)
☐ A moderate amount (3)
☐ A little (4)
☐ None at all (5)
Q18 If you have any additional comments on riding public transportation in ski towns, please provide them here.

________________________________________________________________

Q19 Would you be open to a short interview to talk about your transportation experiences in ski towns?

○ Yes, my email is: (1)

________________________________________________________________

○ Maybe, my email is: (2)

________________________________________________________________

○ No (3)

End of Block: Default Question Block
APPENDIX B

INTERVIEW QUESTIONS:

1. Can you tell me your name, where you work, and what your role is in the organization?

2. Can you tell me a little bit about the existing transportation options in (X) town?

3. What are some of the factors that you are currently taking into consideration for future transportation planning related projects?

4. What are some current goals that the town has for transportation planning?

5. Are there any transportation projects that the town has done recently or is planning for the future that you would consider innovative, and if so, in what ways? Please describe some of these recent projects.

6. Does (insert town here) currently collect ridership data of any kind?

7. If yes, are you able to share any of that data with me?

8. Park City: What modifications have you made to the transportation system since the Olympics? Has it changed or revamped since then?

9. What aspect of (X Town’s) Transportation system do you think operates the best?

10. What aspects of (X Town’s transportation system do you think has the most room for improvement?
11. I recently conducted a survey based on public perceptions of transportation in ski towns. Here is some of the feedback I collected:

a. Park City

   i. Positive:
      1. It’s the best way to avoid parking issues or hassle.
      2. Quick and easy
      3. Super convenient, has convenient stops.
      4. Runs late and is good to keep visitors off the roads.
      5. Well marked destinations on bus signs
      6. Not too much waiting, frequent service, and lots of routes
      7. Staff is friendly.
      8. Covers a wide geographic area.
      9. Easier than driving
     10. No cost of ridership

   ii. Negative
      1. Hard to trust when needed for reliability for getting to work.
      2. Unclear to park your car for the day if you wanted to park and ride.
      3. Could use more frequent service between town and Kimball Junction.
4. Confusing

5. Not as convenient as Vail’s system

b. Do you feel that this feedback is consistent with other feedback received by your department? Or does your department have a method to collect this data from riders?

c. Vail

i. Positive

1. Easy and efficient

2. Buses were on time.

3. Great service

4. Good for going super shot distances.

5. Free cost is great.

6. Simple to park and ride

7. Awesome

8. Easy to travel between vail village and Lionshead.

9. Very good, or great (multiple of both)

10. Good to supplement distances that were too far to walk.

11. Lots of stops

12. Short distance from stops to mountain.

ii. Negative

1. Parking is terrible.
2. Crowded buses, sometimes with long waits
3. Never went where rider needed it to go when needed.
4. Could use more coverage to Avon.
5. Limited access to visitors
6. Not enough satellite parking areas

d. Do you feel that this feedback is consistent with other feedback received by your department? Or does your department have a method to collect this data from riders?

12. What solutions has your town implemented to deal with public transportation and snow?

13. What do you think other ski towns could learn from your ski town to improve their public transportation infrastructure?

14. What do you think makes your town’s transit system unique?

15. What role, if any do you think alcohol usage in ski towns plays in public transportation ridership?

16. Does your town currently have any carbon emission reduction goals?
    a. If so, how does that align with your transportation planning practices?

17. How does the town currently finance a free bus system? And how did the town determine that financing method?

18. What is your personal favorite thing about your town’s transportation system?