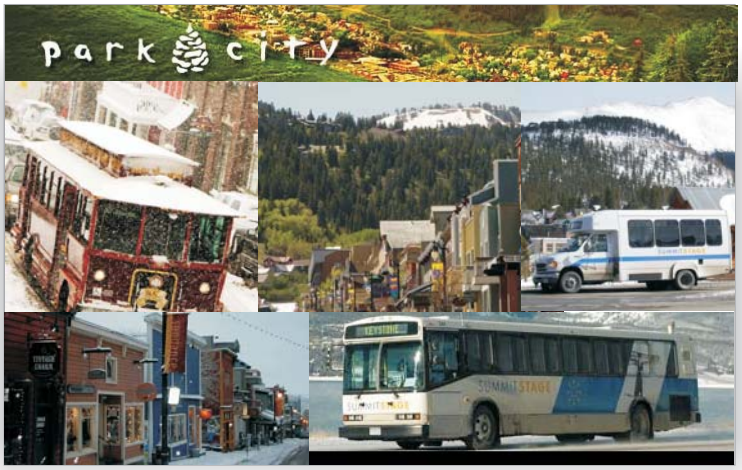
Park City/Summit County
2011 Short Range Transit Development Plan Update



Prepared for the

Park City Municipal Corporation

Prepared by

LSC Transportation Consultants, Inc.

LSC
TRANSPORTATION
CONSULTANTS, INC.

Park City/Summit County
2011 Short Range Transit Development Plan

Prepared for the

Park City Municipal Corporation

And for

Summit County

Prepared by

LSC Transportation Consultants, Inc.
2690 Lake Forest Road, Suite C
P.O. Box 5875
Tahoe City, California 96145
(530) 583-4053

August 29, 2011

LSC Ref. 107520

Table of Contents

List of Tables

TABLE *Page*

List of Figures

FIGURE *Page*

Chapter 1
Introduction

INTRODUCTION

Public transit plays a key role in Park City and western Summit County. Public transit provides the means of addressing the mobility needs of a successful resort region within a limited roadway network, while avoiding the need to expand roadway and parking. It also enhances the attractiveness of the region as a tourism destination and aids businesses by expanding the potential employment pool that delivers customers. In addition, it materially enhances the quality of life of area residents by providing mobility while reducing transportation costs.

The last few years have been a transition period for many elements of society, including transit. Previously, the region experienced a rapid pace of development which increased the demand for transit services. This demand included expanded service within the existing service area, as well as expansion of service into new areas. The latter is evidenced by the implementation of the Quinn's Junction Dial-A-Ride service in April 2006 that operates from Park City into a newly developed (and continually developing) area that includes medical and recreational facilities. New development in the Snyderville Basin area, such as Kimball Junction, has also resulted in a growing transit system into that area. Since 2008, the economic downturn has resulted in fewer large-scale developments and a slower overall pace of development in Park City/Summit County. However, new development is currently on the horizon that will change and expand the role of public transit. At the same time, there is a continued need for transit strategies to help attain environmental goals.

Recognizing the importance of transit, Park City Municipal Corporation and Summit County have retained a study team led by LSC Transportation Consultants, Inc. to prepare a Short Range Transit Development Plan Update. Using recently conducted studies as a basis, and under guidance of a transit steering committee, this study will address the changing conditions affecting transit in the region, and provide an opportunity to develop plans that will tailor transit services to current conditions. This study will be a guideline for the area to follow over the next seven years (2011 to 2018).

The Short Range Transit Development Plan (SRTDP) study document first presents and reviews the setting for transportation, including recently prepared plans and studies, demographic factors and the recent operating history of Park City Transit. Subsequent sections analyze a wide range of service, capital, institutional and management, and financial alternatives. Finally, the study presents a transit plan that will guide the growth of services over the coming period. The final study will afford the leaders and transportation providers of the area an opportunity to take an in-depth look at the transit system currently in place, choose the optimal manner in which transit can meet the public's needs within this area, and carefully identify where transit resources may need to be devoted over the plan.

This page intentionally left blank.

Chapter 2
Study Area Characteristics

STUDY AREA

Summit County, Utah is located in the Wasatch Mountains, roughly 30 miles east of Salt Lake City. The area, particularly Park City, is famous for the skiing opportunities and is becoming increasingly known for a variety of other recreational, cultural and historical resources and events. Figure 1 illustrates the study area, including it's proximity to other cities in Utah.

The area surrounding Park City, including the Snyderville Basin, is dominated by a number of distinct destination areas, including Park City's Historic Old Town and multiple ski resort communities. The study area has experienced rapid growth in the past decade, including the Kimball Junction and Deer Valley resort areas. Although the current economic climate has slowed expansion down, more growth is expected in the future. Park City is the County's retail, recreational and entertainment center, which has created a strained roadway system in and around Park City. "Big box" retail and new subdivisions in outlying areas have increased traffic in the region as well.

Major roadways within the study area include I-80, State Road 224, and State Road 228. I-80 provides direct access to Salt Lake City to the west and access to the eastern portions of the study area, including Coalville. US 40 diverges from I-80 east of the Snyderville Basin, heading south to Heber City and beyond. State Route 224 is the major roadway that provides access to Park City from I-80; Kimball Junction, the Canyons Resort and Park City Mountain Resort are all located off this route. Once in town, State Route 224 becomes Park Avenue and serves the downtown area of the City. State Route 248 in Park City is also known as Kearns Boulevard, and traverses east into the Prospector Square area of Park City and to the Quinn's Junction/US Highway 40 area of the County.

MAJOR ACTIVITY CENTERS

Summit County is home to many ski resorts that attract residents and visitors alike. These include Park City Mountain Resort, Deer Valley Resort and Canyons (in unincorporated Summit County north of Park City), all of which offer activities year round.

Park City and its surrounding areas offer the majority of Summit County's activity centers. Within Park City proper, Old Town (downtown) is the cultural, restaurant and entertainment center for the basin. Its unique charm and character are some of the primary reasons why visitors choose to come to the area. In addition, it is also an important employment center. The small streets and limited parking add to the ambiance, but can impede access. Transit service is an important element in this area's ability to remain an important ski vacation destination.

The Park City / Summit County area also contains a number of parks, including Rockport State Park, Deer Creek State Park and Wasatch Mountain State Park. Echo Lake in Coalville and the

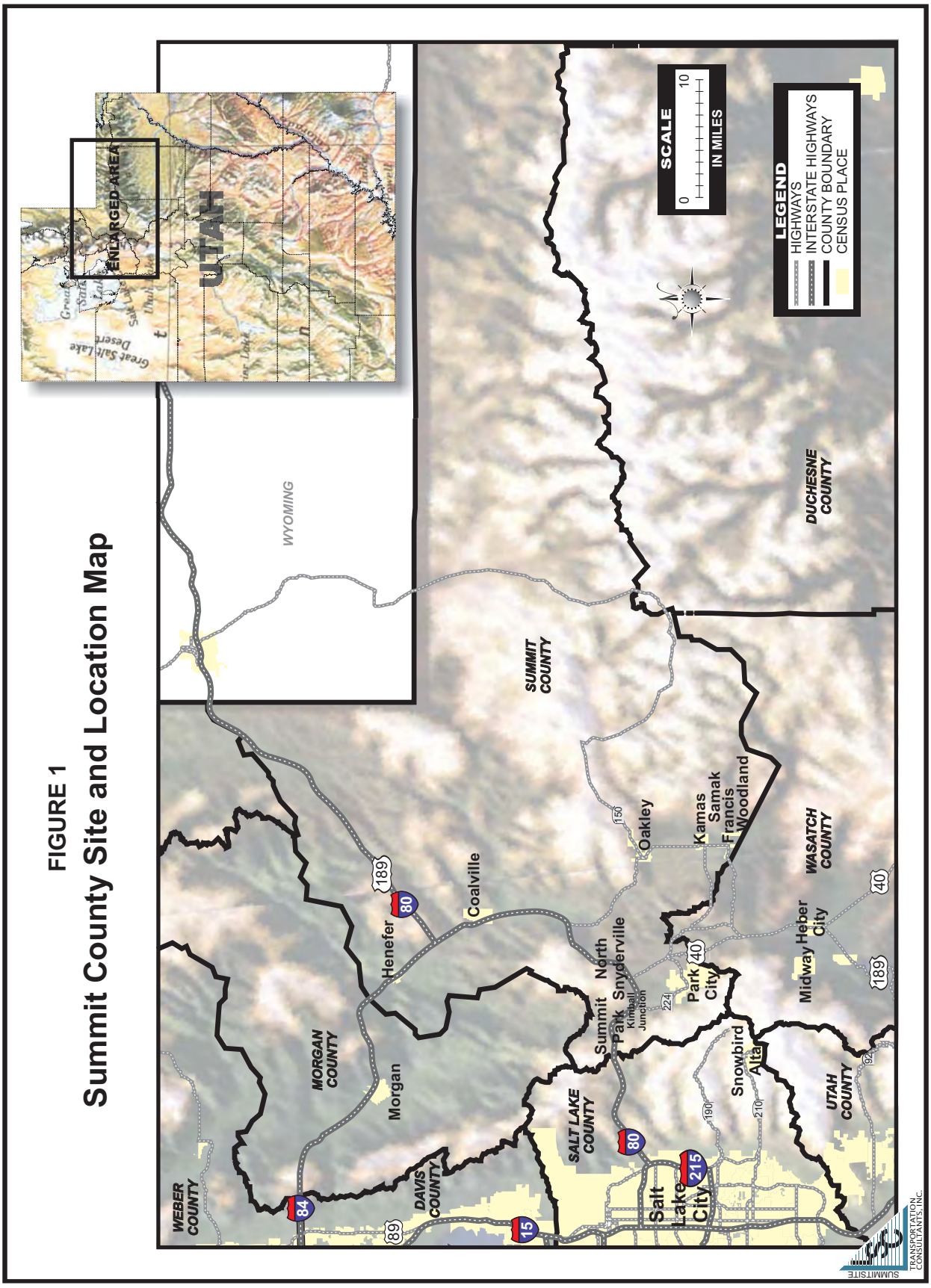


FIGURE 1
Summit County Site and Location Map
ENLARGED AREA
UTAH
WYOMING
SCALE
0
10
IN MILES
LEGEND
HIGHWAYS
INTERSTATE HIGHWAYS
COUNTY BOUNDARY
CENSUS PLACE
WEBER COUNTY
MORGAN COUNTY
DAVIS COUNTY
SALT LAKE COUNTY
SUMMIT COUNTY
WASATCH COUNTY
UTAH COUNTY
DUCHESNE COUNTY
Morgan
Henefer
Coalville
Oakley
Kamas
Samak
Francis
Woodland
North Snyderville
Summit Park
Kimball Junction
Park City
Midway
Heber City
Snowbird
Alta
Salt Lake City
84
80
15
89
189
40
215
224
150
190
210
TRANSPORTATION CONSULTANTS, INC.
SUMMITSITE

Jordanelle Reservoir offer water sports, while the Provo River provides opportunities for river rafting and fishing. Trails for hiking, biking and horseback riding are also prevalent throughout Summit County and nearby Wasatch Mountains. In addition to the ski resorts already mentioned, skiing and other winter sports are also available at the Utah Olympic Park.

Another key activity center is the Kimball Junction area, which has experienced continual development of commercial and mixed land uses, including major destinations such as the Newpark and Redstone developments. These developments contain hotels, retail and grocery shopping, dining and entertainment activities, including a bowling alley and cinema.

Quinn's Junction has experienced rapid development in recent years, with both medical and recreational uses. The area is now home to the National Ability Center, the Park City Ice Area and Sports Complex, the Park City Medical Center and the People's Health Clinic.

SPECIAL EVENTS

Summit County is home to a number of special events that attract attendees from all over the world. During the major events, Park City Transit provides extra service in order to offset potential traffic and parking issues. These recurring events include:

Winter

- Sundance Film Festival, a ten-day festival in January
- World Cup ski and snowboard competitions in January

Summer

- Park City Arts Festival, in early August
- Deer Valley Summer Concert Series, held from mid-July through mid-August
- Park Silly Sunday Market, from June through September
- Triple Crown Softball tournament in July
- Tour of Utah bike race in July

Fall

- Autumn Classics Music Festival, in September and October

Spring

- Park City Film Music Festival, held in May

In addition to the above events, other events occur throughout the year, including ski and snowboard competitions, celebrity ski events, cultural events and other athletic events.

ECONOMY AND EMPLOYMENT

The Park City/Summit County area has a very tourist-oriented employment focus. Based on 2008 data released by the State of Utah Department of Workforce Services, roughly 36 percent of the nonfarm jobs in Summit County are within the Leisure and Hospitality sector, the greatest of any single industry. A list of the top employers in the county from 2009, as shown in Table 1, indicates that half of the largest employers are ski resorts, including lodging and ski services. Of the remaining employers, local government and public education also have significant numbers of employees. It is important to note that this is not a comprehensive list, and that there are a

number of additional employers that fall into the 100 to 249 employee's category. These include the State of Utah, various retail establishments such as Wal-Mart, Home Depot and grocery stores, as well as smaller hotels and resorts including the Marriott and Hilton hotels.

TABLE 1: Top 10 Employers in Park City / Summit County, 2010

Employer	Service	Location	# of Employees
Deer Valley Resort	Ski Resort/Accommodations	Park City	500-999
The Canyons	Ski Resort/Accommodations	Park City	500-999
Park City School District	Public Education	Park City	500-999
Park City Mountain Resort	Ski Resort/Accommodations	Park City	500-999
Park City	Local Government	Park City	500-999
Summit County	Local Government	Park City	250-499
Stein Eriksen Lodge	Accommodations/Resort	Park City	250-499
Premier Resorts of Utah	Accommodations/Resort	Park City	250-499
Backcountry.com	Electronic Shopping	Park City	250-499
Triumph Gear Systems	Aircraft Parts and Equipment	Park City	100-249

Source: State of Utah Department of Workforce Services, 2011

With tourism being affected by the recent recession, employment has also been impacted. Table 2 and Figure 2 present employment data for the past five years. As shown, unemployment has increased significantly in recent years, growing from 2.9 percent in 2006 to 7.3 percent in 2010, according to the State of Utah Department of Workforce Services. Historically, the unemployment rate of Summit County has been on par with the statewide levels, also shown for comparison purposes in Figure 2.

TABLE 2: Summit County Employment - 2006 to 2010

	Labor Force	Employed	Unemployed	Unemployment Rate
2006	21,801	21,170	631	2.9%
2007	21,742	21,174	568	2.6%
2008	22,054	21,292	763	3.5%
2009	21,972	20,572	1,400	6.4%
2010	21,818	20,232	1,586	7.3%

Source: State of Utah Department of Workforce Services, 2011

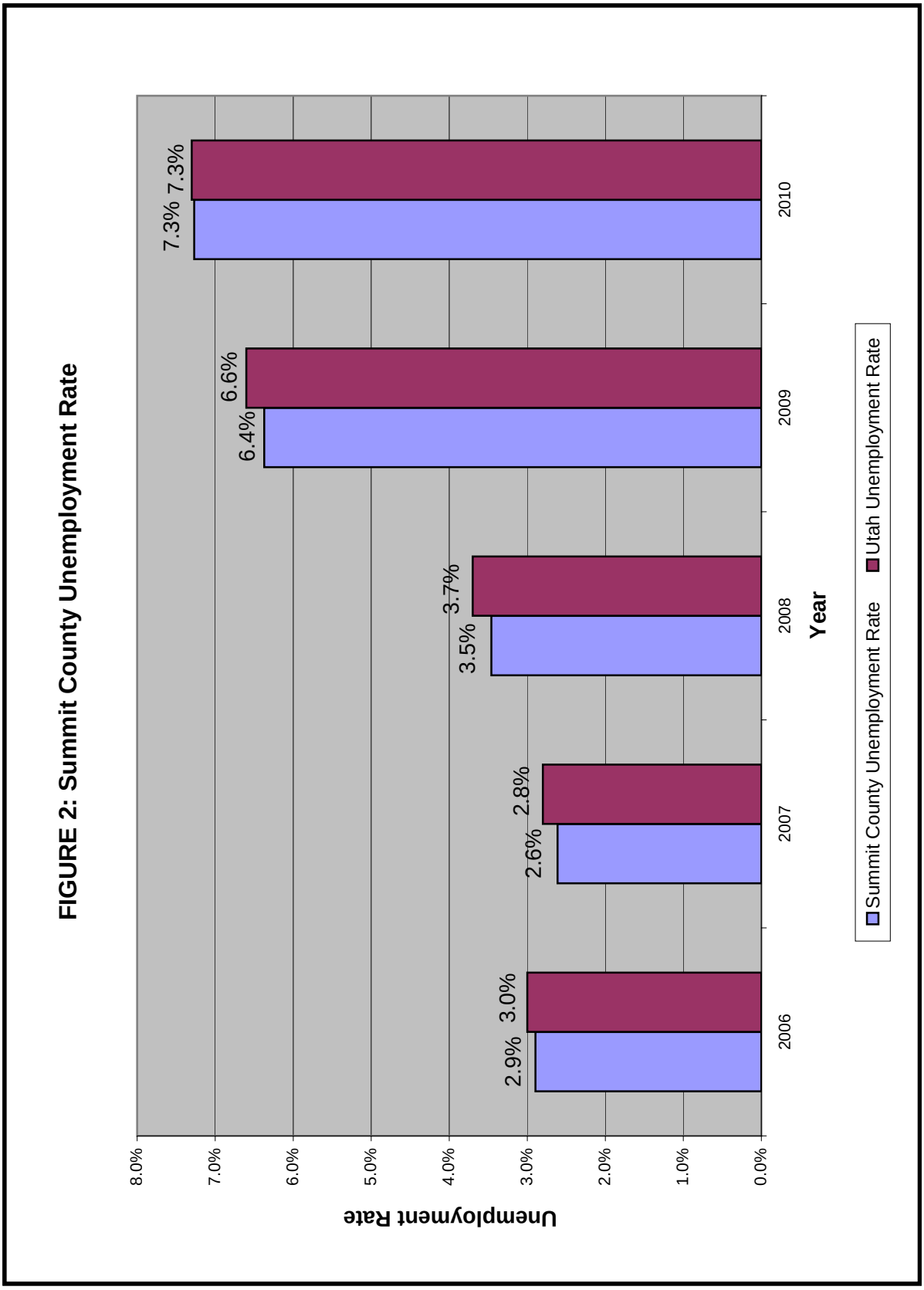


FIGURE 2: Summit County Unemployment Rate
Unemployment Rate
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
7.3% 7.3%
6.6%
6.4%
3.7%
3.5%
2.8%
2.6%
3.0%
2.9%
2006
2007
2008
2009
2010
Year
Summit County Unemployment Rate
Utah Unemployment Rate

POPULATION

As shown in Table 3, the population in Summit County has increased nearly 20 percent between 2000 and 2009, averaging an annual change of roughly 2 percent. In 2009, the total County population was 35,664, according to the US Census Bureau's 2005-2009 American Community Survey. Data is also shown for select areas in the study area, representing the most populous places. The South and North Snyderville Basin Census Data Place (CDP) areas have experienced significant growth in the past 9 years, with 34 percent and 30 percent increases, respectively. The Summit Park CDP area has grown 19 percent, while Park City has grown by nearly 9 percent.

TABLE 3: Historical Population for Select Areas of Summit County

	2000	2009	% Change 2000 - 2009	Avg Annual % Change
Park City	7,371	8,015	8.7%	0.9%
South Snyderville Basin CDP	3,636	4,880	34.2%	3.3%
North Snyderville Basin CDP	1,821	2,375	30.4%	3.0%
Summit Park CDP	6,597	7,853	19.0%	2.0%
Total Summit County	**29,736**	**35,644**	**19.9%**	**2.0%**

Source: US Census Bureau.

Detailed data regarding the population characteristics of Summit County from the 2005 – 2009 American Community Survey is presented by census tract (as shown in Table 4) and by place (as shown in Table 5). Figures 3 and 4 illustrate the population in the various study area locations by Census Tract and by Place.

As shown in these tables and figure, the greatest population concentrations are located along the Highway 224 corridor, which includes Park City, South Snyderville Basin CDP, North Snyderville Basin CDP and the Summit Park CDP. As a whole, the population for this area was 23,123 for 2009, representing approximately 65 percent of the County's total population.

High Transit Potential Population

Nationwide, transit system ridership is drawn largely from various groups of persons who make up what is often called the "transit dependent" population. This category includes youths, elderly persons, persons with disabilities, low-income persons, and members of households with no available vehicle. Tables 4 and 5 present the potential transit dependent population by census tract and by place. This data is drawn from the most recent American Community Survey, with the exception of the disabled population data; the totals included on the table were derived from the 2000 U.S. Census.

TABLE 4: Summit County Population Characteristics by Census Tract, 2009

		Total Population		Youth (ages 5-17)		Elderly (65+)		Low Income		Total Households	Zero Vehicle Households		2000 Census Total Population	Disabled	
Census Tract	Area	#	%	#	%	#	%	#	%	#	#	%	#	#	%
9943.02	N. & S. Snyderville Basin	10,123	28.4%	1,932	19.1%	533	5.3%	667	6.6%	3,585	87	2.4%	8,083	105	1.3%
9943.01	Summit Park/ Jeremy Ranch	8,820	24.7%	1,888	18.7%	438	4.3%	332	3.3%	3,254	57	1.6%	7,721	57	0.7%
9942	Oakley/ Kamas / Francis	6,510	18.3%	1,473	14.6%	517	5.1%	587	5.8%	2,181	37	1.0%	4,895	169	2.1%
9944	Park City	5,203	14.6%	776	7.7%	278	2.7%	515	5.1%	2,007	164	4.6%	4,847	60	0.7%
9941	Coalville / Henefer	4,988	14.0%	1,019	10.1%	506	5.0%	369	3.6%	1,723	31	0.9%	4,190	153	1.9%
Total Summit County		***35,644***	***100.0%***	***7,088***	***19.9%***	***2,272***	***6.4%***	***2,470***	***6.9%***	***12,750***	***376***	***2.9%***	***29,736***	***544***	***1.8%***

Note 1: The most recent disability information is available from the 2000 Census only.

Source: US Census Bureau 2005-2009 American Community Survey; US Census Bureau 2000 US Census.

TABLE 5: Summit County Population Characteristics by Place, 2009

Census Place	Total Population		Youth (ages 5-17)		Elderly (65+)		Low Income		Total Households	Zero Vehicle Households		2000 Census Total Population	Disabled	
	#	%	#	%	#	%	#	%	#	#	%	#	#	%
Park City	8,015	*22.5%*	1,242	*15.5%*	433	*5.4%*	883	*11.0%*	2,960	216	*7.3%*	7,371	88	*1.2%*
Summit Park CDP	7,853	*22.0%*	1,838	*23.4%*	353	*4.5%*	233	*3.0%*	2,705	45	*1.7%*	6,597	57	*0.9%*
South Snyderville CDP	4,880	*13.7%*	1,083	*22.2%*	146	*3.0%*	176	*3.6%*	1,670	0	*0.0%*	3,636	42	*1.2%*
North Snyderville CDP	2,375	*6.7%*	380	*16.0%*	233	*9.8%*	123	*5.2%*	931	35	*3.8%*	1,821	35	*1.9%*
Kamas	1,845	*5.2%*	450	*24.4%*	125	*6.8%*	346	*18.8%*	610	25	*4.1%*	1,274	67	*5.3%*
Coalville	1,688	*4.7%*	466	*27.6%*	113	*6.7%*	116	*6.9%*	508	9	*1.8%*	1,382	52	*3.8%*
Oakley	1,183	*3.3%*	241	*20.4%*	149	*12.6%*	10	*0.8%*	396	0	*0.0%*	948	33	*3.5%*
Francis	1,118	*3.1%*	224	*20.0%*	67	*6.0%*	163	*14.6%*	375	0	*0.0%*	698	41	*5.9%*
Henefer	769	*2.2%*	103	*13.4%*	98	*12.7%*	40	*5.2%*	281	0	*0.0%*	684	41	*6.0%*
Samak CDP	485	*1.4%*	115	*23.7%*	30	*6.2%*	0	*0.0%*	163	0	*0.0%*	161	8	*5.0%*
Woodland CDP	482	*1.4%*	202	*41.9%*	33	*6.8%*	50	*10.4%*	121	0	*0.0%*	335	10	*3.0%*
Other Summit County	4,951	*13.9%*	749	*15.1%*	501	*10.1%*	330	*6.7%*	2,030	46	*2.3%*	4,829	70	*1.4%*
Total Summit County	***35,644***	***100.0%***	***7,093***	***19.9%***	***2,281***	***6.4%***	***2,470***	***6.9%***	***12,750***	***376***	***2.9%***	***29,736***	***544***	***1.8%***

Note 1: The most recent disability information is available from the 2000 Census only.

Source: US Census Bureau 2005-2009 American Community Survey; US Census Bureau 2000 US Census.

FIGURE 3

Summit County Population by Census Tract

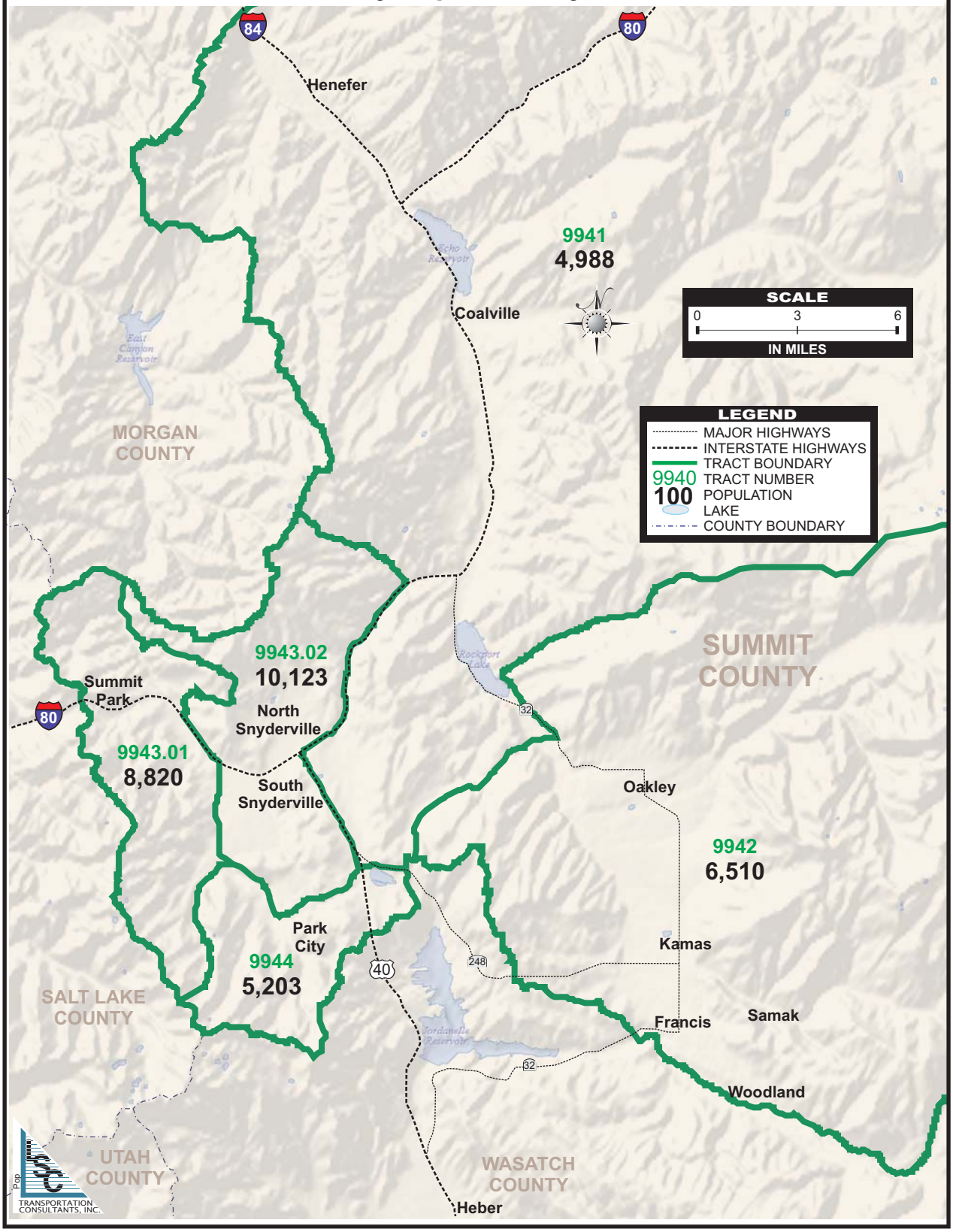
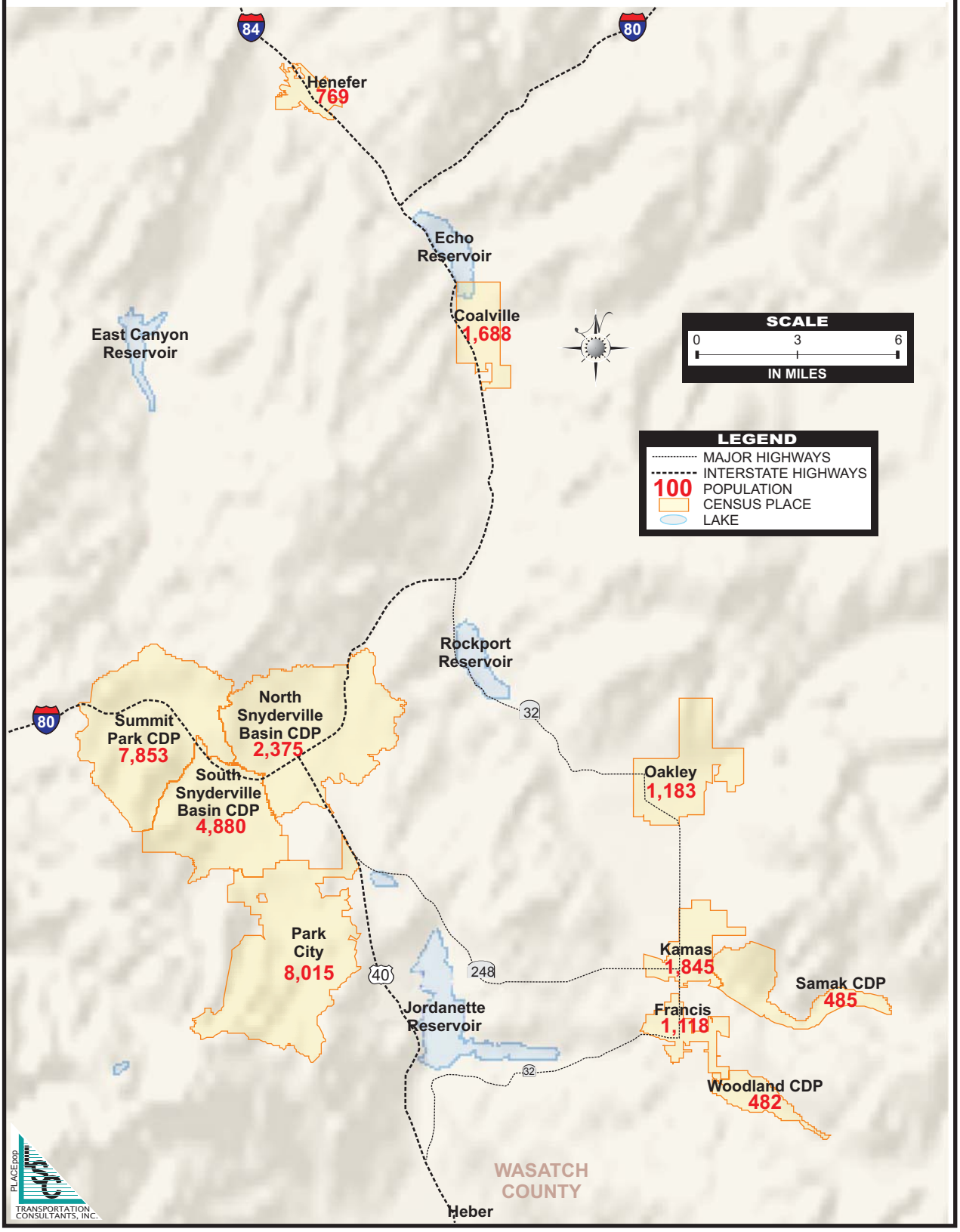


FIGURE 4

Summit County Population by Census Place



Youth Population

Youths represent a transportation-dependent population, as those under 16 years of age are unable to drive and may not have a parent available to transport them. In particular, transit ridership is generated by junior high school students who are independent enough to attend after-school activities but are unable to drive. The best available US Census data groups youth by ages, and includes a group between 10 and 17 years of age. As a result, the study defines the youth group as ages 5 to 17 years.

As shown in the tables, and graphically in Figure 5, the County's total youth population was 7,093 in 2009 [1], equal to roughly 20 percent of the overall population. The Summit Park CDP has the greatest number of youths, with 1,838 persons, followed by Park City (1,242 persons) and the South Snyderville CDP (1,083 persons). On the low end, Henefer has the fewest number of youth, with only 103 persons, while the Samak CDP was home to only 115 youth-aged persons.

Elderly Population (65 years of age and older)

Another important group that is considered transit-dependent is the elderly population, where many choose not to drive yet must travel to various programs and activities. As presented in the tables and Figure 6, residents over the age of 65 comprised 6.4 percent of Summit County's population. The greatest proportion of elderly population is found in Park City (433 persons), the Summit Park CDP (353 persons) and the North Snyderville Basin CDP (233 persons). In comparison, only 30 elderly persons resided in the Samak CDP and only 33 elderly persons in the Woodland CDP area.

Low-Income Population

Low-income persons are another likely market for transit services, as measured by the number of persons living below the poverty level. This information is presented in Tables 4 and 5 and in Figure 7. An estimated 2,470 persons were living below the poverty level in Summit County in 2009, representing nearly 7 percent of the County's total population. The greatest number of low-income persons, 883 persons, is located in Park City. However, on a percentage basis the greatest levels of low-income persons were in Kamas, where nearly 19 percent of the population (346 persons) is considered low income, and in Francis with nearly 15 percent (163 persons). These figures suggest that locations with a higher concentration of low-income residents, and associated relatively high need for transit service, are found in both urban and rural portions of the study area.

Zero Vehicle Households

The number of households without a vehicle available is perhaps one of the strongest indicators of a transit-dependent household. As shown in the tables and Figure 8, only 2.9 percent of the

[1] The totals for the County differ between Tables 4 and 5 slightly, which is a result of how the overall percentages distributed between Census Tract and Place. For the purposes of the report, the totals from Table 4 will be used.

FIGURE 5

Summit County Youth Population by Census Tract

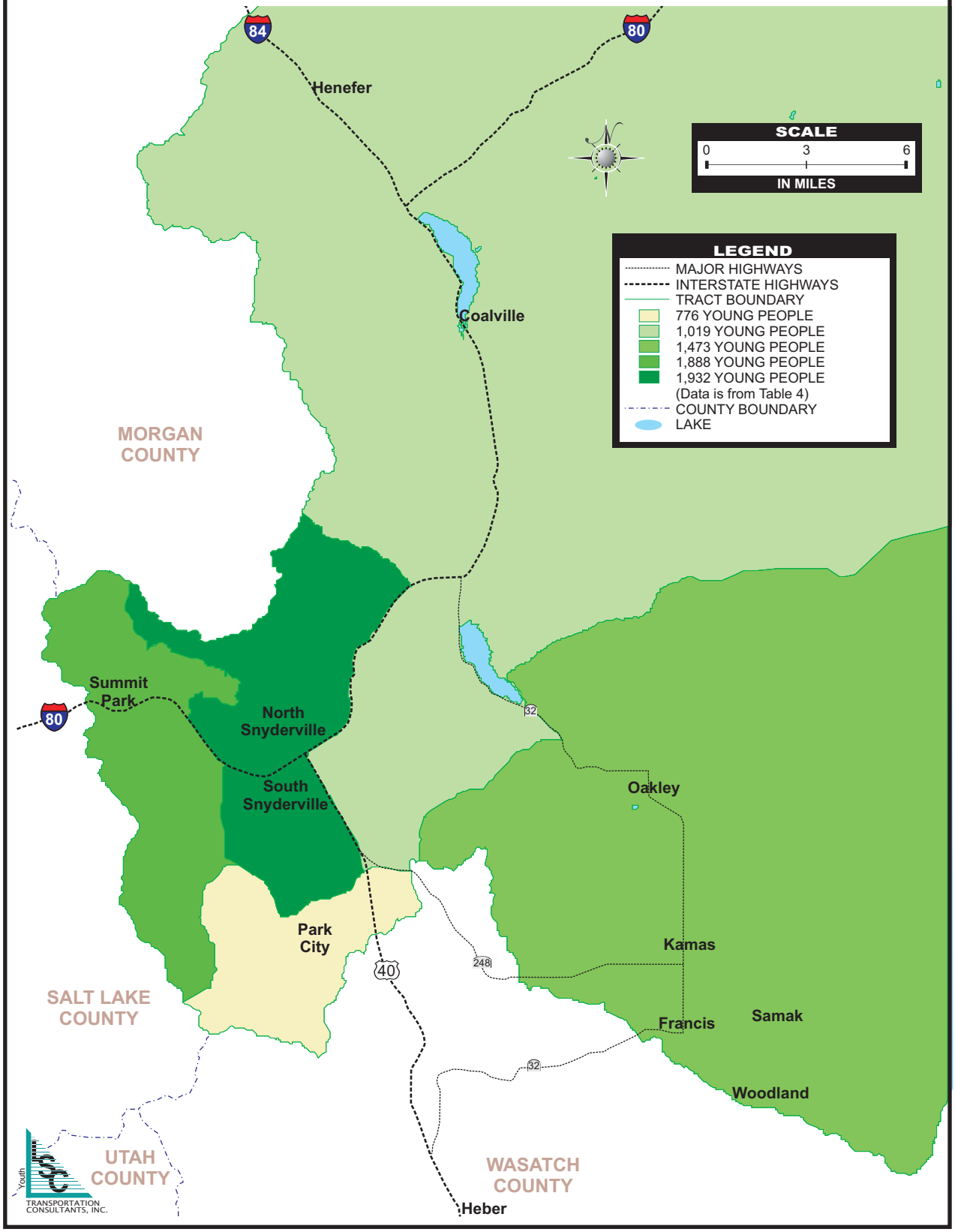


FIGURE 6

Summit County Elderly Population by Census Tract

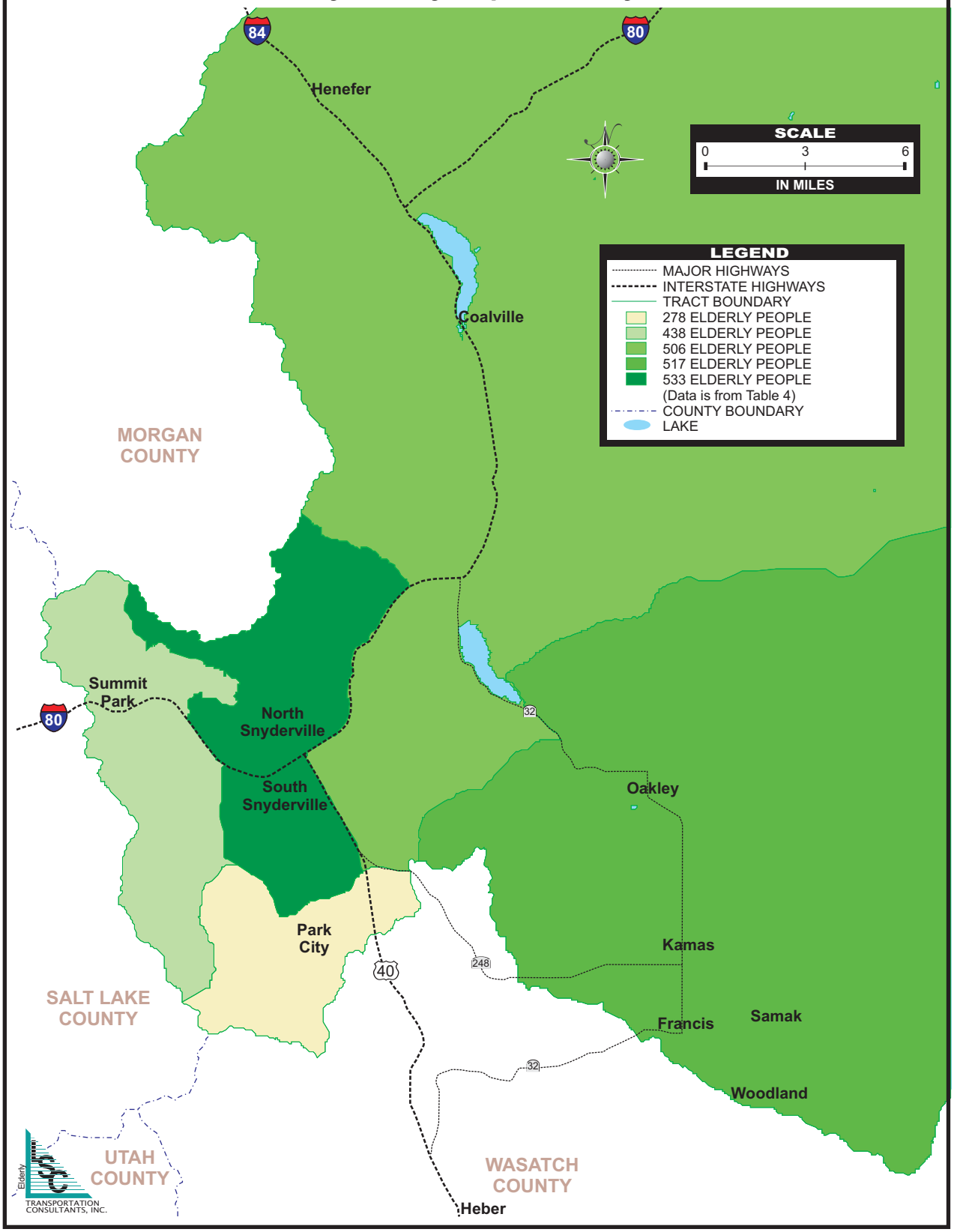


FIGURE 7

Summit County Below Poverty Level Population by Census Tract

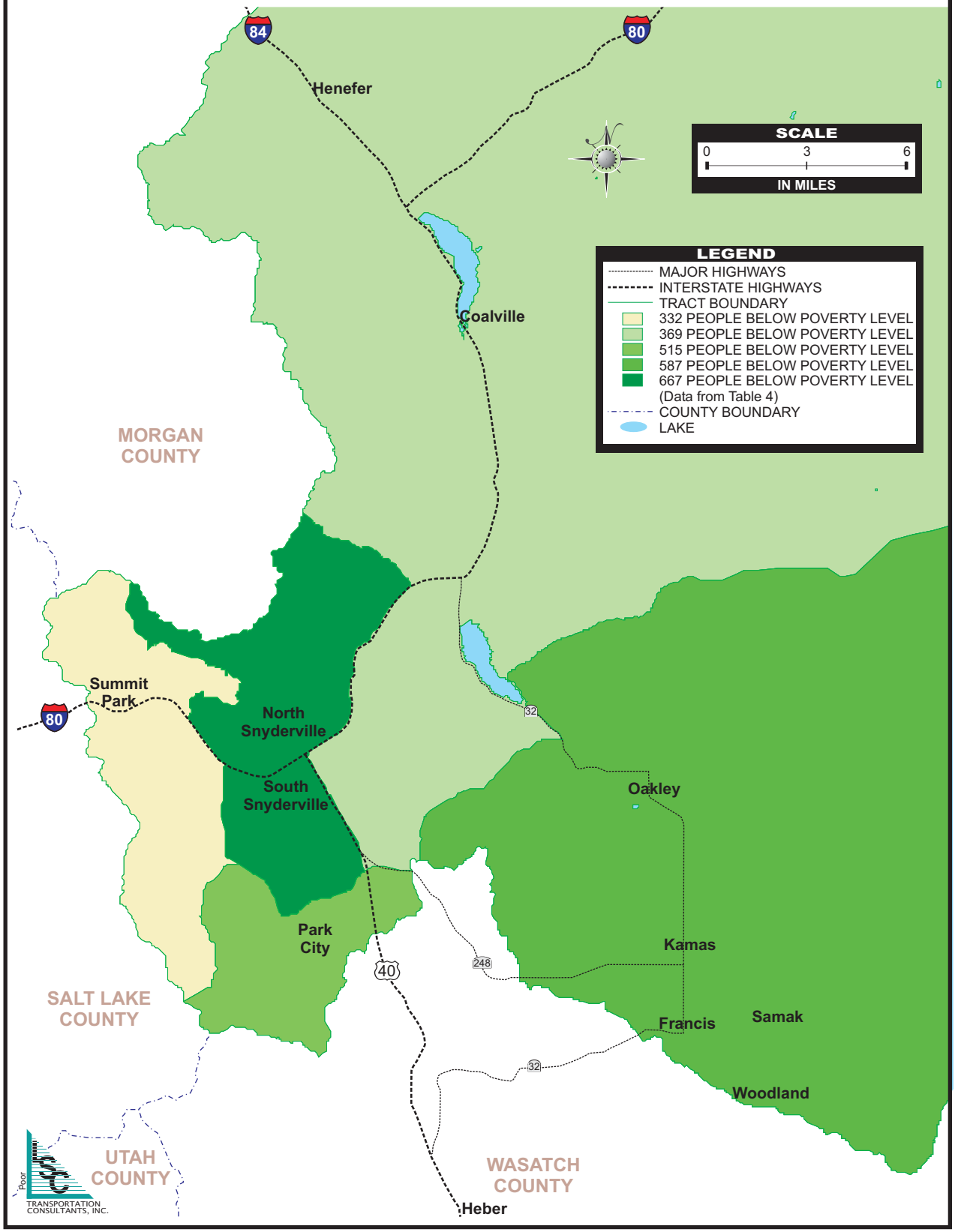
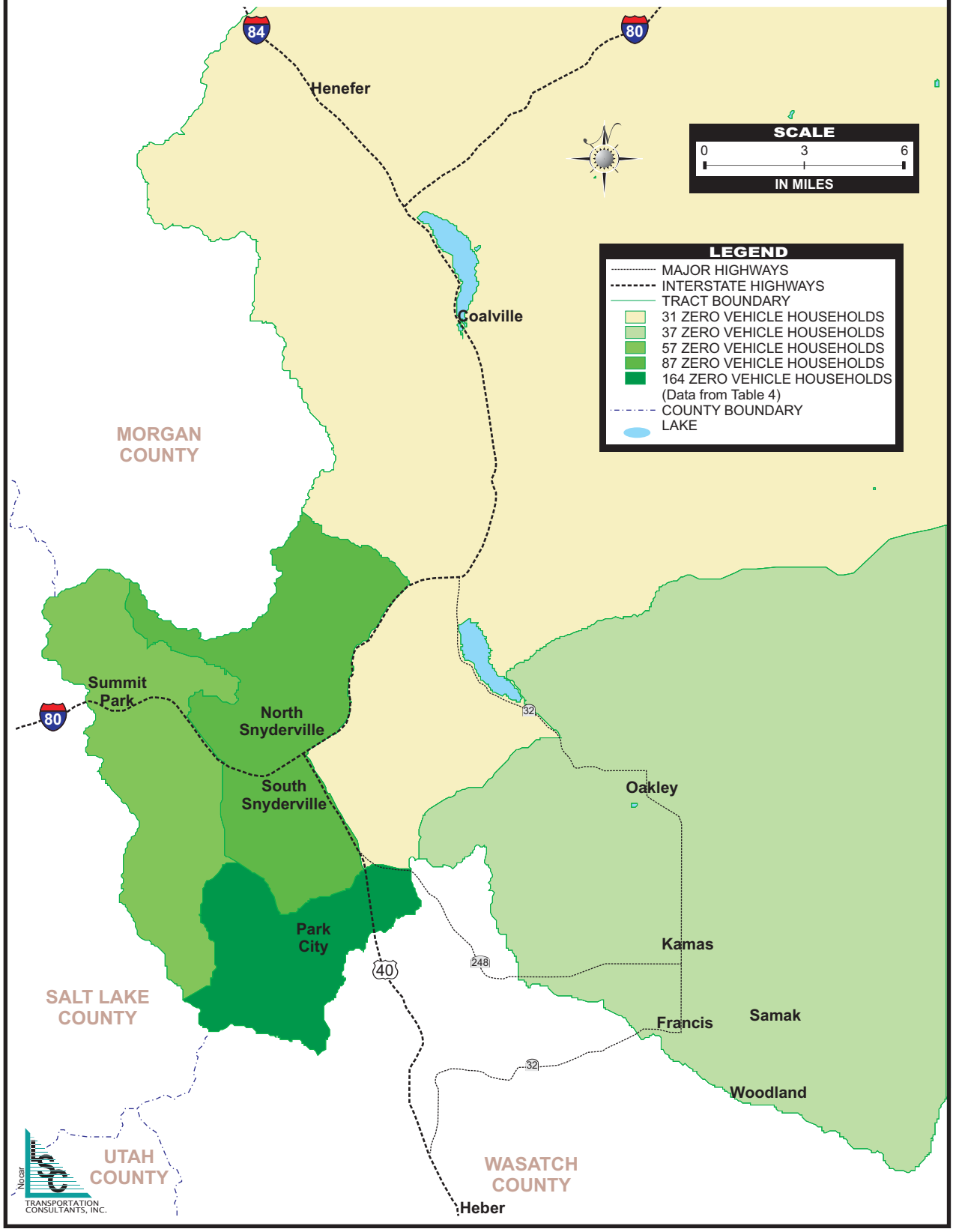


FIGURE 8

Summit County Zero Vehicle Households by Census Tract



households (376 households) in the county are considered zero vehicle households. Census Tract 9944 (primarily the Park City area) has the highest percentage, with 4.6 percent. Approximately 2 percent of the households in Census Tract 9943.02 (which includes the South and North Snyderville Basin CDP areas) do not have a vehicle available. However, when looking at more detailed information by Census Place in Table 5 (rather than Census Tract), a number of areas do not have any vehicles with zero vehicles available. This includes Oakley, Francis, Henefer, Samak and Woodland.

Disabled Persons

The US Census Bureau defines "mobility limited" as persons having a health condition lasting more than six months that makes it difficult to go outside the home alone. The information presented in Tables 4 and 5 includes only persons with "go outside the home" disability status. Figure 9 depicts this information graphically.

As shown in the tables, only 1.8 percent of the population was considered to be mobility limited, according to the 2000 US Census, with the greatest number of disabled persons in Park City, Kamas, Summit Park CDP and Coalville. As noted earlier, disability information for detailed areas (places, Census Tract, etc) was not provided by the most recent American Community Survey, and could only be obtained from the 2000 Census. However, on a county level, disability information was available from the 2005 – 2007 American Community Survey. This data showed that the number of disabled persons in Summit County declined by 31 percent between 2000 and 2007. In 2007, there was a total of 377 mobility limited persons, which represents roughly 1.1 percent of the total population for the same period.

Population Projections

The State of Utah has projected that by 2020, Summit County's population will reach 61,738, representing a potential increase of 26,074 persons, or 73 percent, from the 2009 population of 35,664.

Visitor Population

Overnight Visitors

Data provided by the Park City Chamber of Commerce and Visitor's Bureau shows that in 2010, there was a total of 2,971,186 overnight visitors in Park City, as shown in Table 6. This figure represents a decline in overnight visitors of 11.5 percent from 2006. Even with the overall decrease, the overnight visitor population increased in the last year by just over 6 percent.

Looking more closely at seasonal totals, the winter season has decreased roughly 17 percent between 2006 (1,608,917 visitors) and 2010 (1,336,305 visitors), while the non-winter season has seen a lesser decline of roughly 7 percent during the same period. Over the most recent two years, winter visitation continued to decline (by 0.7 percent) while the non-winter visitation grew by 7.5 percent. Detailed winter visitor data shows that on average, overnight visitors typically stay 5.9 nights, according to information for the 2007-2008 season.

FIGURE 9

Summit County Mobility Limited Population by Census Tract

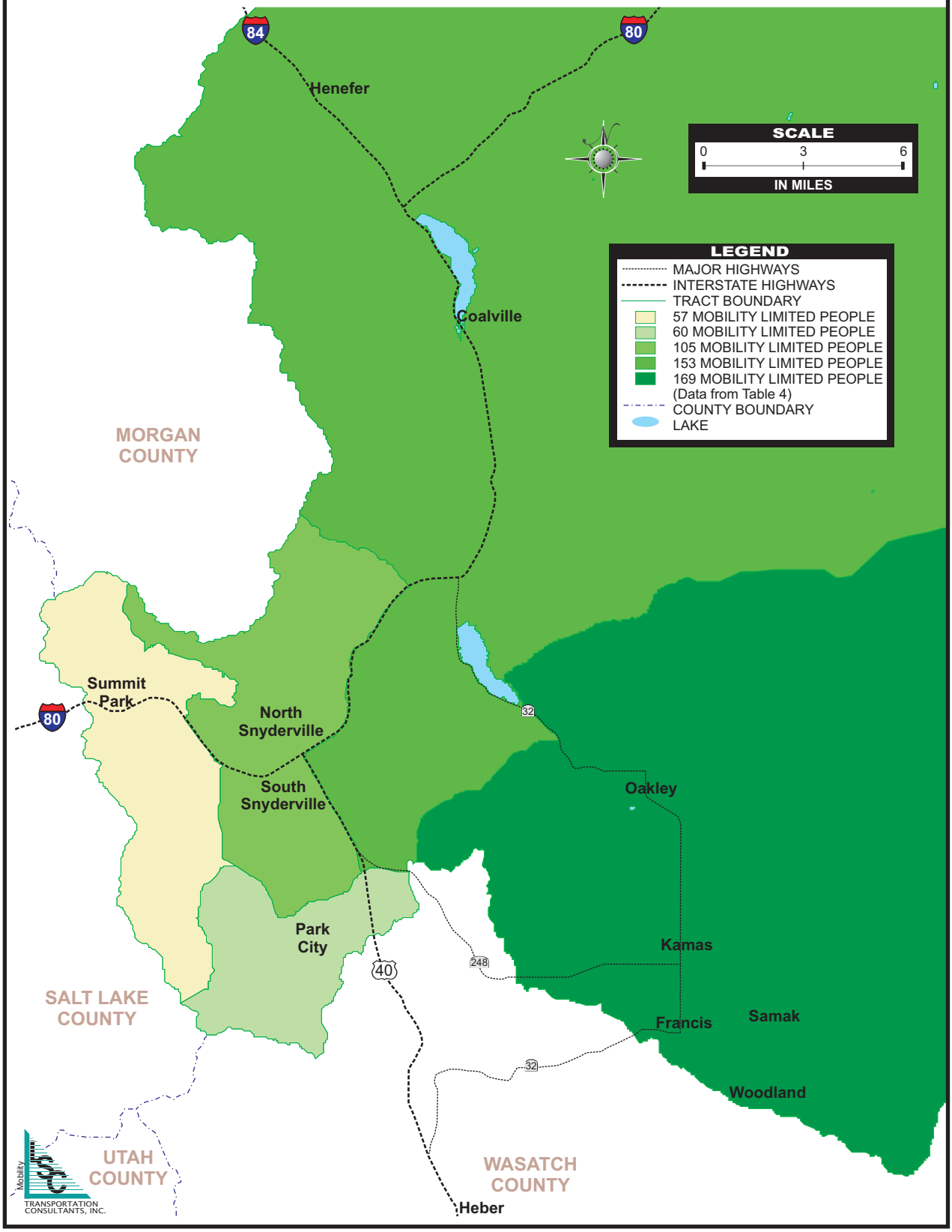


TABLE 6: Park City Visitor Nights by Month, 2005-2009

Month	2006	2007	2008	2009	2010	% Change 2006 - 2009
January	437,684	467,026	418,570	419,081	425,380	-2.8%
February	406,316	385,678	389,624	352,620	357,402	-12.0%
March	433,762	420,174	436,265	308,345	344,685	-20.5%
April	182,782	171,648	159,831	156,866	201,460	10.2%
May	132,271	144,234	151,074	142,850	146,197	10.5%
June	210,767	238,075	220,741	166,895	176,720	-16.2%
July	348,372	349,672	327,830	326,132	337,945	-3.0%
August	323,974	301,720	317,294	234,707	263,866	-18.6%
September	227,387	205,318	204,462	186,053	190,221	-16.3%
October	163,247	169,383	177,771	180,212	186,635	14.3%
November	153,771	153,143	125,485	118,043	122,737	-20.2%
December	337,281	304,905	265,392	208,838	217,938	-35.4%
Year Total	3,357,614	3,310,976	3,194,339	2,800,642	2,971,186	-11.5%
Change over Previous Year		-1.4%	-3.7%	-14.1%	5.7%	
Winter Total [1]	1,608,917	1,610,159	1,549,364	1,345,438	1,336,305	-16.9%
Non-Winter Total [2]	1,742,571	1,733,193	1,684,488	1,511,758	1,625,781	-6.7%

Note 1: Winter includes December of prior year and January through March of current year.
Note 2: Off-Season includes April through November.

Source: Park City Chamber of Commerce & Visitors Bureau, 2011.

Skier Days

Given the ski-based industry of Park City, another important factor to consider is the number of skier days. Skier days are used to measure the total number skiers in an area, and include the skier visits in the area for both out of town guests and locals. Information provided by the Park City Chamber of Commerce and the Ski Utah organization shows that the winter 2009-2010 season had a total of 1,734,025 skier days in Park City, which represents an increase of 5 percent from the previous year, as shown in Table 7. The prior year had a substantial decrease of roughly 14 percent, and given this, the small increase in the current year still resulted in totals lower than those seen in the 2006-2007 winter season.

TABLE 7: Historical Skier Days, 2005 through 2009

Year	State of Utah		Park City Area Resorts [1]		Park City Market Share of Utah
	Skier Days	% Change	Skier Days	% Change	
2005-2006	4,062,188	--	1,715,536	--	42.2%
2006-2007	4,082,094	0.5%	1,746,333	1.8%	42.8%
2007-2008	4,258,900	4.2%	1,871,540	7.2%	43.9%
2008-2009	3,972,984	-7.2%	1,645,233	-12.1%	41.4%
2009-2010	4,048,153	1.9%	1,734,025	5.4%	42.8%

Note 1: Includes Park City, Deer Valley and the Canyons Resorts

Source: Park City Chamber of Commerce & Visitors Bureau; Ski Utah

COMMUTE PATTERNS

Commute data can provide insight into another potential group of transit riders. The US Census maintains the "Longitudinal Employer Household Dataset" which provides detailed data on the location of employment for a study area's residents, as well as data on the location of residence of a study area's workers. Table 8 presents the commute data for the overall study area in 2008.

The first section of the table represents where Summit County residents are commuting for work. In total, 57 percent of residents commute within Summit County for work, with the majority (33.5 percent) working in Park City. Approximately 28 percent of Summit County residents work in Salt Lake County, including 14 percent that commute to Salt Lake City.

Another factor to consider is the population that commutes into Summit County from other areas. The LEHD data shows that 42.4 percent of the employed persons are generated from Summit County, including workers living in Park City (11.6 percent) and Summit Park CDP (9.3 percent). Nearly 29 percent of the commuters into the area come from Salt Lake County and 9 percent from adjacent Wasatch County.

A more detailed look at specific patterns between areas in the County and beyond (Table 9) reveals that:

- Park City, South Snyderville CDP and Summit Park CDP have the greatest number of commuters, both into and out of the communities.

- The majority of commuters in the County are generated from areas within the County. Over 50 percent of the commuters to Park City and South Snyderville are from Summit County, while 48 and 46 percent of commuters to North Snyderville and Summit Park are from the County, respectively.

TABLE 8: Summit County Commute Pattern Data, 2008

***Bold** = Locations within the Summit County Study Area*

Location of Employment for Residents of Summit County

Cities Where Residents of Summit County Work	# of Jobs	% of Total	Counties Where Residents of Summit County Work	# of Jobs	% of Total
Park City, UT	**5,897**	**33.5%**	**Summit County, UT**	**10,029**	**57.0%**
Salt Lake City, UT	2,466	14.0%	Salt Lake County, UT	4,914	27.9%
South Snyderville Basin CDP, UT	**837**	**4.8%**	Utah County, UT	706	4.0%
Kamas, UT	**463**	**2.6%**	Davis County, UT	390	2.2%
Summit Park CDP, UT	**422**	**2.4%**	Weber County, UT	347	2.0%
West Valley City, UT	384	2.2%	Wasatch County, UT	268	1.5%
Murray, UT	322	1.8%	Cache County, UT	120	0.7%
Sandy, UT	292	1.7%	Tooele County, UT	82	0.5%
South Salt Lake City, UT	256	1.5%	Duchesne County, UT	73	0.4%
Coalville, UT	**238**	**1.4%**	Morgan County, UT	44	0.2%
Other Locations	6,033	34.3%	Other Locations	637	3.6%
Total	*17,610*	*100.0%*	*Total*	*17,610*	*100.0%*

Location of Residence for Workers Within Summit County

City of Residence for Commuters Into Summit County	# of Workers	% of Total	County of Residence for Commuters Into Summit County	# of Workers	% of Total
Park City, UT	**2,755**	**11.6%**	**Summit County, UT**	**10,029**	**42.4%**
Summit Park CDP, UT	**2,191**	**9.3%**	Salt Lake County, UT	6,842	28.9%
Salt Lake City, UT	1,889	8.0%	Wasatch County, UT	2,156	9.1%
South Snyderville Basin CDP, UT	**1,526**	**6.4%**	Utah County, UT	1,407	5.9%
Heber, UT	1,300	5.5%	Davis County, UT	926	3.9%
North Snyderville Basin CDP, UT	**748**	**3.2%**	Weber County, UT	492	2.1%
Sandy, UT	601	2.5%	Cache County, UT	267	1.1%
Kamas, UT	**440**	**1.9%**	Tooele County, UT	181	0.8%
West Valley City, UT	435	1.8%	Box Elder County, UT	158	0.7%
Cottonwood Heights, UT	375	1.6%	Morgan County, UT	120	0.5%
Other Locations	11,415	48.2%	Other Locations	1,097	4.6%
Total	*23,675*	*100.0%*	*Total*	*23,675*	*100.0%*

Source: US Census Bureau, LEHD Origin-Destination Database.

TABLE 9: Commute Origin and Destination for Select Locations

Bold = locations within Study Area

Commute From... \ Commute To....	Park City	South Snyderville CDP	Summit Park CDP	North Snyderville CDP	Kamas	Coalville	Oakley	Francis	Samak CDP	Henefer	Woodland CDP	Heber	Salt Lake City	Other Salt Lake County	Total Commuters From Location	# Persons Commuting to Study Area Locations	% Persons Commuting to Study Area Locations
Park City	**2,171**	**178**	**70**	**60**	**12**	**8**	**7**	**2**	**6**	**--**	**1**	30	414	402	3,361	2,515	74.8%
South Snyderville CDP	**1,043**	**177**	**56**	**44**	**7**	**10**	**5**	**--**	**--**	**--**	**--**	12	345	301	2,000	1,342	67.1%
Summit Park CDP	**1,279**	**203**	**192**	**49**	**12**	**14**	**1**	**1**	**3**	**--**	**3**	26	933	809	3,525	1,757	49.8%
North Snyderville CDP	**516**	**93**	**21**	**26**	**1**	**4**	**--**	**--**	**--**	**--**	**--**	2	184	150	997	661	66.3%
Kamas	**129**	**18**	**9**	**8**	**126**	**9**	**29**	**11**	**14**	**--**	**5**	23	59	95	535	358	66.9%
Coalville	**72**	**18**	**5**	**4**	**10**	**74**	**6**	**1**	**1**	**6**	**--**	12	62	111	382	197	51.6%
Oakley	**88**	**16**	**8**	**7**	**87**	**6**	**11**	**12**	**7**	**1**	**3**	15	62	74	397	246	62.0%
Francis	**63**	**16**	**8**	**3**	**57**	**1**	**11**	**14**	**7**	**--**	**2**	10	31	59	282	182	64.5%
Samak CDP	**20**	**8**	**--**	**3**	**12**	**3**	**3**	**5**	**1**	**1**	**--**	1	6	13	76	56	73.7%
Henefer	**35**	**9**	**6**	**2**	**6**	**22**	**--**	**1**	**2**	**7**	**--**	9	28	41	168	90	53.6%
Woodland CDP	**28**	**7**	**2**	**--**	**23**	**1**	**3**	**2**	**2**	**--**	**--**	10	10	16	104	68	65.4%
Heber	912	85	48	31	15	16	9	7	3	6	--						
Salt Lake City	1,186	195	88	42	19	27	6	5	--	1	--						
Other Salt Lake County	2,631	459	309	154	98	69	31	16	10	10	6						
Total Commuters To Location	10,173	1,482	822	433	485	264	122	77	56	32	20						
# Commuters Originating in Study Area	5,444	743	377	206	353	152	76	49	43	15	14						
% Commuters Originating in Study Area	53.5%	50.1%	45.9%	47.6%	72.8%	57.6%	62.3%	63.6%	76.8%	46.9%	70.0%						

Source: US Census Bureau, LEHD Origin-Destination Database.

- Only 21 percent of persons working in Park City are also Park City residents, while a full 38 percent are Salt Lake County residents (including Salt Lake City residents). 28 percent live in Snyderville/Summit Park area, while 9 percent live in Heber City. The smaller communities within Summit County (Kamas, Francis, Oakley, and Coalville) each generate 1 percent of persons commuting to park City, or less.

- Between 18 and 24 percent of residents of the outlying communities commute to jobs in Park City.

- Approximately 8 percent of all persons working in Summit County travel from Heber, in Wasatch County, while 11 percent travel from Salt Lake City and 27 percent commute from other areas of Salt Lake County.

- Roughly 18 percent of Summit County residents travel to Salt Lake City and 17 percent commute to other areas of Salt Lake County.

Means of Transportation to Work

Table 10 shows the commute travel mode split data for Summit County, as identified in the 2009 American Community Survey. Within Summit County as a whole, the majority of workers not employed at home (72.3 percent) drove alone, while nearly 11 percent carpooled, 2.1 percent walked, another 2.1 percent used a taxi, motorcycle or other means, 1.8 percent biked to work and 1 percent used public transit. Highlights of other communities, as shown in Table 10, include:

- Workers in Park City have the highest use of public transit, with 4 percent of the total workers using the bus. The only other areas that generate transit use are South Snyderville Basin (0.8 percent) and Summit Park (0.4 percent).

- The Summit Park area has the highest percentage of workers driving alone (82.5 percent), followed by Henefer (81 percent) and Oakley (79.8 percent). On the other end of the spectrum, only 59.4 percent of workers in Park City drove alone.

- Workers in the North Snyderville Basin area had the greatest number of persons using carpools, comprising nearly 20 percent of the mode split, while the Oakley area had the lowest percentage using carpools (3.8 percent).

- Few communities had workers using a bicycle to commute, however in Park City more persons used a bicycle to commute (7.3 percent) than used public transit. In Henefer, 1.2 percent of persons used a bicycle while less than 1 percent commuted by bicycle in South Snyderville, Kamas and Other Summit County areas.

The American Community Survey also provides data regarding commute times. In Summit County, the mean travel time to work is 24.4 minutes. Roughly 36.3 percent of residents commute less than 15 minutes, 29.6 percent commute between 15 and 29 minutes, 23.2 percent between 30 and 44 minutes, 5.5 percent between 45 and 59 minutes, and another 5.5 percent

TABLE 10: Commute Travel Mode Split Data for Summit County, 2009

	Total Workers	Drove Alone		Carpool		Public Transit		Walked		Bicycle		Other Means		Work At Home	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Park City	4,260	2,529	59.4%	515	12.1%	172	4.0%	153	3.6%	311	7.3%	21	0.5%	559	13.1%
South Snyderville Basin CDP	2,457	1,809	73.6%	111	4.5%	20	0.8%	43	1.8%	17	0.7%	127	5.2%	330	13.4%
North Snyderville Basin CDP	1,497	1,086	72.5%	296	19.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	115	7.7%
Kamas	939	722	76.9%	101	10.8%	0	0.0%	59	6.3%	6	0.6%	0	0.0%	51	5.4%
Summit Park CDP	4,286	3534	82.5%	332	7.7%	17	0.4%	19	0.4%	0	0.0%	108	2.5%	276	6.4%
Coalville	847	663	78.3%	120	14.2%	0	0.0%	25	3.0%	0	0.0%	0	0.0%	39	4.6%
Oakley	677	540	79.8%	26	3.8%	0	0.0%	31	4.6%	0	0.0%	6	0.9%	74	10.9%
Francis	597	457	76.5%	82	13.7%	0	0.0%	0	0.0%	0	0.0%	2	0.3%	56	9.4%
Samak CDP	440	341	77.5%	68	15.5%	0	0.0%	31	7.0%	0	0.0%	0	0.0%	0	0.0%
Henefer	420	341	81.2%	36	8.6%	0	0.0%	5	1.2%	5	1.2%	9	2.1%	24	5.7%
Woodland CDP	172	117	68.0%	17	9.9%	0	0.0%	0	0.0%	0	0.0%	26	15.1%	12	7.0%
Other Summit County	2,728	1812	66.4%	407	14.9%	0	0.0%	43	1.6%	8	0.3%	106	3.9%	351	12.9%
Total Summit County	***19,301***	***13,951***	***72.3%***	***2,111***	***10.9%***	***209***	***1.1%***	***409***	***2.1%***	***347***	***1.8%***	***405***	***2.1%***	***1,887***	***9.8%***

Source: US Census Bureau 2005-2009 American Community Survey.

travel more than one hour. In Park City, the mean travel time to work is slightly less, with 19.7 minutes, and a greater number of residents with a commute less than 15 minutes (53.8 percent of residents).

TRAFFIC VOLUMES

Existing Volumes

The major roadways in Summit County include Interstates 80 and 84, US Highway 40, and State Routes 32, 35, 65, 150, 224, and 248. The Utah Department of Transportation (UDOT) has prepared calculations of traffic volumes for each of these facilities, as presented in Table 11. The table presents the Average Annual Daily Traffic (AADT) volumes for 2007 through 2009, with the corresponding average annual rate of change between these three years.

Traffic volumes in Summit County are predictably highest on segments of the Interstate 80 corridor and State Route 224. The two highest volumes were seen at I-80 at the Jeremy Ranch Interstate Exchange (46,025 AADT) and the State Route 224/Kimball Junction interchange (35,425 AADT). The third highest volume was found on State Route 224 at the State Route 248 junction in Park City (32,795 AADT), followed by the Canyons Resort Drive segment of State Route 224 (27,580 AADT).

Since 2007, nearly all traffic volumes have decreased, some more substantially than others. The greatest decrease was seen on State Route 32 at Lower River Road in Francis, with nearly a 70 percent decline. This was followed closely by the State Route 32 at Boulderville Road segment in Oakley (65 percent decrease).

Only two segments experienced an increase over the past three years. This included Interstate 84 at State Route 65 in East Henefer, with a 10 percent increase, and State Route 248 at the SR 40 interchange, with a 1.2 percent increase. The segment on State Route 35 at the Summit / Wasatch County line had no change from 2007, although volumes are increasing slightly considering 2008 experienced a very low decrease in AADT.

Travel Forecasts

There are several computer traffic models that encompass all or parts of the study area: the Park City travel demand model developed for the Park City Traffic and Transportation Master Plan, the Wasatch County Rural Planning Organization (RPO) model, and the Wasatch Front Regional Council (WFRC)/Mountainland Association of Government (MAG) model. In particular, the Park City model (which also reflects growth in the remainder of the study area) provides forecasts of total travel demand in the region that are useful in this transit study.

Table 12 presents a summary of the trip generation estimates for 2009 and 2020 from the Park City model. This model considers four types of trip: **Home-Based Work** trips (trips directly between home and work), **Home-Based Other** trips (other trips beginning and ending at home, such as shopping and non-ski recreation trips), **Non-Home-Based** trips (such as between work and shopping) and **Ski** trips. These figures represent “person trip-ends,” wherein each actual trip

TABLE 11: Summit County Traffic Volumes, 2007 - 2009

Route	Location	AADT 2007	AADT 2008	AADT 2009	Total Change 2007-2009 (%)
Interstate 80	Jeremy Ranch	47,234	43,265	46,025	-2.6%
	SR 224 Kimball Junction	39,067	35,785	35,425	-9.3%
	SR 40 Silver Creek Junction	16,224	14,665	14,755	-9.1%
	Ranch Exit (Tollgate Canyon)	16,068	14,525	14,020	-12.7%
	SR 32 Wanship Kamas	14,337	12,965	13,045	-9.0%
	SR 280 Coalville	13,481	12,185	12,255	-9.1%
	I 84 West	16,510	13,765	13,850	-16.1%
Interstate 84	SR 86 West Henefer	9,008	8,640	8,700	-3.4%
	SR 65 East Henefer - I 80	8,600	9,500	9,485	10.3%
U.S. Highway 40	I 80 Silver Creek Junction	25,636	24,380	24,185	-5.7%
	Silver Summit Interchange	25,392	24,150	23,955	-5.7%
	SR 248 Park City Interchange	20,638	19,050	18,900	-8.4%
State Route 32	SR 40 North of Heber	2,177	2,055	2,090	-4.0%
	Lower River Road Francis	6,363	6,005	1,935	-69.6%
	SR 35 Francis SR 32	4,877	4,575	4,655	-4.6%
	SR 248 200 South Kamas	8,596	8,375	6,005	-30.1%
	SR 150 Center Street Kamas	6,400	6,235	6,345	-0.9%
	300 North Kamas	6,288	3,125	3,785	-39.8%
	Boulderville Road Oakley	5,779	5,630	2,005	-65.3%
	Smith Moorehouse Oakley	2,915	2,840	2,890	-0.9%
	North Bench Road Oakley	3,058	2,380	2,425	-20.7%
	Browns Canyon	2,555	2,490	2,535	-0.8%
	SR 302 Rockport State Park	1,562	1,520	1,550	-0.8%
	I 80 Westbound On Ramp	2,832	2,755	2,805	-1.0%
	Local Road I 80 Westboound Off Ramp	1,630	1,590	1,615	-0.9%
State Route 35	SR 32 Francis	3,593	3,320	3,570	-0.6%
	South Willow Way Francis	2,146	1,985	2,130	-0.7%
	Bench Creek Road to Woodland	688	365	545	-20.8%
	Summit / Wasatch County Line	385	355	385	0.0%
State Route 65	Morgan / Summit County Line	332	320	325	-2.1%
	Memorial Park Road Henefer	855	835	330	-61.4%
	SR 86 Henefer	1,179	1,150	1,170	-0.8%
State Route 150	SR 32 Kamas	2,251	2,190	2,230	-0.9%
	300 East Kamas	1,750	1,705	1,735	-0.9%
	Road to Kamas Fish Hatchery	1,100	1,060	1,080	-1.8%
State Route 224	Wasatch / Summit County Line	2,976	2,865	2,850	-4.2%
	Hillside Avenue Park City	14,338	13,635	13,555	-5.5%
	Deer Valley Drive	23,139	22,005	20,750	-10.3%
	Bonanza Drive	28,711	27,305	18,705	-34.9%
	Park Avenue	30,476	28,985	19,860	-34.8%
	SR 248 Park City	35,024	34,780	32,795	-6.4%
	Meadows Drive	27,900	27,705	26,125	-6.4%
	Canyons Resort Drive	31,920	29,255	27,580	-13.6%
	I 80 Kimballs Junction	18,115	17,990	16,965	-6.3%
State Route 248	SR 224 Park City	22,318	21,315	20,545	-7.9%
	Comstock Drive Park City	19,419	18,545	17,875	-8.0%
	Wyatt Earp Way	15,920	15,210	14,655	-7.9%
	SR 40 Interchange	9,119	9,575	9,230	1.2%

Source: Utah Department of Transportation, 2010.

TABLE 12: Park City Traffic Model Trip Generation – 2009 and 2020

	Trip Productions					Trip Attractions					Total Trip Ends					Change	
	Home-Based Work	Home-Based Other	Non-Home-Based	Ski	Total	Home-Based Work	Home-Based Other	Non-Home-Based	Ski	Total	Home-Based Work	Home-Based Other	Non-Home-Based	Ski	Total	#	%
2009 Winter																	
Park City	5,505	58,035	28,807	4,395	96,741	11,685	52,294	28,807	13,860	106,646	17,190	110,329	57,613	18,255	203,387		
Quinns	0	0	118	0	118	101	95	118	0	314	101	95	236	0	432		
Kamas/Jordenelle	3,450	15,255	5,593	135	24,433	1,261	13,465	5,593	0	20,318	4,710	28,720	11,186	135	44,751		
Canyons	479	9,390	3,234	575	13,679	1,048	7,443	3,234	7,140	18,865	1,527	16,833	6,469	7,715	32,544		
Snyderville Basin	12,949	56,932	28,712	469	99,063	9,661	56,410	28,712	0	94,783	22,610	113,342	57,424	469	193,845		
Total	22,383	139,612	66,464	5,574	234,033	23,755	129,707	66,464	21,000	240,926	46,138	269,319	132,929	26,574	474,959		
2020 Winter																	
Park City	7,725	61,923	31,029	6,040	106,717	12,817	55,629	31,029	19,140	118,615	20,541	117,552	62,058	25,180	225,332	21,945	11%
Quinns	661	2,115	1,258	20	4,054	758	1,762	1,258	0	3,778	1,419	3,877	2,516	20	7,832	7,400	1712%
Kamas/Jordenelle	7,632	26,846	10,781	173	45,433	3,724	23,237	10,781	0	37,743	11,357	50,083	21,563	173	83,176	38,425	86%
Canyons	1,066	30,646	9,978	808	42,498	3,482	23,329	9,978	9,860	46,650	4,549	53,975	19,956	10,668	89,148	56,604	174%
Snyderville Basin	28,827	104,404	57,722	721	191,674	27,375	99,897	57,722	0	184,994	56,201	204,302	115,445	721	376,668	182,823	94%
Total	45,911	225,934	110,769	7,762	390,376	48,156	203,855	110,769	29,000	391,780	94,067	429,789	221,538	36,762	782,156	307,197	65%
Change 2009-2020	23,528	86,322	44,305	2,188	156,343	24,401	74,148	44,305	8,000	150,854	47,929	160,470	88,609	10,188	307,197		
% Change 2009-2020	105%	62%	67%	39%	67%	103%	57%	67%	38%	63%	104%	60%	67%	38%	65%		
2009 Summer																	
Park City	5,505	22,584	20,617	0	48,705	11,685	25,417	20,617	0	57,720	17,190	48,001	41,234	0	106,425		
Quinns	0	0	118	0	118	101	95	118	0	314	101	95	236	0	432		
Kamas/Jordenelle	3,450	14,154	5,315	0	22,919	1,261	12,552	5,315	0	19,127	4,710	26,706	10,629	0	42,046		
Canyons	479	1,966	1,583	0	4,029	1,048	2,025	1,583	0	4,655	1,527	3,991	3,167	0	8,684		
Snyderville Basin	12,949	53,128	27,741	0	93,818	9,661	53,223	27,741	0	90,624	22,610	106,351	55,482	0	184,443		
Total	22,383	91,832	55,374	0	169,590	23,755	93,311	55,374	0	172,440	46,138	185,143	110,749	0	342,030		
2020 Summer																	
Park City	7,725	23,932	22,292	0	53,948	12,817	26,954	22,292	0	62,062	20,541	50,885	44,583	0	116,010	9,585	9%
Quinns	661	2,049	1,236	0	3,946	758	1,692	1,236	0	3,686	1,419	3,740	2,473	0	7,632	7,200	1666%
Kamas/Jordenelle	7,632	23,646	10,000	0	41,278	3,724	20,673	10,000	0	34,397	11,357	44,319	20,000	0	75,675	33,629	80%
Canyons	1,066	3,304	3,952	0	8,322	3,482	3,553	3,952	0	10,988	4,549	6,857	7,905	0	19,310	10,626	122%
Snyderville Basin	28,827	89,308	54,109	0	172,244	27,375	88,040	54,109	0	169,524	56,201	177,349	108,219	0	341,769	157,326	85%
Total	45,911	142,238	91,590	0	279,739	48,156	140,912	91,590	0	280,657	94,067	283,149	183,180	0	560,396	218,366	64%
Change 2009-2020	23,528	50,406	36,215	0	110,149	24,401	47,601	36,215	0	108,217	47,929	98,006	72,431	0	218,366		
% Change 2009-2020	105%	55%	65%	--	65%	103%	51%	65%	--	63%	104%	53%	65%	--	64%		

Source: Park City Travel Demand Model, prepared by Interplan

made by an individual requires one trip-end at their origin and a second at their destination. Trip **productions** are generally at the home end of a trip, while trip **attractions** are at the work or commercial end of a trip. A review of Table 12 indicates the following:

- Winter daily trips generated in Summit County are forecast to grow by 65 percent between 2009 and 2020. By trip type, the largest growth will be in home-based work trips (104 percent), while ski trips will grow relatively modestly (38 percent).

- The greatest proportion of areawide growth in winter traffic will be generated in the Snyderville Basin area, with 60 percent of the total traffic growth. This equals a 94 percent growth over current traffic levels. Traffic growth in Park City (excluding Quinn's Junction area) will be relatively modest at 11 percent (or 7 percent of the total areawide growth). While the growth in traffic generation in the Quinn's Junction area will be high on a percentage basis, regionwide only 2 percent of winter traffic growth will occur in this area.

- The relative growth in summer is similar to winter, with total growth of 65 percent over the 11 year period, and with the highest growth in home-based work trips.

- Growth in summer traffic will be even more concentrated in the Snyderville Basin area than growth in winter traffic, at 72 percent of all regionwide traffic growth, though the absolute level of traffic growth in this sub-area will be less in summer than in winter.

Further analysis of the transportation models will be conducted as part of detailed evaluation of service and capital alternatives in future phases of this study.

PLANNED AND POTENTIAL DEVELOPMENT

The following are potential projects within the study area that have the potential to impact transit ridership or operations in the study area.

Treasure Hill Development

The Treasure Hill development is a proposed project located adjacent to Old Town (downtown) Park City and the Park City Mountain Resort. It is located on an 11.5 acre hillside site, of which 97 percent would be preserved of open space, and the resulting area designed to be developed as a dense, compact, pedestrian-oriented project. As proposed, the Treasure Hill development would include 394,000 square feet of residential area, consisting of hotel, condominium, fractional ownership and employee housing, with an estimated population of 2,000 guests. There are also a total of 19,000 square feet designated for commercial use, a conference center, and a cabriolet lift designed to provide visitor access from the development to the Main Street and Park City Transit.

This project is still in the review/application process with the City, and has yet to be approved. Currently, there are five potential options with varying number of residential units and commercial square footage.

Ironhorse Transit Expansion

The Ironhorse Transit expansion project is a Park City Municipal Corporation site that will provide additional transit and transportation-related operations and maintenance space. The site

is located at the current Public Works facility that houses the transit and transportation functions. Included in this project are:

- 64 bus bays, plus an addition 8 maintenance bays
- 84 employee parking spaces
- Bus wash facility
- Expanded fleet parts room, as well as additional maintenance tool and equipment storage
- Fueling facility

The enhanced space is currently under construction and is slated for completion by August 2011.

Summit Research Park

Recently approved in Summit County is the Summit Research Park, which is located in the Kimball Junction area. This project includes 152 affordable housing units, as well as up to 1.3 million square feet of commercial space. The site, located on 89 acres, is situated behind the Tanager Outlets, and can be accessed by the existing Pink route.

Wal-Mart Expansion

Also in Summit County, the existing Wal-Mart has been approved for an expansion of 43,000 square feet. This would bring the total square footage of the use to 115,000 square feet.

Other Summit County Projects

There are a number of other projects in Summit County that have not yet been approved, but are worth mentioning due to their potential to impact transit ridership. All of these projects are located in the Snyderville Basin, an area generally served by the Brown and Pink routes (although all projects may not be directly served).

- The Silver Creek Village Center is a mostly residential project that would add 850 market rate housing units, 220 affordable housing units, and 50,000 square feet of commercial uses. The project is located near I-80 and Highway 40, in the Silver Summit area.

- In the Newpark development, there are three separate proposals (all Final Site plans) that would add up to 160 residential units, another 130,000 square feet of residential, and nearly 70,000 square feet of parking garage and retail uses.

- The Utah Olympic Park is also proposing to rezone their property, with the project to include athlete housing, a “human performance center” sports rehabilitation center, and support commercial. In its entirety, the project would total approximately 270,000 square feet.

- The Stone Ridge Core project is located in the Silver Summit neighborhood, and proposes to include incentive densities for affordable housing, and would result in 258 units (market rate and affordable units).

- Another rezone project that would incentivize density for affordable housing is the Wielenmann rezone project. In total, there would be roughly 207 units, both market rate and

affordable. The site is nearly 70 acres and is located behind the Wielenmann School of Discovery, near the Newpark development.

- The Base Camp Commercial Plaza project is considered a low impact permit project and would include 4 development pads resulting in 71,000 square feet of commercial space and 6,000 square feet of restaurant uses. The site is located along Highway 224, near the Sun Peak Drive intersection and north of The Canyons Resort.

REVIEW OF EXISTING PLANS AND POLICIES

A key step in any physical planning process, particularly one that considers a longer planning horizon, is the careful consideration of other ongoing planning processes in the area. This section presents a review of these recent and concurrent planning studies and considers how each impacts the potential for future transit services.

Snyderville Basin General Plan, 2002

The following are policies related to transit within Summit County's *Snyderville Basin General Plan* document. The overall objective of the Transportation and Circulation Policy element is to "*Promote a comprehensive transportation infrastructure and convenient and efficient service system that meets the travel requirements of existing and future residents and visitors, but which is compatible with the mountain, resort, and rural characteristics of the Snyderville Basin."*

- *Policy 9.2:* Continue working on a comprehensive transportation plan that establishes a roadway classification system, a map showing the location of future roads and key improvements required, and a description of a local transit system needed to serve the community.

- *Policy 9.*16: Within a Village or Resort Center, centrally located transit facilities shall be provided. In the absence of a Basin-side transit system, an appropriate space for such use shall be reserved and the means provided for by the developer or Master Association upon implementation of a transit system that will serve the Village Center.

- *Policy 9.*30: Periodically study with Park City and others the feasibility of providing transit service between the Snyderville Basin Village Centers, the Canyons Resort and other future Resort Centers, and the Park City Resort, Main Street, and other major employment centers.

Park City General Plan, 1997

The City's most current General Plan was adopted in March 1997, and includes numerous polices within the Transportation Element, as well as one specific Citywide goal:

- *Goal: Preserve environmental quality, open space and outdoor recreational opportunities*

  This goal includes a specific statement regarding transit, noting that "as needs of the community is analyzed, consideration should be given to a wide range of transportation modes, including walking, biking, skiing and using various mass transit alternatives."

The Transportation Element includes approximately 32 policies and improvements relating to transit service and facilities. A summary of these are noted below.

- Transit policies are targeted at attracting a greater number of visitors and residents, through service expansion (frequency, hours, and service area), improved transit facilities, and connectivity to other modes such as walking, bicycling and carpooling.

- Land Use policies emphasize recognition of the relationship between land use and transportation modes. Focus is on transit-oriented development, roadway design to allow efficient transit service, multi-modal connections at transit stops, and enhanced access to transit stops at new developments.

- Parking policies related to transit include providing transit shuttles between the Old Town area and outlying parking areas, so as to minimize traffic and parking impacts during peak periods and events.

- Roadway Improvements include a specific policy suggesting that streets be designed to allow convenient service by transit vehicles, as well as access for pedestrians/bicyclists to or from trails, public facilities and commercial centers.

- Roadway Transit Improvements specifically identified in the document include modifications to eliminate on-street parking and narrowing of travel lanes to allow for transit stops, implementing "bus jump-queue" lanes to improve transit travel time, providing street modifications between Old Town and Park City Resort to improve transit convenience, and formalizing bus routes inside the City's developed areas and unincorporated areas.

- Parking Improvements related to transit include using Park City Mountain Resort and Deer Valley parking as overflow parking during peak winter evenings, served by high-frequency transit shuttles.

- Transit Improvements include utilization of advanced technologies to improve transit service convenience, upgrading transit stop and facility amenities, maximizing the role of the private sector in the provision of new transit services outside of the City, revising existing fixed-routes to serve more areas and to provide better connections, implementing express routes and commuter services, and strategies to reduce congestion and parking demand in Old Town.

Park City Environmental Sustainability

Park City has recently formed an Environmental Sustainability team that focuses on a number of areas that aim to improve environmental quality in the area, many of which impact transit and alternative modes of transportation.

In January 2009, the City Council adopted the Park City Environmental Plan, a set of goals and objectives related to the environment of the City. The following lists the goals and any specific objectives that are associated with transit.

- **Goal 1:** Preserve and enhance the ecological systems and diversity of the City and, in turn, the Region.
  - Objective 1.0: Reduce Municipal carbon and greenhouse gas emissions.

  - Objective 1.2: Reduce Park City's community CO2 emissions.

- **Goal 2:** Encourage the efficient use of all resources in order to ensure a future with a secure and sustainable energy supply.

- **Goal 3:** Encouraging environmental stewardship and protection of Park City's natural environment through sharing of environmental information with the community and active, meaningful community participation.
  - Objective 3.0: Support local organizations that educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.
  - Objective 3.1: Support discussions for transit options between Park City and surrounding areas.

- **Goal 4:** Incorporate environmental considerations as an integral part in assessing growth management options, land use plans, transportation plans and development proposals.
  - Objective 4.1: Increase utilization of alternative transportation.
  - Objective 4.2: Maintain air quality at current levels.

- **Goal 5:** Continue to review and investigate best practices that have the potential of substantially improving the environment.
  - Objective 5.0: Ensure the Environmental Sustainability Plan keeps pace with technology, nation-wide rends and the community's collective interests.

Another effort put forth by Park City's Environmental Sustainability team is the Anti-Idling Ordinance, passed in December 2010 by the City Council. This ordinance prohibits the idling of vehicles for more than three minutes. The intent is to reduce vehicle emissions and improve air quality, as well as to encourage more efficient use of fuel. Primarily, this ordinance is aimed at private personal vehicles, as well as commercial trucks. Due to the nature of transit bus activity, the ordinance does provide an exception for transit vehicles.

The City's Sustainability team has also developed a program and website, named ParkCityGreen.org, which provides residents and visitors with resources for reducing their carbon footprint and making Park City more sustainable. In addition to carbon footprint calculators, the website provides information on the local transit system, rideshare programs, and the walkable Park City initiative, among others.

This page left intentionally blank.

Chapter 3
Transportation Services

EXISTING TRANSIT SERVICES

Transit service in Park City began in the winter of 1975-1976, and has grown to provide a robust free fixed-route and demand response service to Park City as well as many areas within Summit County. Fixed-route service is provided through two schedules – winter and non-winter (spring, fall an summer) – each of which is tailored to the seasonal variations experienced in such a resort-oriented town. Demand response service is available for disabled persons throughout Park City and the Kimball Junction area, and to seniors within the Park City limits.

Existing Service Plan

Transit in the Park City and Summit County areas is offered year round, as shown in Figures 10 (winter service) and 11 (summer service)[2]. The span of service (period of the day served) and frequency of the routes may change by season.

Park City Transit Routes

In-town service is offered through six fixed-routes, as well as a downtown trolley route, which all originate from the Old Town Transit Center in downtown Park City.

Prospector Square – Red Route

The Prospector Square (Red) Route operates from the Old Town Transit Center in downtown Park City to the Prospector Square area to the north. Major stops along this route include the Park City Marriott, Park City Prospector Lodge, the high school, and Park City Mountain Resort (transfer point). Throughout the year, the route operates on 20 minute headways, with specific winter and non-winter schedules, as follows:

- Winter, peak buses operate daily between 7:01 AM and 11:01 PM
- Summer service operates between 7:30 AM and 10:30 PM

Park Meadows – Green Route

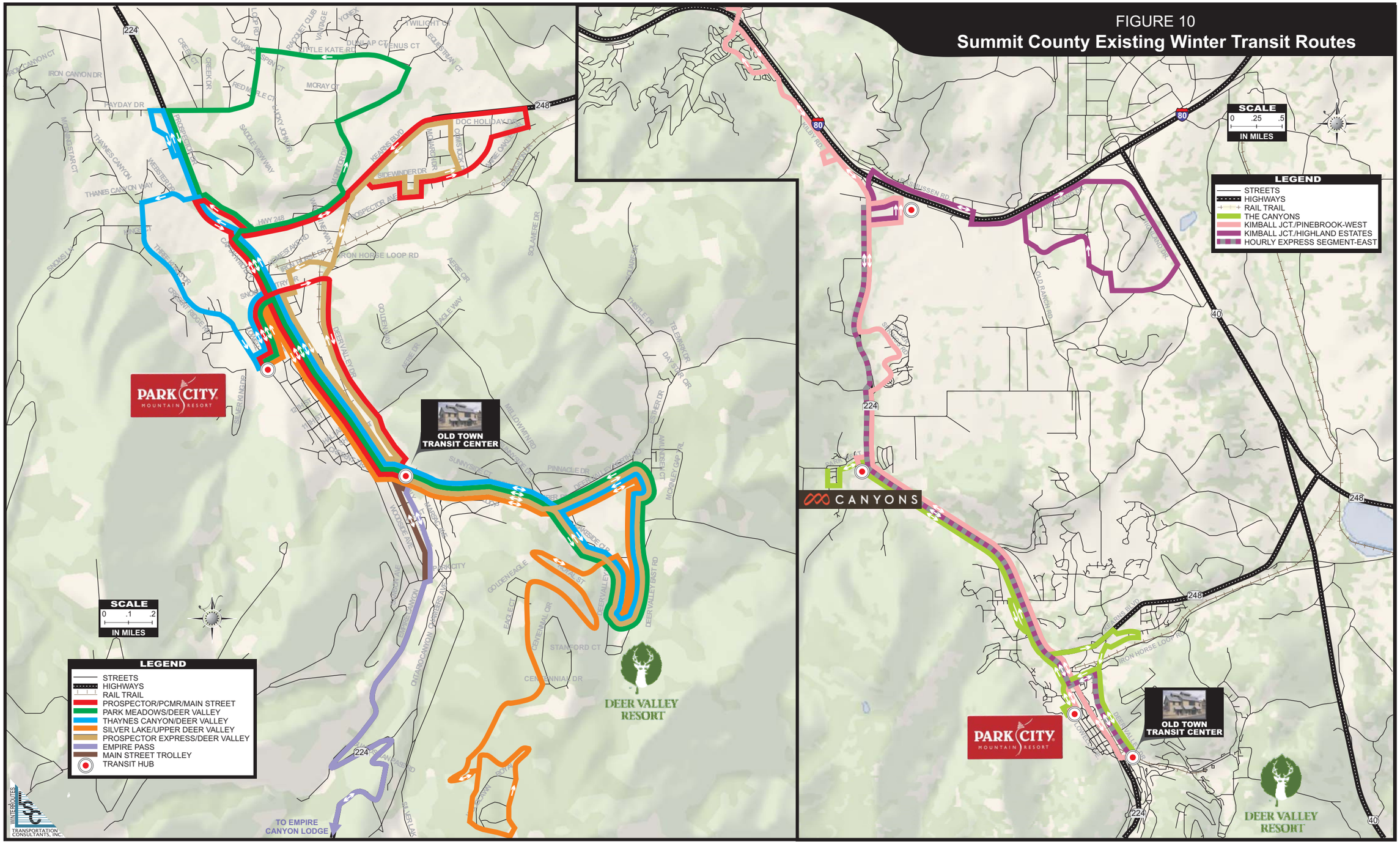
This route provides service from the Old Town Transit Center to Park Meadows and Deer Valley, with service also to the Thaynes Canyon area. The route operates as a loop between the downtown Park City and the Park Meadows area, and after returning to the Old Town Transit Center, continues to the Snow Park Lodge in lower Deer Valley and back to downtown. Major stops on this route include the Racquet Club, Peaks Hotel, Park City Mountain Resort and the Snow Park Lodge, as well as the school campus and affordable housing units. Service is provided on 20 minute headways. In the summer, this route is combined with the Thaynes Canyon service area.

[2] The service year is considered to consist of the Winter service period (early December through the second week of April), and the Summer service period (remainder of the year).

This page left intentionally blank.

FIGURE 10

Summit County Existing Winter Transit Routes



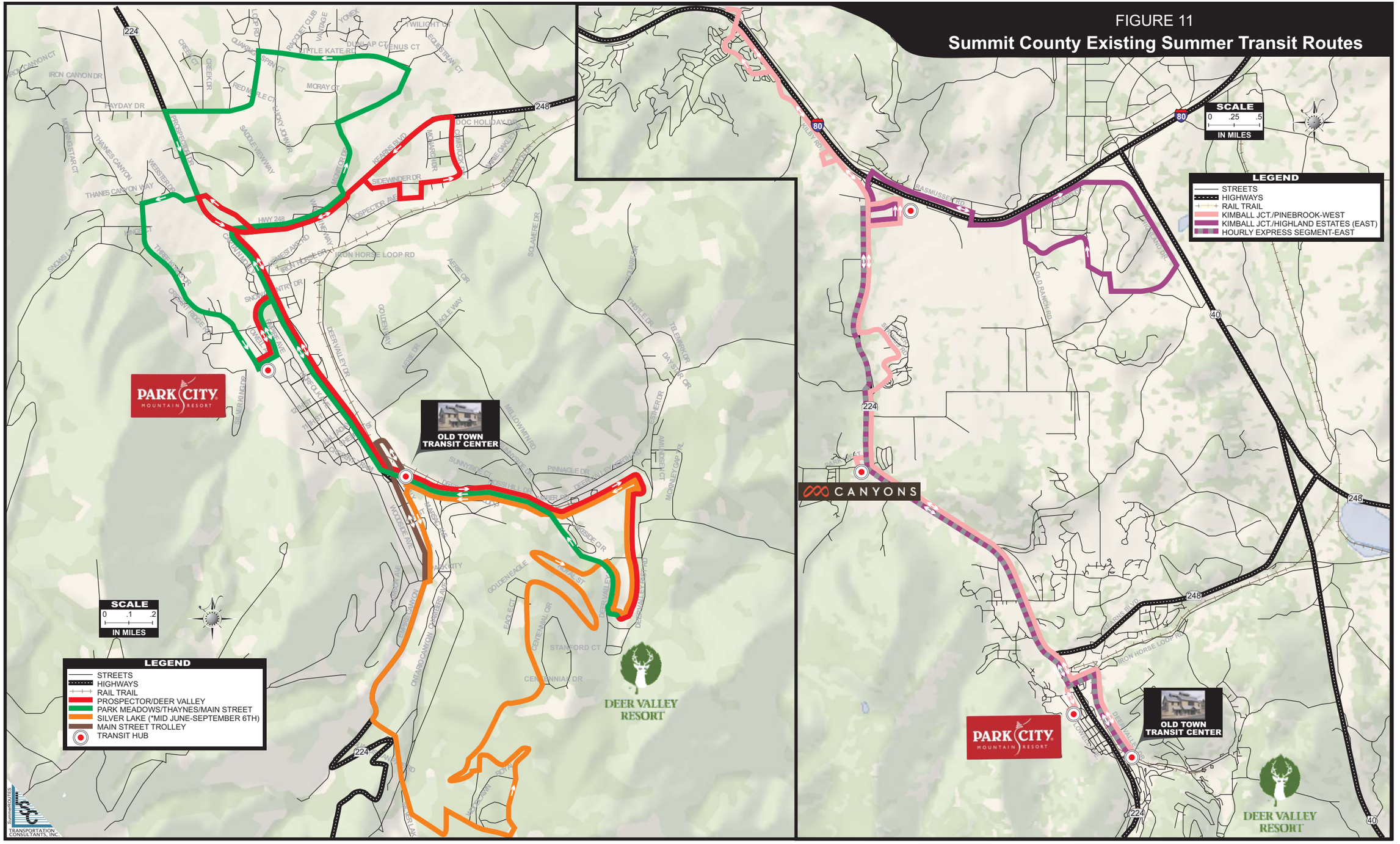


FIGURE 11
Summit County Existing Summer Transit Routes
SCALE
0 .1 .2
IN MILES
LEGEND
STREETS
HIGHWAYS
RAIL TRAIL
PROSPECTOR/DEER VALLEY
PARK MEADOWS/THAYNES/MAIN STREET
SILVER LAKE (*MID JUNE-SEPTEMBER 6TH)
MAIN STREET TROLLEY
TRANSIT HUB
PARK CITY MOUNTAIN RESORT
OLD TOWN TRANSIT CENTER
DEER VALLEY RESORT
SCALE
0 .25 .5
IN MILES
LEGEND
STREETS
HIGHWAYS
RAIL TRAIL
KIMBALL JCT./PINEBROOK-WEST
KIMBALL JCT./HIGHLAND ESTATES (EAST)
HOURLY EXPRESS SEGMENT-EAST
CANYONS
PARK CITY MOUNTAIN RESORT
OLD TOWN TRANSIT CENTER
DEER VALLEY RESORT

- Daily winter peak operations are offered daily between 7:38 AM and 10:38 PM
- In the summer, service is provided between 7:30 AM and 10:30 PM

Thaynes Canyon – Blue Route

Service to the Thaynes Canyon area is provided through the Blue Route, which originates in downtown Park City at the Old Town Transit Center and travels to Thaynes Canyon and Deer Valley. Along the blue route, major stops include Park City Mountain Resort, Peaks Hotel (Highway 224), and the Snow Park Lodge in lower Deer Valley. The route is only operated during winter; in summer, the Thaynes Canyon area is served as part of the Park Meadows/Deer Valley Green Route. Buses depart three times per hour on 20-minute headways, with peak departures between 7:28 AM and 10:48 PM.

Prospector Express – Yellow Route

The Prospector Express route provides additional, more direct service into the Prospector and Deer Valley areas. Originating from downtown Park City, the route travels to Prospector Square with stops at the Park City Marriott, Prospector Square Lodge and the high school, then onto the Park City Mountain Resort, back to the Old Town Transit Center before traveling to the Snow Park Lodge in Deer Valley and returning to downtown. Service is provided on 20-minute headways during the winter season, with peak departures between 7:43 AM and 10:43 PM

Silver Lake Village – Orange Route

The Silver Lake Village Orange Route is a limited route that originates at the Park City Mountain Resort and travels to Deer Valley and Silver Lake Village before ending at the Old Town Transit Center in downtown. Service is provided on 30 minute headways during the day, and on hourly headways after 6:00 PM.

- Buses depart between 6:22 AM and 10:22 PM daily during the winter season
- Summer service is provided between 10:00 AM and 5:40 PM from mid-June to September 6th
- No service is operated during the spring and fall

Empire Pass – Lavender Route

The Empire Pass – Lavender route provides service between downtown Park City's Old Town Transit Center and the Empire Canyon Lodge on Empire Pass. The route is currently operated on 30 minute headways in the winter season only, with departures between 6:28 AM and 10:28 PM.

Main Street Trolley

A downtown trolley is operated in the Old Town district of Park City, serving Main Street. The service is designed to give visitors easy access to shops and restaurants along the street, and connects Main Street with routes serving the Old Town Transit Center. Service is offered every 15 minutes from 10:00 AM to 11:00 PM in the winter, and from 10:00 AM to 10:00 PM during non-winter months.

Early Morning and Late Night Service

In addition to the services described above, early morning service (designed to provide service to commuters / workers) and late night service is offered citywide. These routes are only operated during the winter season.

Early morning routes consist of departures every 30 minutes between 5:43 AM and 6:43 AM, with a final departure at 7:00 AM. Between 5:43 AM and 6:43 AM, the buses originate at the Fresh Market in Old Town, while the final 7:00 AM departs from the Old Town Transit Center. These routes provide service throughout Park City, including at least one stop within Old Town, Prospector Square, Park Meadows, Thaynes Canyon, Deer Valley, and Silver Lake Village. The only area not served is Empire Pass.

Late night service operates with departures between 10:55 PM and 1:55 AM from the Old Town Transit Center. As with the early morning routes, service is offered to nearly all areas of Park City, with the exception of Silver Lake Village and Empire Pass. Old Town, Prospector Square, Park Meadows, and Thaynes Canyon are all served by late night service.

Summit County Transit Routes

Service to various areas of western Summit County is offered through three fixed-routes, all of which provide service into downtown Park City.

Pinebrook/Kimball Junction West – Pink Route

This route provides service from downtown Park City's Old Town Transit Center to the Pinebrook area, with stops in Kimball Junction in both the outbound and inbound directions. Wal-Mart, the Tanger Outlets, Jeremy Ranch Park and Ride and Powderwood are among some of the major stops on the route, as well as Redstone and Newpark in Kimball Junction, the Canyons transit hub and Park City Mountain Resort. The route consists of two "legs" with Kimball Core service operating along State Route 224 between Park City and Kimball Junction, then transitioning into the West/Pinebrook service. The route operates on 30 minute headways.

- Winter service consists of two departures per hour with the first bus at 7:40 AM and the last at 10:10 PM
- Summer service operates every 30 minutes between 7:40 AM and 9:10 PM daily

Highland Estates/Kimball Junction East – Brown Route

Service to Silver Summit and Highland Estates is offered on the eastern portion of this route, originating from the Redstone area of Kimball Junction. The route is operated hourly and stops at Redstone and Newpark in Kimball Junction, the Canyon Creek Club, Trailside Elementary School and the Park Avenue Condominiums in Park City, to name a few. An express run is also operated between downtown Park City and the Redstone area of Kimball Junction as part of this route, and is operated hourly between 7:00 AM and 9:00 PM.

- In winter, service is operated at the top of the hour, with departures between 7:00 AM and 9:00 PM for the Express Route, and between 7:25 AM and 9:25 PM for the East portion of the route.

- Summer service is provided daily between 8:10 AM and 9:10 PM on the east portion of the route, and between 7:55 AM and 8:55 PM on the express portion along SR 224.

The Canyons – Lime Route

Service to Canyons Ski Resort area is offered year round, with the route beginning in the Canyons area and traveling to the Old Town Transit Center and Park City Mountain Resort. The route is operated on 30 minute headways, with current winter service between 6:25 AM and 6:02 PM. Summer service peak hours are from 7:30 AM to 5:10 PM with 40-minute headways.

Demand Response Service

Demand response service in Park City and Summit County is offered through two options – ADA paratransit service and Dial-A-Ride. The paratransit service operates throughout the Park City and Kimball Junction area, and is available to ADA eligible persons, including the elderly and disabled, within ¾-mile of the fixed routes. The service hours are consistent with the fixed-route service, in accordance with ADA requirements. In winter, the service operates between 5:45 AM and 2:30 AM, while in the summer hours are between 7:30 AM and 10:30 PM.

The Dial-A-Ride program is offered to the general public and primarily serves the Quinn's Junction area, located along US Highway 40 east of Park City. This area houses a number of activity centers, including the new ice arena and sports complex, the National Ability Center, Park City Medical Center, Summit County Public Health Center and the People's Health Clinic.

Dial-A-Ride service is offered between 8:00 AM and 9:00 PM in the summer and between 8:00 AM and 11:00 PM in the winter, with a two hour advance reservation required. Pick ups and drop offs are available at designated stops:

- Old Town Transit Center
- Park Avenue Condos
- Fresh Market
- Park City High School
- Treasure Mountain International School
- Park City Ice Arena and Sports Complex
- National Ability Center
- People's Health Clinic
- Park City Medical Center

Rides exclusively between in-town stops are not permitted and must be made using fixed route service; transfers to fixed routes are possible at the Old Town Transit Center and designated Dial-A-Ride stops along the route. Recurring trips are permitted up to 30 days, and are common for school activities and medical appointments. If a passenger is ADA eligible, service is offered throughout the Park City limits, and is not limited to designated stops.

Ridership Characteristics

In 2010, Park City Transit served a total of 1,887,642 passenger-trips, including fixed-route and demand response ridership. This figure represents a slight (1.9 percent) decrease in ridership from 2009, as shown in Table 13. The historical data provided in the table shows that in total, ridership has decreased nearly 7 percent since 2007, despite a slight increase in 2008. Considering that Park City is highly dependent on the tourist population, and given the recent downturn in the economy, a decrease in ridership is not surprising.

TABLE 13: Park City Transit Annual Ridership

	Ridership Total [1]	% Change
2007	2,027,296	--
2008	2,133,996	5.3%
2009	1,923,716	-9.9%
2010	1,887,642	-1.9%

Note 1: Ridership includes fixed route and demand response services

Source: Park City Municipal Corporation, 2011.

The following sections detail ridership characteristics for the fixed-route and demand response services in the study area.

Fixed Route Ridership Characteristics

Monthly Ridership for 2010

Table 14 provides detailed ridership by month for all of the fixed route services in the study area, including special services (i.e. tripper buses, special event services, etc.), while Figure 12 graphically represents this data. As shown, there were a total of 1,875,433 passenger-trips served by the fixed-route services in 2010. Of these, roughly 48 percent (890,907 passenger-trips) were on the City interlined routes and 26 percent (483,678 passenger-trips) were on Summit County routes.

A more detailed look at the Park City routes shows that the Prospector Square route generates the greatest ridership, with a total of 335,672 passenger-trips, followed by the Park Meadows route with 230,075 passenger-trips. This is in part due to the fact that these are the only two City routes operated year-round. The Silver Lake route generated roughly 5 percent of the total system ridership, with 91,340 passenger-trips, while the downtown trolley service carried 75,260 passengers. Of the routes with a full years worth of data, the Early Morning and Late Evening routes had the lowest ridership, with 17,260 passenger-trips and 21,824 passenger-trips, respectively.

Within the County services, the greatest ridership activity was on the Pinebrook West/Kimball Core route, with a total of 378,072 passenger trips, which amounts to 20 percent of the total system ridership, and 78 percent of the Kimball Junction service. The Highlands Estates East route totaled 36,114 passenger-trips and the Kimball Core Express route totaled 69,492 passenger-trips. The remaining (active) County route, The Canyons route, generated 75,390 passenger-trips.

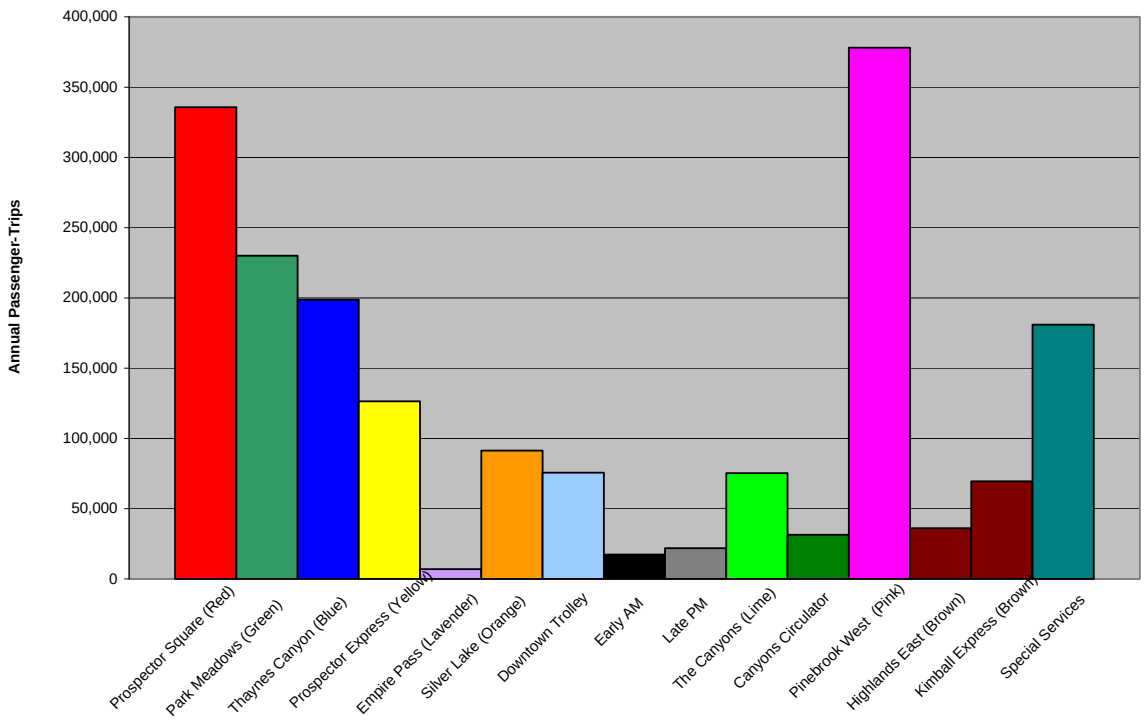
TABLE 14: Park City Transit Monthly Ridership by Route, 2010

	Park City Services										Summit County Services							
	Interlined Routes												Kimball Junction					
	Prospector Square (Red)	Park Meadows (Green)	Thaynes Canyon (Blue)	Prospector Express (Yellow)	*Subtotal: City Routes*	Empire Pass (Lavender)	Silver Lake (Orange)	Downtown Trolley	Early AM	Late PM	The Canyons (Lime)	Canyons Circulator [1]	Pinebrook West and Kimball Core (Pink)	Highlands Estates East (Brown)	Kimball Core Express Route (Brown)	*Subtotal: Kimball Junction*	Special Services	*Total Ridership*
January	42,685	46,851	56,605	36,028	*182,169*	--	22,775	7,791	4,765	7,293	20,692	10,298	59,092	4,593	10,672	*74,357*	93,221	***423,361***
February	36,490	40,051	48,390	30,799	*155,730*	--	19,286	3,706	3,642	4,638	18,612	9,808	50,635	3,936	9,144	*63,715*	3,930	***283,067***
March	34,769	38,162	46,108	29,347	*148,386*	--	18,355	6,494	3,478	4,107	17,994	9,407	49,794	3,871	8,993	*62,657*	3,072	***273,950***
April	27,547	13,306	6,374	4,057	*51,284*	--	4,104	5,076	802	1,064	4,431	1,974	24,742	2,540	4,580	*31,862*	174	***100,771***
May	16,943	5,983	--	--	*22,926*	--	0	4,800	--	--	--	--	15,576	1,869	2,932	*20,376*	0	***48,102***
June	22,010	7,772	--	--	*29,782*	--	866	7,119	--	--	--	--	20,081	2,409	3,780	*26,270*	20	***64,057***
July	35,019	12,365	--	--	*47,384*	--	3,495	8,438	--	--	--	--	28,587	3,430	5,381	*37,397*	4,285	***100,999***
August	25,899	9,145	--	--	*35,044*	--	3,002	9,486	--	--	--	--	26,578	3,189	5,002	*34,769*	68,774	***151,075***
September	21,542	7,607	--	--	*29,149*	--	496	6,454	--	--	--	--	18,315	2,197	3,447	*23,960*	257	***60,316***
October	19,002	6,710	--	--	*25,712*	--	0	4,609	--	--	--	--	15,507	1,860	2,919	*20,286*	83	***50,690***
November	22,683	8,009	--	--	*30,692*	--	1,387	4,761	157	276	598	--	19,961	2,395	3,757	*26,113*	288	***64,272***
December	31,082	34,115	41,218	26,234	*132,649*	6,944	17,574	6,859	4,416	4,446	13,063	--	49,205	3,825	8,886	*61,916*	6,906	***254,773***
Total Ridership by Route	***335,672***	***230,075***	***198,695***	***126,465***	***890,907***	***6,944***	***91,340***	***75,593***	***17,260***	***21,824***	***75,390***	***31,487***	***378,072***	***36,114***	***69,492***	***483,678***	***181,010***	***1,875,433***
% of Systemwide Total Ridership	*17.9%*	*12.3%*	*10.6%*	*6.7%*	*47.5%*	*0.4%*	*4.9%*	*4.0%*	*0.9%*	*1.2%*	*4.0%*	*1.7%*	*20.2%*	*1.9%*	*3.7%*	*25.8%*	*9.7%*	

Note 1: This route is no longer operated by the transit agency.

Source: Park City Municipal Corporation, 2011.

FIGURE 12: Ridership by Route, 2010



Ridership by Month and Route

Ridership on a monthly basis is also shown in Table 14. Not surprisingly, the greatest ridership is generated in the winter months, with the highest total in January with 423,361 passenger-trips. This is followed by February (283,067 passenger-trips), March (273,950 passenger-trips) and December (254,773 passenger-trips). The special service routes carried the greatest number of passengers, with 93,921 passenger-trips; this is due to the Sundance Film Festival that requires additional transit service in order to accommodate the high number of visitors for the event. Special events aside, the Pinebrook West/Kimball Core route had the highest number of passenger-trips in any given month, with a total of 59,092 passenger-trips in January. This was followed by the Thaynes Canyon route (56,605 passenger-trips in January).

The lowest ridership occurred in May, with 48,102 passenger-trips systemwide, and October, with 50,690 passenger-trips. In addition to many routes not operating during these times, the lowridership figures are consistent with other resort areas where tourism is generally low in the "shoulder" seasons/months. During these months, the Prospector Square route carried the greatest number of persons, with 16,943 passenger-trips in May and 19,002 passenger-trips in October. Conversely, the Highlands Estates East route carried the fewest passengers, with 1,869 passenger-trips in May and 1,860 passenger-trips in October.

A comparison of current monthly ridership with that observed in 2005 indicates that Park City Transit ridership has become substantially less "seasonal" over the intervening years. While ridership during the peak winter month (January) grew by 11 percent and ridership during the peak summer month (August) grew by 4 percent, ridership during May grew by a full 64 percent

while ridership in October grew by 52 percent. This is a positive trend, as it indicates that transit resources are becoming better utilized on a year-round basis.

Ridership by Season

Seasonal ridership on the fixed-routes is shown in Table 15. The 2009-2010 winter season, includes December 2009 through mid-April 2010, while the summer includes mid-April through November. Note that the month of November does include a schedule called "Winter Start-Up" which is summer service with the addition of early morning and late night City service, and for the purposes of this review, is still considered "summer."

The 2009-2010 winter season had a total of 1,252,976 passenger-trips, comprising roughly 68 percent of the total system ridership for the 12-month period. During the season, the greatest number of passenger-trips occurred in January, with 423,361 passenger-trips. The Thaynes Canyon – Blue Route generates the highest ridership of the City routes, with a total of 192,979 passenger-trips. The Park Meadows – Greet Route followed with 159,724 passenger-trips. On the opposite end of the spectrum, the early morning route had the fewest trips (15,889 passenger-trips) followed by the Highlands Estates portion of the Brown Route (16,739 passenger-trips).

The summer had a total of 592,444 passenger-trips. The most active months are mid-summer, with 151,075 passenger-trips in August and 100,999 passenger-trips in July. Of the two City routes operated during the summer, the Prospector Square – Red Route generated a strong majority of the ridership, with 185,839 passenger-trips, while the Park Meadows/Thaynes Canyon – Green Route carried only 65,620 passenger-trips. With respect to the Kimball Junction services, the Pinebrook West – Pink Route generate a substantial portion of the ridership with a total of 159,219 passenger-trips.

Demand Response Ridership Characteristics

In 2010, the demand response ridership, including ADA paratransit and Dial-A-Ride, totaled 12,024 passenger-trips. As shown in Table 16 and Figure 13, ridership between the two services is split nearly evenly, with 49 percent of the ridership (5,921 passenger-trips) on the paratransit service and 51 percent on the Dial-A-Ride service (6,103 passenger-trips).

On a monthly basis, March had the greatest number of rides, with a total of 1,368 passenger-trips, of which 689 passenger-trips were through the paratransit service and 679 passenger-trips on the Dial-A-Ride. February (1,056 passenger-trips), July (1,039 passenger-trips), September (1,039 passenger-trips) and December (1,033 passenger-trips) also generated high ridership on the services.

Also shown in Table 16 is a breakdown of Dial-A-Ride ridership characteristics. In 2010, 1,936 passenger-trips (32 percent) were considered scheduled pick-ups, while 4,167 passenger-trips (68 percent) were generated from the fixed stops.

TABLE 15: Fixed Route Ridership by Season, 2009 - 2010

	Park City Services										Summit County Services							
	Interlined Routes												Kimball Junction					
	Prospector Square (Red)	Park Meadows (Green)	Thaynes Canyon (Blue)	Prospector Express (Yellow)	*Subtotal: City Routes*	Empire Pass (Lavender) [1]	Silver Lake (Orange)	Downtown Trolley	Early AM	Late PM	The Canyons (Lime)	Canyons Circulator [2]	Pinebrook (Pink)	Highlands Estates (Brown)	Express Route (Brown)	*Subtotal: Kimball Junction*	Special Services	*Total Ridership*
Winter 2009-2010																		
December 2009	26,772	29,384	35,502	22,596	114,255	--	14,961	6,603	3,202	3,294	12,842	8,215	45,696	3,552	8,253	57,501	3,887	224,760
January 2010	42,685	46,851	56,605	36,028	182,169	--	22,775	7,791	4,765	7,293	20,692	10,298	59,092	4,593	10,672	74,357	93,221	423,361
February	36,490	40,051	48,390	30,799	155,730	--	19,286	3,706	3,642	4,638	18,612	9,808	50,635	3,936	9,144	63,715	3,930	283,067
March	34,769	38,162	46,108	29,347	148,386	--	18,355	6,494	3,478	4,107	17,994	9,407	49,794	3,871	8,993	62,657	3,072	273,950
April	4,807	5,276	6,374	4,057	20,514		4,104	2,030	802	1,064	4,431	1,974	10,128	787	1,829	12,745	174	47,838
Total Winter	*145,523*	*159,724*	*192,979*	*122,827*	*621,054*	--	*79,481*	*26,624*	*15,889*	*20,396*	*74,571*	*39,702*	*215,345*	*16,739*	*38,890*	*270,975*	*104,284*	*1,252,976*
Summer 2010																		
April	22,741	8,030	--	--	30,770	--	0	3,046	--	--	--	--	14,613	1,753	2,751	19,117	0	52,933
May	16,943	5,983	--	--	22,926	--	0	4,800	--	--	--	--	15,576	1,869	2,932	20,376	0	48,102
June	22,010	7,772	--	--	29,782	--	866	7,119	--	--	--	--	20,081	2,409	3,780	26,270	20	64,057
July	35,019	12,365	--	--	47,384	--	3,495	8,438	--	--	--	--	28,587	3,430	5,381	37,397	4,285	100,999
August	25,899	9,145	--	--	35,044	--	3,002	9,486	--	--	--	--	26,578	3,189	5,002	34,769	68,774	151,075
September	21,542	7,607	--	--	29,149	--	496	6,454	--	--	--	--	18,315	2,197	3,447	23,960	257	60,316
October	19,002	6,710	--	--	25,712	--	0	4,609	--	--	--	--	15,507	1,860	2,919	20,286	83	50,690
November [3]	22,683	8,009	--	--	30,692	--	1,387	4,761	157	276	598	--	19,961	2,395	3,757	26,113	288	64,272
Total Summer	*185,839*	*65,620*	*0*	*0*	*251,459*	--	*9,246*	*48,713*	*157*	*276*	*598*	--	*159,219*	*19,102*	*29,968*	*208,288*	*73,707*	*592,444*
Total Ridership 2009-2010	331,362	225,344	192,979	122,827	872,513	--	88,727	75,337	16,046	20,672	75,169	39,702	374,564	35,841	68,858	479,263	177,991	1,845,420
% Ridership Winter	*43.9%*	*70.9%*	*100.0%*	*100.0%*	*71.2%*	--	*89.6%*	*35.3%*	*99.0%*	*98.7%*	*99.2%*	*100.0%*	*57.5%*	*46.7%*	*56.5%*	*56.5%*	*58.6%*	*67.9%*
% Ridership Summer	*56.1%*	*29.1%*	*0.0%*	*0.0%*	*28.8%*	--	*10.4%*	*64.7%*	*1.0%*	*1.3%*	*0.8%*	--	*42.5%*	*53.3%*	*43.5%*	*43.5%*	*41.4%*	*32.1%*

Note 1: Empire Pass route was not operated during the 2009-2010 season.
Note 2: Canyons Circulator route ended operation as of 2010.
Note 3: November includes the "Winter Start-Up" schedule, but is considered part of the "summer" season in terms of ridership; Winter season began December 3rd, 2010.

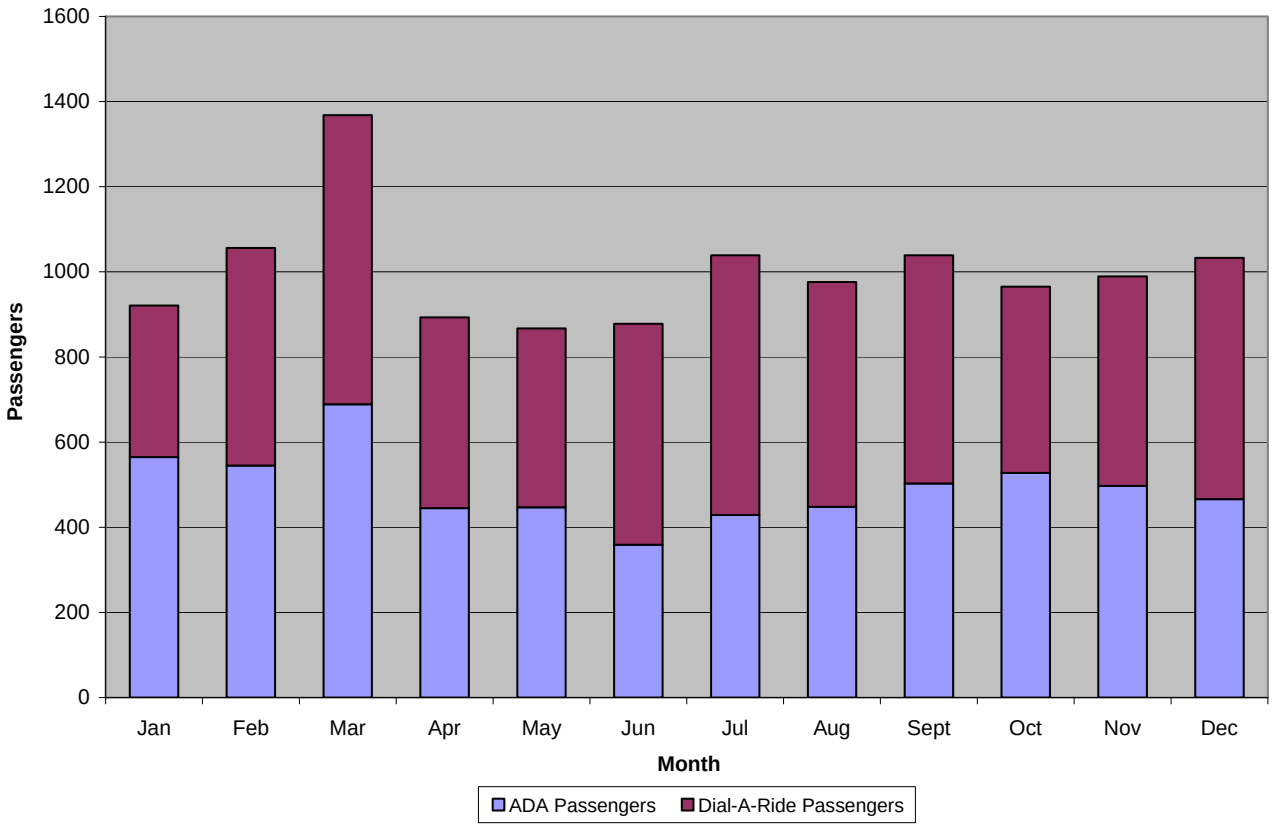
Source: Park City Municipal Corporation, 2011.

TABLE 16: Demand Response Ridership, 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
ADA Service													
County Passengers	411	416	509	359	357	276	306	336	403	427	390	363	4,553
City Passengers	132	72	118	60	61	46	71	58	62	46	47	55	828
City Senior Passengers	22	57	62	26	29	37	52	54	38	55	60	48	540
ADA Service Subtotal	*565*	*545*	*689*	*445*	*447*	*359*	*429*	*448*	*503*	*528*	*497*	*466*	*5,921*
Dial-A-Ride													
Scheduled Passengers	202	159	290	83	69	189	181	49	154	160	259	141	1936
Fixed Stop Passengers	154	352	389	365	351	330	429	479	382	277	233	426	4167
Dial-A-Ride Subtotal	*356*	*511*	*679*	*448*	*420*	*519*	*610*	*528*	*536*	*437*	*492*	*567*	*6,103*
Demand Response Total	***921***	***1,056***	***1,368***	***893***	***867***	***878***	***1,039***	***976***	***1,039***	***965***	***989***	***1,033***	***12,024***

Source: Park City Municipal Corporation, 2011

FIGURE 13: Demand Response Ridership by Month, 2010



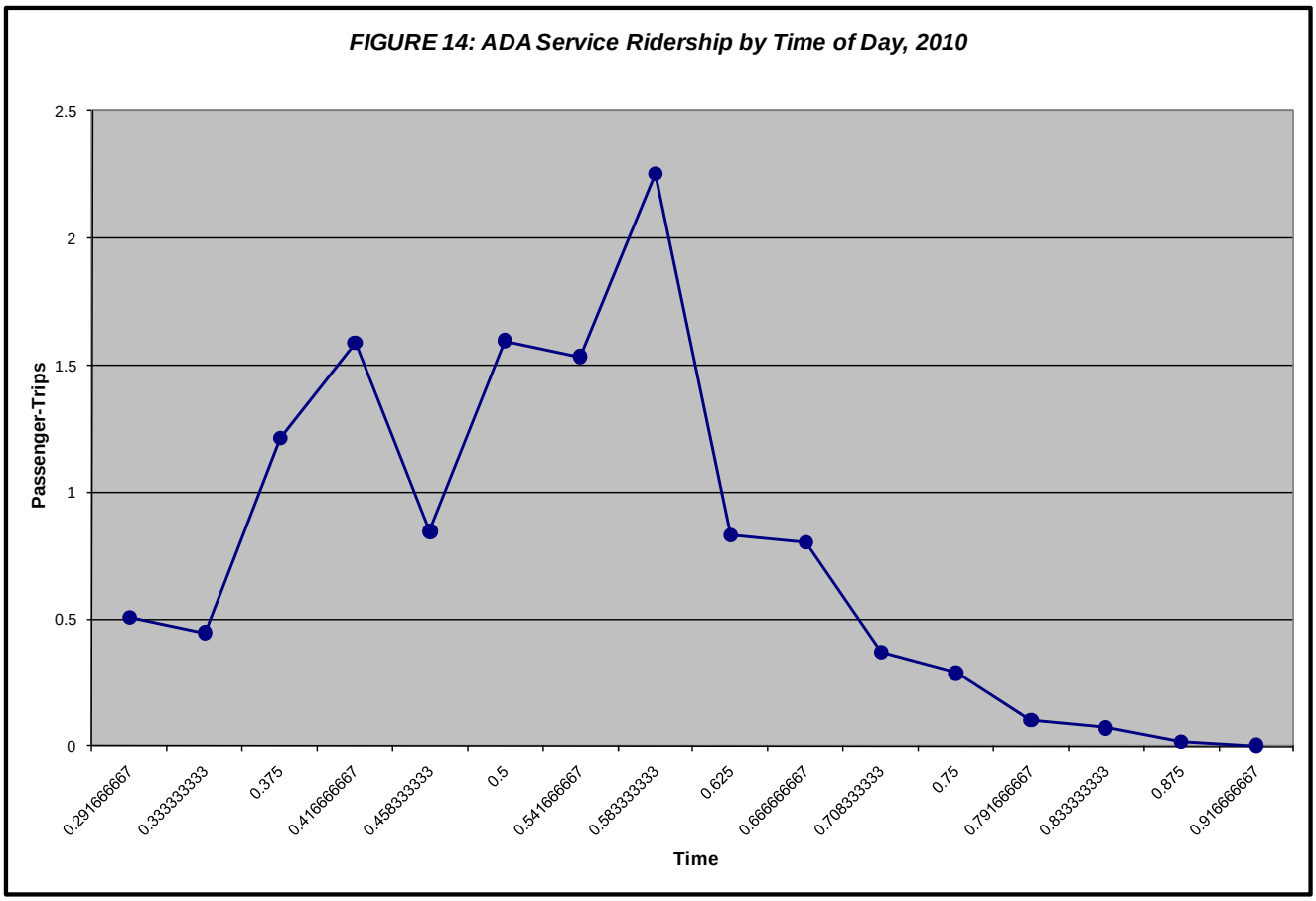
As discussed above, general public Dial-A-Ride passengers schedule rides originating at designated fixed stops, which accounts for 68 percent of the ridership generated. The National Ability Center (277 passenger-trips) and the Old Town Transit Center (272 passenger-trips) had the greatest number of pick-ups, while the Park City Recreation Center (35 passenger-trips) and the People's Health Clinic (32 passenger-trips) had the fewest.

Table 17 and Figure 14 present data for the ADA paratransit service by time of day for 2010. As shown, the highest amount of ridership is generated between 10:00 AM and 3:00 PM when a daily average of 8 trips were served. Ridership sharply decreases after 2:00 PM, with very little ridership after 7:00 PM.

TABLE 17: ADA Service Ridership by Month and Time of Day, 2010

Time	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total	Average Daily
7:00 AM	12	10	9	6	15	3	4	4	33	35	32	22	**185**	**0.5**
8:00 AM	12	14	19	1	1	14	28	16	8	16	12	22	**163**	**0.4**
9:00 AM	60	64	63	39	34	23	18	32	28	34	27	21	**443**	**1.2**
10:00 AM	47	54	62	65	56	37	46	35	38	50	48	42	**580**	**1.6**
11:00 AM	12	11	21	24	16	21	16	14	26	53	46	49	**309**	**0.8**
12:00 PM	48	52	59	39	43	48	47	54	64	44	45	40	**583**	**1.6**
1:00 PM	38	43	58	38	40	33	38	46	60	59	55	52	**560**	**1.5**
2:00 PM	75	75	114	83	87	39	44	51	74	60	69	52	**823**	**2.3**
3:00 PM	26	19	31	26	25	21	18	25	33	31	25	23	**303**	**0.8**
4:00 PM	30	31	29	19	25	25	17	32	23	23	18	21	**293**	**0.8**
5:00 PM	21	15	18	5	8	5	13	13	9	13	6	9	**135**	**0.4**
6:00 PM	21	19	19	11	5	6	11	6	1	3	1	2	**105**	**0.3**
7:00 PM	8	6	4	3	2	1	2	2	5	2	2	1	**38**	**0.1**
8:00 PM	0	2	2	0	0	0	4	6	0	3	4	5	**26**	**0.1**
9:00 PM	1	0	1	0	0	0	0	0	1	1	0	2	**6**	**0.0**
10:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	**1**	**0.0**
Total	411	416	509	359	357	276	306	336	403	427	390	363	**4,553**	**12.5**

Source: Park City Municipal Corporation, 2011.



FINANCIAL CHARACTERISTICS

Cost Allocation Model

Estimated Park City Transit operating costs were analyzed to assess those factors that impact cost levels. The costs presented in Table 18 represent those for the entire 2010 fiscal year. Each cost item is allocated to that quantity (vehicle service hour, vehicle service mile or fixed cost) upon which it is most dependent. Fuel costs, for example, are allocated to vehicle service miles. When divided by the total quantity of service budgeted, a cost equation can be developed. For Park City, this equation is:

Operating Cost = $44.73 x annual vehicle service hours +
$1.14 x annual vehicle service miles +
$873,145 in annual fixed costs

This equation can be used to estimate the cost of any changes in service, such as the operation of additional routes or changes in daily hours of operation. It should be noted that the cost equation above presents each cost factor related to operating the service. As such, none of the cost factors can be utilized by itself to determine the cost impacts of service change without applying the pertinent unit quantity to each cost factor.

TABLE 18: Park City Transit Cost Allocation Model

Fiscal Year 2009-2010

Line Item	Total	Vehicle Service Hours	Vehicle Service Miles	Per Vehicle	Fixed
Driver's Salaries & Benefits	$2,808,020	$2,808,020			
Supervisor's Salaries & Benefits	$321,506	$321,506			
Manager's Salaries	$122,102				$122,102
Admin.Charge (Gen. Fund)	$484,730				$484,730
Memberships	$6,788				$6,788
Public Notices	$3,613				$3,613
Meetings, Conf., Travel	$15,592				$15,592
Recruitment/Training	$9,885				$9,885
Department Supplies	$72,156				$72,156
Office Supplies	$2,378				$2,378
Postage	$1,442				$1,442
Uniforms	$14,284	$14,284			
Building Maintenance	$5,552				$5,552
Printing	$22,897				$22,897
Photocopying	$970				$970
Electricity	$11,331				$11,331
Natural Gas	$3,172				$3,172
Telephone	$1,427				$1,427
Cellular Phone	$5,726				$5,726
Professional Services	$14,318				$14,318
Consulting Services	$80,749				$80,749
Street Signs	$8,319				$8,319
Vehicle - Fuel	$677,000		$677,000		
Vehicle - Parts and Main. & Washing	$550,000		$550,000		
Vehicle Insurance	$100,000			$100,000	
Total Expenditures	**$5,343,956**	**$3,143,811**	**$1,227,000**	**$100,000**	**$873,145**
Unit Quantities		**70,282**	**1,075,422**	**34**	
Cost Per Unit (Fiscal Year)		**$44.73**	**$1.14**	**$2,941.18**	

Source: Park City Municipal Corporation, 2011.

Revenues

Detailed Park City Transit revenues are shown in Table 19. In the 2010 fiscal year, revenues totaled approximately $12.9 million, of which $6.6 million was from Federal grants, $2.0 million from regional transit revenue, and $3.9 million was from local funding sources (transit sales tax, resort tax and business license assessments). The 2010 total revenues were substantially higher than previous years, primarily due to increased Federal grant funding that was awarded to the transit agency. Also shown in the table are the forecast revenues for the 2011 fiscal year, which are estimated to total $10.6 million. This reduction can be attributed to the assumption that Federal grant funding will decrease, as well as the resort tax and regional transit revenues.

TABLE 19: Park City Transit Revenue History

	2007	2008	2009	2010	Estimated 2011
Transit Sales Tax	$1,751,187	$1,831,352	$1,533,677	$1,633,166	$1,710,000
Resort Tax	$1,718,388	$1,719,186	$903,161	$1,494,601	$1,349,000
Business License	$777,993	$783,283	$802,723	$817,496	$920,000
Night Rental License Fee	$187,654	$138,944	$162,012	$223,555	$225,000
Federal Grants	$3,050,215	$54,775	$2,443,256	$6,631,022	$4,654,837
Fare Revenue	$34,352	$40,771	$45,997	$53,979	$50,000
Bus Advertising	$27,170	$36,740	$32,928	$17,080	$28,479
Regional Transit Revenue	$1,085,786	$1,596,177	$1,847,281	$2,017,641	$1,750,000
Total Transit Revenues	***$8,632,745***	***$6,201,228***	***$7,771,036***	***$12,888,540***	***$10,687,316***

Source: Park City Municipal Corporation, 2011.

OPERATING CHARACTERISTICS AND PERFORMANCE EVALUATION

To gain further insight into the efficiency and effectiveness of Park City Transit services, it is useful to conduct an analysis of ridership and operating data by service category. Ridership and operating statistics for the 2010 calendar year were reviewed to identify average activity, marginal operating costs and fixed operating costs, as reflected in Table 20. The entire Park City Transit system had a total of 78,380 vehicle service hours and 1,118,358 vehicle service miles during the 2010 calendar year, as well as operating costs totaling $5.75 million. The following provides more detailed broken out by service area/type – Park City services, Summit County services and Demand Response service.

Park City Services

As previously discussed, City operated fixed route ridership totaled 1,096,924 in during the 2010 calendar year. Further, ridership ranged from a low of 17,260 passenger-trips on the early morning service to a high of 335,672 passenger-trips on the Prospector Square (red) route. During the same period, the Park City services had a total of 42,087 vehicle service hours and 536,469 vehicle service miles. The Park Meadows – Green Route had the greatest number of hours (12,985 service hours) and miles (169,355 service miles), while the early morning service had the fewest, with 356 service hours and 6,812 service miles.

Operating costs for the Park City services are estimated to total $3,008,000, of which $2,539,100 was marginal operating subsidy and $463,900 was allocated operating subsidy. The Park Meadows – Green Route required the most subsidy ($927,400), followed by the Prospector Square – Red Route with $822,100, while the early morning route required the least ($29,500).

TABLE 20: Park City Transit Operating Characteristics and Performance Indicators

	Park City Services											Summit County Services								
	Interlined Routes													Kimball Junction						
	Prospector Square (Red)	**Park Meadows (Green)**	**Thaynes Canyon (Blue)**	**Prospector Express (Yellow)**	***Subtotal: City Routes***	**Empire Pass (Lavender) [1]**	**Silver Lake (Orange)**	**Downtown Trolley**	**Early AM**	**Late PM**	***Total Park City Services***	**The Canyons (Lime)**	**Canyons Circulator [2]**	**Pinebrook / West (Pink)**	**Express / East (Brown)**	***Subtotal: Kimball Junction***	***Total County Services***	**Special Services**	**Demand Response [3]**	***FIXED ROUTE TOTAL***	***SYSTEMWIDE TOTAL***
Operating Data																				
One-Way Passenger-Trips	335,672	230,075	198,695	126,465	*890,907*		91,340	75,593	17,260	21,824	*1,096,924*	75,390		378,072	105,606	*483,678*	*559,068*	181,010	12,024	***1,837,002***	***1,849,026***
Vehicle Service Hours	11,450	12,985	3,930	3,978	*32,343*		3,915	4,525	356	949	*42,087*	2,731		15,652	5,520	*21,172*	*23,903*	1,139	11,252	***67,128***	***78,380***
Vehicle Service Miles	152,317	169,355	49,584	46,404	*417,660*		54,435	44,207	6,812	13,355	*536,469*	46,383		263,387	128,842	*392,229*	*438,612*	40,277	103,000	***1,015,358***	***1,118,358***
Marginal Operating Subsidy	$694,300	$782,400	$240,700	$234,400	*$1,951,800*		$244,400	$256,400	$25,500	$59,500	*$2,537,600*	$182,200		$1,011,400	$397,500	*$1,408,900*	*$1,591,100*	$125,500	$628,000	***$4,254,200***	***$4,882,200***
Allocated Operating Subsidy	$127,500	$144,700	$43,800	$44,300	*$360,300*		$43,600	$50,400	$4,000	$10,600	*$468,900*	$30,400		$174,400	$61,500	*$235,900*	*$266,300*	$12,700	$125,300	***$747,900***	***$873,200***
Total Operating Subsidy	$821,800	$927,100	$284,500	$278,700	*$2,312,100*		$288,000	$306,800	$29,500	$70,100	*$3,006,500*	$212,600		$1,185,800	$459,000	*$1,644,800*	*$1,857,400*	$138,200	$753,300	***$5,002,100***	***$5,755,400***
Performance Indicators																				
Passenger-Trips per Vehicle Service Hour	29.3	17.7	50.6	31.8	*27.5*		23.3	16.7	48.5	23.0	*26.1*	27.6		24.2	19.1	*22.8*	*23.4*	158.9	1.1	***27.4***	***23.6***
Passenger-Trips per Vehicle Service Mile	2.2	1.4	4.0	2.7	*2.1*		1.7	1.7	2.5	1.6	*2.0*	1.6		1.4	0.8	1.2	*1.3*	4.5	0.1	***1.8***	***1.7***
Total Subsidy per Passenger-Trip	$2.45	$4.03	$1.43	$2.20	*$2.60*		$3.15	$4.06	$1.71	$3.21	*$2.74*	$2.82		$3.14	$4.35	$3.40	*$3.32*	$0.76	$62.65	***$2.72***	***$3.11***

Note 1: Data does not include Canyons Circulator or Empire Pass routes as there is no recent data for a full year for each - Canyons Circulator is no longer operated and Empire Pass is new as of Dec 2010

Note 2: Data is for a typical service year, considering Winter, Off-Season and Winter Start-Up service schedules, using 2009 and 2010 data

Note 3: Includes Paratransit/Mobility and Dial-A-Ride services

Note 4: Operating data for the most recent 12 month period.

Source: Park City Municipal Corporation, 2011

This page left intentionally blank.

Summit County Services

In Summit County, ridership totaled 559,068 passenger-trips in 2010, and there were a total of 23,903 vehicle service hours and 438,612 vehicle service miles. Ridership ranged from a low of 75,390 passenger-trips on the Canyons -- Lime Route to a high of 378,072 passenger-trips on the Pinebrook/West -- Pink Route. The Pink route had the greatest number of service hours (15,652 service hours) and service miles (128,842 service miles) out of the individual routes, while The Canyons – Lime Route had the fewest, with 2,731 vehicle service hours and 46,383 vehicle service miles.

The total operating costs for county services totaled $1,854,500, including $1,588,200 in marginal operating subsidy and $266,300 in allocated operating subsidy. The greatest amount is expended on the Pinebrook/West -- Pink route, with a total of $1,186,200, while the least amount is spent on The Canyons -- Lime route, with $209,200 in operating subsidy.

Demand Response

The demand response system operated a total of 103,000 service miles and 11,525 service hours and served 12,024 passenger-trips. Operating costs for this service were estimated to total $753,500 for the 2010 calendar year, of which $628,200 was marginal operating subsidy and $125,300 was allocated operating subsidy.

Systemwide Performance Indicators

The performance indicator information for the Park City Transit system is presented in Table 20, as well as Figures 15 through 17.

A service's financial efficiency is provided by the operating subsidy per one-way passenger-trip. This "performance indicator" is probably the single best means of measuring performance, as it directly relates the "goal" of public transportation (to provide passenger-trips) to the basic resource required (public dollars). As shown in Figure 15, the system-wide operating subsidy per one-way passenger-trip during the 2010 calendar year was $3.11, while the fixed-route (excluding demand response service) operating subsidy per one-way passenger-trip was $2.72. By service category, the Special Services generated the lowest subsidy per one-way passenger-trip ($0.77) followed by the Thaynes Canyon – Blue Route ($1.43) and the early morning service ($1.71). The demand response service had the highest subsidy per one-way passenger-trip at $62.67.

An important measure of service effectiveness is "productivity", defined as the number of one-way passenger-trips provided per vehicle service hour. As presented in Table 20 and Figure 16, the system as a whole achieved a productivity of 23.6 passenger-trips per vehicle service hour, while the fixed-route service achieved 27.4 passenger-trips per vehicle service hour. Special Services had the highest productivity (158.9 passenger-trips per vehicle service hour), reflecting the very high ridership levels during special events such as Sundance. This is followed by the Thaynes Canyon – Blue Route with 50.6 passenger-trips per vehicle service hour and the early

FIGURE 15: Total Subsidy per Passenger-Trip

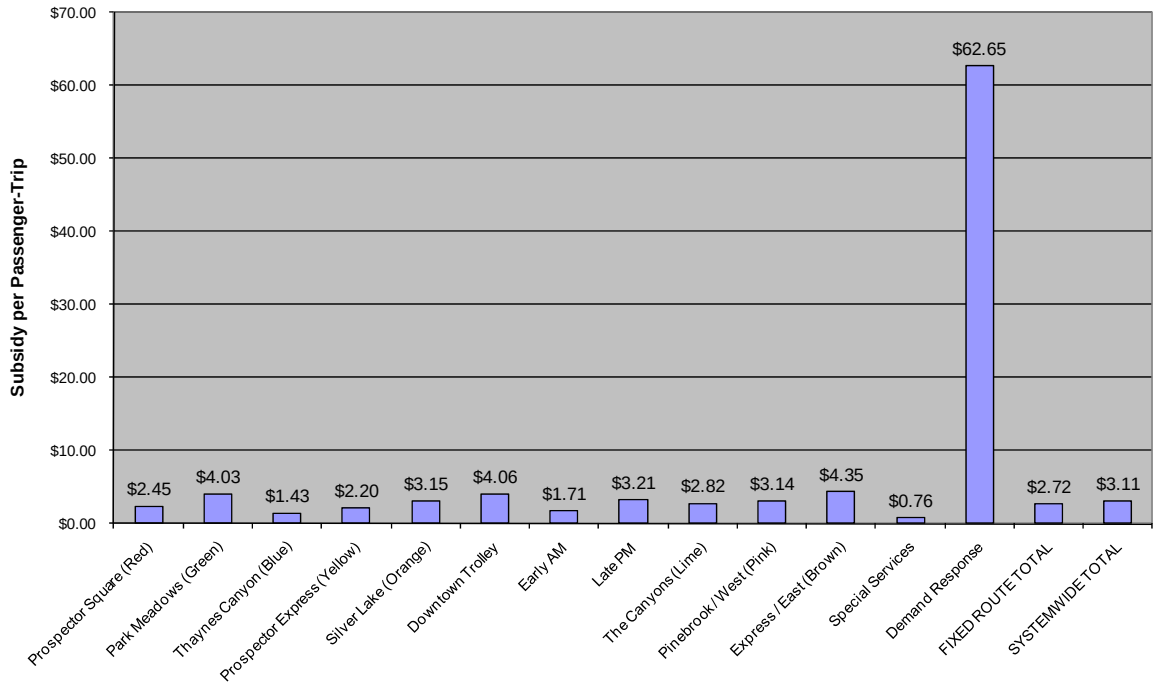
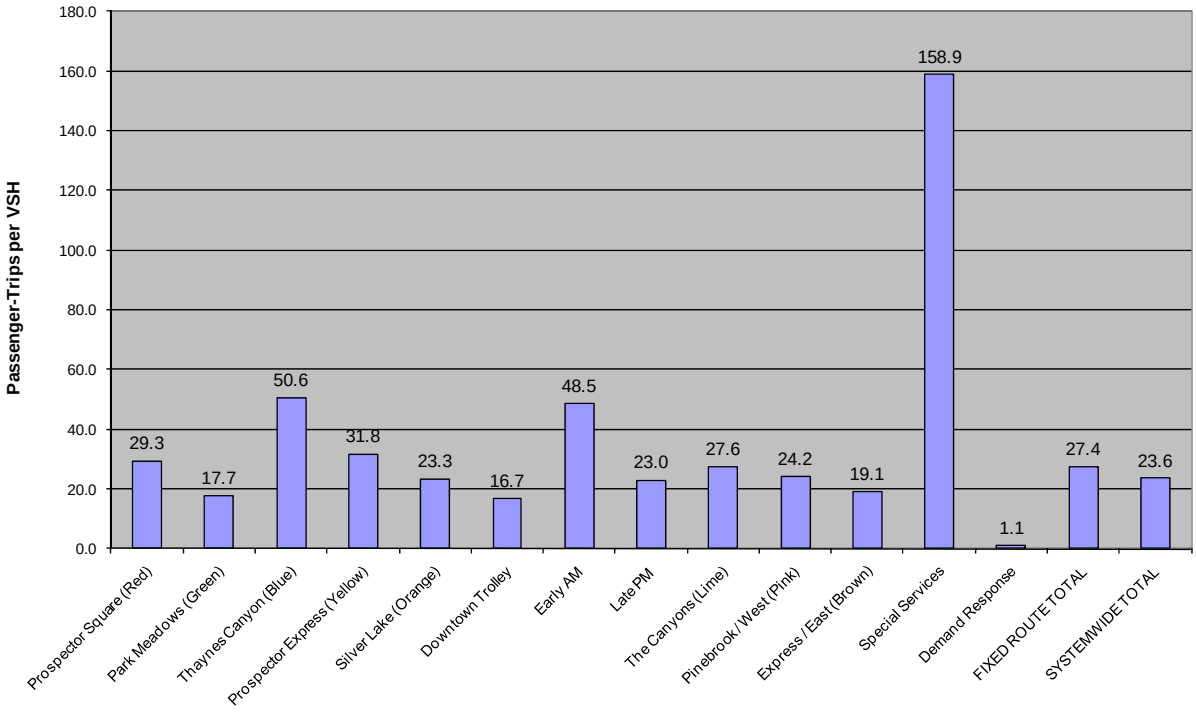


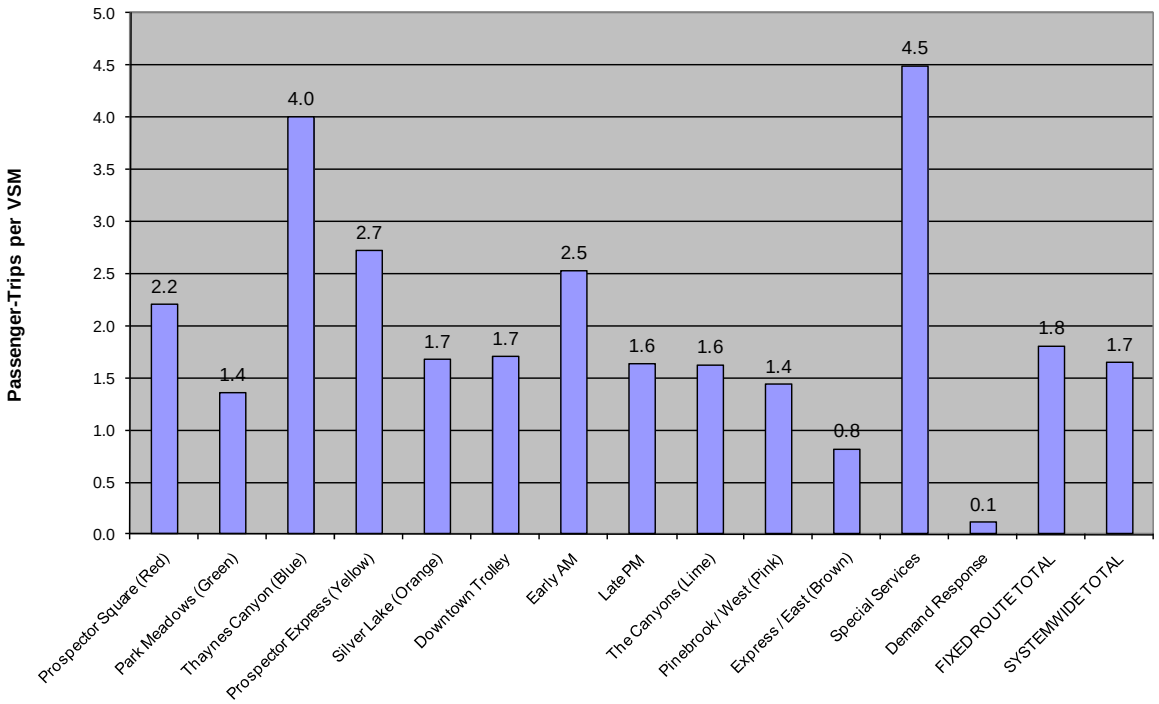
FIGURE 16: Passenger-Trips per Vehicle Service Hour



morning service with 48.5 passenger-trips per vehicle service hour. The demand response service resulted in the lowest productivity, with 1.1 passenger-trips per vehicle service hour.

Service effectiveness is also measured by the number of one-way passenger-trips per vehicle service mile. As shown in Table 20 and Figure 17, the overall system averaged 1.7 passenger-trips per vehicle service mile, while the fixed-route only averaged 1.8 passenger-trips per vehicle service mile. Special services had the highest passenger-trips per vehicle service mile (4.5), followed very closely by the Thaynes Canyon (blue) route with 4.0 passenger-trips per vehicle service mile. The least effective routes, per this measure, are the demand response service (0.1 passenger-trips per vehicle service mile) and the Kimball Express/East (brown) route with 0.8 passenger-trips per vehicle service mile.

FIGURE 17: Passenger-Trips per Vehicle Service Mile



CAPITAL ASSETS

Transit Fleet

Park City Transit currently has a fleet of 37 revenue vehicles, all of which are wheelchair accessible. These vehicles have a seating capacity of between 15 (demand response vehicles) and 32 persons, as displayed in Table 21. The agency also uses 5 non-revenue vehicles for transit staff purposes. The majority of the revenue vehicles were purchased prior to 2010 and have planned replacement years within this plan study period.

TABLE 21: Park City Transit Fleet Inventory

	Bus #	Model Year	Make	Body Type	Seating Capacity	Current Mileage	Funding	Planned Replacement Year
Revenue Vehicles	620	2009	GMC	Titan	24	13,837	5311	2016
	621	2010	GMC	Titan	24	20,257	5311	2017
	622	2010	GMC	Titan II	15	14,445	5311	2015
	623	2010	GMC	Titan II	15	21,002	5311	2015
	624	2010	GMC	Titan II	15	15,447	5311	2015
	625	2010	GMC	Titan	24	3,550	5311	2017
	648	2001	Gillig	Low-Floor	32	202,873	5309	2013
	649	2001	Gillig	Low-Floor	32	246,132	5309	2013
	650	2001	Gillig	Low-Floor	32	189,127	5309	2013
	653	2002	Gillig	Low-Floor	32	248,675	5311	2014
	654	2002	Gillig	Low-Floor	32	218,832	5311	2014
	655	2002	Gillig	Low-Floor	32	257,852	5311	2014
	656	2002	Gillig	Low-Floor	32	255,865	5311	2014
	657	2004	Gillig	Low-Floor	32	178,728	5311	2016
	658	2004	Gillig	Low-Floor	32	274,035	5311	2016
	659	2004	Gillig	Low-Floor	32	248,297	5311	2016
	660	2004	Gillig	Low-Floor	32	238,899	5311	2016
	661	2005	CCC	Trolley	30	118,461	5309	2015
	662	2005	Gillig	Low-Floor	32	221,089	5309	2017
	663	2005	Gillig	Low-Floor	32	300,018	5309	2017
	664	2005	Gillig	Low-Floor	32	274,727	5309	2017
	665	2005	Gillig	Low-Floor	32	279,304	5309	2017
	667	2006	Gillig	Low-Floor	32	228,554	5309	2018
	668	2006	Gillig	Low-Floor	32	223,567	5309	2018
	669	2006	Gillig	Low-Floor	32	244,757	5309	2018
	670	2006	Gillig	Low-Floor	32	227,999	5309	2018
	671	2006	Gillig	Low-Floor	32	213,610	5309	2018
	672	2006	Gillig	Low-Floor	32	215,442	5309	2018
	673	2006	Gillig	Low-Floor	32	215,552	5309	2018
	674	2008	Gillig	Low-Floor	32	85,706	5311	2020
	675	2008	Gillig	Low-Floor	32	65,672	5311	2020
	676	2008	Gillig	Low-Floor	32	68,764	5311	2020
	677	2008	Gillig	Low-Floor	32	84,696	5311	2020
	678	2010	Gillig	Low-Floor	32	43,032	5311	2022
	679	2010	Gillig	Low-Floor	32	39,286	5311	2022
	680	2010	Gillig	Low-Floor	32	32,085	5311	2022
	681	2010	Gillig	Low-Floor	32	35,185	5311	2022
Non-Revenue	601	2002	Jeep	Grand Cherokee	5	52,421	5311	2010
	602	2009	Chev	Colorado	5	25,326	5311	2014
	603	2009	Chev	Equinox	5	17,692	5311	2014
	604	2009	Chev	Malibu Hybrid	5	16,260	5311	2014
	606	2002	Ford	F450	3	46,122	5311	2010

Source: Park City Municipal Corporation, 2011.

Transit Centers

Within the transit system, there are currently four transit center locations: Old Town Transit Center, Park City Mountain Resort Transit Hub, The Canyons Transit Hub and the Newpark Transit Hub. The location at Newpark is serving as a temporary Kimball Junction transit center until a new facility can be constructed. These locations provide important connections between routes, and potentially with new services (such as Salt Lake City Commuter service).

The Old Town Transit Center is the main facility in the system, and includes visitor information with indoor seating and restrooms. There is a lower level that is utilized by transit staff for training.

Bus Stops and Bus Shelters

Park City Transit has a total of 257 active bus stops along all of the routes. Among these stops, there are currently a total of 42 bus shelters, with 21 shelters located each in Park City and in Summit County. The shelter locations are listed below.

Park City

- Adolph's
- All Seasons
- Crescent Ridge
- Fresh Market
- Gambler
- Montage
- Park Ave Condos
- Park City High School
- Park City Learning Center
- Park City Library
- Park City Market
- Peaks
- Prospector Lodge
- Racquet Club
- Skate Park
- Silver Lake Village
- Silver Star
- Snow Peak Lodge
- Richardson's Flat Park and Ride
- Richardson's Flat Park and Ride
- Old Town Transit Center

Summit County

- Blue Roof
- Bobsled
- Canyon Creek
- Canyons 224
- Canyons Hub
- Ecker Hill
- Elk Meadows
- Grand Summit
- Landmark
- New Park
- New Park Studios
- Park & Ride Jeremy Ranch
- Park City Nursery
- Powderwood
- Quinn's Jct Peoples Health Clinic
- Redstone
- Silver Mt Spa
- Timberwolf
- Wal-Mart
- Wendy's
- Quarry Village

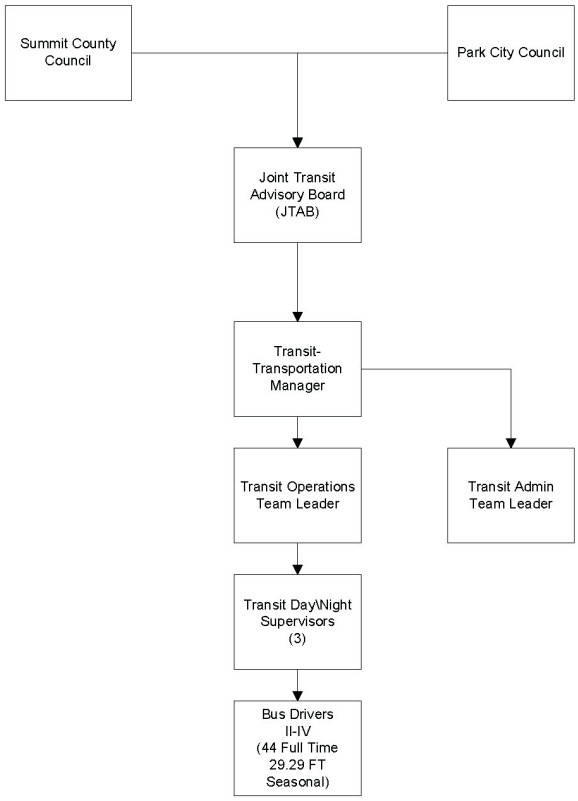
Operations and Maintenance Facility

A new facility is currently being constructed at the Public Works Department site on Iron Horse Drive. As previously discussed, the facility will dramatically improve the maintenance functions and abilities of Park City Transit, with more storage space (for tools, parts and buses), greater bus maintenance capacity, a new bus wash and fueling station, as well as new staff offices. The site is slated to be occupied by December 2011.

EXISTING TRANSIT ORGANIZATION STRUCTURE

Public transit services in Park City and the Snyderville Basin are managed and operated by the Park City Municipal Corporation, as shown in Figure 18. The City's Public Works Department has overall responsibility for the planning, operation and maintenance of local transit buses. City staff works closely with Summit County in planning for regional services. Assistance with financial management, bookkeeping and payroll is provided to the Public Works Department by the City's administrative offices.

FIGURE 18: Park City Organizational Chart 2010-2011



Park City Transit is overseen by the Joint Transit Advisory Board, and ultimately by the Summit County Council and Park City Council. There is a Transit-Transportation Program Manager that supervises the team, with both the Transit Operations Team Leader and the Transit Administrative Team Leaders directly reporting to the Manager.

OTHER REGIONAL TRANSIT PROVIDERS

As is the case with many resort areas, there are numerous transportation providers in the Park City area. Many of these are private services (i.e. private airport shuttles) and taxicab companies offering in-town transportation as well as airport transfers, with vehicles ranging from town cars to large vans and small minibuses. In addition to these companies, there are ridesharing opportunities for commuters in Summit County and beyond. Below is a summary of some of the larger service providers and programs available in the study area.

UTA Vanpool Program

The Utah Transit Authority (UTA) is the regional transportation provider for a six-county region, including Salt Lake County, Weber County, Davis County, Box Elder County, Tooele County

and Utah County. The largest service provided by UTA is TRAX, a fixed-route service operating in the six counties. Other services provided by UTA include paratransit service and commuter programs. UTA's vanpool program is available to, and used by, Park City area employers.

UTA manages a vanpool program throughout the state on behalf of the Utah Department of Transportation. While the majority of vanpools are in the Salt Lake City area, the program does serve the Park City area. A number of employers have participated in the program (currently or in the past), including Gear Industries (Summit County area) and Deer Valley Resort.

To establish a vanpool, a company or group leases a van from UTA Rideshare, organizes a pool with between 7 and 15 persons, and designates at least 2 drivers and a bookkeeper. The participants should be originating from generally the same location and have the same destination address. UTA Rideshare provides the van, maintenance, insurance, back-up van and support, fuel and up to 50 personal miles per month. There is also a $230 pre-tax transit benefit that is available to the participants of the program.

The cost of the vanpool service depends on the number of riders in the van and on the average miles per month, calculated by the round trip miles per work day and the average work days per month. Additionally, excess miles over and above the commute, personal and maintenance miles allowed are charged at the applicable mileage rate plus $0.55 per mile. Vanpools that carry 7 to 15 passengers will cost in the range of $454 to $3,295 per month, depending on mileage; the per person costs decrease as the number of passengers increase. For example, a vanpool operating between Park City and Salt Lake City would travel approximately 58 miles per day, or 1,276 miles per month (based on the 5-day work week commute), and would result in a payment of $912 (or $0.691 per mile, roughly). Depending on the number of persons, the individual contributions would range from $130 with 7 people to $61 with 15 people.

Other Ridesharing Opportunities

The ParkCityGreen.org website provides residents with other ridesharing opportunity resources. These include the KPCW radio station ride board, the eRideshare website and the Carpool World website. As of the date of this study, the eRideshare website had 8 postings for carpool opportunities originating from or going to Park City, and the Carpool World website had 3 listings.

Lewis Stages and All Resort Express

Lewis Stages is a tour and charter transportation service provider in Utah, offering services within the state and beyond. The All Resort Express segment of the company is specific to the resort areas outside Salt Lake City, and provides a number of services including airport transfers (shared van or private vehicle), charter services (vans, minibuses or private vehicles), Park City shuttle services, and taxicab services. Airport shuttle services are available 24 hours per day between the Salt Lake City International Airport and Park City and Kimball Junction area, and cost $37.00 per person (one-way) for shared van service, up to $169.00 for up to 5 passengers in a private SUV and $250.00 for private van service (up to 10 passengers). Rates for non-airport private vehicle service are $85.00 per hour.

Other Transportation Services

Most of the resorts in the Park City area provide local service in the Park City and Snyderville Basin areas, as well as airport service. Service for both guests and employees may be offered, depending on the resort.

This page intentionally left blank.

Chapter 4
Transit Needs and Demand

PARK CITY TRANSIT NEEDS AND DEMAND

Transit Demand Summary

A key step in developing and evaluating transit plans is a careful analysis of the transportation needs of various segments of the population and the potential ridership of transit services. The discussion below summarizes relevant data collected in the previous chapters and reviews the potential transit demand which stems from four categories:

- Transit Dependent Population Needs
- Employee Transit Needs
- Transit Demand
- Human Service Program – Related Transit Demand

Transit Needs

Transit Dependent Population

In many areas, the majority of transit passengers are typically transit dependent, as outlined in Chapter 2. The census data for the greatest number of transit dependent population, youth, mobility limited, elderly, low income, and zero vehicle households are presented in Figures 6-10 in Chapter 2. The census block group/regions which include the largest number of transit dependent persons are highlighted below:

- The highest concentrations of elderly persons are located in Park City, Summit Park CDP, South Snyderville Basin CDP and North Snyderville CDP, which combined make up over 50 percent of the total elderly population. These locations are currently served by both fixed-route and demand response (including ADA paratransit) services.

- Park City has the highest concentration of mobility limited persons, followed by Kamas and Summit Park CDP. Both Park City and Summit Park are served by current transit services, however Kamas is not. Despite this, the rather low population of the area may not warrant the need for transit services.

- The greatest concentrations of low-income persons are located in Park City, Kamas and Summit Park CDP. Kamas is not currently served by transit services.

- The highest numbers of youths in the study area are located within the boundaries of current transit services.

- Few places in the study area have households with zero vehicles, however the community with the greatest concentration is Park City, followed by Kamas and the North Snyderville CDP. Only Kamas is not served by transit, however given that only 25 households do not have vehicles, it is likely that this is not generating a high demand.

An overall review of the demographic data shows residents with a high propensity to use transit are located within the current service area for Park City Transit. Kamas does have higher levels of transit-dependent populations, primarily low-income and disabled persons. However, given the relatively low population total of this area, the amount of persons that make up these categories may not warrant new service. Based on this data, it is assumed that generally, the current transit services meet the needs of Summit County's resident transit-dependent population.

Employed Population

One element of the total demand for transit services in the region is commuter services. This element has become an important market for many transit systems. According to recent Census data, 63 percent of employed residents in Summit County commute within Summit County.

- Park City generates the greatest number of commuters, most of which originate from Park City, South Snyderville CDP, Summit Park CDP and North Snyderville CDP, all communities located in the Park City Transit service area.

- A very limited number of persons commute from larger areas of the study area to smaller communities in Summit County. Most of the commute patterns in the County are consistent with the location of major employers in the study area.

- 46 percent of Kamas residents that commute into the study area are traveling to Park City, Summit Park CDP or the Snyderville Basin.

Due to the number of commuters from Kamas into Park City, the subject of a commuter service from Kamas was explored in 2009. However, after coordinating with the local resorts, it was determined that despite potential employee demand, the service would not be fully utilized and was therefore never operated. One of the most prevalent reasons for not using the service had to do with work schedules, as the limited shuttle schedule times would not necessarily coincide with many of the employees shifts. Additionally, the travel time associated with the service was not viewed favorably by potential users.

According to information obtained from Park City staff, there is roughly a 15 percent variation in employment over the course of the year. Considering that the majority of employment is generated from winter resorts, it is assumed that this influx of potential employees occurs in the winter season. As such, new services to meet any potential demand, particularly from outlying areas, may be warranted during this peak season only.

Discussion regarding needs and demand from Summit County to outlying areas, including Salt Lake City, is presented in the following section.

PARK CITY POTENTIAL TRANSIT DEMAND

One of the objectives of this study is to determine the transit needs. As a tourist-oriented community, the transit system is highly dependent upon the visitor populations. With many out-of-state and international visitors, it is likely that many will arrive to Park City without a personal vehicle (including rental cars). In addition to the numerous hotel and motel rooms, there are approximately 5,400 second homes (according to data obtained from Park City staff) that may also generate transit demand with visitors.

Many factors affect tourism, making it difficult to predict the future patterns, and therefore difficult to predict ridership patterns. Nonetheless, by looking at a combination of overnight visitors, skier days and ridership trends, a reasonable estimate of the range of transit demand can be made.

Skier Day Method

Over the past five years, the ratio to the number of one-way passenger-trips per annual skier days has ranged from 0.98 to 1.17, with the average ratio of skier days to one-way trips between 2005 and 2010 equal to 1.11. During this time period, ridership was decreasing while skier days have increased, resulting in a current ratio of 1.07.

Over the last decade, skier days have increased an average of 3.1 percent per year, with a total increase of 36 percent since 2000. Assuming this trend continues, it can be estimated that there will be roughly 1,787,643 skier days in the 2010-2011 winter season, and up to potentially 1,842,919 skier days in the 2011-2012 winter season. Multiplying this number by 1.07 (the average ratio of skier days to transit trips) suggests there will be a demand of 1,921,271 passenger-trips in 2011 (a 1.7 percent increase in ridership from 2009-2010) and up to 1,980,679 passenger-trips in demand for 2012.

Overnight Visitor Method

A relationship between overnight visitors and transit ridership can also be determined. By looking at overnight visitors in comparison to passenger-trips, a consistent trend appears wherein a higher transit rate per overnight visitor is seen in winter (0.93 trips per overnight visitor), and lower in the summer (0.40 trips per overnight visitor). Over the past three years, the annual average passenger-trip per overnight visitor has been 0.66.

The first step in this method is to determine the anticipated visitor population for 2011. Using the average change in overnight visitors for the past three years, which is roughly -2.4 percent, there will be an estimated 2,900,321 overnight visitors in 2011. Next, the average annual trip per overnight visitor is applied, resulting in a transit ridership of 1,924,127 for 2011. This figure is 56,552 trips less than through the skier day method. This figure is perhaps on the low side, considering the increase in overnight visitors observed between 2010 and 2009. Although the general trend has been a decline, the recent upswing could indicate increased future overnight visitors that could bring potential 2011 ridership closer to that of the skier day estimate.

Ridership Trends Method

The most straightforward method of estimating future ridership demand is to look at the ridership trends from the past. From 2007 to 2010, ridership decreased an average of 1.8 percent per year. Applying this factor to last year's ridership indicates the 2011 ridership will be approximately 1,854,248. This results in 67,023 fewer passenger-trips than through the skier day method, and 69,879 fewer passenger-trips than the overnight visitor method.

SUMMIT COUNTY POTENTIAL RURAL TRANSIT DEMAND

While the methods presented above are capable of providing transit demand estimates in a resort area, for rural non-program demand, it is useful to reference the Transit Cooperative Research Program (TCRP) Project A-3: *Rural Transit Demand Estimation Techniques*.

Demand Estimation for Non-Program Transit Trips

Study documents present a series of formulas relating the number of participants in various types of programs with the observed actual demand for service, based upon a database of 185 transit agencies across the country. The TCRP analytical technique uses a "logit model" approach to the estimation of transit demand, similar to that commonly used in urban transportation models. This model incorporates an exponential equation that relates the quantity of service and the demographics of the area.

As with any other product or service, the demand for transit services is a function of the level of supply provided. To use the TCRP methodology to identify a feasible maximum demand, it is necessary to assume a high supply level, as measured in vehicle service miles of annual transit service per square mile of service area. A review of the transit database presented in the TCRP documents indicates that 6,500 vehicle service miles per square mile per year is the upper-bound "density" of similar services provided in this country. This assessment of demand for the rural to urbanizing areas, therefore, could be considered to be the maximum potential ridership if a high level of rural service were made available throughout the region.

The 6,500 vehicle service miles per square mile equates to eleven round trips of transit service per day through each square mile. Applying this feasible maximum service density to the population of the rural portion of Summit County yields the estimated transit demand, based on the most current demographic data obtained from the U.S. Census, for the general population, as well as the elderly and mobility limited populations, as presented in Table 22. It is important to note that the table does not include Park City, the Snyderville Basin or Summit Park, as these areas are more developed compared to other areas of the County. The estimated rural non-program Summit County demand is 14,720 one-way passenger-trips. Of that total, 7,680 are trips by elderly persons, 1,650 are trips by disabled persons, and the remaining 5,390 are trips by general public riders. Areas of high demand are located in Francis and Kamas, with a large proportion of demand in the unincorporated portions of the county.

TABLE 22: Summit County Rural Non-Program Transit Demand

	Estimated Annual Passenger-Trip Demand				
Area Description	Elderly	Mobility-Limited	General Public	TOTAL	**Estimated Daily Transit Demand**
Coalville city	780	270	590	1,640	7
Francis town	460	210	830	1,500	6
Henefer town	670	210	200	1,080	4
Kamas city	860	340	1,770	2,970	12
Oakley city	1,030	170	50	1,250	5
Balance of Summit County	3,880	450	1,940	6,270	25
Total Rural Summit County (not including Park City or Snyderville areas)	**7,680**	**1,650**	**5,390**	**14,720**	**59**

Note: Demand estimated based on the methodology presented in "*TCRP Report 3: Workbook for Estimating Demand for Rural Passenger Transportation*."

Demand Estimation for Program Transit Trips

The transit trips made by residents of rural areas to and from specific social programs (such as for job training or sheltered workshops) typically comprise approximately half of the total transit demand. This demand differs from other types of demand in that it is specifically generated by each program. Specific figures for the number of program participants were not available from all programs; census data was used where participant information is not available. A series of estimation techniques presented in the TCRP report, based upon the demographics of Summit County, were applied to identify program trip demand.

Estimates of total annual one-way transit passenger-trips generated by social service programs in rural Summit County are presented in Table 23. These estimates are based upon the presence of the various types of social service programs, and information regarding their service area and distribution of program participants. All programs combined are estimated to require 139,950 annual one-way passenger-trips.

TABLE 23: Summit County Rural Program-Related Transit Demand

Program Type	Criteria	2009 Total	Feasible Number of Participants	Feasible Number of Rides
Development Services: Adult	Persons age 16 and above	21,972	47	20,340
Development Services: Case Management	Mobility Limited, all ages	544	15	580
Development Services: Children	Total Population	35,644	38	1,510
Group Home	Mobility Limited, all ages	544	5	1,590
Headstart	Total Population	35,644	117	30,900
Homeless Transportation	Population in Poverty	2,470	62	0
Job Training	Age 16 to 59	19,700	110	15,110
Mental Health	Mobility Limited, all ages	544	15	5,260
Mental Health: Case Mgt.	Persons age 16 to 59	19,700	165	1,050
Senior Nutrition	Persons age 75 & above	820	130	32,230
Sheltered Workshop	Persons age 16 to 59	19,700	82	31,380
Total Potential Ridership			**788**	**139,950**

Note: Demand estimates based on the methodology presented in "*TCRP Report 3: Workbook for Estimating Demand for Rural Passenger Transportation* ."

It is important to note that in general, rural demand estimates result in slightly higher figures than actual conditions may yield. As such, the number of rides shown for both the program and non-program transit demand should be considered as the maximum demand possible.

OTHER SUMMIT COUNTY TRANSIT DEMAND

Intercity Transit Demand

There are a number of markets for intercity travel in the study area, the primary one being between Park City and Salt Lake City. Residents of Park City and Snyderville Basin travel to Salt Lake City for employment and shopping, and residents and air travelers in Salt Lake City travel to Park City for employment and tourism. Other areas of potential demand include residents of outlying communities such as Kamas and Francis, who travel to Salt Lake City, Park City, or Heber City for employment or services. Origin-destination data was presented in Chapter 2, Table 9.

Given the presence of numerous resorts in the study area, Summit County draws commuters from outlying areas. The following points present trends observed from the origin-destination data collected.

- A significant number of persons commute from Heber, in adjacent Wasatch County, into Park City; roughly 80 percent of commuters originating from Heber commute to Park City.
- Of the commuters originating in Salt Lake City and commuting the study area, roughly 76 percent complete their trip in Park City.

Likewise, the Salt Lake City area draws commuters from the study area. Roughly 18 percent of employed residents in the study area commute into Salt Lake City. Looking more closely, approximately 88 percent of these commuters originate from Park City, Summit Park or the Snyderville Basin areas. Additionally, 17 percent of study area residents commute to other areas of Salt Lake County, including 80 percent originating from Park City, Summit Park or the Snyderville Basin.

To meet the needs of commuters between Salt Lake City and Park City, UTA has been in talks with Park City Transit to provide service. The details of this service have yet to be determined; however, it is likely that this service will be implemented in the near future. Such a service would meet a growing demand for residents, and would be consistent with the sustainability principals that Park City has adopted.

Special Event Transit Demand

Park City is host to numerous large-scale special events which tend to increase the need for transit services. For example, the Sundance Film Festival can attract over 45,000 visitors during the 10-day event, vastly increase transit ridership. In order to meet the needs of this event, as well as others, Park City Transit provides additional service throughout the system. Demand generated by special events depends on the schedule, location and mobility patterns associated with the specific event.

Chapter 5
Summit County and Inter-County Service Alternatives

This chapter focuses on transit service alternatives outside of Park City, including service in the Snyderville Basin, The Canyons, to other communities in Summit County (Kamas, Coalville) and between Park City and Salt Lake City. Also discussed is potential service to Heber and Hideout, in Wasatch County.

SNYDERVILLE BASIN SERVICE

The evaluation of potential service to new areas in the Snyderville Basin area is presented in two steps. First, the ridership potential of individual new service areas is evaluated. Secondly, two feasible service plans that would serve various combinations of existing and expanded service areas are presented.

Evaluation of Ridership Potential in Individual Service Areas

The major areas considered as potential candidates for expanded service are discussed below. A summary of these areas is presented in Table 24.

Bear Hollow Village

This residential area consists of a total of 249 dwelling units, located west of SR 224 and south of Olympic Boulevard. While two transit routes pass the area on SR 224, it is not well served by the existing routes. Ridership potential was evaluated by calculating a transit ridership rate for the nearby Silver Springs area, based on observed boarding/alighting data and the number of dwelling units. Applied to the number of Bear Hollow Village units, daily ridership if this area is served at a level similar to existing service along SR 224 would equal 32 one-way passenger trips in the winter and 11 in the summer. Factored by the number of days per year, this equates to approximately 6,500 passenger-trips per year, as shown in Table 24.

Kimball Research Park

The area west of SR 224 and south of West Ute Boulevard is approved for development of the Kimball Research Park, which ultimately could encompass 1,300,000 square feet of office and light industrial floor area. Ridership potential was assessed on the basis of potential employment. Applying an average rate of 2.3 employees per thousand square feet, this development could ultimately be home of approximately 2,990 jobs. A transit trip rate per employee was calculated based upon existing Park City Transit ridership, the proportion of trips taken by non-ski-area commuters, and the total non-ski-area employment in the service area. The resulting rate of 0.07 transit trips per employee was applied (in both summer and winter, and jobs in the research park are likely to be year-round), yielding 229 transit trips per day. At 255 workdays per year, this equates to 58,500 transit trips per year. It should be noted that it is expected to take many years for the full development to build out.

TABLE 24: Analysis of Annual Ridership Potential by Development/Potential Service Area

Area	Existing or Future Planned Development				Daily Rate (1-Way Psgr-Trips per Unit)		Ridership (1-way Psgr-Trips) Daily		
	Dwelling Units	Commercial Floor Area (KSF)	Jobs	Other Generators	Winter	Summer	Winter	Summer	Annual
Bear Hollow Village	249	0	0	--	0.13	0.04	32	11	6,500
Kimball Research Park	--	1300	2990	--	0.07	0.07	229	229	58,500
Old Ranch Road Area	78	0	0	--	0.13	0.04	10	3	2,100
Powderwood Expansion (Liberty Peak)	150	0	0	--	0.13	0.04	19	7	3,900
Silver Creek Business Park Area -- Existing	--	NA	611	Justice Center	0.07	0.07	63	63	17,300
Silver Creek Business Park Area -- Future	--	41	94	--	0.07	0.07	7	7	1,800
Silver Creek Village Center -- Residential	1,070	--	--	--	0.13	0.04	139	47	28,100
Silver Creek Village Center -- Commercial	--	50	150	--	0.07	0.07	31	31	7,800
Silver Creek Village Center -- Total	--	--	--	--	--	--	169	77	35,900
Silver Creek Estates	340	0	0	--	0.04	0.02	13	6	3,100
Summit Park Corridor	554	--	--	Weilenmann School of Discovery, Gorgoza Park	0.04	0.02	67	16	12,000
Park City Heights	239	--	--	--	0.07	0.07	17	17	6,100
Todd Hollow Village	185	--	--	--	0.13	0.04	24	8	4,900
Deer Mountain	146	--	--	--	0.07	0.07	10	10	3,700

Old Ranch Road Area

While the existing transit routes serve SR 224 and the High Estates area, there is an intervening area along Old Ranch Road that is not currently served. This area encompasses approximately 78 homes. Applying the residential trip rate from the Silver Springs area, service to this corridor would generate 10 daily transit trips on a winter day, and 3 on a summer day. Over the course of a year, this would total approximately 2,100 transit trips. Service to this corridor would require either an additional route (which would be very costly), or diversion of the existing Silver Summit/Highland Estates Route off of Bitner Road in one direction or the other (which would reduce ridership in this high productivity area). Due to these factors, service to this area will not be considered further.

Powderwood Expansion

Plans are currently under way for 150 additional multifamily housing along Powderwood Drive (southwest of the Factory Outlet Stores). At the residential trip rate discussed above, this area would generate an estimate 19 transit trips per winter day and 7 per winter day, or an annual total of 3,900 passenger-trips.

Silver Creek Commerce Center / Silver Creek Business Park

This area along Silvercreek Drive and the North Pace Frontage Road already encompasses substantial development, including the Triumph plant, Home Depot, and the Summit County Justice Center. There is also existing commercial development potential in the area. Transit ridership was estimated based upon employment in area, and including an estimate 20 one-way passenger-trips per day associated with the Justice Center. No ridership was assumed associated with customers of Home Depot. A total of 63 passenger-trips per weekday is estimated. Over the course of a year (and assuming that weekend daily ridership is 20 percent of weekday ridership), service to this area would generate 17,300 one-way passenger-trips per year. Development of approved-but-not-yet-built commercial floor area would add an additional 1,800 trips, for a total of 19,100 one-way passenger-trips.

Silver Creek Village Center

Planning and entitlement is currently underway for the mixed-use Silver Creek Village Center in the southeast quadrant of the I-80/US 40 interchange (north of the Silver Creek Business Park). This is currently envisioned to consist of 1,070 dwelling units along with 50,000 square feet of commercial development. At the residential and commercial transit trip rates discussed above, this development would generate an estimated 169 transit trips per winter day and 77 transit trips per summer day. Over the course of a year, this would total an estimated 35,900 passenger trips. It is worth noting that efficient provision of transit service to this overall area would be significantly enhanced if Silvercreek Drive were to be extended to form a loop through the Village Center back to the Frontage Road.

Silver Creek Estates

Silver Creek Estates consists of an extensive large-lot residential development consisting of 340 homes north of I-80. Due to the low density land use pattern and dispersed roadway system, service to this area would be similar to that currently provided to the Jeremy Ranch area: a stop at a park-and-ride near the entrance to the subdivision. Considering the existing ridership

generated by the Jeremy Ranch park-and-ride and the number of dwelling units in Jeremy Ranch, a rate of 0.04 daily transit passenger-trips per dwelling unit in winter and 0.02 in summer was calculated. Applying these rates to the number of homes in Silver Creek Estates, service to this area would serve 13 passenger-trips on a winter day and 6 passenger-trips on a summer day. Given this low ridership potential and the operating time and costs that would be associated with serving Silver Creek Estates, service to this area would not be cost effective.

Summit Park

As the Park City Transit routes currently only extend as far west as Pinebrook Boulevard, the Timberline and Summit Park subdivisions to the west are not currently served. Due to the dispersed nature of Summit Park and its narrow, steep and windy roadways, it is not possible to effectively serve the interior of this area. It would be possible, however, to provide service along Kilby Road as far as a park-and-ride at the Parleys Summit interchange (Parleys Lane). This would also serve the Gorgoza Park tubing hill, as well as the Weilenmann School of Discovery (a private K-8 school). Ridership demand for this area would be generated from three sources:

- Residential park-and-ride would be generated. Applying the observed ridership rate at the Jeremy Ranch park-and-ride to the number of units in the Summit Park and Timberline areas, this would generate approximately 21 one-way passenger-trips over a winter day, and 10 over a summer day.

- The tubing hill is estimated to generate 40 passenger-trips over an average winter day.

- With the possible exceptions of class trips, transit ridership generated by the Weilenmann School of Discovery is expected to be minimal, consisting of an estimated six staff commute trips per day.

Overall, this service would generate 67 passenger-trips per winter day, 16 over a summer day, and 12,000 over the course of a year.

County Overall Service Plan Alternatives

These alternatives focus on the key interlined routes, and do not consider the Snyderville Circulator or Canyons services, discussed separately below.

Status Quo

The existing County service plan consists of three buses providing service every 30 minutes between Jeremy Ranch and Park City (a 90-minute total route cycle time), along with one bus providing hourly express service between Park City and Kimball Junction as and the Silver Summit/Highland Estates route (a 60-minute total route cycle time). This service plan has been effective in serving ridership and overall has provided reliable service. However, there are some existing deficiencies with this status quo:

- Some route segments consume resources without generating significant ridership, particularly the portion of the Silver Summit/Highland Estates route east of the Canyon Creek Club as well as the Silver Springs portion of the Pinebrook Route.

- With the exception of the once-per hour express run, travel time between Kimball Junction and Park City is long (roughly 30 minutes), due to service to local areas along the route.

- As discussed above, some potential ridership generating areas are not currently served. The existing County service plan does not have excess running time to serve new areas, without reducing service frequency to existing areas.

- The Express route does not serve the Canyons Transit Center. While this is addressed in part by provision of the separate Canyons Route service to Park City, it does reduce opportunities for more convenient trips between The Canyons and points to the north.

- The current Express / Silver Summit / Highlands Estates combined route does not have sufficient time to make up for any traffic delays during peak periods, particularly between 3:00 PM and 6:00 PM.

To address these deficiencies and provide for future growth, two overall service plan alternatives were developed and evaluated, as discussed below.

Alternative A

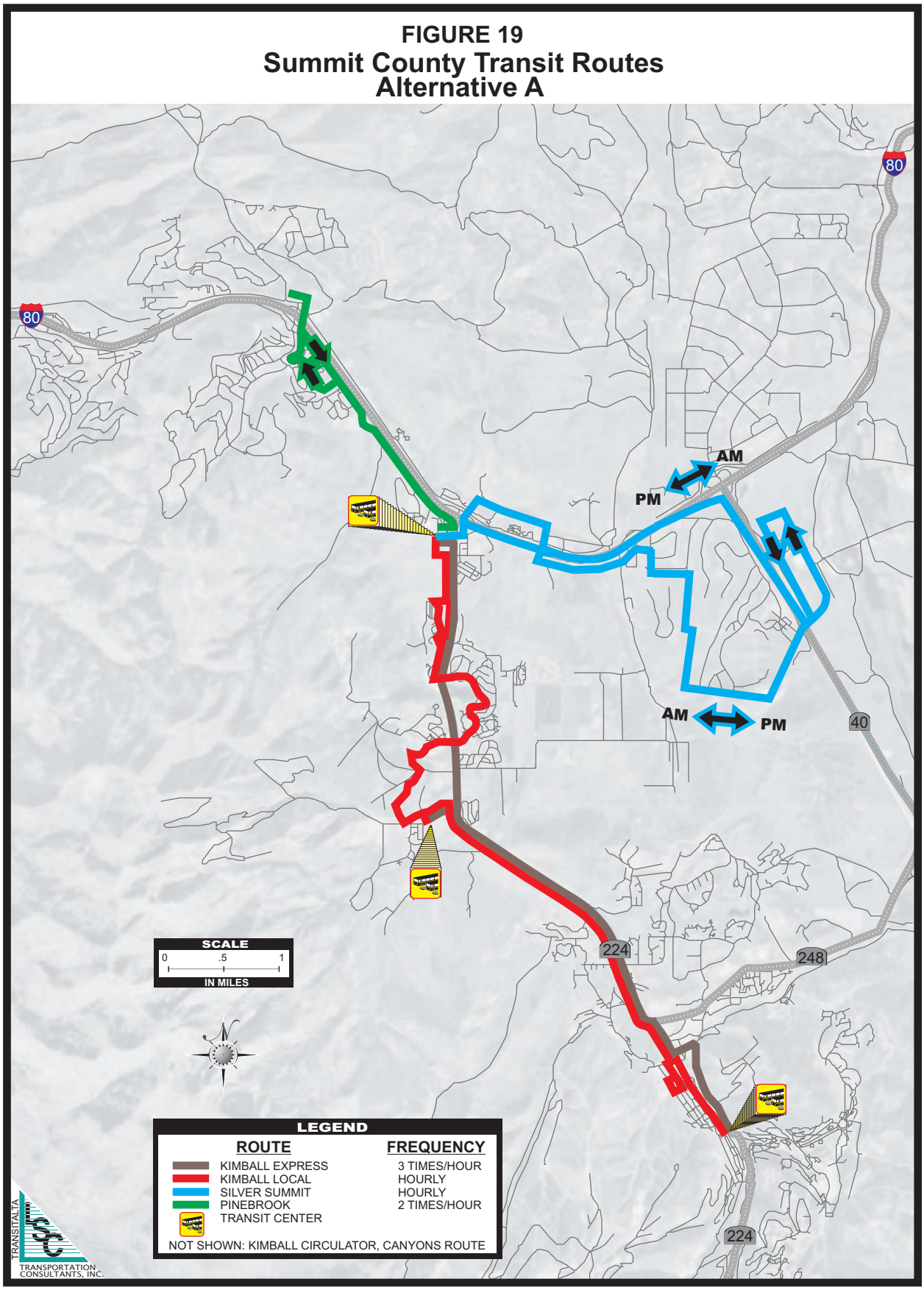
This alternative, as depicted in Figure 19, would consist of the following services:

- Two buses would be used to operate Kimball Junction Express service paired with Pinebrook service, providing an hour-long cycle length. Service provided twice an hour on the Pinebrook route would operate with alternating 20 minute and 40 minute headways. A stop at the Canyons Transit Center would be added in each direction to the Express route.

- A third bus would operate a Kimball Junction Express run, paired with a revised Silver Summit/Highland Estates route. Instead of the current route (operating a clockwise loop along Highland Drive, Silver Summit Parkway and Trailside Drive), the route would use I-80 and US 40 in the AM period to make a quick trip to Silver Creek Business Park and the Summit County Justice Center, and then return via the existing route along Silver Summit Parkway, Trailside Drive, Highland Drive and Bitner Road. This route can be operated in approximately 28 minutes, including time to serve future development in Silver Creek Village Center. This one-way route has the benefit of quickly serving commuters from the remainder of the transit service area traveling to the Business Park and providing shorter in-vehicle travel time for local residents traveling into the remainder of the system. In the PM, the route would reverse to serve the local streets on the outbound leg and returning via I-80. (While this route option would eliminate service along Highland Drive between Old Ranch Road and Silver Summit Parkway, available transit ridership data indicate that these stops serve only approximately five passenger-trips per day over the course of the year.)

- A fourth bus would provide hourly “local” service along the SR 224 corridor, including the existing Silver Springs stops as well as new service to the Bear Hollow and Sun Peak/Frostwood areas. Ingress to Bear Hollow would be via Bear Cub Lane and egress via Bobsled Boulevard in both directions, in order to enter SR 224 at a traffic signal. One sub-option would be to serve the Grand Summit Hotel instead of the Sundial/Frostwood area, particularly if another route serves the Frostwood area.

FIGURE 19
Summit County Transit Routes
Alternative A



The first three buses would in combination provide express service along the SR 224 corridor between Old Town and Kimball Junction every 20 minutes. To provide adequate running time (and layover time) for this plan, the Kimball transit center would need to shift from Newpark to the planned location west of the Richins Building. The service characteristics of this alternative are shown in Table 25.

An operating cost model (as shown in Table 26) is applied to the service quantities, which is based on FY 2010-11 budget estimates and expected impacts of inflation (particularly to fuel costs). Total marginal operating costs would increase by approximately $106,000 per year, or 7 percent over the status quo.

The ridership impact of this alternative was evaluated based on a detailed assessment of the on-board passenger surveys with regards to trip origin and destination. The individual survey responses were grouped by origin and destination, and factored by the average daily total ridership, as shown in Table 27 and Figure 20. This analysis reflects the strong concentration of trips on the County services along the SR 224 corridor. It is worth noting the relative balance of overall ridership generated in the Pinebrook area versus the Silver Summit area. Also of note is the low ridership generated along SR 224 north of The Canyons but south of Kimball Junction, as well as the lack of any existing reported ridership between the Pinebrook and Silver Summit areas.

The ridership generated by each area was factored by the impact of the service alternative on three key transit service factors, as shown in Table 28: service frequency, travel time, and the need for passenger to transfer between routes. Standard “elasticity” factors were first identified reflecting the change in ridership associated with the change in these three key factors that would result from the service alternative. This standard factor was then adjusted by the proportion of overall ridership generated in each service area that would be impacted by the specific factor. The resulting factors were then applied to a “status quo” ridership in order to identify ridership that would result from the alternative. In addition, the existing ridership generated on the portion of the Silver Summit/Highland Estates Route that would lose service under Alternative A was subtracted.

As shown in Table 28, this alternative would increase ridership by approximately 133,000 passenger-trips per year or 27 percent over the status quo alternative. As also indicated in Figure 21, the bulk of this ridership increase would be generated within existing service areas, along with approximately 24,000 passenger-trips per year generated in the Bear Hollow and Silver Creek areas. While ridership would be reduced somewhat in the Silver Springs and Silver Summit areas, the increase in service frequency along the SR 224 corridor in particular would generate a very significant overall increase in ridership.

Table 28 also presents ridership estimates including the additional development presented in Table 24. With this additional ridership demand, ridership under this alternative would equal a total of 665,000 passenger-trips per year, adding another 48,000 annual passenger-trips.

The ridership estimate (at current level of development) is also used in Table 25 to assess the overall impact of this alternative on the performance measures for these elements of the County transit program. As shown, this alternative would increase the passenger-trips per vehicle-hour of service from 24.1 to 29.8 (a 23 percent increase), would slightly increase the passenger-trips per vehicle-mile of service (by 9 percent), and would reduce the operating cost per passenger-trip by $0.47 (a 16 percent decrease).

TABLE 25: Summit County Fixed-Route Transit Service Alternatives

Fiscal Year 2011-12 *Costs Exclude Allocated Fixed Costs*

Alternative/Route/Season		Vehicles [1]	Runs Per Day	Annual: Vehicle Service Miles	Annual: Vehicle Service Hours	Annual: Operating Days	Annual: Marginal Operating Cost	Ridership Impact [2] (One-Way Trips): Daily	Ridership Impact [2] (One-Way Trips): Annual	Performance Analysis: Passenger-Trips per VSH	Performance Analysis: Passenger-Trips per VSM	Performance Analysis: Op. Cost per Passenger-Trip
SUMMIT COUNTY STATUS QUO [1]		4	N/A	371,500	20,040	365	$1,443,980	1,325	483,680	24.1	1.3	$2.99
ALTERNATIVE A												
Modified Kimball Express	Winter	1	45	81,300	2,900	129	$244,190					
	Non-Winter	1	40	132,200	4,720	236	$395,390					
	Subtotal	***1***	**--**	***213,500***	***7,620***	***365***	***$639,580***					
Kimball Local	Winter	1	15	37,000	1,940	129	$140,710					
	Non-Winter	1	14	63,200	3,300	236	$237,610					
	Subtotal	***1***	**--**	***100,200***	***5,240***	***365***	***$378,320***					
Modified Silver Summit	Winter	1	15	21,900	970	129	$76,480					
	Non-Winter	1	14	37,500	1,650	236	$128,320					
	Subtotal	***1***	**--**	***59,400***	***2,620***	***365***	***$204,800***					
Pinebrook	Winter	1	30	23,200	1,940	129	$121,950					
	Non-Winter	1	28	39,600	3,300	236	$205,520					
	Subtotal	***1***	**--**	***62,800***	***5,240***	***365***	***$327,470***					
TOTAL		**4**	**--**	**435,900**	**20,720**	**365**	***$1,550,170***	1,689	**616,590**	**29.8**	**1.4**	**$2.51**
	Net Change	*0*	**--**	*64,400*	*680*	--	$106,190	*364*	*132,910*	5.6	0.1	($0.47)
				17%	*3%*	--	*7%*	*27%*	*27%*	*23%*	*9%*	*-16%*
ALTERNATIVE B												
Modified Kimball Junction Express	Winter	1	30	54,200	1,940	129	$164,090					
	Non-Winter	1	25	82,600	2,950	236	$248,210					
	Subtotal	***1***	**--**	***136,800***	***4,890***	***365***	***$412,300***					
Kimball Local	Winter	1	15	37,000	1,940	129	$140,710					
	Non-Winter	1	14	63,200	3,300	236	$237,610					
	Subtotal	***1***	**--**	***100,200***	***5,240***	***365***	***$378,320***					
Modified Silver Summit	Winter	0.75	15	20,900	1,450	129	$96,000					
	Non-Winter	0.75	14	35,800	2,480	236	$162,660					
	Subtotal	***0.75***	**--**	***56,700***	***3,930***	***365***	***$258,660***					
Pinebrook/ Summit Park	Winter	0.75	15	21,300	1,450	129	$96,540					
	Non-Winter	0.75	14	36,300	2,480	236	$163,340					
	Subtotal	***0.75***	**--**	***57,600***	***3,930***	***365***	***$259,880***					
Pinebrook	Winter	0.5	15	11,600	970	129	$60,980					
	Non-Winter	0.5	14	19,800	1,650	236	$102,760					
	Subtotal	***0.5***	**--**	***31,400***	***2,620***	***365***	***$163,740***					
TOTAL		**4**	**--**	**382,700**	**20,610**	**365**	***$1,472,900***	1,592	**581,210**	**28.2**	**1.5**	**$2.53**
	Net Change	0	--	11,200	570	N/A	$28,920	267	*97,530*	4.1	0.2	($0.45)
				3%	*3%*	--	*2%*	*20%*	*20%*	*17%*	*17%*	*-15%*

Note 1: Excludes "The Canyons" service to Park City, early morning/late evening service, as well as all City routes.
Note 2: Excluding ridership generated by future development.

TABLE 26: Park City Transit Cost Allocation Model

Fiscal Year 2011-2012

Line Item	Total	Cost Allocation Parameter: Vehicle Service Hours	Vehicle Service Miles	Per Vehicle	Fixed
Driver's Salaries & Benefits	$ 2,794,423	$ 2,794,423			
Supervisor's Salaries & Benefits	$ 355,510	$ 355,510			
Managers Salaries	$ 127,743				$ 127,743
Membership	$ 3,060				$ 3,060
Public Notices	$ 3,098				$ 3,098
Meetings/Conference	$ 18,009				$ 18,009
Recruitment and Training	$ 16,528				$ 16,528
Department Supplies	$ 60,689				$ 60,689
Office Supplies	$ 5,748				$ 5,748
Postage	$ 2,319				$ 2,319
Uniforms	$ 16,842	$ 16,842			
Radio Maintenance	$ 14,023				$ 14,023
Building Maintenance	$ 16,320				$ 16,320
Printing	$ 27,523				$ 27,523
Photocopy	$ 346				$ 346
Utilities	$ 16,059				$ 16,059
Cellular & Pager	$ 6,837				$ 6,837
Misc. Contract Services	$ 74,946				$ 74,946
Street Signs	$ 9,098				$ 9,098
Administrative Charge (General Fund)	$ 494,425				$ 494,425
Vehicle Maintenance	$ 683,400		$ 683,400		
Vehicle Insurance	$ 102,000			$ 102,000	
Fuel	$ 778,550		$ 778,550		
Total Expenditures	$ 5,627,497	$ 3,166,776	$ 1,461,950	$ 102,000	$ 896,772
Unit Quantities		70,282	1,075,422	34	
Cost Per Unit (Fiscal Year)		$ 45.06	$ 1.36	$ 3,000	

Based on FY 2010-11 budget. Inflation rate of 15% for fuel and 2% for all other items applied to estimate FY 2011-12 values.

Advantages

- Provides 20 minute express service between Park City and Kimball Junction. All passengers on the Pinebrook and Silver Summit legs are provided with express service to The Canyons and Park City.
- Provides additional connections to a Canyons Circulator.
- Expands service to the Bear Hollow, Frostwood/Sun Peak and Silver Creek Business Park areas.
- Significantly increases ridership and productivity.

TABLE 27: Existing County Transit Passenger-Trip Origin/Destination Pattern

FROM	TO: Along SR 224	Bear Hollow	Canyons	Kimball Junction Area	Park City (Deer Valley)	Park City (PCMR)	Park City (Other)	Pinebrook Leg	Silver Springs	Silver Summit Leg	Total
AVERAGE TOTAL DAILY PASSENGER-TRIPS IN PEAK WINTER MONTH (JANUARY)											
All County Routes											
Along SR 224	0	0	0	0	0	0	0	10	0	0	10
Bear Hollow	0	0	0	0	0	0	0	0	0	0	0
Canyons	0	0	30	110	10	0	320	20	20	10	520
Kimball Junction Area	0	0	60	60	30	40	270	30	20	80	590
Park City (Deer Valley)	0	10	20	20	0	10	30	0	0	0	90
Park City (PCMR)	0	0	40	50	10	0	60	20	0	0	180
Park City (Other)	20	0	370	270	50	30	340	30	0	20	1,130
Pinebrook Leg	0	0	50	110	0	10	80	10	0	0	260
Silver Springs	0	0	0	10	0	0	30	0	0	0	40
Silver Summit Leg	0	0	0	90	10	30	80	0	0	10	220
Total	20	10	570	720	110	120	1,210	120	40	120	3,040
Canyons Route Only											
Along SR 224	0	0	0	0	0	0	0	0	0	0	0
Bear Hollow	0	0	0	0	0	0	0	0	0	0	0
Canyons	0	0	10	10	10	0	240	0	0	0	270
Kimball Junction Area	0	0	0	0	0	0	0	0	0	0	0
Park City (Deer Valley)	0	0	0	0	0	0	0	0	0	0	0
Park City (PCMR)	0	0	30	0	0	0	50	0	0	0	80
Park City (Other)	0	0	130	0	40	0	150	0	0	0	320
Pinebrook Leg	0	0	0	0	0	0	0	0	0	0	0
Silver Springs	0	0	0	0	0	0	0	0	0	0	0
Silver Summit Leg	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	170	10	50	0	440	0	0	0	670
Kimball Junction and Silver Summit/Highland Estates Routes Only											
Along SR 224	0	0	0	0	0	0	0	10	0	0	10
Bear Hollow	0	0	0	0	0	0	0	0	0	0	0
Canyons	0	0	20	100	0	0	80	20	20	10	250
Kimball Junction Area	0	0	60	60	30	40	270	30	20	80	590
Park City (Deer Valley)	0	10	20	20	0	10	30	0	0	0	90
Park City (PCMR)	0	0	10	50	10	0	10	20	0	0	100
Park City (Other)	20	0	240	270	10	30	190	30	0	20	810
Pinebrook Leg	0	0	50	110	0	10	80	10	0	0	260
Silver Springs	0	0	0	10	0	0	30	0	0	0	40
Silver Summit Leg	0	0	0	90	10	30	80	0	0	10	220
Total	20	10	400	710	60	120	770	120	40	120	2,370
PERCENT OF TOTAL VALID RESPONSES											
All County Routes											
Along SR 224	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bear Hollow	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Canyons	0%	0%	1%	4%	0%	0%	11%	1%	1%	0%	17%
Kimball Junction Area	0%	0%	2%	2%	1%	1%	9%	1%	1%	3%	19%
Park City (Deer Valley)	0%	0%	1%	1%	0%	0%	1%	0%	0%	0%	3%
Park City (PCMR)	0%	0%	1%	2%	0%	0%	2%	1%	0%	0%	6%
Park City (Other)	1%	0%	12%	9%	2%	1%	11%	1%	0%	1%	37%
Pinebrook Leg	0%	0%	2%	4%	0%	0%	3%	0%	0%	0%	9%
Silver Springs	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%
Silver Summit Leg	0%	0%	0%	3%	0%	1%	3%	0%	0%	0%	7%
Total	1%	0%	19%	24%	4%	4%	40%	4%	1%	4%	100%
Canyons Route Only											
Along SR 224	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bear Hollow	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Canyons	0%	0%	1%	1%	1%	0%	36%	0%	0%	0%	40%
Kimball Junction Area	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Park City (Deer Valley)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Park City (PCMR)	0%	0%	4%	0%	0%	0%	7%	0%	0%	0%	12%
Park City (Other)	0%	0%	19%	0%	6%	0%	22%	0%	0%	0%	48%
Pinebrook Leg	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Silver Springs	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Silver Summit Leg	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	0%	0%	25%	1%	7%	0%	66%	0%	0%	0%	100%
Kimball Junction and Silver Summit/Highland Estates Routes Only											
Along SR 224	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bear Hollow	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Canyons	0%	0%	1%	4%	0%	0%	3%	1%	1%	0%	11%
Kimball Junction Area	0%	0%	3%	3%	1%	2%	11%	1%	1%	3%	25%
Park City (Deer Valley)	0%	0%	1%	1%	0%	0%	1%	0%	0%	0%	4%
Park City (PCMR)	0%	0%	0%	2%	0%	0%	0%	1%	0%	0%	4%
Park City (Other)	1%	0%	10%	11%	0%	1%	8%	1%	0%	1%	34%
Pinebrook Leg	0%	0%	2%	5%	0%	0%	3%	0%	0%	0%	11%
Silver Springs	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	2%
Silver Summit Leg	0%	0%	0%	4%	0%	1%	3%	0%	0%	0%	9%
Total	1%	0%	17%	30%	3%	5%	32%	5%	2%	5%	100%

Source: Onboard Surveys Conducted March 2011, factored by peak winter monthly ridership totals.

TABLE 28: Summit County Alternative A Ridership

Ridership Area	Existing Development: 11-12 Status Quo Ridership	Existing Development: Service Quality Factors: Frequency	Existing Development: Service Quality Factors: Travel Time	Existing Development: Service Quality Factors: Transfers	Existing Development: Annual Ridership Under Scenario		With Future Development: Base Case Ridership	With Future Development: Frequency	With Future Development: Travel Time	With Future Development: Transfers	With Future Development: Annual Ridership Under Scenario	
Silver Summit Area	44,900	0%	-7%	0%	40,430		44,900	0%	-7%	0%	40,430	
Pinebrook Area	47,760	0%	20%	4%	59,270		47,760	0%	20%	4%	57,810	
Kimball Junction	120,410	9%	19%	0%	154,260		139,891	9%	19%	0%	177,750	
Jeremy Ranch	5,310	0%	20%	4%	6,590		5,310	0%	20%	4%	5,130	
Silver Springs	8,160	-27%	0%	0%	5,970		8,160	-27%	0%	0%	4,510	
Bear Hollow	6,500	0%	0%	-3%	6,330		6,500	0%	0%	-3%	4,870	
Canyons	51,020	10%	31%	-13%	65,220		51,020	10%	31%	-13%	63,760	
224 Corridor	2,040	0%	0%	0%	2,040		2,040	0%	0%	0%	580	
OTTC	183,680	9%	26%	-4%	240,280		183,680	9%	26%	-4%	238,820	
PCMR	20,410	0%	0%	-7%	18,900		20,410	0%	0%	-7%	17,440	
Silver Creek Area	17,300	0%	0%	0%	17,300		55,000	0%	0%	0%	53,540	
Total	507,490				616,590						664,640	
Subtotal: Existing Svc Area	*483,690*				*592,960*						*606,230*	
Change From Base Case in Existing Service Area					*132,900*	27%					*180,950*	37%

Source: LSC Transportation Consultants, Inc.

FIGURE 20
Winter Daily Passenger Trips
By Origin/Destination Pairs on County Routes

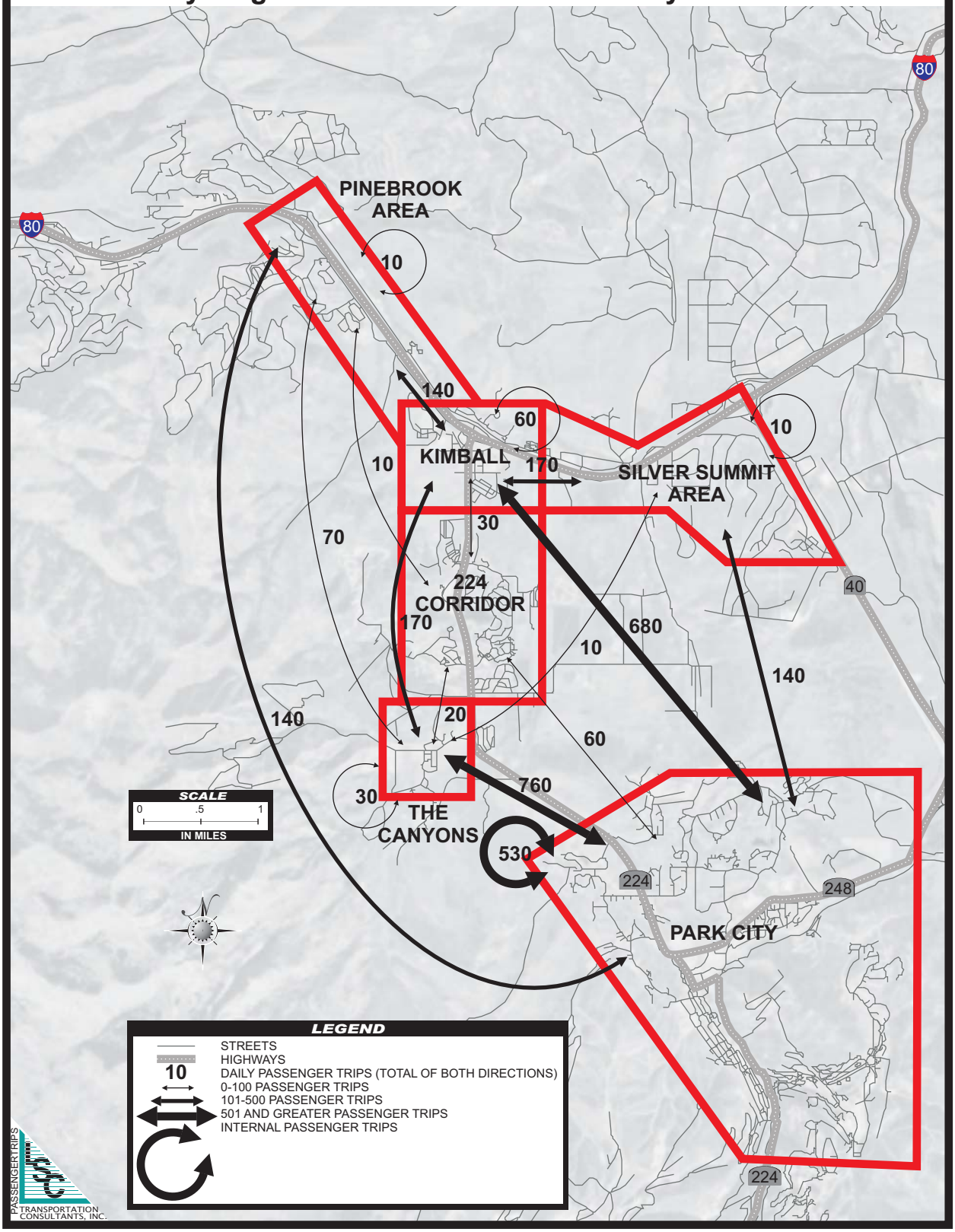
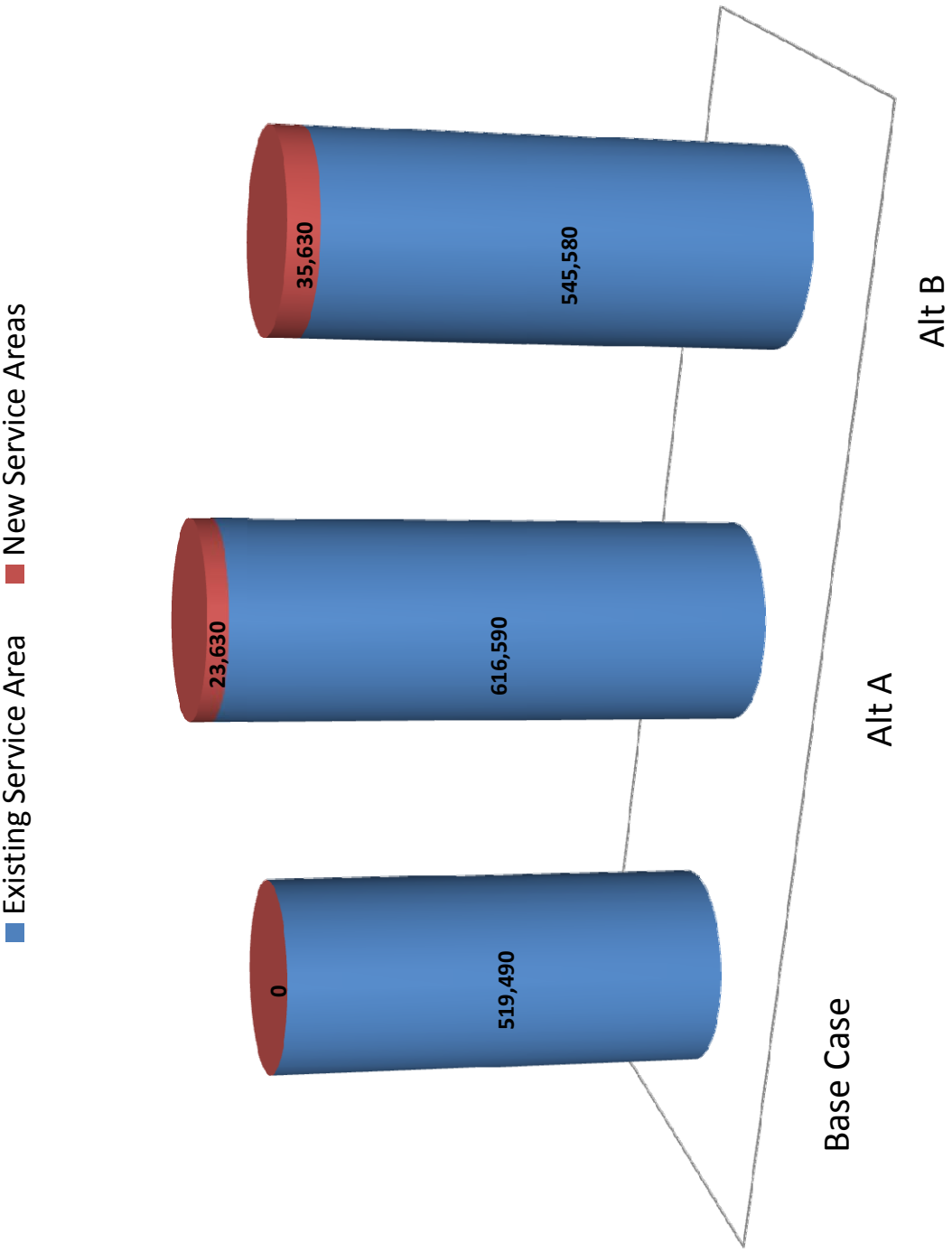


Figure 21: County Service Alternatives Annual Ridership



Disadvantages

- Eliminates existing service along Highland Drive between Old Ranch Road and Silver Summit Parkway.
- One-way service plan of Silver Summit/Highland Estates may be confusing to passengers, and will result in longer travel times for some passengers traveling in the off-peak direction.
- Reduces service within Silver Springs from half-hourly to hourly.
- Requires $79,000 in additional annual operating funding.
- The 20 minute / 40 minute pattern of times between Pinebrook runs is slightly less convenient, and potentially confusing to passengers.
- New bus stops would need to be established in some areas.

Alternative B

As shown in Figure 22, this alternative consists of the following individual services:

- Two buses would be used to operate three routes, totaling a 2-hour cycle:

    1. An expanded Silver Summit/Highland Estates route, consisting of the existing route plus service to Silver Creek Business Park, the Summit County Justice Center and the future Silver Creek Village Center (40 minute route)

    2. An expanded Pinebrook route, extended along Kilby Road as far as a park-and-ride at Summit Park (35 minute route)

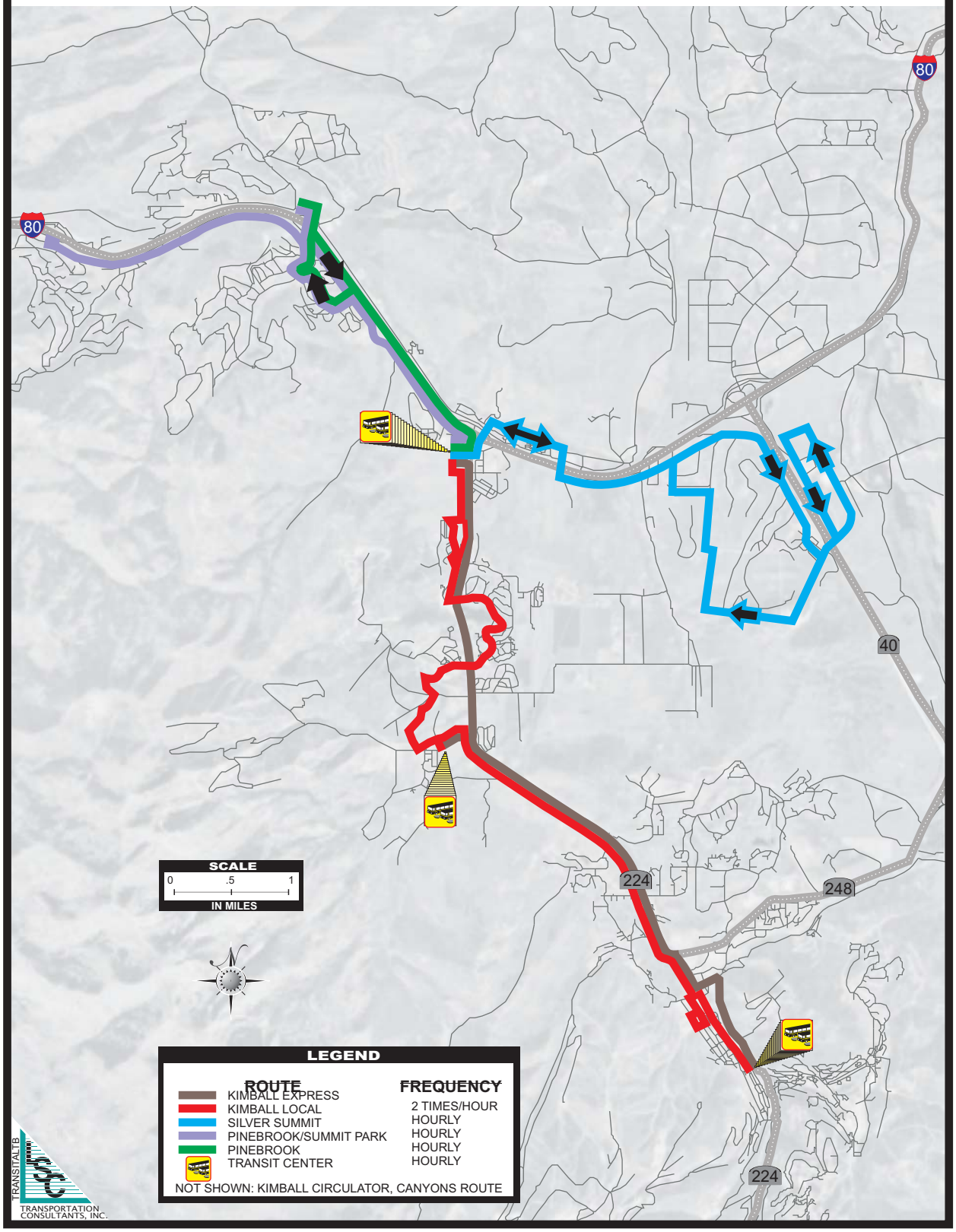
    3. The Kimball Junction Express route between Kimball Junction and Old Town Transit Center, with an added stop at The Canyons Transit Center. (35 minute route)

- One bus would be used to operate an additional Kimball Junction Express run (also serving the Canyons Transit Center, and timed to provide half-hourly headways along SR 224) as well as the existing Pinebrook route (without extension to Summit Park).
- A fourth bus would be used to operate hourly “local” service along the SR 224 corridor between Park City and Kimball Junction, including service to Silver Springs, Bear Hollow, and Sun Peak/Frostwood.

In comparison with Alternative A, this alternative serves an additional area (Summit Park), but provides two Express runs each hour between Kimball Junction and Park City, rather than three.

Service quantities are shown in the bottom of Table 25. As indicated, the number of buses required to operate the service remains unchanged at four, and both vehicle-miles and vehicle-hours are within 3 percent of status quo levels. As a result, overall costs increase by only roughly $29,000 per year.

FIGURE 22
Summit County Transit Routes
Alternative B



Ridership impacts were assessed using the same methodology discussed above for Alternative A, as shown in Table 29. The ridership benefits associated with travel time would be lower for Alternative B (reflecting one less Express run per hour), while the losses associated with the need to transfer would be high (due to the interlining of the three routes). Overall ridership would increase by roughly 98,000 passenger-trips per year or 20 percent, which is 7 percent less than for Alternative A. As shown in Figure 21, the ridership generated in new service areas is higher (reflecting service to Summit Park), but overall ridership would be roughly 35,000 trips per year lower than under Alternative A.

TABLE 29: Summit County Alternative B Ridership

	Existing Development						With Future Development		
		Service Quality Factors							
Ridership Area	11-12 Status Quo Ridership	Frequency	Travel Time	Transfers	Annual Ridership Under Scenario		Base Case Ridership	Annual Ridership Under Scenario	
Silver Summit Area	44,900	0%	-7%	0%	41,890		44,900	40,430	
Pinebrook Area	47,760	0%	7%	0%	51,300		47,760	49,840	
Kimball Junction	120,410	0%	14%	0%	137,320		139,891	158,070	
Jeremy Ranch	5,310	0%	7%	0%	5,700		5,310	4,240	
Silver Springs	8,160	-27%	8%	-6%	6,140		8,160	4,680	
Bear Hollow	6,500	0%	0%	-3%	6,330		6,500	4,870	
Canyons	51,020	6%	21%	-8%	60,960		51,020	59,500	
224 Corridor	2,040	0%	4%	0%	2,120		2,040	660	
OTTC	183,680	0%	20%	0%	221,250		183,680	219,790	
PCMR	20,410	0%	0%	-7%	18,900		20,410	17,440	
Silver Creek Area	17,300	0%	0%	0%	17,300		55,000	53,540	
Summit Park	12,000	0%	0%	0%	12,000		12,000	10,540	
Total	519,490	-	-	-	581,210			623,600	
Subtotal: Existing Svc Area	*483,690*				*545,580*			*554,650*	
Change From Base Case in Existing Service Area					*97,520*	20%		*139,910*	29%

Source: LSC Transportation Consultants, Inc.

As shown in the bottom portion of Table 25, this alternative would substantially improve the passenger-trips served per vehicle-hour and vehicle-mile of service, increasing both by 17 percent. Overall marginal operating cost per passenger-trip would be reduced by 15 percent.

Advantages

- Increases Express service between Kimball Junction and Park City from every hour to every half hour.
- Provides service to Summit Park, as well as Silver Summit Business Park and Bear Hollow.
- Improves ridership and productivity over status quo.
- Lower cost impact.
- Preserves service to all existing stops in Silver Summit/Highlands Estates area.
- Avoids out-of-direction travel for passengers along Bitner Road traveling in the off-peak direction.
- Provides additional layover time.

Disadvantages

- Less Express service, and more need for transfers.
- Lower ridership potential than Alternative A.
- Combination of longer and shorter routes would result in imbalanced schedules in Pinebrook area, and some need for additional in-vehicle travel times.
- New bus stops would need to be established in some areas.
- Reduces service within Silver Springs from half-hourly to hourly.
- Expansion to Summit Park would increase the area that would need to be provided with Paratransit/Mobility service. This area would be particularly challenging to serve given the long distance from the operations base in Park City.

OTHER SUMMIT COUNTY ALTERNATIVES

Kimball Circulator

At present, the Kimball Junction area is served by both the Pinebrook (Pink) route as well as the Silver Summit/Highland Estates (Brown) route, as each route travels off of the SR 224 corridor to the transit center at Newpark. Other major stops in the area include a stop along Newpark Boulevard new Redstone, as well as stops (on the Pinebrook Route only) serving Wal-Mart and the Tanger Outlet Center. This service strategy has several limitations:

- Some areas are far from the nearest existing stop. Accessing Redstone requires a 400 to 500 foot walk across parking lots from the nearest stop, for example. The southernmost multifamily housing areas in the Redstone area are roughly a 0.3 mile walk to the nearest stop.
- Service to most stops is only provided every half hour. This greatly limits the ability of current transit services to serve as an internal connector for trips within Kimball Junction.
- There is no capacity on existing routes to add to the transit routes to serve new areas. In addition, simply extending the existing routes would add travel time to the many existing passengers traveling through the Kimball Junction area.

Within the five-year SRTDP planning period, very substantial development is expected in the Kimball Junction area, particularly with regards to the Kimball Research Park and adjacent Liberty Peak multifamily housing area. As presented in Table 24, these areas have substantial potential to generate transit ridership, totaling roughly 62,000 passenger-trips per year at buildout. However, it is not possible to serve this area in the southwest portion of Kimball Junction with existing routes.

A logical next step in the evolution of both the Kimball Junction area and the transit program is the provision of a local circulator route serving the area. Figure 23 presents a conceptual route map that could serve the key activity centers as well as the Kimball Research Park and Liberty Peak areas, consisting of two one-way loops centered on the Kimball Transit Center. This route

FIGURE 23
Potential Kimball Junction Circulator Bus Route

is 3.4 miles in length, and can be operated on a 20-minute schedule (even with traffic delays). The route would be timed to provide direct connections to/from the regional routes (which would be particularly effective with the 20-minute-headway Express service under Alternative A, above). A smaller transit vehicle (such as 30-foot bus) would operate this service, preferably with a low floor to ease entry and exit.

A reasonable span of service for this route would be 7:00 AM to 11:00 PM, year-round, in order to serve commuters, shoppers and persons out for the evening. As shown in Table 30, this service would incur a marginal cost of $347,000. (A reduced span of service, such as evening service in the off-seasons on weekends only, could reasonably reduce this figure while still providing substantial benefits.) Ridership is estimated based on the observed existing ridership patterns as well as the effectiveness of similar service in other mixed commercial/residential centers to equal approximately 88,000 one-way passenger-trips per year.

It should be noted that some roadways along the conceptual route are relatively narrow, with parking along one or both sides. It may be necessary to reconfigure some intersections or parking areas to ensure that buses can make turns without encroaching onto oncoming travel

County Service Later in the Evening

The current schedule results in a last departure time during the winter starting a 9:00 PM on the Kimball Express and Silver Summit/Highland Estates (Brown) service, and starting at 10:10 PM on the Pinebrook Route (Pink). In the summer, the last departures start at 8:55 PM on the former and 8:40 PM on the latter. These end of service times are early compared with those of other transit services in mountain resort areas. As examples, the program serving Aspen ends at 12:00 Midnight year round, while the Vail Transit program operates many of its routes until 2:00 AM in winter and Midnight in the off-seasons.

Table 31 presents hourly ridership by route for an average winter day, along with the percent of total daily ridership in each hour. Figure 24 depicts the proportion of ridership in each hour for County services and City services as a whole, which reflects the higher “commute” use of the County system in the 7:00 AM and 4:00 PM hours. This figure also depicts an equivalent graph line for the Aspen transit program, showing the relatively high proportion of daily ridership occurring in the later evening hours.

Four options regarding extension of the current service hours were evaluated, for the Kimball/Pinebrook (Pink) and the Express/Silver Summit/Highland Estates (Brown) routes:

- **Winter Service Till 11 PM** – This would add one additional Pink Route run and two Brown Route runs. (Buses on the routes at 11:00 PM would complete their runs). This would have the advantage of providing more consistent end of service times between the two routes, which is easier for passengers to understand. As shown in Table 30, costs would be increased by roughly $33,000 per year. Ridership is estimated based on the observed ratio of ridership in these additional hours to the total average daily ridership on comparable routes in the Aspen transit system, and reduced by 25 percent to reflect existing PCT passengers that currently use the last available runs and would make use of additional later runs. Overall, this additional service would carry an estimate 61 passenger-trips on an average winter day, or 7,800 over the course of the winter season. Overall, a respectable 17.3 passenger-trips would be served per additional vehicle-hour of service.

TABLE 30: Other County Transit Service Alternatives In Existing Service Area

Fiscal Year 2011-12 *Costs Exclude Allocated Fixed Costs*

Alternative	Additional Vehicles		Runs Per Day	Annual Vehicle Service.. Miles	Annual Vehicle Service.. Hours	Annual Operating Days	Annual Marginal Operating Cost	Ridership Impact (One-Way Trips) Daily	Ridership Impact (One-Way Trips) Annual	Performance Analysis Marginal Passenger-Trips per VSH	Performance Analysis Marginal Passenger-Trips per VSM	Performance Analysis Marginal Op. Cost per Passenger-Trip
Kimball Junction Circulator	1											
Winter	1	7:00AM-11:00PM	48	21,100	2,060	129	$123,000	384	*49,529*	24.0	2.3	$2.48
Non-Winter	1	7:00AM-11:00PM	48	38,500	3,780	236	$224,200	161	*38,071*	10.1	1.0	$5.89
Total	***1***		***N/A***	***59,600***	***5,840***	***365***	***$347,200***		***87,600***	15.0	1.5	$3.96
Extend Winter Service Till 11 PM												
Kimball/Pinebrook	0		1	3,300	190	129	$13,000	29	3,700	19.5	1.1	$3.51
Express/Silver Summit/Highland Estates	0		2	6,000	260	129	$19,900	32	4,100	15.8	0.7	$4.85
Total				***9,300***	***450***		***$32,900***		***7,800***	***17.3***	***0.8***	***$4.22***
Extend Winter Service till Midnight												
Kimball/Pinebrook	0		3	9,800	580	129	$39,500	86	11,000	19.0	1.1	$3.59
Express/Silver Summit/Highland Estates	0		3	9,000	390	129	$29,800	46	5,900	15.1	0.7	$5.05
Total				***18,800***	***970***		***$69,300***		***16,900***	***17.4***	***0.9***	***$4.10***
Extend Summer Service till 11 PM												
Kimball/Pinebrook	0		4	23,800	1,420	236	$96,300	62	14,500	10.2	0.6	$6.64
Express/Silver Summit/Highland Estates	0		2	11,000	470	236	$36,100	19	4,500	9.6	0.4	$8.02
Total				***34,800***	***1,890***		***$132,400***		***19,000***	***10.1***	***0.5***	***$6.97***
Extend Summer Service till Midnight												
Kimball/Pinebrook	0		6	35,700	2,120	236	$144,100	85	20,100	9.5	0.6	$7.17
Express/Silver Summit/Highland Estates	0		3	16,500	710	236	$54,400	26	6,200	8.7	0.4	$8.77
Total				***52,200***	***2,830***		***$198,500***		***26,300***	***9.3***	***0.5***	***$7.55***
Canyons Circulator												
Winter	1	7:00 AM-11:00 PM	64	24,000	1,940	121	$121,500	298	36,000	18.6	1.5	$3.38
Non-Winter	1	7:00 AM -9:30PM	56	21,000	1,750	121	$108,900	228	27,600	15.8	1.3	$3.95
Total				***45,000***	***3,690***		***$230,400***		***63,600***	***17.2***	***1.4***	***$3.62***
Replace Canyons Route with Canyons Circulator/Express												
Canyons Circulator/Express												
Winter	2		34	44,400	2,740	121	$186,800	423	51,200			
Summer	1		19	50,100	2,320	244	$174,100	91	22,200			
Subtotal				94,500	5,060		$360,900		73,400	14.5	0.8	$4.92
Existing Canyons Route												
Winter (1)	2		22	45,200	2,660	121	$184,300	400	48,400			
Summer	1		15	61,800	2,440	244	$195,500	54	13,100			
Subtotal				107,000	5,100		$379,800		61,500	12.1	0.6	$6.18
Net Total	***0***			***-12,500***	***-40***		***($18,900)***		***11,900***			

Note 1: Excludes passenger-trips wholly within Park City, which can be assumed to shift to other existing PCT routes.

Source: LSC Transportation Consultants, Inc.

TABLE 31: Hourly Variation in Ridership -- Average Winter Day

	6AM	7AM	8AM	9AM	10AM	11AM	Noon	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	Mdnt	1AM	2AM
Average Winter Daily Ridership by Hour																					
Prospector Square (Red)		17	33	47	42	56	39	61	88	80	105	49	87	79	60	64	40	17			
Park Meadows (Green)		1	41	70	55	48	62	51	71	103	116	97	84	80	65	66	40	7			
Thaynes Canyon (Blue)		3	78	123	85	45	41	46	68	104	151	98	104	123	94	65	52	0			
Prospector Express (Yellow)		52	54	49	35	35	26	36	49	49	71	79	53	62	68	39	48	7			
Subtotal: City Core		*73*	*206*	*290*	*217*	*184*	*168*	*193*	*276*	*335*	*443*	*323*	*329*	*343*	*287*	*234*	*180*	*31*			
Trolley					4	9	21	10	11	11	32	18	16	12	17	7	6	1			
City Early Morning Service	39	60	7																		
City Late Night Service																	3	58	27	29	18
Silver Lake			0	72	34	53	30	41	41	56	48	49	28	26	28	10	10				
Subtotal City Service	*39*	*133*	*213*	*361*	*256*	*246*	*219*	*244*	*329*	*403*	*524*	*390*	*373*	*381*	*332*	*252*	*198*	*91*	*27*	*29*	*18*
Early Kimball Service	0	19	115																		
Kimball Core (Pink)	0	3	29	30	45	30	37	39	52	94	127	104	63	71	35	56	30	11			
Kimball West (Pink)	0	17	14	9	21	23	40	33	33	55	58	84	61	48	31	31	12				
Kimball Express (Brown)	0	28	18	10	13	17	12	9	11	21	22	16	32	8	19	22					
Kimball East (Brown)	0	1	3	2	8	6	6	3	4	12	13	13	19	12	7	5					
Canyons (Lime)	13	56	54	62	48	25	20	25	38	38	92	24									
Canyons Circulator		24	17	24	17	8	8	12	6	14	21	28	32	14	15	10	9	4			
Subtotal: County Services	*32*	*244*	*134*	*138*	*151*	*110*	*124*	*120*	*143*	*233*	*333*	*267*	*207*	*152*	*107*	*124*	*50*	*15*			
Total: All Services	*71*	*377*	*347*	*499*	*407*	*356*	*343*	*364*	*472*	*636*	*857*	*658*	*579*	*534*	*439*	*376*	*248*	*106*	*27*	*29*	*18*
Percent by Hour																					
Prospector Square (Red)		2%	3%	5%	4%	6%	4%	6%	9%	8%	11%	5%	9%	8%	6%	7%	4%	2%			
Park Meadows (Green)		0%	4%	7%	5%	5%	6%	5%	7%	10%	11%	9%	8%	8%	6%	6%	4%	1%			
Thaynes Canyon (Blue)		0%	6%	10%	7%	4%	3%	4%	5%	8%	12%	8%	8%	10%	7%	5%	4%	0%			
Prospector Express (Yellow)		6%	7%	6%	4%	4%	3%	4%	6%	6%	9%	10%	7%	8%	8%	5%	6%	1%			
Subtotal: City Core		2%	5%	7%	5%	4%	4%	5%	7%	8%	11%	8%	8%	8%	7%	6%	4%	1%			
Trolley					2%	5%	12%	6%	7%	7%	18%	10%	9%	7%	10%	4%	3%	1%			
City Early Morning Service	37%	57%	7%																		
City Late Night Service																	2%	43%	20%	21%	13%
Silver Lake			0%	14%	7%	10%	6%	8%	8%	11%	9%	9%	5%	5%	5%	2%	2%				
Subtotal City Service			4%	7%	5%	5%	4%	5%	7%	8%	10%	8%	7%	8%	7%	5%	4%				
Early Kimball Service																					
Kimball Core (Pink)	0%	0%	3%	3%	5%	4%	4%	5%	6%	11%	15%	12%	7%	8%	4%	7%	3%	1%			
Kimball West (Pink)	0%	3%	2%	2%	4%	4%	7%	6%	6%	10%	10%	15%	11%	8%	6%	5%	2%				
Kimball Express (Brown)	0%	11%	7%	4%	5%	7%	5%	3%	4%	8%	9%	6%	12%	3%	7%	8%					
Kimball East (Brown)	0%	1%	2%	2%	7%	5%	5%	3%	3%	11%	11%	12%	17%	11%	6%	5%					
Canyons (Lime)	3%	11%	11%	13%	10%	5%	4%	5%	8%	8%	19%	5%									
Canyons Circulator		9%	7%	9%	6%	3%	3%	5%	2%	5%	8%	11%	12%	5%	6%	4%	3%	1%			
Subtotal: County Services	0%	1%	9%	5%	5%	6%	4%	5%	4%	5%	9%	12%	10%	8%	6%	4%	5%	2%	1%		
Total: All Services	0%	1%	5%	4%	6%	5%	5%	4%	5%	6%	8%	11%	8%	7%	7%	6%	5%	3%	1%	0%	0%	0%

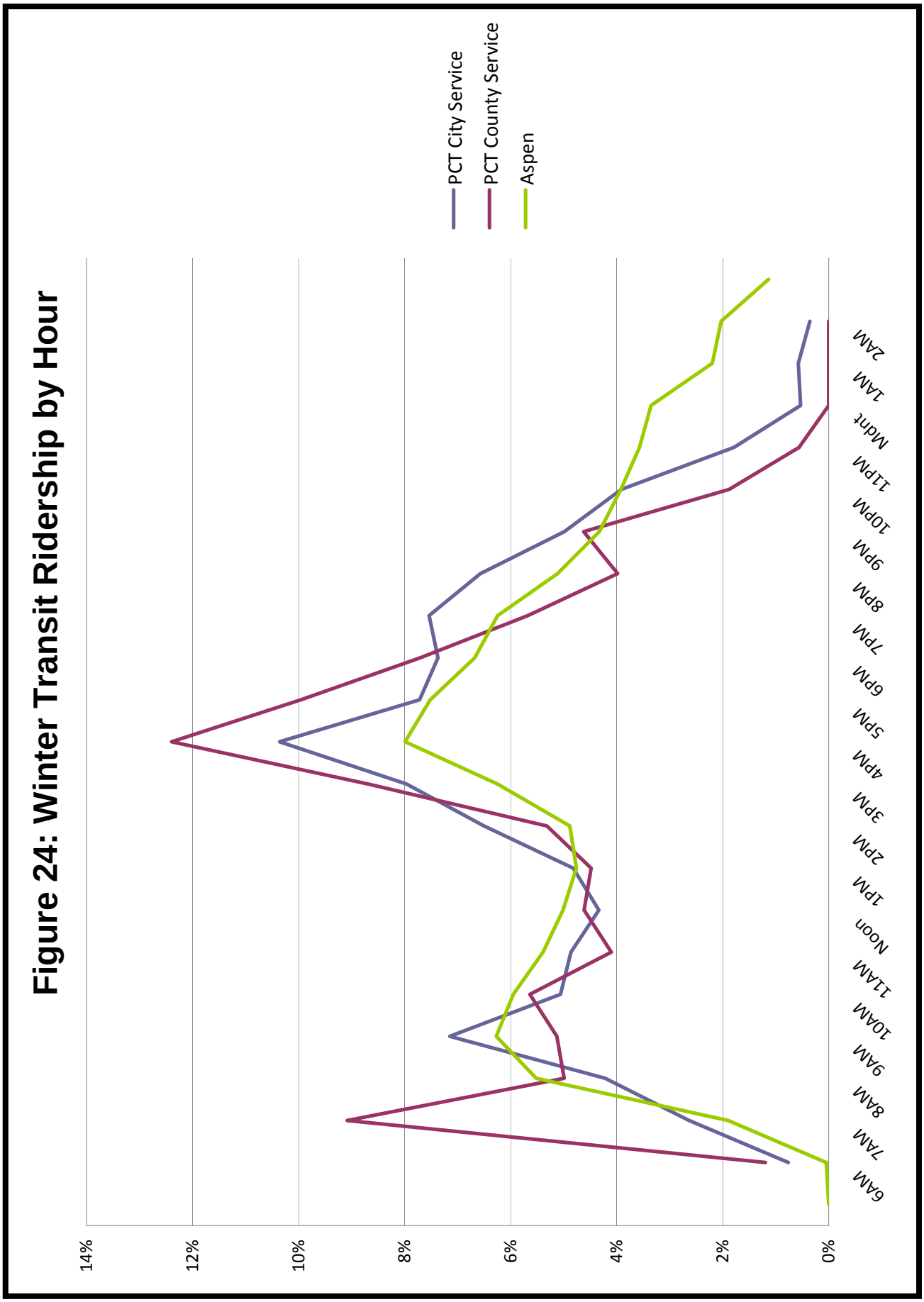


Figure 24: Winter Transit Ridership by Hour
PCT City Service
PCT County Service
Aspen
14%
12%
10%
8%
6%
4%
2%
0%
6AM
7AM
8AM
9AM
10AM
11AM
Noon
1PM
2PM
3PM
4PM
5PM
6PM
7PM
8PM
9PM
10PM
11PM
Mdnt
1AM
2AM

- **Winter Service Till Midnight** – Three additional Pink Route runs would be added, along with three Brown Route runs. Total costs would be increased by $69,300, while ridership would increase by 16,900 over a winter season. Productivity would be equivalent to the previous alternative.

- **Summer Service Till 11 PM** – This option would require operation of four additional Pink Route runs and two additional Brown Route runs per day. Reflecting the longer length of the season, operating these additional runs throughout the non-winter seasons would incur a cost increase of $132,500 per year. Approximately 82 passenger-trips per day would be served, or 19,000 over the course of the season. Productivity would be relatively low, at 10.1 passenger-trips per vehicle-hour.

- **Summer Service Till Midnight** – Adding the additional two Pink Route runs and one Brown Route run would increase the cost to $198,500 per year. Ridership would equal 9.3 passenger-trips per vehicle-hour of service.

There would be a benefit if the hours of service on the County routes were consistent with those of the City routes (as discussed below), as this is easier to communicate to passengers.

Canyons Service Alternatives

At present, a separate The Canyons Route is operated during the winter from 6:14 AM to 5:30 PM (every half hour), and during the summer from 6:14 AM to 4:55 PM (every 40 minutes). This route extends from the Grand Summit Hotel along Canyons Resort Drive and SR 224, and then operates along a loop in Park City encompassing Prospector Square, Old Town Transit Center and the Park City Mountain Resort. Service to other Canyons lodging properties, and in other periods of the day, is provided more informally by individual lodging vans.

In the northbound direction, The Canyons winter schedule fits well between Pink Route service times. However, in the southbound direction, The Canyons run (near the top of the hour) essentially duplicates the Pink Route service. In the summer, the differing 40-minute and 30-minute schedule headways makes The Canyons route more difficult for passengers to use, and means that some runs are very close to existing Pink Route service times.

This service plan has the advantage of providing “one seat” transportation between the Grand Summit Hotel and Canyons lifts on one end and the key Park City lodging and visitor activity centers on the other end. As a result, visitors need not figure out the local transit system beyond the schedule for The Canyons bus. However, there are several disadvantages to this current operating plan:

- Service to other destinations within The Canyons is uncertain (as it depends upon individual lodging vans) or is nonexistent.

- Canyons guests that use The Canyons route during the day may find themselves in Park City after the end of service, and need to figure out the other transit routes (and connecting van services) to return. As a result, they are more likely to drive for trips such as evening dining in Park City.

- The service frequently duplicates other PCT routes and schedules in Park City. One result of this is that 36 percent of the ridership on the existing winter service is comprised of passengers travelling wholly within Park City (not to/from The Canyons).

A key consideration with regards to The Canyons is the extensive additional development that is allowed under The Canyons SPA Development Agreement. As of the end of 2010, total development within The Canyons reflects only 22 percent of the potential buildout, which totals 8.3 million square feet of total building floor area, of which just less than 1.3 million is commercial floor area.

A rough estimate of total transit trips generated at buildout can be made by dividing the current annual ridership generated in The Canyons (51,020 passenger-trips) by 22 percent. This indicates ridership on the order of 218,000 passenger-trips per year at buildout (equal to half of the existing total County transit ridership).

While much of the future development is in the core areas along Canyons Resort Drive, other substantial areas are in Frostwood, the Lower Village, and Willow Draw, which would require new route extensions to adequately serve with transit.

Extension of SR 224 Local Service to Grand Summit Hotel

One option to improve public transit in The Canyons would be to extend the Kimball/Pinebrook Route to the Grand Summit Hotel. While this would provide direct service to both Park City and Kimball Junction, it would add a total of 10 minutes of travel time to the existing route. As this running time is not available within the current 90 minute total route cycle length, it would require provision of an additional bus.

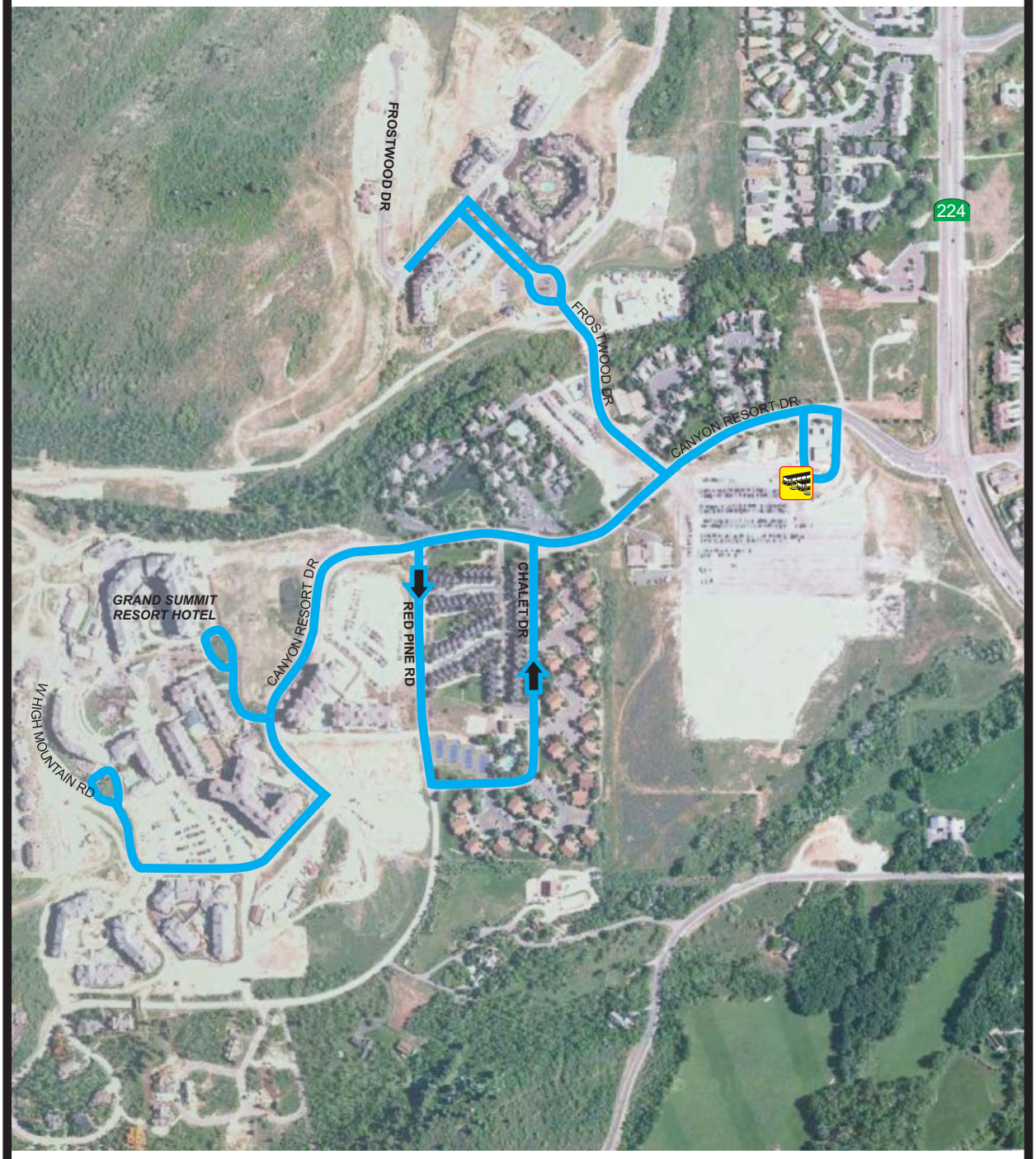
An additional strong disadvantage is the out-of-direction travel and associated travel time for through passengers on the Kimball/Pinebrook (Pink) Route not bound to or from The Canyons. As reflected in Figure 20, many of the riders on the Kimball/Pinebrook (Pink) Route along SR 224 at Canyon Drive are traveling between the Snyderville Basin and Park City. On an average winter day, approximately 800 people ride the Pink Route past Canyons Drive – rerouting the Kimball/Pinebrook (Pink) Route to the Grand Summit Hotel would add approximately 10 minutes of additional travel time for these passengers. Extending the Kimball/Pinebrook (Pink) Route to Grand Summit Hotel would therefore be a detriment to the overall transit program. One possible exception to this would be if express bus service along SR 224 were to be expanded (as discussed above).

Provision of Canyons Circulator

Another means of expanding service availability in The Canyons would be to operate a separate Canyons Circulator connecting the Canyons Transit Center with lodging properties. A feasible circulator route is shown in Figure 25. This 3.1 mile-long route could be operated on a 15-minute loop. For purposes of this evaluation, it is assumed that service is provided over the following hours:

Winter – 7:00 AM – 11:00 PM
Summer – 7:00 AM – 9:30 PM

FIGURE 25
Canyons Circulator Route



SCALE
0 250' 500'
IN FEET

LEGEND
CANYONS CIRCULATOR ROUTE
TRANSIT CENTER

CANYONS LSC TRANSPORTATION CONSULTANTS, INC.

Other options can be considered with differing hours of operation, or by limiting the summer service calendar to peak summer season (such as the mid-June – Labor Day calendar used for the Silver Lake Village Route).

Ridership on a Canyons Circulator can be estimated by reviewing existing ridership generated in the area, and increasing by 25 percent to reflect the net improvement of additional service frequency and areas served minus the hassle of transferring at the Canyons Transit Center. At current development levels, a ridership of 63,600 one-way passenger trips is estimated, as shown in Table 30. Productivity would be moderate, at 17.3 passenger-trips per vehicle-hour of service.

The advantage of a circulator service is that it can provide direct service to properties not on Canyon Resort Drive. It can also provide more frequent service within The Canyons, which is particularly effective if service frequency along SR 224 is expanded. The biggest disadvantage is the need for passengers to transfer at the Canyons Transit Center (and for visitors to figure out an additional transit service). At peak times (particularly when demand in The Canyons can exceed the capacity of a transit vehicle), reliance wholly on a Circulator strategy could also result in vehicle overcrowding.

Canyons Hybrid Circulator/Express Route

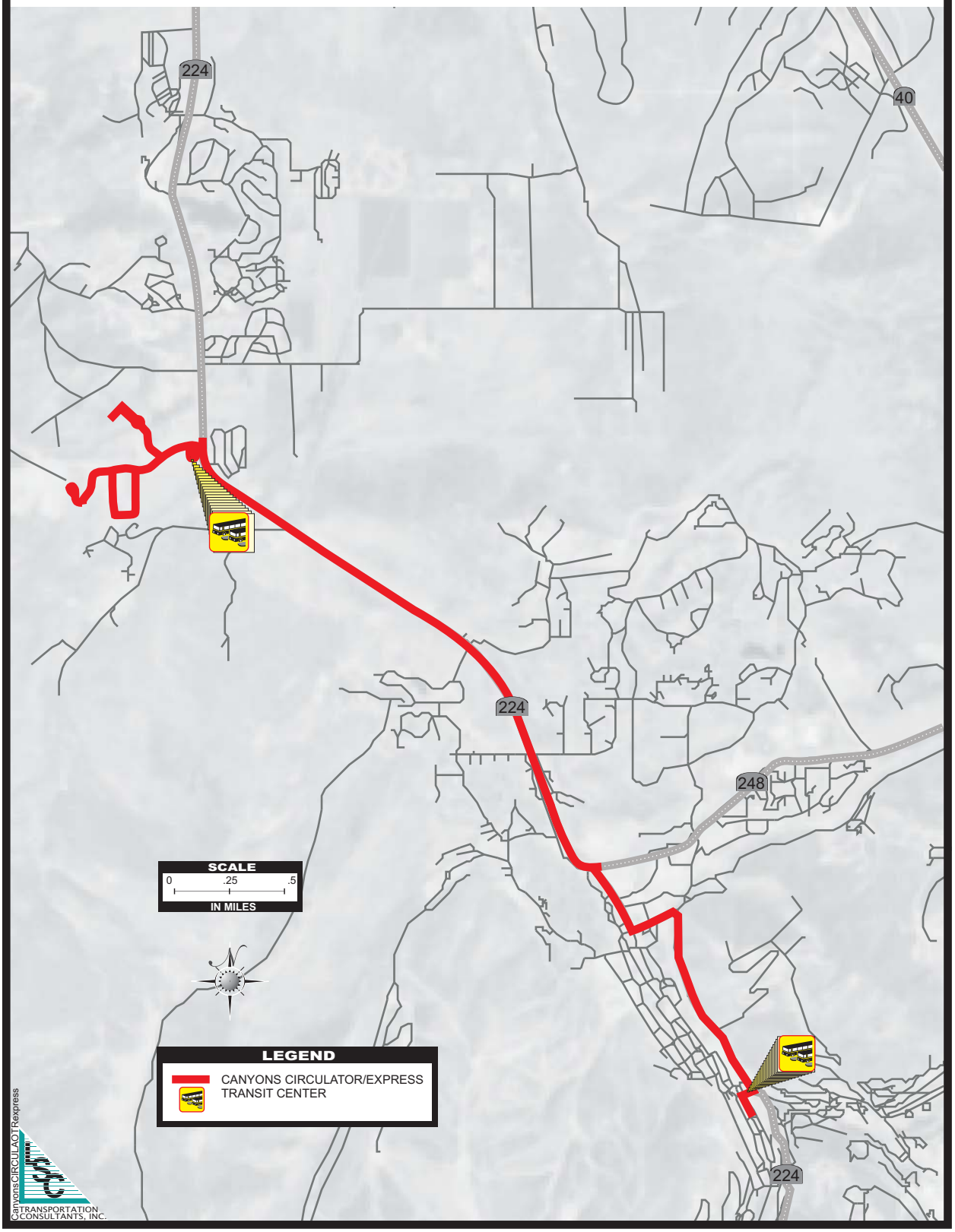
Another option to better serve The Canyons would be to combine a Canyons circulator service with a direct service between The Canyons and Park City. As shown in Figure 26, this route would serve key stops within The Canyons (Grand Summit, Waldorf Astoria, Red Pines, Transit Center), and then operate an express run to the Old Town Transit Center via SR 224 and Deer Valley Drive. The Fresh Market stop could also be served to allow more convenient transfers to other locations in Park City, such as PCMR and Prospector. This service could be operated on a 30-minute headway using one vehicle in the non-winter seasons, and 20-minute headways (using two vehicles on a 40-minute route cycle) during the winter. It would serve the large majority of existing travel between The Canyons and Park City (though it would no longer effectively serve current passenger trips between stops within Park City).

This alternative would not change the number of buses used for Canyons service (two in winter and one in summer). As mileage would be lower, overall annual operating costs would drop by approximately $18,800. Ridership by season is estimated by considering current Canyons winter ridership, factoring for the change in service frequency and loss of direct service for a minority of existing trips, and adding a portion of the Canyons Circulator ridership discussed above (again, adjusted for the difference in service frequency and number of stops served). As 2011 is the first summer of Canyon service, this “existing” ridership is estimated by factoring the Canyons winter ridership by the ratio of summer to winter ridership on the Park City routes. Existing ridership on The Canyons route carried between stops within Park City is assumed to shift to other transit routes. Overall, this service alternative is estimated to carry 73,400 annual passenger-trips compared with 61,500 for the existing service plan, yielding a net increase of 11,900 passenger-trips. This alternative overall would improve the productivity of The Canyons service from 12.1 passenger-trips per vehicle-hour of service under the current plan to 14.5 under the hybrid alternative.

Canyons Direct SR 224 Service

Another option to provide direct service to the Canyons would be to provide service along the SR 224 corridor between Old Town Transit Center, the Grand Summit Hotel, and Kimball

FIGURE 26
Canyons Circulator/Express Route



Junction. This route would also serve the Prospector Square area and Park City Mountain Resort. It would add express service between Canyons and Kimball Junction to the current Canyons (Lime) Route. The route would provide hourly headway service, over the current hours of service.

This route provides an efficient hourly schedule in the summer (when traffic delays are relatively), requiring approximately 40 minutes for service between Canyons and Park City, 15 minutes for service between Canyons and Kimball Junction, and 5 minutes per hour for makeup/layover. However, in winter the overall route requires approximately 1 hour 15 minutes to operate, requiring two vehicles to provide hourly headways.

Advantages of this alternative are that it would provide direct service from Kimball Junction to Grand Summit Resort area, and would provide additional through service along the SR 224 corridor. On the other hand, it would result in several disadvantages:

- It would reduce frequency of direct service from Canyons to Park City from the current level of every 30 minutes in winter and 40 minutes in summer to every 60 minutes year-round.
- It would not expand service to outlying areas of the Canyons.
- It would continue the long in-vehicle travel times for persons traveling between Canyons and Old Town Park City.
- While the ridership demand between Canyons and Park City is much greater than the demand between Canyons and Kimball Junction, this plan would provide equal service on both segments.

As shown in Table 30, this service would not change the annual vehicle-hours of service, but would reduce the vehicle-miles of service, resulting in a reduction in annual operating costs of $28,800. Ridership would be impacted positively by the additional service between Canyons and Kimball Junction, but negatively by the reduced frequency of service between Canyons and Park City. On balance, summer ridership would be increased by approximately 8,200 passenger-trips per year, but winter ridership would be reduced by roughly 6,300 passenger-trips per year, yielding a total annual increase of 2,900 passenger-trips per year.

Outlying County Service

While the transit program in western Summit County has grown into a successful service, no scheduled transit service is available to the smaller communities to the east, including Kamas, Oakley and Coalville. As discussed below, three potential levels of service were evaluated:

"Lifeline" Service

Lifeline service is defined as a very limited service designed for transit dependent residents of smaller communities, providing scheduled service into a larger urban center, typically for shopping, medical or social service purposes. While it may be offered more than one day per week, for purposes of this analysis service one day per week (such as every Tuesday) is assumed, with a morning run scheduled to arrive in Park City around 9:00 AM, with a departing run scheduled to depart around 3:00 PM. Once in Park City, of course, passengers could travel around the existing transit service area on other transit routes. A service from Coalville could also serve stops in Kimball Junction.

Service would be offered on a reservation basis, with passengers required to make reservations by 4:00 PM on the day prior to their ride. "Standing orders" could also be provided for

passengers or groups consistently making use of the service. Several stops would be established in each community (such as at senior centers), though deviations would be available for those with mobility limitations (on both ends of the trip). Buses would "deadhead" out from Park City in the morning to start their run, and deadhead back in the afternoon. On the Kamas Route, service would start in Kamas and serve passengers in Oakley as requested.

Due to the length and cost of this service, a fare would be charged. A reasonable fare given the length of the trip and fares for similar longer-distance public transit trips in the region would be $4.00 per one-way trip for the general public, and $2.00 for seniors (age 65 and above), ADA eligible persons, and youth (typically age 5 to 16), with children under 5 years of age riding for no fare.

As shown in Table 32, this service would require an operating subsidy of approximately $29,000 per year for Kamas/Oakley service, and $35,000 for Coalville service. Ridership estimates are based on the non-program and program demand estimates presented in Tables 22 and 23, reduced to reflect the limited service level. An average of 26 one-way trips (or 13 round-trips) per day is estimated for Kamas/Oakley, and 10 one-way trips (or 5 round-trips) for Coalville service.

Commuter Service – Winter Only

Another option would be to provide commute transit service into the Park City area from the outlying communities, with one run per day in each commute period seven days a week throughout the winter season. These services would be most effectively provided under a "park out" operating plan, in which buses are stored overnight in the outlying community. This has the advantage of avoiding the long "dead head" travel needed if buses are stored overnight in Park City, which would effectively double the operating costs of these services. For a "park out" plan to be feasible, the following would need to be provided:

- A secured location to store the buses overnight, such as at a municipal or county corporation yard. This can also have the advantage of providing some "as needed" light mechanic help, if, for example, a battery goes dead overnight. Even in a rural area, parking a transit vehicle overnight in an unsecured location would likely lead to vandalism, and parking overnight at a driver's residence is often a problem with the community.

- Drivers need to be found that live in or near the outlying community. To operate seven-days-a-week service, a minimum of two drivers and preferably three in each outlying community are needed, in order to provide some relief if a driver calls in sick on short notice. Some amount of risk would be assumed that drivers on any particular day are not available and the costs of drivers traveling from Park City to start services are incurred.

- A mechanism needs to be established by which these drivers can officially start and end their shift, such as by calling in.

- Driver shifts need to be organized to allow these drivers to shift between commuter and local services, in accordance with local, state and federal work rules.

Ridership estimates for potential commuter service between Park City and the outlying communities of Coalville and Kamas were based on two sources of existing commute patterns. Figures from the Longitudinal Employer Household Dynamics program of the US Census Department, as presented in Table 9, were used to represent year-round employee commuters.

TABLE 32: Transit Alternatives Serving Other Communities in Summit and Wasatch Counties

Fiscal Year 2011-12 *Costs Exclude Allocated Fixed Costs*

Alternatives Options/Details	Additional Vehicles [1]	Runs Per Day	Annual Vehicle Service.. Miles	Annual Vehicle Service.. Hours	Annual Operating Days	Annual Total Operating Cost	Ridership Impact (One-Way Trips) Daily	Ridership Impact (One-Way Trips) Annual	Annual Farebox Revenue	Annual Subsidy Required	Performance Analysis Passenger-Trips per VSH	Performance Analysis Passenger-Trips per VSM	Performance Analysis Subsidy per Passenger-Trip
Lifeline Services													
Kamas/Oakley Service - 1 day/week	1	2	10,300	390	129	$33,100	26	1,372	$4,100	$29,000	3.5	0.1	$21.14
Coalville Service - 1 day/week	***1***	***2***	***12,900***	***390***	***129***	***$36,600***	***10***	***533***	***$1,600***	***$35,000***	***1.4***	***0.0***	***$65.67***
Coalville Commuter Service													
Winter Service	0	2	12,642	387	129	$34,600	12	1,530	$5,400	$29,200	4.0	0.1	$19.08
Non-Winter Service	0	2	23,128	708	236	$63,300	7	1,670	$5,800	$57,500	2.4	0.1	$34.43
Total	***0***	***2***	***35,770***	***1,095***	***365***	***$97,900***	***9***	***3,200***	***$11,200***	***$86,700***	***2.9***	***0.1***	***$27.09***
Kamas Commuter Service													
Winter Service	0	2	8,256	387	129	$28,700	41	5,250	$18,400	$10,300	13.6	0.6	$1.96
Non-Winter Service	0	2	15,104	708	236	$52,400	18	4,370	$15,300	$37,100	6.2	0.3	$8.49
Total	***0***	***2***	***23,360***	***1,095***	***365***	***$81,100***	***26***	***9,620***	***$33,700***	***$47,400***	***8.8***	***0.4***	***$4.93***
Heber City Commuter Service													
Winter Service	0	4	9,391	516	129	$36,000	103	13,260	$33,200	$2,800	25.7	1.4	$0.21
Non-Winter Service	0	4	17,181	944	236	$65,900	61	14,510	$36,300	$29,600	15.4	0.8	$2.04
Total	***0***	***2***	***26,572***	***1,460***	***365***	***$101,900***	***76***	***27,770***	***$69,400***	***$32,500***	***19.0***	***1.0***	***$1.17***

In addition, winter seasonal employee commute patterns were identified based upon a review of employee residence location for major employers in the Park City/Snyderville area, as presented in Table 33. In total, the number of persons commuting from the Kamas/Oakley area to the Park City/Snyderville area is estimated to equal 426, while 166 persons commute from the Coalville area in the winter. A five percent transit mode split was

In addition, a Kamas – Park City commute service could serve the City of Hideout area along SR 248 in Wasatch County, including the Todd Hollow and Deer Mountain developments. As shown in Table 24, ridership demand for these areas would total approximately 8,600 passenger-trips per year, at current PCT service levels along the SR 224 corridor. Factoring for the lower level of service under this commute-only alternative, this equates to an estimated additional 10 passenger-trips per day in winter and 5 passenger-trips per day in non-winter.

Table 32 shows the details of implementing these services:

- *Coalville* – Winter service would incur a marginal operating cost of $34,600. Subtracting $5,400 in passenger revenues, (at an average fare of $3.50 per one-way passenger-trip), an annual subsidy of $29,200 would be required to operate the service. This option would serve 4.0 passenger-trips per vehicle-hour, and require $19.08 in subsidy per passenger-trip.

- *Kamas/Oakley* -- Commuter service to Kamas is estimated to result in a marginal cost of $28,700 over the course of the winter season. Subtracting an estimated $18,400 in passenger revenues, net operating subsidy of $10,300 would be required to operate the service. A total of 13.6 passenger-trips would be served per vehicle-hour, and $1.96 in subsidy would be required per passenger-trip.

As reflected in these forecasts, service to Kamas/Oakley would be substantially more effective than service to Coalville, due to the higher demand and lower operating costs.

Commuter Service – Year Round

Providing service throughout the year would serve year-round employees living in the outlying communities, as well as seasonal workers. As also shown in Table 32, operating a “park out” commuter service year-round would result in the following:

- *Coalville* – A marginal operating cost of $97,900 would be incurred. Ridership in the non-winter seasons would average seven one-way passenger-trips per day (an average of nine per day over the entire year). Subtracting $11,200 in passenger revenues, an annual subsidy of $86,700 would be required to operate the service. In total, 2.9 passenger-trips would be served per vehicle-hour, and $27.09 in subsidy would be needed per passenger trip.

- *Kamas/Oakley* – Year-round commuter service to Kamas is estimated to result in a marginal cost of $81,100. Average daily ridership outside of the winter season is estimated to be 18 passenger-trips. Subtracting an estimated $33,700 in passenger revenues, net operating subsidy of $47,400 would be required to operate the service. This option would serve 8.8 passenger-trips per vehicle-hour, and require $4.93 in subsidy per passenger-trip.

Overall, service limited to the winter season would be significantly more effective than year-round service, and service to Kamas/Oakley would more effective that service to Coalville.

TABLE 33: Employee Resident Locations for Major Park City / Western Summit County Employers

	Employer												Percent of Employees in Commute Area		
County	Back Country	Canyons	Deer Valley	IHC	Marriott	PC Schools	PCMC	PCMR	Rossignol	Total	Subtotal: Ski Areas	Subtotal: Other	Total	Subtotal: Ski Areas	Subtotal: Other
Box Elder County	0	2	0	0	0	0	0	0	0	2	2	0	--	--	--
Cache County	1	4	0	0	1	1	0	3	0	10	7	3	--	--	--
Carbon County	0	1	0	0	0	0	0	1	0	2	2	0	--	--	--
Davis County	4	9	0	0	0	2	3	13	0	31	22	9	1%	1%	1%
Duchesne County	2	19	25	2	2	10	10	7	0	77	51	26	2%	2%	2%
Grand County	0	4	0	0	0	0	0	0	0	4	4	0	--	--	--
Iron County	0	0	0	0	1	0	0	2	0	3	2	1	--	--	--
Juab County	0	0	0	0	0	1	0	0	0	1	0	1	--	--	--
Millard County	0	0	0	0	1	0	0	0	0	1	0	1	--	--	--
Morgan County	1	6	0	0	0	1	1	1	0	10	7	3	0%	0%	0%
Salt Lake County	113	332	0	50	42	83	29	172	13	834	504	330	20%	18%	22%
Salt Lake City	*67*	*171*	*0*	*0*	*26*	*39*	*7*	*97*	*7*	*414*	*268*	*146*	*10%*	*10%*	*10%*
Other	*46*	*161*	*0*	*50*	*16*	*44*	*22*	*75*	*6*	*420*	*236*	*184*	*10%*	*8%*	*12%*
San Juan County	0	1	0	0	0	0	0	0	0	1	1	0	--	--	--
Sanpete County	0	0	0	0	0	0	1	2	0	3	2	1	--	--	--
Summit County	81	642	100	115	45	472	107	648	24	2,234	1,390	844	53%	50%	57%
Coalville	*0*	*12*	*19*	*0*	*5*	*11*	*9*	*11*	*0*	*67*	*42*	*25*	*2%*	*2%*	*2%*
Francis, Kamas Area	*2*	*39*	*81*	*25*	*3*	*44*	*14*	*23*	*0*	*231*	*143*	*88*	*5%*	*5%*	*6%*
Park City, Snyderville, Summit Park	*78*	*589*	*0*	*90*	*37*	*415*	*82*	*610*	*24*	*1,925*	*1,199*	*726*	*45%*	*43%*	*49%*
Echo	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*	*2*	*0*	*0%*	*0%*	*0%*
Henefer	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*1*	*0*	*3*	*1*	*2*	*0%*	*0%*	*0%*
Peoa	*1*	*0*	*0*	*0*	*0*	*1*	*1*	*3*	*0*	*6*	*3*	*3*	*0%*	*0%*	*0%*
Uintah County	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--
Utah County	19	88	0	0	9	7	10	75	1	209	163	46	5%	6%	3%
Wasatch County	4	92	462	62	22	77	49	80	0	848	634	214	20%	23%	14%
Heber	*3*	*75*	*411*	*44*	*20*	*65*	*43*	*62*	*0*	*723*	*548*	*175*	*17%*	*20%*	*12%*
Midway	*1*	*16*	*51*	*18*	*2*	*10*	*4*	*18*	*0*	*120*	*85*	*35*	*3%*	*3%*	*2%*
Other	*0*	*1*	*0*	*0*	*0*	*2*	*2*	*0*	*0*	*5*	*1*	*4*	*0%*	*0%*	*0%*
Washington County	0	0	0	0	0	0	0	1	0	1	1	0	--	--	--
Weber County	3	4	0	0	0	0	1	2	0	10	6	4	0%	0%	0%
Out of State	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--
Total	231	1,365	587	229	123	656	211	1,007	38	4,447	2,959	1,488	--	--	--
Total Within Typical Commute Area	227	1,192	587	229	120	652	210	998	38	4,253	2,777	1,476	100%	100%	100%

Typical Commute Area includes Davis, Duchesne, Morgan, Price, Salt Lake, Summit, Utah and Weber Counties.

HEBER CITY SERVICE

A commute service could also be provided from Heber City to Park City, and would serve a substantial market of commuters, as well as others making day trips to the Park City area for recreation, shopping, etc. The route would originate in the southern portion of Heber City (such as Wal-Mart or Days Market) and serve four to five stops along Main Street (with a possible park-and-ride opportunity at Smiths Market or Holiday Lanes), as shown in Figure 27. A stop could be provided at Utah Valley University Wasatch, as well as Stillwater Lodge. The route would serve existing stops along Kearns Boulevard and Bonanza Drive, and terminate at the Old Town Transit Center, (though a second stop at PCMR could be served if warranted by passenger demand). Given the demand, two AM and two PM runs would be needed (and would provide a better level of service). This route would require approximately 40 minutes to operate in one direction. Including time for traffic delays, departures at 5:50 AM and 6:50 AM would allow transfers to local PCT routes at 40 minutes past the hour, allowing commuter's time to walk or use the local routes to start work at 7:00 AM and 8:00 AM. In the opposite direction, departures from OTTC at 4:20 PM and 5:20 PM would serve commuters leaving work at 4:00 PM and 5:00 PM. As a commuter service, this option would not trigger the need for complementary door-to-door paratransit van service under the Americans with Disabilities Act.

As shown in Table 32, assuming one hour of driver time per run (including check-in/check-out time) and park-out operation, marginal costs over a winter season would be $36,000. In light of the relatively short travel distance, a mode split of 4% is estimated, and a fare of $3.00 for general public and $1.50 for elderly/disabled/youth (average fare would be approximately $2.50 per passenger trip). Ridership based solely on commuters (excluding trips for other purposes, such as skiing) is estimated to equal 13,260 trips over the course of the winter season. As fares would generate approximately $33,200 per year, subsidy over the course of the winter season would be only $2,800 (once full ridership potential is achieved). This service would be quite efficient, generating 25.7 passenger-trips per vehicle-hour of service.

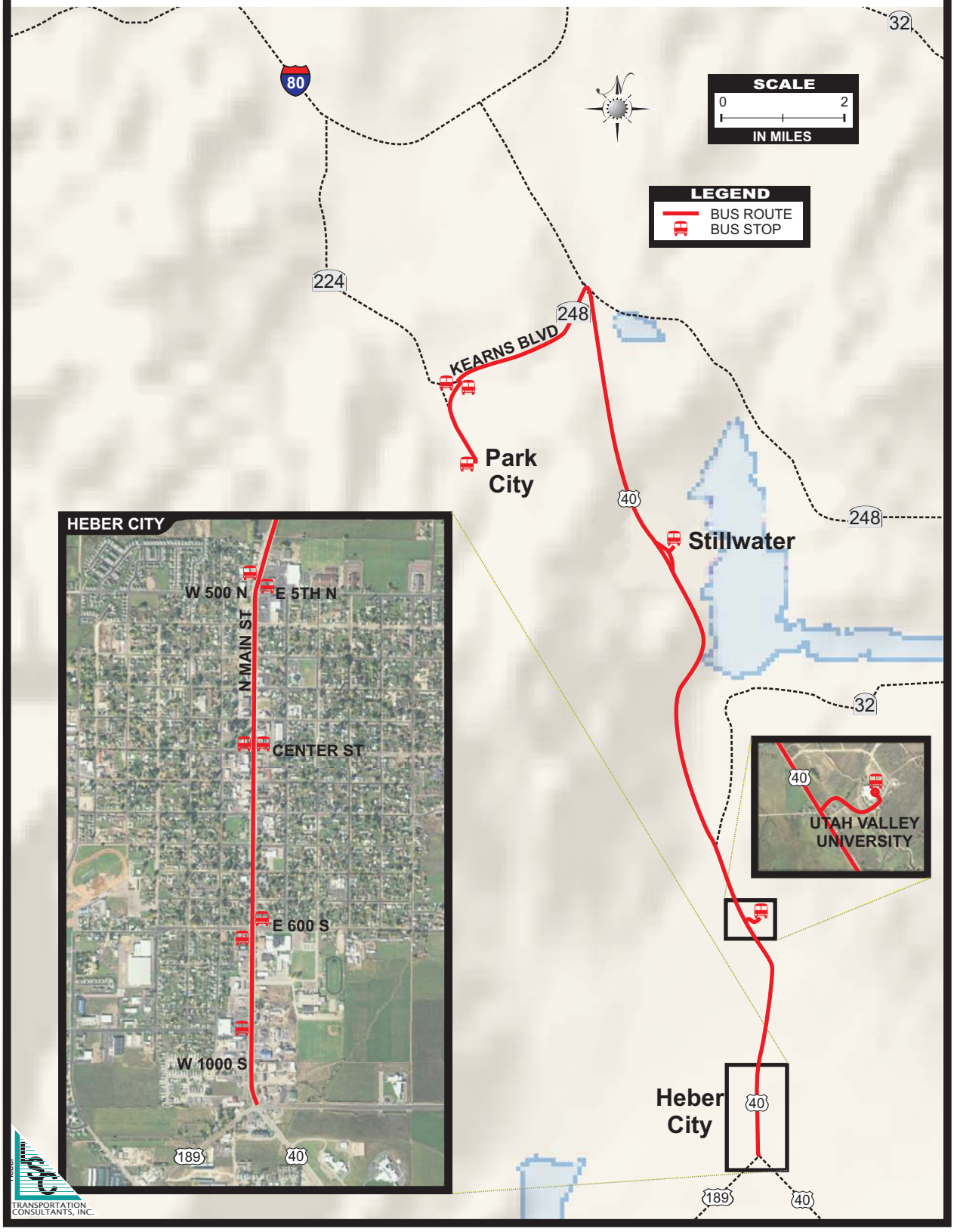
It should be noted that full transit ridership potential is not typically reached until the third year of operation of a new service, as passengers become aware of the new service and make other decisions (such as replacement of a second car in the household for commuting) that affect their use of the service. In general, 65 percent of potential full ridership is achieved in the first year of a new service, and 90 percent in the second year. Applying these factors, winter service would generate 8,800 passenger-trips in the first year, and 11,900 in the second. In the first year, winter service would require a subsidy of $13,900, dropping to $6,200 in Year Two.

If operated year-round, this service plan would incur a marginal operating cost of $101,900, while the annual ridership of 27,770 would generate $69,400 in fare revenues. As a result, a marginal subsidy of $32,500 per year would be required. Even in the non-winter seasons, the efficiency of this service would be relatively good, with 15.4 passengers per vehicle-hour of service and a subsidy requirement of only roughly $2.04 per trip. In the first year of operation, a subsidy of $55,700 would be required, dropping to $39,400 in the second year.

SALT LAKE CITY TO PARK CITY SERVICE

With growth both in Summit County as well as along the Wasatch Front, there is an increasing demand for regional transit service between Salt Lake City and the Park City area. While the

FIGURE 27
Potential Heber City - Park City Bus Route



Park City/Salt Lake City corridor is currently served by a number of private limousine and charter bus providers, these services are primarily designed for visitors. The public has indicated a desire for a public transit connection between Park City/western Summit County and the Wasatch Front, focusing on commuter transportation, shopping/recreation, and access to higher education.

The Utah Transit Authority is currently finalizing plans to initiate the "Park City Connect" public transit service between Salt Lake City and Park City, as presented in the Salt Lake City, Summit County, Park City Transit Business Case (UTA Strategic Planning, November 2010). This service is currently envisioned to consist of the following:

- The route would extend from the Salt Lake Central Intermodal Center, through the University of Utah campus via 200 South and Foothills Parkway, to the Old Town Transit Center. In Summit County, stops would be served at the Jeremy Ranch Park-and-Ride, Kimball Junction Transit Center/Newpark, The Canyons Transit Center, Park City Mountain Resort and Old Town Transit Center (with some runs with high ridership to/from Deer Valley potentially extended to the Deer Valley ski area). For persons commuting in the uphill direction, park-and-ride lots would be available along Foothills Parkway. Overall, the service would provide an end-to-end ride time of 1 hour 15 minutes.

- Service levels would vary by season. From December to April, AM service would consist of a total of five runs in the eastbound direction and 3 westbound, reversing in the PM commute period. Between April and August, this would be reduced to three eastbound and two westbound trips in the AM commute period (and reverse in the PM), while between August and December this would increase to three runs in both direction in both peak commute periods. Including a spare, six buses would be required to operate the service. In winter, service would operate 7 days a week, while in the remainder of the year service would be limited to weekdays only.

- Special services would also be provided for special events, such as Sundance, peak ski periods, the Arts Festival, and the Deer Valley Concert Series.

- Fares would be equivalent to the UTA's current standard premium fares, recently increased to $5.50 per one-way trip for the general public, with discounted fares available for persons age 65 and above and pass purchasers. An subsidy program could be established with major employers, such as the ski areas.

- Buses would be provided by UTA.

The UTA study includes an analysis of potential ridership service, including ridership wholly within Salt Lake City (such as between the U of U and downtown). Based in large part by the opportunity to combine service to Park City with service in the existing UTA service area, the $4.50 base fare was found to cover operating costs. Specific funding levels required from Park City and Summit County will be determined by actual subsidy needs.

An updated evaluation of potential ridership, focusing on ridership over Parley's Summit, is presented in Table 34. This evaluation is based on the UTA study, adjusted to reflect more recent information and the specific considerations of a resort economy:

- Year-round employees working in the Park City area commuting "up the hill" are based on the number of commuters (from the Longitudinal Employer-Household Dynamic US Census dataset, as shown in Table 8), factored to reflect commuting five days per week and two one-way trips per person per day. As detailed in the UTA study, a 5 percent transit mode split is applied, and factors are also applied that reflect the specific service levels and fare level of the proposed operating plan. Overall, uphill commuters are estimated to generate 114 one-way passenger-trips per day.

- Winter seasonal workers (not included in the LEHD data) commuting up the hill are presented in Table 33. Reflecting both a higher proportion of these workers without access to a car as well as expected efforts on the part of the ski areas to limit employee parking, a 25 percent mode split is applied. As service will be designed to fit employee shifts and fares supported by the major employers, no factors are applied to reflect these considerations.

TABLE 34: Salt Lake City -- Park City Transit Demand

	Daily Person-Trips	Mode Split	Base Daily Ridership: 30 minute service over 14 hour span, $2.00 Fare except $3.50 for Rec.	*Adjustment Factors*		Realized Ridership At Proposed Service Plan and Fare Level	
				Service Level	*Fare Level*	Daily	Annual
Uphill							
Commuters to Park City							
- Year Round	7,234	5%	362	*0.63*	*0.50*	114	
- Winter Seasonal	720	25%	180	*1.00*	*1.00*	180	
Skiers			329	*0.75*	*0.88*	218	
- Subtotal: Winter						512	76,800
- Total: Non-Winter						114	17,400
- Total Annual							94,200
Downhill (Year Round)							
Commuters to Salt Lake City	2,680	5%	134	*0.63*	*0.50*	42	
College/School			383	*0.586*	*1.00*	224	
Total						267	40,800
Total Both Directions							135,000

Notes

Excludes ridership within Salt Lake County. Negligable ridership within Summit County assumed.

Excludes trips for other purposes (shopping, other recreation, special events, etc.)

Impact of recent UTA fare increase assumed to be balanced by recent increases in price of gasoline.

- Skier transit demand is based upon observed ridership on the Little Cottonwood Canyons UTA service, factored by the relative levels of ski activity. As the service plan will focus service in the peak skier periods, only a 25 percent reduction is applied.

- In the "downhill" direction, year-round commuters were evaluated solely for those persons working in Salt Lake City (no persons that would need to transfer to jobs in other communities were included).

- Ridership would also be generated by students at the U of U and other institutions, as discussed in the UTA study.

In total, in winter 512 one-way transit trips would be generated by persons traveling up the hill for work or skiing, as shown in Table 34, along with 267 transit trips generated by persons

traveling down the hill for work or school. In the remainder of the year (and assuming no summer seasonal employment commute demand), 114 one-way passenger-trips would be generated for those traveling up the hill.

Factoring by 150 winter days of service plus 153 in the other seasons, total annual ridership over Parley's Summit on this service is estimated to be 135,000 per year. The substantial ridership generated by trips within Salt Lake County would be in addition to this figure.

This level of ridership potential indicates that this service would greatly benefit Park City, western Summit County, and the major activity centers. In addition to expanding access by employees and customers, this service would take approximately 350 vehicle-trips off of SR 224 over a winter day (assuming average vehicle occupancy of 2.0 for the avoided auto trips) and reduce parking demand by approximately 175 cars. Once established, it can also be expected that new trip patterns will emerge, such as persons traveling for recreational activities beyond skiing.

Role of Park City and Summit County

While UTA is planning to provide the vehicles and operate the service, there are still important roles with Park City and Summit County can play in implementing this service:

Park City

- Provide overnight storage of approximately two to three UTA buses, as well as mid-day storage for approximately four to five buses.

- Provide incidental mechanical assistance (such as minor repairs at pullout), a facility for UTA drivers to check-in/check-out, and incidental management assistance.

- Provide paratransit services within Summit County, necessitated by the provision of the new fixed route service.

- Enter into an Inter Local Agreement (ILA) to address responsibilities and roles.

Summit County and Park City

- Provide access to transit passenger facilities for the new UTA buses, and signage for the new service.

- Work with UTA to finalize stops and routing. As an example, Park City should encourage UTA to operate only on Deer Valley Drive between Deer Valley Drive/Park Avenue and the OTTC, rather than Park Avenue, in order to minimize the impacts on the adjacent neighborhood and reduce travel times.

- Encourage ski areas and other large businesses to support the new service through purchase of employee passes.

- Joint marketing of transit services, such as inclusion of contact information on PCT marketing materials.

The new service would be considered a “commuter” service under the Americans with Disabilities Act. As such, complementary paratransit service is not required.

COMPARISON OF SUMMIT COUNTY AND INTER-COUNTY SERVICE ALTERNATIVES

A summary of the various Summit County and inter-county service alternatives is presented in Table 35:

- The greatest potential to increase ridership is provided by the Salt Lake City – Park City service (135,000 passenger-trips per year), and the Summit County Kimball route alternatives (97,500 to 133,000 per year). Other options with relatively high ridership potential are a Kimball Junction Circulator (87,600 per year), Canyons Circulator (63,600 per year) and Heber City commuter service (27,800 per year).

TABLE 35: Summary of Summit County and Inter-County Service Alternatives

Fiscal Year 2011-12 *Costs Exclude Allocated Fixed Costs*

	Net Change in Annual					Performance Analysis (Marginal)		
Alternative	Passenger-Trips	Vehicle-Hours	Vehicle-Miles	Operating Cost	Subsidy	Passenger-Trips per VSH	Passenger-Trips per VSM	Operating Subsidy per Passenger-Trip
County Routes Alternative A	132,910	680	64,400	$106,190	$106,190	195.5	2.06	$0.80
County Routes Alternative B	97,530	570	11,200	$28,920	$28,920	171.1	8.71	$0.30
Kimball Junction Circulator	87,600	5,840	59,600	$347,200	$347,200	15.0	1.47	$3.96
Extend Winter Service Till 11 PM	7,800	450	9,300	$32,900	$32,900	17.3	0.84	$4.22
Extend Winter Service till Midnight	16,900	970	18,800	$69,300	$69,300	17.4	0.90	$4.10
Extend Summer Service till 11 PM	19,000	1,890	34,800	$132,400	$132,400	10.1	0.55	$6.97
Extend Summer Service till Midnight	26,300	2,830	52,200	$198,500	$198,500	9.3	0.50	$7.55
Canyons Circulator	63,600	3,690	45,000	$230,400	$230,400	17.2	1.41	$3.62
Replace Canyons Route with Canyons Circulator/Express	11,900	-40	-12,500	($18,900)	($18,900)	-297.5	-0.95	-$1.59
Replace Canyons Route with Canyons Direct SR 224 Service	2,900	0	-21,100	($28,800)	($28,800)	--	-0.14	-$9.93
Lifeline Services								
Kamas/Oakley Service - 1 day/week	1,372	390	10,300	$33,100	$29,000	3.5	0.13	$21.14
Coalville Service - 1 day/week	533	390	12,900	$36,600	$35,000	1.4	0.04	$65.67
Coalville Commuter Service								
Winter Service	1,530	387	12,642	$34,600	$29,200	4.0	0.12	$19.08
Non-Winter Service	1,670	708	23,128	$63,300	$57,500	2.4	0.07	$34.43
Total	3,200	1,095	35,770	$97,900	$86,700	2.9	0.09	$27.09
Kamas Commuter Service								
Winter Service	5,250	387	8,256	$28,700	$10,300	13.6	0.64	$1.96
Non-Winter Service	4,370	708	15,104	$52,400	$37,100	6.2	0.29	$8.49
Total	9,620	1,095	23,360	$81,100	$47,400	8.8	0.41	$4.93
Heber City Commuter Service								
Winter Service	13,260	516	9,391	$36,000	$2,800	25.7	1.41	$0.21
Non-Winter Service	14,510	944	17,181	$65,900	$29,600	15.4	0.84	$2.04
Total	27,770	1,460	26,572	$101,900	$32,500	19.0	1.05	$1.17
Salt Lake City -- Park City Connect Bus	135,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD

- One key measure of service effectiveness is the change in passenger-trips served per net change in vehicle-hours operated. One option – the replacement of existing Canyons service with a combined Canyons Circulator/Express route – results in a negative number of -298, which is a beneficial result in that it reflects an increase in ridership and a decrease in vehicle-hours. The Summit County route realignments also perform well based on this measure, adding at least 171 passenger-trips per net additional vehicle-hour of service. Heber City commuter service has a high effectiveness, with 26 passenger-trips per vehicle-

hour of service in winter and 15 in the other seasons. The Canyons Circulator (at 17 passenger-trips per hour), the Kimball Junction Circulator (at 15 passenger-trips per hour) and the winter Kamas commuter service (at 14 passenger-trips per hour) attain the current service effectiveness standard for County routes of 10 passenger-trips per vehicle-hours of service. The evening extension of service hours to 11PM or Midnight in winter and to 11 PM in summer also achieve this standard. Other alternatives fall below this goal.

- The key measure of service efficiency is the change in subsidy required per marginal passenger-trip. Again, a negative value in Table 35 reflects a positive result – a reduction in subsidy divided by an increase in ridership. The replacement of the existing Canyons route with a Circulator/Express route results in this condition (-$1.59). For positive values, a lower figure is better, in that it reflects less public funding required per additional passenger-trip served. The winter Heber City Commuter service fares well by this measure, requiring only $0.21 per net new passenger-trip, followed by the County Route Alternative B, at $0.30. While PCT does not have established standards for this measure, a good comparison is the existing total County fixed route service value of $3.32. Using this as a yardstick, other alternatives that have relatively good service efficiency are the County Routes Alternative A ($0.80), Heber City year-round commuter service ($1.17), Kamas winter commuter service ($1.96), while the Canyons Circulator at $3.62 and Kimball Junction Circulator at $3.96 are only slightly higher.

Overall, the following conclusions can be drawn regarding the service alternatives:

- Park City – Salt Lake City service would generate very substantial ridership increases.

- Either of the County Route alternatives would provide substantial improvements in ridership and service efficiency/effectiveness over the current plan serving the Snyderville Basin. Alternative A provides greater ridership by providing higher frequency along the SR 224, while Alternative B provides service to additional areas (the segment of Highland Drive east of Old Ranch Road as well as to Summit Park).

- Circulator services in both Kimball and in The Canyons would be moderately effective at current development levels (though additional development would improve the effectiveness of these services).

- Extension of winter service until Midnight would be effective.

- A Canyons Circulator/Express route would be an overall improvement over the existing Canyons route plan, particularly in periods with low demand between Canyons and the outlying portions of Park City. While the Canyons Direct SR 224 alternative would also increase ridership and efficiency over the current Canyons route plan, the Circulator/Express option would serve approximately 8,000 additional passenger-trips per year (largely due to the better frequency of service to Park City).

- A Kamas Commuter route (also serving Oakley and Hideout) would be an effective service in winter.

- Heber City commuter service in winter would be very effective.

- Service between Coalville and Park City/Snyderville Basin would not be effective.

This page left intentionally blank.

Chapter 6
Park City Service Alternatives

The transit route structure in Park City is well established. The evaluation of service alternatives therefore focuses on the span of service (the hours of the day in which service is offered). Alternatives are also considered to better serve the growing Quinn's Junction area. In addition, options to address current operational problems are discussed.

LATE NIGHT SERVICE HOURS

Winter

At present in winter, the four buses operating the Prospector Square (Red), Prospector Express (Yellow), Park Meadows (Green) and Thaynes Canyon (Blue) routes end at 11:00 PM, and are replaced with the two buses operating the Late Night Service. This Late Night route covers the large majority of the stops served on the four standard routes. Service is provided every 30 minutes rather than every 20 minutes, however. In addition, some passengers are required to be on the bus for much longer than under the daytime route plan (such as those heading home to the Three Kings area from Main Street, which must ride the bus for 38 minutes).

One option would be to simply operate the daytime routes for an additional hour, until Midnight, then operating the Late Night service from Midnight to 2:00 AM. Subtracting the costs associated with the reduction in Late Night operations from the costs associated with expansion of the regular routes, the net impact of this alternative would be to increase annual operating costs by approximately $68,800, as shown in Table 36. Ridership for this expanded service was estimated by considering the hourly variation in service for the Aspen local routes against the existing PCT regular route ridership (adjusted to reflect existing riders choosing to travel later) and subtracting the existing ridership on the Late Night runs, yielding a net increase in ridership of 14,200 passenger-trips over the course of the winter. This service change would be marginally productive, yielding an increase of 13 passenger-trips for each additional vehicle-hour of service.

As with any alternative that changes the span of service, existing driver shifts would need to be modified. This could potentially result in a loss of efficiency, or a need for a higher proportional of "short shifts." Overall impact on driver shifts will be assessed as part of the final plan preparation, once preferred alternatives have been identified.

Another more expansive option would be to eliminate the Late Night Service and extend the existing four-bus core route operating plan until approximately 2:15 AM (the current end of Late Night service). This option would result in a net increase in operating costs of $182,000, and a net ridership increase of 30,100. Productivity would be a relatively low 10.4 passenger-trips per net new vehicle-hour of service.

Summer

Summer service on the core Prospector Square (Red) and Park Meadows/Thaynes Canyon (Green) routes currently ends at 10:30 PM. This is a relatively early end of service for a transit

TABLE 36: Park City Service Alternatives

Fiscal Year 2011-2012

Alternative	Additional Vehicles [1]	Runs Per Day	Annual Vehicle Service.. Miles	Hours	Operating Days	Marginal Operating Cost	Ridership Impact (One-Way Trips) Daily	Annual	Performance Analysis: Marginal Passenger-Trips per VSH	Marginal Passenger-Trips per VSM	Marginal Op. Cost per Passenger-Trip
Operate Winter Daytime Routes till Midnight											
Prospector Square (Red)	0	3	1,700	129	129	$8,120	42	5,400			
Park Meadows (Green)	0	3	1,700	129	129	$8,120	46	6,000			
Thaynes Canyon (Blue)	0	3	1,600	129	129	$7,990	56	7,200			
Prospector Express (Yellow)	0	3	1,500	129	129	$7,850	36	4,600			
Late PM	0	-2	(3,600)	(258)	129	($16,520)	-69	-9,000			
Total			2,900	258		$15,560	110	14,200	55.0	4.9	$1.10
Operate Winter Daytime Routes till 2 AM											
Prospector Square (Red)	0	9.5	5,400	408	129	$25,720	94	12,200			
Park Meadows (Green)	0	9.5	5,300	408	129	$25,590	104	13,400			
Thaynes Canyon (Blue)	0	9.5	5,200	408	129	$25,450	125	16,100			
Prospector Express (Yellow)	0	9.5	4,800	408	129	$24,910	80	10,300			
Late PM	0	-6	(13,355)	(949)	129	($60,900)	-169	-21,800			
Total			7,345	683		$40,770	234	30,100	44.1	4.1	$1.35
Extend Core Summer Service till Midnight -- All Non-Winter											
Prospector (Red)	0	4	9,200	692	236	$43,690	50	11,800	17.1	1.3	$3.70
Park Meadows (Green	0	4	7,000	535	236	$33,620	18	4,200	7.9	0.6	$8.00
Total			16,200	1,227		$77,310		16,000	13.0	1.0	$4.83
Extend Summer Service till Midnight -- Mid-June to Sept 5											
Prospector (Red)	0	4	3,200	241	82	$15,210	62	5,100	21.2	1.6	$2.98
Park Meadows (Green	0	4	2,400	186	82	$11,640	22	1,800	9.7	0.8	$6.47
Total			5,600	427		$26,850		6,900	16.2	1.2	$3.89
Replace Dial-A-Ride with Quinns Junction Fixed Route											
Fixed Route Winter	0	30	41,800	1,935	129	$144,010	236	30,500			
Fixed Route Non-Winter	0	26	66,300	3,068	236	$228,370	303	71,400			
Expansion of Paratransit Service	1	--	27,000	2,920	365	$171,270	20	7,300			
Subtotal		*N/A*	135,100	7,923		$543,650		109,200	13.8	0.8	$4.98
Eliminate Existing Dial-A-Ride			(26,200)	(2,860)	365	($164,480)	*-17*	(6,100)	2.1	0.2	$26.96
Total			108,900	5,063		$379,170		103,100	20.4	0.9	$3.68

Note 1: Additional vehicles can only be evaluated as part of the whole fleet mix.

Note 2: Includes Routes 1-3 (Prospector, Park Meadows, Thaynes); Trolley, Silver Lake, and Bonanza Express. Does not include County Routes, Special Services, or Paratransit.

Source: LSC Transportation Consultants, Inc.

program serving a resort community. Unlike in winter, no modified Late Night service is operated in the non-winter seasons. Two options were considered to extend this service to Midnight, varying by the length of season for the additional service. As shown in Table 36, providing this additional service for all 236 non-winter days per year would increase annual operating costs by $77,300. Ridership (based on the variation in summer ridership for the Aspen transit system) is estimated to be 16,000 passenger trips per year.

Alternatively, the provision of Red/Green service between 10:30 PM and Midnight could be limited to the 82 days of the peak summer season between mid-June and Labor Day (consistent with the calendar for summer Silver Lake Village (Orange) and Empire Pass (Lavender) service). The operating cost increase would be $26,800. Ridership increase during this period is estimated to equal 6,900 passenger-trips per year, or 16.2 additional passenger-trips per additional vehicle-hour of service.

DIFFERING SERVICE PLAN IN SPRING/FALL OFFSEASONS

Many other transit programs serving mountain resort areas operate a lower service plan in the off-seasons (spring and fall) than in the peak summer season. While this is the case for PCT to a degree (in that the Silver Lake Village and Empire Pass routes only operate from mid-June to Labor Day), the other core routes operate the same schedule for all non-winter days.

A review was conducted of ridership by route by month for the non-winter seasons. Productivity does vary somewhat, particularly on the interlined Red and Green route, which varies from a low of 12 passenger-trips per hour in May to a high of 25 in July. However, the May figure remains at a reasonable level, while the July figure is within the capacity of the current route plan. Reducing service in the off-seasons (such as late April and May, and mid-September to mid-November) would also create confusion. One relatively simple option would be to reduce the number of buses operating the interlined routes from four to two This would result in 40-minute headways, which would result in differing service times from hour to hour (which is confusing to the passengers). The two additional changes in schedule per year would also add confusion to the system, while also adding to the management workload. Overall, providing an off-season service plan for the interlined routes different from peak-season is not recommended.

QUINN'S JUNCTION FIXED ROUTE SERVICE

The Dial-A-Ride service was initiated in 2007 to provide transit service to the Quinn's Junction area, including the National Ability Center, the Recreation Complex, and Park City Medical Center. The current service is offered seven days a week from 8:00 AM to 9:00 PM, except in winter when service is extended to 11:00 PM. Riders are required to reserve a trip at least 2 hours in advance, except that "standing orders" for consistent trips can be made for periods up to 30 days. After several years in which ridership was low (600 to 900 passengers per year), in 2010 ridership jumped to 6,103 total passenger-trips – probably due to additional development in Quinn's Junction, including the People's Health Clinic.

One option to serve the Quinn's Junction area would be to replace the DAR service with a fixed route service. This route would originate at the Old Town Transit Center, and travel north on Deer Valley Drive and Bonanza Drive and then east on Kearns Boulevard, serving existing stops along Bonanza Drive and new stops along Kearns at Sidewinder Drive, the High School and Comstock Drive. Heading east on SR 248, stops would be served at Park City Heights (planned for 239 total residential units at buildout, with the first phase of 75 to 90 units in place

by fall of 2012), the Recreation Complex, the Park City Medical Center, and People's Health Clinic, before returning along the same route. This route is 10.8 miles in length, and can be served on a half-hourly schedule. (Providing a half-hourly schedule is why the route would be via Kearns Boulevard rather than Sidewinder Drive.)

Ridership for this service would consist of two key "markets":

- Due to the need for reservations, the potential ridership in the Quinn's Junction area is not currently being fully realized. As presented in the Quinn's Junction Transit Evaluation (LSC, December 18, 2009), the full potential of existing uses is estimated to equal 11,770 one-way vehicle trips. In addition, the Park City Heights residential project will add an estimated 6,100 passenger-trips per year, once completed.

- One of the strong benefits of this option over the current DAR service is that it could also serve as a "Prospector Express" service during the non-winter months (when the existing Prospector Express (Yellow) route is not in operation). Ridership was estimated by applying the existing ratio of Prospector Express ridership to Prospector Square ridership in winter to the summer Prospector Square ridership, and factoring downward to reflect (1) the lower frequency of service and (2) the fact that stops along Sidewinder Drive would not be served. In addition, this service would add service options between the Kearns Boulevard corridor and downtown Park City in the winter, increasing ridership. Overall, a "Quinn's Express" would generate approximately 85,000 additional riders as it passes through the Prospector Square area.

Overall, the fixed route service would serve approximately 101,900 passenger-trips per year, or 95,800 more passenger-trips than the existing DAR service. At 20 passenger-trips per vehicle-hour of service, the productivity of the fixed route would be comparable to existing PCT routes, such as Park Meadows (Green).

Expanding the fixed route service to Quinn's Junction would also expand the service area for the Paratransit/Mobility program. This could lead to a substantial increase in the need for such service, considering the types of trip generators in the Quinn's area. As the current Paratransit service is at capacity, additional service would be required. On an incremental basis, a conservatively high estimate of 8 vehicle-hours of additional service per day is assumed, over the entire year. This additional capacity would also leave some capacity for expansion of paratransit service to other portions of the service area, as well. At current utilization rates, 7,300 passenger-trips per year would be served, for a total (with fixed route) of 101,900 additional passenger-trips per year.

Assuming the same span of service as the current DAR, this service would incur $379,000 in increased operating costs over the current DAR service (including the cost of additional Paratransit/Mobility service).

Another benefit of this alternative is that it would add transit capacity to serve the potential Bonanza Park development. At present, this area (bounded roughly by Kearns Boulevard, Park Avenue, Deer Valley Drive and the properties east of Bonanza Drive) contain a total of 788,000 square feet of commercial, institutional and lodging floor area. Development plans are still being developed, but encompass scenarios that could increase this total to over 6 million square feet. In addition to sitting at a key location for travel corridors serving the region, this level of development would greatly increase the need for public transit service to the area.

Addressing Winter Operational Issues on the Prospector Square (Red) Route

During periods of peak winter passenger and traffic activity the Prospector Square Route can become both overcrowded and behind schedule. There are several ways that this can be addressed:

- Provision of a Quinn's Express Route, as discussed above, would somewhat reduce ridership on the Prospector Square Route, marginally reducing running time.

- At present, the Prospector Square (Red) Route operates outbound from OTTC via Park Avenue but inbound via Deer Valley Drive. The Prospector Express (Yellow) Route operates in the opposite direct. Operating both directions of each route on a specific street would simplify the route system (making it easier for passengers to understand). Moving the outbound (northbound) Prospector Square (Red) route to Deer Valley Drive would also reduce running time on this route by two to three minutes.

SPECIAL EVENT TRANSIT SERVICE

Much of Park City's tourism is dependent on annual multi-day annual events which draw large crowds, such as the Sundance Film Festival and the Kimball Arts Festival. New events are often being added, and each event creates a need for expanded transit service. Due to the constraints of local roadway and parking capacity and the desire to keep the community attractive, transit services play a key role in managing access for special events. Transit services are essential to the success of the larger events. It is important to note that "special event transportation" is actually a significant element of Park City's overall public transportation program. In winter, 8 percent of ridership is generated by special events, while in summer this proportion increases to 13 percent of ridership. The specific transit needs of special events vary depending on the number of attendees, residence/lodging location of attendees, location of available parking, and timing of the events. Under this "alternative", the Park City transit program would commit to continuing involvement in Special Events transportation strategies.

COMPARISON OF CITY SERVICE ALTERNATIVES

A review of the City service alternative discussed above indicates the following:

- The greatest potential for increased ridership is provided by a Quinn's Junction fixed route (particularly after Park City Heights is constructed), with 103,100 additional passenger-trips per year (including additional trips within the current fixed route service area, and additional Paratransit/Mobility trips). Operating the core routes till 2:00 AM in winter generates 30,100 additional riders, followed by extending the core routes till Midnight in the non-winter season (16,000 passenger-trips).

- The most effective option, as measured by the change in passenger-trips per change in vehicle-hour of service, is the provision of fixed route service to Quinn's Junction, followed by later evening service in the peak summer season.

- The performance figure for conversion of Quinn's Junction service ($3.68 per net new passenger-trip) makes it less effective than the average of existing PCT city services

($2.60), but more effective than either the existing Park Meadows Route ($4.03) or the Trolley ($4.06).

While less effective than current services, the extension of winter and summer evening core route service until Midnight appear warranted. Conversion of Quinn's Junction service to fixed route will be warranted as development of the area occurs (and will also help to serve Bonanza redevelopment).

Chapter 7
Capital Alternatives

Before transit services can be provided, a myriad of capital items are required. These capital items required for public transit service consist of vehicles, vehicle maintenance facilities, passenger amenities such as shelters and benches, and transit facilities. Indeed, many capital elements will be required to maintain and potentially expand Park City/Summit County transit services over the coming years, as discussed below.

FACILITY ALTERNATIVES

Kimball Junction Transit Center

A transit passenger facility in the Kimball Junction area is an increasingly important "next step" in the evolution of the regional transit program. Increased development in the area within the last decade has resulted in a greater need for transportation services. Further, with the potential for new intercity services, including service between Salt Lake City and the Park City area, the Kimball Junction area is a prime location for a transit facility to due to its proximity to I-80. Aware of these needs, Summit County has begun the planning and design phases of a new transit center in Kimball Junction.

The County has identified a vacant parcel adjacent to the existing Summit County Government offices, which includes the Library, located on West Ute Boulevard at the intersection of State Route 224. The transit center site is located to the west of the Summit County building, bordered by West Ute Boulevard to the north and North Landmark Drive to the west. Vehicular circulation would be provided by both roadways. This site is centrally located within the Kimball Junction area, providing easy access to the major shopping destinations including Wal-Mart, the Tanger Outlet Center, and the Newpark/Redstone developments.

Site Program and Design

A site design has yet to be created, however based on existing service and potential expansions discussed in Chapter 2 (Service Plan) a reasonable program can be developed. It is recommended that space be allocated to accommodate local and intercity services, as follows:

- Route serving the Pinebrook/Jeremy Ranch/Summit Park area	1 bus
- Route serving the I-80 East/Silver Summit area	1 bus
- Local route serving the SR 224 corridor	1 bus
- Express route serving the SR 224 corridor	1 bus
- Kimball Area circulator	1 bus
- Salt Lake service	1 bus
- Paratransit service	1 van
- Special event shuttle	1 bus
- Intercity bus	1 bus
- Private airport shuttle bus	1 bus
- Lodging vans	2 vans
- Total	11 buses + 3 vans

In reality, it would probably be possible for the four vans to share two bays with little conflict, as well as the private airport shuttle bus and the special event shuttle bus. Overall, therefore, the Center should provide space for a minimum of 10 buses plus 2 vans at peak times. Service expansion beyond these routes will probably be in the form of additional frequency, rather than additional routes, which would not impact the number of buses at the transit center at any one time.

In addition to the transit bays, the program for the Kimball Junction Transit Center should provide amenities to make the facility efficient and attractive to potential riders. Given the expected level of utilization, these amenities should consist of the following:

- *Transit Building*. A structure is warranted, providing the following:

    - A climate-controlled indoor waiting area with seating
    - Two restrooms
    - A transit information booth
    - A small driver break room
    - Space for interactive kiosks or other information devices

- *Lighting*. The facility must be well lit, to ensure the safety and convenience of the passengers. The lighting requirements for a specific facility will depend on the layout of the facility.

- *Bicycle racks and/or bicycle lockers*. Bicycle parking and storage should be located near the bus shelter/passenger loading area.

- *Landscaping*. Landscaping will make the facility more attractive to both current and potential users. Landscaping should be placed where it will not interfere with the safety and personal security of the passengers. Generally, landscaping should be focused on the entrances to the facility and the perimeter of the site. When placing landscaping in the passenger waiting area it is important that the landscaping not interfere with sight lines for both security reasons, and to ensure that waiting passengers can see approaching buses. Outdoor passenger seating is also important, allowing the opportunity for passengers to wait outside in good weather.

When designing a transit center, several operational factors should be evaluated, including the following:

- *Provision of Adequate Land Area*. In addition to providing space for passenger loading and bus bays, a transit center must also accommodate vehicle circulation, interior space, any setbacks required by local regulation, and landscaping.

- *Vehicle Access*. Given the relatively high number of transit vehicle movements through a passenger facility over the course of the day, safe and efficient transit access to and from adjacent arterial streets is a crucial consideration. Delays to transit vehicles (such as left turn movements onto busy streets or within busy parking lots) can cause substantial delay to the entire transit system. Vehicle travel paths must also be carefully designed to minimize conflict with pedestrians.

- *Environmental Impact*. Transit passenger facilities must also be designed to avoid or minimize any potential negative impact of their construction or operation. Any significant impacts associated with a facility will require mitigation, which can often become a large proportion of the total project cost. These potential impacts can include the noise, air quality, aesthetics, traffic, wetlands and ecologically sensitive areas, to name a few.

For proper systemwide bus circulation, buses should be able to enter the transit center from all major street directions. Circulation into the site should separate automobile and bus traffic to ease access for both, and two access points located on different streets should be provided to the facility whenever possible. Vehicle and pedestrian access should be designed to minimize conflict between buses and pedestrians.

In addition to the passenger loading bays, it is often beneficial to provide at least one parking location for an out-of-service transit bus. This can allow one vehicle to be traded out for another without affecting traffic flow around the center. As discussed below, a minimum of 15 park-and-ride spaces should be provided either onsite or immediately adjacent, for Salt Lake commuters. Parking for transit staff, and for drivers stopping for transit information, should also be considered.

Park City Mountain Resort Transfer Center

The bus loading area at the PCMR has long been a problem to efficient operation of the PCT system, particularly in peak winter ridership periods. This stop has the second highest boarding activity after the Old Town Transit Center. All of the in-town routes serve this stop, which is highly popular as a winter destination due to the ski resort.

Currently, the site has four bus benches, one for each route that serves the stop, and a designated “bus only” area to facilitate easier movement of the vehicles. Approximately 200 feet of curb is available, adequate to accommodate up to four buses at a time. There are no shelters available curbside for waiting passengers. While there are covered waiting areas at the resort, they are not directly adjacent to the bus stops. This can result in visibility issues between passengers and the drivers, particularly during winter months when overhead shelter is in high demand.

Given the popularity of the stop with current service levels, increased development will lead to more passengers. Potential future redevelopment of the PCMR area may provide an opportunity to construct a new transit facility which would also serve as a transfer center. Enhancing public transit (through provision of a new facility) could also help offset traffic impacts associated with redevelopment. It is recommended that Park City Transit work with developers to create a more comprehensive passenger facility at the PCMR stop. In addition to indoor heated waiting areas, the transit center should be designed with the provision for six buses at a time to accommodate future increased service levels. Standards as noted in the discussion for the Kimball Junction Transit Center above should also be considered, such as circulation, lighting and other passenger amenities.

Bonanza Transit Transfer Center

With growth in outlying areas (such as The Canyons, Quinn’s Junction) as well as the potential for new services to other communities such as Kamas and Heber, there is a growing need for a facility to accommodate transfers between routes along the Kearns Boulevard area. While the Old Town Transit Center is a good location to serve transfers between some routes, this

location is not convenient for other growing trip patterns (such as The Canyons to Prospector Square, or Quinn's Junction to PCMR). The redevelopment of the Bonanza area provides a good opportunity to both facilitate this transfer pattern, and also to enhance service to the development itself. While it would not replace the Old Town Transit Center, a facility that can accommodate up to four buses at a time (with convenient ingress and egress to the east, west, and south) would be a long-term benefit to the growth in the local and regional transit program. An enclosed climate-controlled waiting area with capacity for approximately 50-80 persons at one time would be appropriate.

Summit Park Bus Turnaround/Park-N-Ride

If transit service is extended westward along Kilby Road to the Summit Park interchange (at Parley's Way), a turnaround loop will be needed (as there are no public streets that form a convenient route). In addition, the 554 residences in the area warrant at least a modest-sized park-and-ride, for both commuters to the Salt Lake Valley as well as to Park City. One feasible location is in the southeast corner of the Summit Park I-80 interchange. An example plan is shown in Figure 28. To accommodate grades, a retaining wall would probably be required between this facility and the adjacent I-80 eastbound onramp. While this layout provides 23 auto parking spaces, this figure could be increased by extending the facility to the east.

Expanded Transit Operations and Maintenance Facility

The Iron Horse Transit Operations Facility used by Park City Transit, along with the balance of the Public Works Department, is located on Iron Horse Drive in Park City. This facility, which is very well located with respect to the transit operations, is currently being expanded, including 8,708 additional square feet of maintenance shop/offices, 33,666 square feet of bus storage facility, and additional auto parking.

In order to meet the Vehicle Cleanliness Standard and meet Service Quality goals, the expanded facility should have a dedicated bay with accompanying maintenance systems for deep vehicle interior cleaning. By improving cleanliness and reducing corrosion, this would also serve to improve interior vehicle maintenance and reduce down time needed for repairs.

Park and Ride Facilities

The provision of park-and-ride lots in the Park City / western Summit County area is complicated by the fact that there are a variety of potential "markets" for park-and-ride facilities. The following discusses these various park-and-ride use groups:

- **Special Events** – The larger special events in the Park City area (Sundance, ski/snowboard events, golf events) generate the need for offsite parking, to varying degrees. The public is generally willing to use intercept parking for such events, so long as convenient shuttle service is provided. Information prior to the event (such as on event websites) and good directional signage is also important in ensuring good utilization while minimizing traffic congestion. Special event employees can also be required to use off-site parking as a requirement of the event permit. Identifying an appropriate number of parking spaces in the region for special events would require a detailed evaluation of access patterns for events, the amount of parking available at the event site, and the availability of other parking areas on a short term basis (such as school parking on weekends and holidays). Richardson Flats is a good location to serve this need, though events generating parking need in the evening

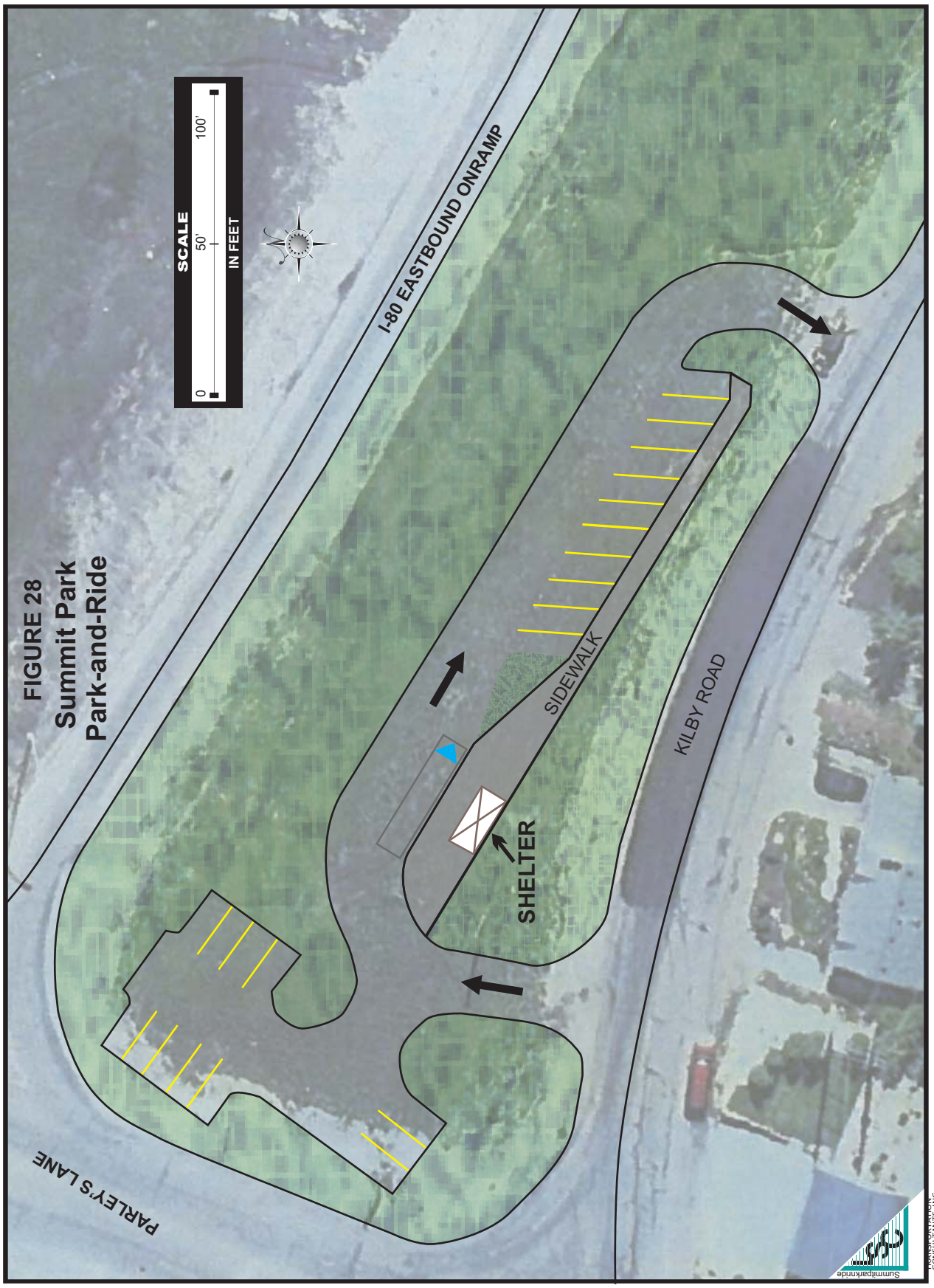


FIGURE 28
Summit Park
Park-and-Ride
SCALE
0
50'
100'
IN FEET
I-80 EASTBOUND ONRAMP
SIDEWALK
KILBY ROAD
SHELTER
PARLEY'S LANE

hours or on weekends/holidays could use the Research Park parking areas on a joint use basis, as that area develops.

- **Construction Workers** – Larger construction projects can generate employee parking requirements that can only be addressed through use of an offsite parking area. As evidenced by the parking provided at the Richardson Flats area during construction of the Montage project, intercept parking is an effective means of addressing this impact. Future parking needs will depend on the specifics of future major development projects and the ability to provide onsite parking during various construction phases.

- **Employee Parking** – One potential strategy to addressing parking needs in a successful commercial district (such as Old Town) is to park employees in an offsite location. Simply providing intercept parking and shuttle service, however, has proven to be ineffective so long as more convenient parking within walking distance of the employment site is available. With regards to Park City area employees, provision of a park-and-ride (with shuttle service) is only "half of the equation" in shifting travel patterns. Intercept parking strategies are only effective when providing the parking alternative is paired with a disincentive to use parking within walking distance of the employment site. This typically entails either an aggressive paid parking or parking enforcement program, or simply the unavailability of employee parking in a location more convenient than the intercept parking location. Short of disincentives, regular use of intercept parking by employees should not be expected. As an aside, provision of transit priority programs along SR 224 and SR 248 would also provide greater incentive for employees to use intercept parking.

- **Salt Lake Bus Service Parking** – Residents of the Park City/Summit County area using the planned "Park City Connect" service to Salt Lake City will generate the need for park-and-ride spaces. Applying an estimated 75 percent auto access mode share and an average of 1.2 persons per auto to the 267 daily passenger-trips shown in Table 34, and adjusting for round-trips, a total of approximately 85 parking spaces will be needed to accommodate residents driving to the new transit service. Of these, 20 are generated by residents of the Park City area, 50 are generated by residents of the Jeremy Ranch and Summit Park areas, while the remaining 15 are generated by residents of the Snyderville Basin area. In identifying appropriate locations for these spaces, the following should be considered:

  - Commuters prefer parking in a location that is in their general direction of travel, rather than driving away from their destination to access parking.

  - The transit route travel time needed to serve the parking should be minimized, by limiting the number of stops and any additions to the overall route.

  Both of these factors argue against Richardson Flat as a park-and-ride location for the Salt Lake service. Rather, parking should be provided in the following three general areas:

  - The existing Jeremy Ranch Park-and-Ride provides 40 spaces, though some are currently in use for existing carpools. It may be possible to expand the parking lot to the east, adding approximately 25 spaces. The Summit Park Park-and-Ride could also be constructed and served by the new route (though this would add running time). Other options for additional park-and-ride capacity in the vicinity include the LDS church (approximately a 1,000 foot walk from the existing Park-and-Ride), the Quarry Village shopping center, and/or a new park-and-ride adjacent to the eastbound off-ramp. If new parking areas are developed, it will be important for the Salt Lake service to only serve a

single lot, in order to provide an efficient running time. As a result, the existing lot could be limited to carpooling only.

- The relatively small number of parking spaces needed in the Kimball Junction area could be provided as part of the Kimball Junction Transit Center, or potentially along the adjacent street.

- To serve Park City residents, 20 spaces should be provided at a location along the SR 224 corridor near the north end of town. As this demand is largely during the week, these could potentially be provided at a church or other place of worship. Another potential option would be parking adjacent to The Canyons transit center, which would only be problematic on the very limited number of weekdays per year that are not business holidays but still have high levels of skier activity.

- **Skiers** – At present, parking for skiers is typically accommodated on-site at each of the ski areas. An exception is PCMR skier parking on peak holidays and Saturdays, which is accommodated in school parking lots as part of the City's Peak Skier Day Program. Regular use of other park-and-ride lots (such as Richardson Flats, or the Research Park on weekends and holidays) is not expected in the near-term, unless development of existing skier parking areas significantly reduces the amount of on-site parking.

In reviewing these lists, the Richardson Flats Park-and-Ride is most appropriately designated for the following uses:

- Special event parking
- Construction worker parking

Additional use for offsite skier parking will depend on future decisions regarding use of existing skier parking at the base areas. In addition, additional use for ongoing employee parking will depend on any future measures to reduce the supply or increase the cost of parking convenient to employment sites.

A regional park-and-ride management plan will be important in effectively accommodating the various uses:

- Quarterly, counts of commuter cars should be conducted at park-and-ride locations (both formal lots and observed informal locations) in the region. Prepaid mail-back postcards left beneath windshield wipers should also be considered to survey driver's trip purpose, travel mode, and vehicle occupancy.

- On an ongoing basis, offsite parking usage for special events should be monitored. Event organizers should be required to provide the locations used for offsite parking, as well as a count of peak parking use at each location.

- Both the PCMC and County should designate an individual responsible for receiving and recording public comments/complaints regarding parking associated with the uses discussed above.

- On at least an annual basis, City and County staff should meet to (1) review the park-and-ride data, (2) discuss current park-and-ride issues, (3) coordinate the use of park-and-ride facilities for special events (including scheduling of major special events to ensure adequate

parking availability and (4) discuss the potential for new park-and-ride facilities, including joint use of parking associated with planned developments.

Bus Stop Design and Amenities

The “street furniture” provided by the transit system is a key determinant of the system’s attractiveness to both passengers and community residents. Bus benches and shelters can play a large role in improving the overall image of a transit system, and in improving the convenience of transit as a travel mode. In addition, they increase the physical presence of the transit system in the community. More importantly, shelter is vital to those waiting for buses in harsh weather conditions, both for comfort and safety. Passengers benefit from the installation of passenger amenities at major bus stops, particularly adjacent to regional shopping centers, medical facilities and social service agency facilities.

Shelters currently provided in the service area are attractive and complement the service. In addition to the 42 existing bus shelters (with benches), the system also has a total of 57 bus benches, of which 54 are located in the City and 3 in the Summit County service area. The majority of these benches are constructed of metal, which is appropriate given the winter weather conditions. Park City Transit staff has noted that several of the existing benches are in need of replacement, including one bench located at Canyons Resort Drive and SR 224, and the remaining four at the Old Town Transit Center.

The 2007 Park City / Summit County SRTP identified numerous bus stop improvements throughout the system. The vast majority of recommendations have subsequently been addressed, particularly the need for benches or shelters. In addition to these improvements, Transit Administration and Operations staff work as a team to evaluate and recommend improvements to amenities and the installation of bus shelters based on safety and usage.

Lighting and safety issues are equally important along major roadways. With late evening service and snowy conditions, adequate lighting can be an important additional amenity and safety consideration. This could range from overhead street lighting to a low power light to illuminate the passenger waiting area. Opportunities for the installation of solar-powered lighting at existing bus stops and transfer facilities should be explored as a low impact and environmentally friendly solution. Park City Transit should conduct an inventory of existing lighting facilities and provide lighting where needed. Generally, areas with poor visibility or lighting that may impact passenger security should be given higher priority. Additionally, neighborhood setting should also be considered, as lighting in residential areas may not be complementary to existing conditions and character.

Bus Stop Maintenance

At present, bus stops within Park City limits (128 stops, with 21 shelters) are maintained by Park City personnel, while Summit County is responsible for maintenance of the 98 stops and 21 shelters in the unincorporated county. This is due at least in part to liability concerns of one jurisdiction performing maintenance functions in the other jurisdiction. In turn, this has led to difference in maintenance and snow removal between stops in the two jurisdictions. Generally, stop maintenance and snow removal has been observed by the consultant to be better in Park City than in the county. As the system grows and the proportion of passengers not dressed for a day on the slopes increases, the importance of shelter maintenance and snow removal to the overall attractiveness of the transit program will only increase.

One option would be to retain a single private contractor for maintenance and snow removal throughout the system, contracted and paid separately by the two jurisdictions. This would ensure consistent maintenance throughout the transit system, and could well lead to an improvement in overall stop conditions. However, it would eliminate the opportunity to use work release labor at low cost, and would incur the administrative costs of any contract.

The use of existing Park City Transit staff to maintain bus stops and shelters is a low cost alternative to contracting the provision of these services to private sector businesses. In order to properly and effectively use staff to perform these functions, Transit operations would need to acquire necessary equipment, such as snow removal equipment, a dedicated field maintenance cleaning support vehicle and equipment. The issue of liability of PCMC staff working at County bus stops would also need to be explored with risk managers in both jurisdictions.

Another option would be for the two jurisdictions to continue maintenance of stops/shelters in their respective jurisdiction, but to develop and adopt a set of consistent standards for maintenance efforts. These standards would include the following:

- A minimum schedule for regular cleaning of stops and shelters.

- A maximum time allowed before a snowfall exceeding a minimum depth is removed (such as “snowfall exceeding 3 inches must be removed by Noon of the following day”)

- A maximum time before major maintenance (such as replacement of broken lights or shelter panels) must be performed.

- A schedule for regular inspection of bus stops and shelters (at least quarterly), with a consistent report format used to present inspection results to both jurisdictions.

Bicycle/Pedestrian Facilities

At one end of their trip or the other, virtually all transit passengers also travel on foot or on bicycle as part of their transit trip. A key element of a successful transit system, therefore, is a convenient system of sidewalks and bikeways serving the transit stops. Park City and Summit County should continue to work with the branches of their respective public works and planning departments to review construction plans and scheduling priorities for pedestrian and bicycle improvements to best coordinate with transit passengers’ needs. The need for bicycle racks at bus stops with high bicycle activity is strong (particularly in residential areas, where passenger’s can leave their bike while using the bus system), and the cost of modern bus stop bicycle racks is on the order of $750 each (including installation). The cost of procuring and installing bicycle racks could be defrayed if local community groups would donate the racks and/or labor to install them.

Advanced Public Transportation System Technologies

Over the past five to ten years, the use of Advanced Public Transportation System (APTS) technologies has become “standard practice” among mid-sized and larger transit programs across the US. Key APTS technologies consist of the following:

- **Automatic Vehicle Location Systems** – AVL systems are computer-based vehicle tracking systems that are used extensively in the transportation industry for both military and civilian

purposes. Driven by Global Positioning System (GPS) technologies, AVL systems can be linked to a variety of other technologies, including computer-aided dispatch systems (that can include tools such as schedule adherence monitoring and computer-aided service restoration), automatic passenger counters, and automated traveler information systems.

- AVL systems can record locations by time of day, making it much easier for transit planners to determine when timetables need adjustment.

- Dispatchers can use real-time information about passenger loadings to dispatch and reassign buses as needed.

- Recorded information can be used to analyze patterns of use for service planning and to assess the impact of marketing efforts.

- AVL systems can be linked to passenger information systems to automate (1) on-board announcements of approaching stops and (2) in-terminal messages showing the expected arrival time of approaching buses.

- **Automatic Passenger Counting System** – APC systems automatically record the number of passengers utilizing the transit system by time and stop.

- **Traveler Information Systems** – From a passenger's perspective, the most exciting APTS technology is the provision of real-time information on transit services:

  - Automated announcement technology can be used to automatically announce and display the names of approaching bus stops among other things; this would help Park City comply with the requirements of the Americans with Disabilities Act, which states that fixed-route transit systems must provide both visual and audible information about vehicle locations to assist riders with visual impairments or other disabilities. This technology removes the responsibility for announcing stops from drivers, leaving them free to concentrate on safe driving.

  - AVL systems can also be used to provide electronic messages about approaching vehicles at key bus stops and transfer locations. For example, an electronic sign at the Park City Mountain Resort could announce: "A Deer Valley/Old Town bus will arrive in 5 minutes; a Prospector Square bus will arrive in 11 minutes." This information can also be provided automatically over the Internet (including smartphones), which allows passengers to monitor the service from their residence or place of work. Studies have shown that these strategies can increase ridership by up to 5 percent.

Applications in Park City/Summit County

In 2010, Park City Transit issued an RFP for APTS technology, and is currently in the process of procuring this equipment. It is estimated that the system will cost approximately $1.4 million, and would be paid for using federal grant funding (secured) and local funds, based on an 80/20 match, that have been factored into the Fiscal Year 2010 capital improvement program budget. A summary of the technologies that Park City is considering is included in the discussion below.

- *Computer Aided Dispatching (CAD)* – provides GIS and tabular display capabilities that allow dispatchers to see where vehicles are located, monitor events and to obtain schedule adherence and passenger count information. This also includes voice calling and data

messaging capabilities between dispatchers and vehicles. This is particularly important to PCT in light of the transfers between routes, and the uncertain running times generated by peak seasonal traffic. Additionally, the system is equipped with a silent alarm switch on the vehicles for emergency response.

- *Reporting and Analysis Techniques* – allows for detailed performance reports to be extracted, including schedule adherence, ridership, and incident information. The technology also includes tools for National Transit Database (NTD) reporting, as well as the ability to provide operational summary and trend analysis reports. Reports generating passenger by stop data would also be possible, through the implementation of APC technology.

- *Automatic Passenger Counting (APC*) – would provide automated passenger counts at each door through an overhead counter system. The information would be linked to the general AVL technology system, allowing for detailed boarding and alighting information to be produced.

- *Passenger Information* – includes real time passenger information displays in the form of wayside signs at stops throughout the system. The electronic signage would include a clock and scrolling display with departure times and other public service announcements. Additionally, stop annunciation systems will be installed on the vehicles, which would automatically announce stops prior to reaching the destination. This system also has the ability to provide on-board announcements unrelated to stops, such as advertising other services or for other information. Other passenger travel tools that will be incorporated include web and phone based capabilities. Passengers will have the ability to visit a website that can provide them with real time information, a feature that can also be used for customer support activities. Alternatively, passengers can call in to an automated phone system that provides current travel information by stop; to obtain the information, the caller must indicate a specified stop ID.

Park City is also planning to implement Google Transit technology, which provides more comprehensive trip planning opportunities beyond driving directions. A user is asked to input their origin and destination information and has the ability to get directions by car, walking, or public transit. Directions by mode are generated, and include details for the overall suggested trip times, bus routes, and departure and arrival times for each mode and stop. The program has the ability to link different modes and transportation providers, simplifying travel for those who wish to use public transportation by displaying trip plan including schedule options and fares.

In order to take part in Google Transit, transit agencies must provide specific information to Google. There are 11 key components, also known as files, 6 of which are required. Once provided with this data, Google gathers it into a schedule design that is easy to use. The components include:

- **Transit Agency** – General information about the transit agency that provides data in this schedule. (Required component)
- **Transit Stops** – Information about locations where vehicles pick up or drop off passengers. (Required component)
- **Transit Routes** – Information about a transit organization's routes. (Required component)
- **Trips** – Information about scheduled service along a particular route, with a trip consisting of two or more stops that occurs at a specific time. (Required component)

- **Arrival and departure** – Lists of the schedule times a vehicle arrives at and departs from individual stops for each trip along a route. (Required component)
- **Calendar Information** – Information regarding the service availability, such as operating days and when the service begins and ends. (Required component).
- **Calendar Exceptions** – Provides a list of exceptions for service categories. (Optional component)
- **Fares** – Information regarding fares for a transit agency's routes. (Optional component)
- **Fare Rules** – Rules for applying fare information. (Optional component)
- **Route Shape** – Defines rules for drawing lines on a map to represent routes. (Optional component)
- **Frequency** – Provides headway data for routes. (Optional component)

Due to the ability to provide directions linking different modes, as well as a relatively simplistic program to use, participating in the program could be a valuable resource for Park City where many of the visitors may not have access to a private automobile.

Bus Rapid Transit Alternatives

Bus Rapid Transit (BRT) is a system of technologies and operating strategies that is rapidly gaining acceptance nationwide. As defined by Wikipedia:

> "*BRT is a term applied to a variety of public transportation systems using buses to provide faster, more efficient service than an ordinary bus line. Often this is achieved by making improvements to existing infrastructure, vehicles and scheduling. The goal of these systems is to approach the service quality of rail transit while still enjoying the cost savings and flexibility of bus transit. At present, 30 full BRT systems are operating in the US, with many other transit services employing elements of BRT."*

BRT is a flexible concept, and can range from "heavy" options with dedicated right-of-way to "light" options whereby technology and relatively minor roadway modification are used to give transit vehicles an advantage in mixed traffic.

"Heavy" BRT consists of rubber-tired transit vehicles operating on separate bus lanes. Beyond travel lanes limited to transit vehicles, characteristics of "full" BRT include:

- High capacity vehicles with a distinctive image. Important vehicle characteristics for BRT include high capacity (typically articulated) buses, low-floor design, multiple loading points, and advanced real-time service information.

- Limited stops, with high level boarding platforms.

- Fare payment upon entering the stations, rather than on the vehicles.

- High frequency of service. BRT typically provides service every 5-8 minutes in rush hours, 10 minutes midday, and 12-15 minutes evening and weekends. Connecting services should be provided at least every 30 minutes off peak and 15 minutes peak.

This type of BRT service most closely reflects the characteristics of Light Rail Transit (LRT). Like LRT, this type of BRT service is typically used to connect outlying residential areas with major employment centers. Examples include the 17-mile Orange Line in Los Angeles, the Silver Line in Boston, and the majority of the EmX BRT system in Eugene, Oregon. Due to the limited frequency of service along any one corridor in the PCT service area, as well as the sobering capital costs and construction impacts of a separate facility, this option is not considered further as part of this SRTP.

However, there may well be opportunities in the Park City/western Summit County area for effective application of "BRT light" strategies. Under this scenario, BRT vehicles operate in mixed travel lanes with auto traffic. Examples are found in Reno, Oakland, and Las Vegas, and the Roaring Fork Transit Authority serving Aspen, Colorado is currently developing plans for a 39-mile BRT corridor stretching to Glenwood Springs. To provide faster and more dependable service, these types of BRT systems typically employ transit signal priority and/or "jump queue" lanes (discussed in greater detail below).

Transit Signal Priority

Under transit signal priority, a detector is installed (typically a video detector) that is triggered when a transit vehicle approaches the signal. A signal is then sent to the computer controlling the signal, generating a request for priority. The computer then identifies if the request should be accommodated (given pre-determined parameters). A second detector also identifies when the transit vehicle has cleared the intersection.

There are a variety of types of signal priority:

- A transit vehicle could be provided with a **green extension** if detected at a point in the cycle timing when additional green time (up to a pre-determined maximum) would aid transit operations. This is typically the most effective form of signal priority, as it does not require additional clearance phases that waste intersection time.

- An **early green** could be provided to a transit vehicle arriving during a red phase, speeding green phases for other movements to allow faster movement of the priority vehicle.

- **Phase insertion** could be provided *only* when a transit vehicle is present, such as a left-turn movement that is allowed only for transit vehicles.

- **Phase rotation** could change the order of specific phases in order to speed transit movements, such as providing a transit vehicle with a left-turn indication prior to the parallel through movement (a "leading left-turn phase") where left turns are typically provided with a phase after the parallel through movement (a "lagging left-turn phase").

A key consideration is the difference between transit signal **preemption** and transit signal **priority**. Under preemption, a transit vehicle is automatically provided with a green signal indication, regardless of where the signal is in the typical cycle of phases. In comparison, priority reflects a system in which a transit vehicle is provided with a higher percentage of green indications, but is not always provided with a green indication. As signal preemption can substantially impact overall traffic operations, priority is a much more common strategy.

Existing transit signal priority programs are in place in many locations, including two corridors in Los Angeles, California; Davis, California; Eugene, Oregon; and Sacramento; California. Priority

is also planned as part of the UTA Provo-Orem BRT and 5600 West BRT projects, as well as the RFTA BRT project in Aspen, Colorado. A survey of existing transit priority systems presented in the *Transit Signal Priority Handbook* (ITS America, 2005) yielded the following key findings:

- Annual cost of maintenance was relatively small. Some agencies did not notice any change in overall signal maintenance costs over and above activities without priority systems. Of those that did, an average is on the order of $1,000 per intersection per year.

- Travel time savings through individual intersections ranging from 9 percent to 70 percent, with a typical value in the range of 20 to 30 percent.

- Very little impact on non-priority street traffic, typically described as "minimal," 1 second per vehicle, or "infinitesimal."

"Jump Queue" Lanes

Jump queue lanes allow buses to bypass traffic queues at traffic signals. This is most beneficial in congested conditions where vehicles cannot pass through a signal in a single cycle. This can take the form of designating existing right-turn lanes as "Right Turn Only – Buses Excepted" in order to allow buses to jump the through traffic queue. Merging back into the through traffic stream can potentially be accomplished by either (1) providing an acceleration lane on the far side of the intersection to allow buses to get up to speed and merge to the left, or (2) providing a special signal indication (and timing phase) to give buses a short head start before the through general traffic movement phase.

Evaluation of BRT Applicability to the PCT Area

The effectiveness of signal priority or jump queue strategies depends upon a combination of existing traffic delays as well as the level of transit activity. Table 37 presents an evaluation of existing traffic delays at key intersections (as observed in a series of travel time runs in September 2007 as part of a study conducted by the University of Utah), as well as the hourly total PCT bus movements through each intersection (per the current winter schedule). Based on this information, the relative potential for benefits to the transit service (and transit passengers) of signal priority and/or jump queue lanes at each intersection was identified. As shown, the greatest potential (under current service plans) is at the SR 248/Bonanza Drive intersection, due to the combination of medium to high traffic delays in many time periods, as well as a moderate level of transit activity. Other locations with a relatively high potential include SR 224/Ute Blvd, SR 224/Canyons Drive, SR 224/SR 248, Park Avenue/Deer Valley Drive, and SR 248/Comstock Drive. It is important to note that (1) additional bus routes in the future would increase the viability at specific locations and that (2) higher traffic delays during the peak winter season would also increase viability.

A more detailed study is recommended in the near term to identify the specific locations and technologies that would be cost-effective and implementable along PCT's key service corridors. This study, undertaken by a partnership between PCMC and Summit County and including strong participation by UDOT, should consider the following:

TABLE 37: Assessment of Transit Priority Feasibility

Intersection		Traffic Delays (1) Northbound AM Pk	Northbound Midday	Northbound PM Pk	Southbound AM Pk	Southbound Midday	Southbound PM Pk	Transit Bus Movements per Hour (2) City	County	Total	Overall Potential for Transit Priority
SR 224	Kimball Jct	Medium	Medium	Medium	Low	Low	Low	0	2	2	Low
SR 224	Ute Blvd	Low	Medium	Medium	Low	High	High	0	5	5	Medium
SR 224	Olympic Park/Newpark Blvd	Low	Low	Medium	Medium	Low	Low	0	5	5	Low
SR 224	Canyons Drive	Low	Low	Low	Medium	Low	Low	0	10	10	Medium
SR 224	SR 248	Low	Low	Medium	Low	Low	Low	12	10	22	Medium
Park Avenue	Deer Valley Dr	Low	Low	Low	Low	Low	Low	30	14	44	Medium
Deer Valley Dr	Bonanza Dr	Low	Low	Low	Low	Low	Low	6	6	12	Low
SR 248	Bonanza Dr	High	Medium	Medium	Low	Low	Medium	12	2	14	High
SR 248	Comstock Dr	High	Low	Low	Medium	Low	High	6	2	8	Medium

Note 1: Source -- Adaptive Signal Control V SCATS Evaluation in Park City, UT (University of Utah, July 2008). Delays observed in September 2007.
Low delays = less than 20 seconds average delay. Medium delays = 20 to 60 seconds average delay. High delays = greater than 60 second average delay.
Note 2: Source: Existing PCT winter schedules.

- The existing delays at key intersections, during peak and off peak periods, by day of week and by season.
- Forecasts of future delays.
- Transit activity levels through key intersections, including both transit vehicle movements and passenger loads.
- Existing transit route on-time performance, and the ability of transit running time reductions to improve schedule adherence/reliability as well as transit operating costs.
- Current transit signal technologies and capabilities.
- Impact of various levels of signal pre-emption to provide travel time reductions for transit vehicles, and associated impact on general traffic level of service and average delays.
- Right-of-way, construction and environmental considerations of intersection and roadway improvements.
- The impacts of potential transit-only advanced green intersection phases at the end of jump-queue lanes.
- Traffic safety impacts of intersection modifications and jump-queue lanes.

A reasonable estimate for total cost of this study is $50,000 to $60,000, depending on the scope of the corridors and intersections to be included.

VEHICLE ALTERNATIVES

As presented in Table 21, Park City/Summit County's fleet currently consists of 37 revenue vehicles, ranging in seating capacity from 15 passengers to 32 passengers. In addition, it uses a fleet of five non-revenue vehicles. The average age of the revenue fleet is 4.9 years and the average mileage is 158,523 per unit.

Per the standards outlined in FTA Circular 5010, the design life for the fixed-route buses is 12-year/500,000 miles, and 7-year/250,000 miles for the Dial-A-Ride minibuses and the Trolley. Bus replacement and expansion projects are typically eligible for FTA funding at an 80 percent Federal/20 percent local split.

Utilizing the FTA standards noted above, approximately 29 revenue vehicles would require replacement within the Plan period, the majority of which would have reached their economically useful lives in 2017. This information is shown in Table 21. Of these vehicles, 10 are

recommended for replacement prior to the maximum age is reached; based on the current mileage per year information, these vehicles would reach the maximum 500,000 miles prior to the 12-year mark.

Alternative Fuels

Global climate change or "global warming" is a major environmental issue which needs to be acknowledged in planning documents. Climate change has been linked to the release of greenhouse gases (GHG's) such as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride into the atmosphere, which traps heat and increases temperatures near the earth's surface. Vehicles, including buses, release various emissions that may not only play a role in climate change, but result in reduced air quality. As noted by the Utah Division of Air Quality, over 50 percent of the air pollution in Utah is from mobile sources.

The United Stated Department of Energy's Vehicle Technology Program created a government industry partnership, called the Clean Cities Initiative. As one of the 100 participating coalitions, the Utah Clean Cities Coalition provides support and information regarding alternative fuels to further the programs goals to reduce dependence on foreign oil, develop regional economic opportunities, and to improve air quality.

To reduce pollution from mobile sources, the United States Environmental Protection Agency (EPA) has adopted a variety of regulations, as required by the Clean Air Act Amendments (CAAA) of 1990. Standards for transit vehicles state that Particulate Matter emissions (PM, or "dust") must be cut by more than 90 percent or no more than 0.05 grams per brake-horsepower per hour (g/bhp-hr). Other standards include: nitrous oxide (NOx), no more than 4.0 g/bhp-hr; hydrocarbons (HC), no more than 1.3 g/bhp-hr; and carbon monoxide (CO), no more than 15.5 g/bhp-hr.

With the need to replace aging vehicle and expand the fleet to meet increased service demand, it is important to discuss the options regarding fuel. Alternative fuels can not only provide cost effective options, but they also work towards clean air and other environmental goals set forth by local, state and federal programs. The following discussion presents the different alternative fuels, their advantages and disadvantages, and their potential application for the Park City Transit fleet. While this review should serve as a step in the development of a more detailed long-term alternative fuel strategy plan, a more detailed study is recommended, that would focus on the following:

- Availability, cost, and quality of fuel in Park City.
- Need for new storage and fueling facilities, and availability of space for these facilities.
- Air quality goals, and the trade-off between emission categories inherent in fuel choices.
- Life-cycle emissions, including emissions associated with the generation of electricity in the local market.
- Impact of off-site fueling on transit staff time and other operational costs.
- Impact on vehicle range and power performance, particularly in cold weather.
- Impact on transit vehicle noise.
- Life-cycle transit vehicle capital costs.
- Availability of additional funding sources for capital and operational needs.
- Requirements for maintenance facility modifications.
- Mechanic training requirements, and availability of unique maintenance personnel skills in the Park City area.

- Requirements for emergency response.
- Ability to share resources and costs with other fleets in the region, including other City and County vehicle fleets.

A reasonable cost estimate for this study would be $40,000 to $50,000.

Compressed Natural Gas (CNG)

Natural gas is a domestically produced alternative fuel and is readily available to end users through the utility infrastructure. The strength of CNG as an alternative fuel for transit buses is that it is generally less expensive per unit of energy than gasoline or diesel fuels. Per the Clean Cities Alternative Fuel Price Report in April 2011, the average price of CNG in the Rocky Mountain Region was $1.55 per diesel gasoline equivalents compared to $4.05 per gallon of diesel gasoline (the fuel price can vary for bulk purchasers). The fuel also has the potential to reduce NOx emissions and PM when compared to diesel, although low sulfur diesel fuel used in conjunction with particulate matter traps can reduce PM emissions by a similar amount. Greenhouse gas emissions from CNG vehicles are approximately 15 percent to 20 percent lower than from gasoline vehicles, since natural gas has a lower carbon content per unit of energy than gasoline. However, CNG generally vehicles have about the same greenhouse gas emissions as diesel fuel vehicles, with lower CO_2 emissions offset by higher hydrocarbon emissions.

Many people – both inside and outside the transit industry – perceive CNG as the future fuel of choice. Others see CNG as a stop-gap measure that can be used to reduce vehicle emissions until other technologies (hydrogen fuel-cell or combustion-electric hybrid) are developed further. Indeed, the decision to pursue CNG comes down to the underlying goals of the agency considering alternative fuels, the local politics, the financial resources of the agency, and the commitment of decision-makers.

Historically, the weakness of CNG is its difficult storage requirements. CNG is stored in high pressure cylinders at pressures up to 3,000 pounds per square inch. The high weight, volume, and cost of the storage tanks for CNG have been a barrier to its commercialization as an alternative fuel. Tanks also have a useful life that can be less than that of the bus as a whole, resulting in expensive replacement of on-vehicle tanks. The recent development of lighter aluminum tanks, however, has reduced this disadvantage to some degree.

The advantages of a CNG bus are the lack of visible pollution and quieter operation. The problems encountered with CNG include the inconsistent quality of local CNG supplies, limited range of CNG vehicles, and continued industry concerns regarding reliability. Specialized maintenance training and equipment, along with modifications to facilities to safely accommodate CNG, also add to costs.

According to the Utah Transportation Authority (UTA), a 40-foot CNG bus in 2010 cost on the order of $480,000, substantially less than a hybrid bus ($630,000) and slightly more than a diesel engine bus ($430,000). The higher cost relative to diesel engine vehicles is due to the higher cost of the engine itself and the higher cost of the fuel tanks. The useful life of a CNG engine is roughly equivalent to that of a traditional diesel engine, depending on the level of maintenance as well as level of contaminates in the fuel. The CNG tanks, however, are typically certified for 15 years; if careful maintenance on the remainder of the bus allows its life to exceed this period, a transit agency can be faced with expensive replacement of the tanks.

In general, a CNG refueling station for an urban transit fleet can cost between $320,000 and $7,400,000. The lower end of this range is for “slow fill” facilities with a very limited capacity in the number of vehicles that can be fueled per day, while the high end is for “fast fill” facilities with large (and expensive) compressors. Additional costs would be incurred to upgrade the new maintenance facility with required safety features and to provide emergency response equipment and training.

In a 1996 Department of Energy report, Pierce Transit (Tacoma, Washington) estimated that CNG engines are about 20 percent less efficient than diesel engines on a per gallon equivalency, which reduces the range of CNG buses. CNG buses are described as having a driving range of about 300 miles (depending upon the capacity of the gas cylinders) compared to a little more than 400 miles for diesel buses. Typically, buses smaller than 35 feet in length are unable to accommodate enough fuel tanks to operate a full urban cycle service day without refueling.

One of the major drawbacks for CNG use in Park City is the lack of an adequate fueling station. While there is a fueling station in Park City, it only has two pumping stations and is also open for public use. As such, refueling at the end of the day would be a long and laborious process. In order to better serve the needs of the transit fleet, Park City Transit could alternately provide a separate fueling station. Such a task would increase start-up costs dramatically and would present additional problems should the CNG option prove to be a poor long term solution.

CNG also would require modifications to the transit maintenance facility. In particular, enhanced venting systems are required, along with modifications to heating, lighting and switching systems to avoid any source of spark (such as is generated by a typical light switch). Specialized emergency response training and equipment is also necessary.

Another important consideration is that the power provided by CNG engines, while it has improved over recent years, is still 25 to 30 percent lower than the power provided by a similar diesel engine. This can result in substantial operational problems on steeper grades present on several of the Park City Transit routes. In addition to delaying routes, this increases the traffic congestion caused by bus operations.

Hybrid Electric

A vehicle technology gaining popularity among transit systems nationwide is hybrid electric propulsion. Under this arrangement, battery-powered electric motors drive the wheels; the batteries are charged using a small internal combustion engine (diesel-, gasoline- or alternative-fueled) to power an electric generator. This arrangement provides dramatically lower emissions, as the engine operates within a very narrow and efficient operating range. Hybrid buses which use ultra-low sulfur diesel and particulate matter filters have 90 percent lower emissions than a conventional diesel bus, and tend to have less greenhouse gas emissions than both conventional diesel and CNG buses.

Operating costs for a hybrid electric system are typically lower in comparison to conventional diesel- or CNG powered arrangements due to greater fuel economy and reduced brake wear (the batteries are also charged through regenerative breaking, which tends to slow the vehicle while it recoups energy). In addition, hybrid electric buses provide better acceleration and quieter operation than conventional internal combustion engine propulsion systems. Another benefit of hybrid electric technologies is that it does not require the large infrastructure investment that is required for CNG technologies. However, the average price of a hybrid bus is

quite dramatic, costing on the order of $630,000 (per UTA in 2010) when compared to $430,000 for a conventional diesel bus. In addition, conventional sealed-gel lead acid battery systems typically last only two to three years, and replacement units cost on the order of $25,000. Better battery technology currently exists that could extend battery life (i.e., nickel metal hydride), but this technology currently costs $35,000 to $45,000 per bus.

Hybrid electric propulsion systems have been tested at several large transit programs, most notably at New York City Transit. The National Renewable Energy Laboratory prepared an evaluation of the benefits of 10 new CNG Orion VII buses and 10 new Orion VII hybrids used for New York City Transit. According to the report, hybrid maintenance costs were lower than the CNG buses, battery replacement rate for the hybrid vehicles was about 4.5 percent per year, brake repair costs were 79 percent lower on the hybrid buses than the CNG buses and the hybrids had fewer roadcalls. New York City Transit has since placed an order for an additional 500 hybrid buses. Other agencies which have tested hybrid technologies include Sunline Transit in Thousand Palms (California), the Roaring Fork Transit Authority (Colorado), the Los Angeles County Metropolitan Transportation Authority, the Orange County Transportation Authority, Omnitrans in San Bernardino, TriMet in Portland (Oregon), King County Metro Transit in Seattle, the Southeastern Pennsylvania Transportation Authority in Philadelphia, and New Jersey Transit.

The National Renewable Energy Laboratory (NREL) has conducted several studies comparing fuel economy and maintenance cost per mile between hybrid electric and diesel transit vehicles for urban fleets. According to a NREL study for Long Beach Transit, fuel economy (miles per gallon) on a gasoline powered hybrid electric vehicles was 4.3 percent lower than on a diesel fueled vehicle but maintenance per mile costs were 42 percent less on the hybrid. Similar comparisons made for King County Metro Transit in Seattle show that fuel economy in miles per gallon was 27 percent greater on a diesel hybrid vehicle in comparison to an Ultra Low Sulfur Diesel (ULSD) vehicle. In this case study, total maintenance cost per mile was only 4 percent lower for the hybrid vehicles.

Little research has been performed regarding the cost effectiveness of hybrid vehicles for rural transit fleets. The frequent stops and starts of typical urban and suburban routes get the most out of the hybrid system. Routes with extended distances between stops would not have as much improvement in fuel economy but would still realize benefits in reduced maintenance from the regenerative braking. If Park City were to replace all revenue vehicles with hybrid electric vehicles, the transit agency could potentially save up to $290,000 in maintenance costs per year and $150,000 in annual fuel costs (assuming the best case scenario figures from the NREL studies). Although this represents up to an eight percent reduction in total annual operating costs, the savings would not pay for the roughly $490,000 increase in average annual capital costs to purchase hybrid vehicles as the existing 37-bus fleet requires replacement. Switching to a hybrid vehicle fleet would be largely dependent upon the level of grant funding available. The life expectancy of a hybrid electric vehicle is similar to a diesel vehicle.

Ultra Low Sulfur Diesel

Diesel-fueled engines have traditionally dominated the transit vehicle marketplace with their fuel efficiency and durability. From an air quality perspective, diesel engines have very low tailpipe emissions of CO and other organic gases. The concern from an air quality perspective, however, has been the emission rates of NOx and PM.

Due to increasing environmental pressure to reduce the above emissions, the Environmental Protection Agency has developed stringent NOx and PM regulations as referenced above. The final Clean Air Amendments permit the use of clean diesel in urban buses, provided that the clean diesel engines meet the PM standards. In partial response to the 1990 CAAA amendments for cleaner burning fuels and the continued development of the previously mentioned alternative fuels, the traditional diesel fuel engine has made great strides toward evolving with a cleaner burning particulate trap and catalytic converter technology.

Ultra-low sulfur diesel (ULSD) is diesel fuel with 15 parts per million (ppm) or lower sulfur content. In 2010, the U.S. Environmental Protection Agency required 100% of the highway diesel fuel refined in or imported into the United States to be ULSD. This ultra-low sulfur content enables use of advanced emission control technologies such as particulate traps and catalytic converters on light-duty and heavy-duty diesel vehicles. When combined with advanced emission control technologies, reductions from use of clean diesel can be equivalent to removing the pollution from more than 90 percent of today's trucks and buses[3].

While ULSD typically does not impact vehicle performance, fuel economy can be compromised since the process that produces ULSD can also reduce the fuel's energy content. Additionally, lubricity is reduced as a result of removing the sulfur. This can be resolved by adding various additives to the fuel before retail sale or by addition biodiesel.

Biodiesel Fuel

Biodiesel can be legally blended with petroleum diesel in any percentage. The percentages are designated as B20 for a blend containing 20% biodiesel and 80% petroleum diesel, B100 for 100% biodiesel, and so forth. Per the Energy Policy Act of 1992, alternative fuel credits are available for B100 and blends of B20 and higher. PCT currently uses B5 blends in winter, and B20 blends in the remainder of the year, obtained from a station on Ironhorse Loop Drive (shifting to onsite fueling at the expanded Ironhorse maintenance facility, once complete).

Biodiesel, in general, contains roughly 8 percent less energy per gallon than standard petroleum-based diesel. Benefits related to greenhouse gases and air quality correspond with the blend used, whereby B20 generates roughly 20 percent of the benefit of B100.

B20 is the most common biodiesel blend in the United States and provides the benefits of biodiesel but avoids many of the cold-weather performance and material compatibility concerns associated with B100. B20 can be used in nearly all diesel equipment, is compatible with most storage and distribution equipment, and generally does not require engine modifications. According to the United States Department of Energy, B20 can reduce PM (particulate matter) emissions by 10 percent, CO (carbon monoxide) by 11 percent, and unburned HC (hydrocarbons) by 21 percent. Further, carbon dioxide emissions can be reduced by 15 percent.

B100 and other higher level blends cannot be used in all engines, though they are typically compatible with diesel engines built after 1994 with biodiesel-compatible material for parts such as hoses and gaskets. Since biodiesel blend levels increase quite substantially beyond B20, there are concerns that should be considered. These concerns include lower energy content per gallon, potential engine warranty issues and microbial contamination. Of particular concern to Park City would be the potential for gelling in low temperatures during the cold winter months. Emission reductions are greater with the use of B100 biodiesel – reducing PM and CO by nearly

[3] United Stated Department of Energy Alternative Fuels and Advanced Vehicle Data Center, 2011

50 percent and unburned HC by nearly 70 percent. Likewise, carbon dioxide emissions can be reduced by more than 75 percent. It is important to note that despite these potential reductions, use of B100 biodiesel can actually increase NOx emissions.

Low-level biodiesel blends are also available, and are the result of blending biodiesel with petroleum diesel. Such fuel is compatible with diesel engines and aids in reducing harmful emissions. Blends include B2 (2 percent biodiesel, 98 percent diesel) and B5 (5 percent biodiesel, 95 percent diesel), both of which are suitable for light-duty and heavy-duty vehicles such as transit buses. As mentioned in the low-sulfur diesel discussion, low-level biodiesel, such as B2 or B5, is a common additive to increase lubricity. In addition to the lubricity benefit, these biofuels also provide air quality benefits. The United States Department of Energy states that "using 100 gallons of B5 brings roughly the same air quality and alternative fuel use benefits as using 25 gallons of B20 or 5 gallons of B100".

In terms of pricing, biodiesel tends to cost slightly more than traditional diesel fuel. As of April 2011, the Clean Cities Initiative cited the cost of B20 biodiesel at $4.15 and of B99 to B100 at $5.10 per gallon, compared to $4.05 per gallon for standard diesel.

Summary

Barring conversion to alternative fuels beyond biodiesel, a number of steps can be taken to substantially reduce the air quality impacts of diesel-fueled transit buses. Various transit systems have been successful in reducing PM emissions through the application of "clean-diesel" technology. The utilization of a low sulfur fuel has proven to reduce the average annual PM emissions of a transit coach from 935 pounds to 260-300 pounds – roughly a 70 percent reduction. In addition, installation of an electronically-controlled fuel injection system and specially-designed transmission has dropped emission levels by 120 pounds of PM annually, for a total reduction in emissions of 87 percent.

The Transit Bus Life Cycle Cost and Year 2007 Emission Estimation report concluded that ULSD buses are still the most economical technology, followed by buses fueled by B20 biodiesel. Fuel economy rated best among the hybrid buses but overall costs were offset by battery replacement costs. As for GHG emissions, the hybrid buses also outperformed the other alternative fuels followed by B20 diesel, ULSD and then CNG. Considering the majority of the Park City Transit fleet is equipped with diesel engines, the most cost effective route would be to pursue ULSD or biodiesel options. However, Park City Transit should remain open to the ideas of alternative fuels as technology progresses and alternative fuel infrastructure is built.

In order to utilize the most appropriate technology for their services and to meet community goals, Park City Transit should undertake a more detailed and thorough study regarding alternative fuel options. This study should be regarded as more of a long-term plan to include implementation strategies for the fleet as the service evolves.

This page is intentionally left blank.

Chapter 8
Institutional and Management Alternatives

This chapter focuses on the institutional framework for public transit services, administrative staffing, and marketing alternatives.

ESTABLISHMENT OF A TRANSIT DISTRICT

Transit services provided to Summit County by Park City are currently governed by an "Inter-local Transportation Agreement" executed on February 1st, 2006, and amended on December 15th, 2009. Under this agreement, the City provides transportation management and operations services to the County based upon a specific scope of work. The document also established the Joint Transit Advisory Board, with two representatives of each of the two governmental entities, and technical support provided by City staff.

Cost responsibilities are assigned to the County using a "Cost Allocation Model" (similar to the cost model shown in Table 26 of this document) based upon actual costs for the previous fiscal year. This cost model apportions to the County the following costs, based upon the proportion of total system-wide vehicle-miles, vehicle-hours and number of vehicles used in the County service:

- Driver salaries and benefits
- Supervisor's salaries and benefits
- Uniforms
- Drug testing
- Fuel
- Vehicle Maintenance
- Vehicle Insurance

Costs are also allocated for marketing, as well as for ongoing revenues into a fund for the 20 percent "local match" for vehicle replacement. In addition, under this agreement the County pays 24.88 percent of the overhead (fixed) costs associated with PCT. Also included are monthly payments reflecting the County's share of the improvements currently underway at the Ironhorse Transit Operations Center.

This agreement has served well in providing the financial and institutional framework for expansion of public transit into the Snyderville and Canyons portion of Summit County. In particular, it has avoided the need for duplicative administrative/management staff between both the City and the County. It also provides for more cost-efficient maintenance of transit vehicles, as specialized training and equipment can be used for both City and County vehicles.

An option to the current institutional framework would be the establishment of an independent transit district. Section 17B-2-203 of the Utah Code allows the formation of special districts for purposes of providing public transit service, and also sets forth requirements for such a district.

Among these requirements is that the number of board members must be an odd number, between 3 and 9. Board representation must be proportional to the amount of transit service provided in each jurisdiction. Under the current service plan, roughly two-thirds of annual vehicle-miles of service are operated within Park City limits, and the remaining one third in unincorporated Summit County. To be proportionate, it would be necessary to have a board of 3 members (2 from Park City, and 1 from the County) or 9 (6 from the City and 3 from the County). Growth in services in one jurisdiction or another would change the relative board

proportion. For instance, expansion in the County services could result in a 7 member board (4 City and 3 County).

At least for the foreseeable future, the County representatives would be a minority on a transit district board. City representatives could in theory make changes to services in the County areas over the wishes of the County. This could be seen as a loss of control from the current situation, whereby the County specifies routes and schedules in the County through contract. However, in practice transit board members tend to consider the best interests of the service as a whole, and to defer to the wishes of individuals representing areas most affected by specific service decisions.

An important factor in the issue of district formation is whether the institutional change would result in cost savings. Assuming no change in driver, maintenance or fuel costs, this typically focuses on whether administrative costs could be reduced. As the County does not have significant staff time assigned to transit issues (and County staff time would still be required to coordinate with the transit district), it is doubtful that any substantial reduction in County costs would accrue. Another potential for cost savings is associated with administrative charges (interdepartmental charges) imposed on the transit service by the Park City Municipal Corporation (PCMC). As shown in Table 26, this is currently $494,000 per year. This costs addresses some functions that otherwise would need to be either provided by additional transit district staff or through service contracts, such as accounting staff and legal services.

Another important factor is the impact on employee salaries and benefits of shifting from PCMC employment to employment with a separate special district. Some current benefit programs potentially might not be available to special district employees. Some employees may also see a detriment to losing the potential for future internal job changes within the PCMC. Current positions that are shared between transit functions and other municipal functions (such as parking) would need to be redefined to focus solely on transit. This could result in a net increase in the need for administrative personnel. While this additional cost could be a detriment, there may also be benefit associated with management that is devoted solely to transit matters.

Existing capital assets used for the transit program (facilities, vehicles, equipment) would need to be transferred to a new transit district, or other legal arrangements established. It is common upon the establishment of a transit district for these assets (and the existing federal share in the value) to be transferred. However, this is complicated in the case of PCT by the fact that the key facility asset (Ironhorse Transit Operations Facility) is used both for transit purposes as well as other PCMC functions, such as parking management. If the facility ownership is transferred to a new district, either the other PCMC functions would need to become a tenant, or other city office space would need to be found. This transfer may also change utility costs, as rates applied to a separate district may differ from those currently charged to PCMC.

Bifurcating transit functions from PCMC may complicate coordination between transit services and other municipal functions, such as snow removal, bicycle/pedestrian improvements, street and parking improvements, etc. Issues that are currently addressed within the municipal government, such as adjusting on-street parking to provide a bus pullout, would instead become a matter of discussion between two separate organizations. On the other hand, the fact that much of the future growth in the transit program will occur outside of City limits – and that coordination between PCT and the County on such matters appears to not be an issue – argues that this factor may not be a concern in Park City.

The impact on revenue sources is also a crucial consideration. While one factor is the potential for a larger organization to obtain a greater amount of Federal funding, PCT is already very effective in presenting the case to fund the region as a whole, and in gaining Federal funding. Existing funding provided to PCMC and to the County could also continue, as a direct "pass through" to the transit district.

In conclusion, the current institutional arrangement appears to be working well in supporting the current scope of the transit program. However, a "tipping point" may come in the future when the amount of transit service operated outside of the municipal boundaries exceeds that operated within Park City, at which point formation of a transit district should be given closer consideration.

ADDITIONAL ADMINISTRATIVE STAFF

To date, PCT has relied on a relatively "lean" administrative staff. Much of the lower-level administrative functions are provided on a part time basis by drivers. While this has the advantage of keeping costs down and allowing more full-time positions, growing demands on the system will necessitate an expanded staff more focused on administrative functions. In particular, the growth in technology will require additional staff resources to manage these systems and review data. Additional staff time is also warranted to expand marketing efforts, and to manage the growing transit fleet and APTS systems. Over the five-year SRTP period, the following new positions are warranted:

- **Data Analyst** – This position will be responsible for data collection and analysis including benchmarking, passenger counts, route and schedule efficiency, budget preparation and service billing. It would also be responsible for day-to-day management of the APTS system

- **Marketing Manager** – This position should be responsible for marketing functions, including interior advertising sales, schedule\route map production, brochures, and maintenance of Twitter/Facebook/web page. Much of the salary cost will be offset by eliminating third party contract for interior ad sales.

- **Equipment Coordinator** – This position will be responsible for coordinating equipment (bus and bus equipment) readiness. Works closely with fleet maintenance and bus operations staff to ensure transit equipment required to meet scheduling demands is available. Addresses the hardware aspects of the APTS/AVL technology.

TRANSIT GOALS AND OBJECTIVES

This section presents a number of potential goals, objectives, and performance standards for Summit County and Park City's public transit system. It is worth noting that many of these goals inherently conflict with each other, such as the goals of (1) providing a high level of service, and (2) minimize financial cost to the community. In such cases, local officials and residents need to make policy decisions to balance these conflicting goals.

Planning and Management Goal: To evaluate strategies that help management maximize productivity while meeting the transit needs of the community and to develop a transit program that takes into account land development in the service area. In addition, Summit County and Park City will strive to provide services to reduce the use of the private automobile and

maximize the use of alternative transportation modes (transit, bicycle, rideshare, etc.) within the respective service areas.

- Planning Standard – The Short-Range Transit Plan shall be updated at a minimum of every five years. This will be a joint effort between Summit County and Park City.

- Service Monitoring Standard – Monitoring reports on the effectiveness and efficiency of transit service will be collected and reviewed monthly.

- Land Use Planning Standard – Park City Transit staff will review development proposals within the service area with pertinent community development and public works departments to study the effects of development on transit service, and to ensure land development that is compatible with alternative transportation as identified in the Summit County and Park City General Plans.

Service Effectiveness Goal: To maximize the ridership potential of area transit services.

- Fixed-Route Effectiveness Standard – Maintain the following annual productivity levels by route:

  - Park City Local Regular Route Services – 24 one-way passenger-trips per vehicle service hour.

  - County Kimball Junction Routes – 20 one-way passenger-trips per vehicle service hour.

  - Other County Routes – 10 one-way passenger-trips per vehicle service hour.

  If route productivity figures fall below these standards, staff should conduct route segment analyses to determine what revisions (if any) could be implemented to boost ridership.

- Marketing Standard – Conduct marketing efforts to ensure that all service area residents are aware of area transit services. Conduct targeted marketing efforts for high-potential groups, including visitors, elderly, disabled, students, low-income, and transit-dependent residents.

Service Quality Goal: To provide safe, reliable, and convenient public transit services.

- On-Time Performance Standard – 95 percent of all fixed-route trips should be operated "on-time." On-time is defined as not early and not more than five minutes late.

- Park City Mobility Denial Standard – No pattern of ADA-eligible trip denials (as defined in the Americans with Disabilities Act of 1990) due to capacity constraints. Passengers whose trip request resulted in a denial will be put on a "stand-by list" maintained by the scheduler; all attempts will be made to accommodate that trip should trip cancellations occur. Regardless of whether the trip can be accommodated, the scheduler will discuss the status of the standby request with the passenger at least two hours before the requested trip time. Call backs will occur only during normal office hours. If a denial can be accommodated within the two-hour window by adding capacity, operating staff should do so in the smallest increment possible (no more than a two hour block).

- Passenger Amenity Standard – Shelter should be considered at all bus stops serving 30 or more passenger boardings per day. Seating should be considered at all bus stops serving 15 or more passenger boardings per day. Benches and shelters will only be installed on existing UDOT, Park City or Summit County right-of-way, except where written confirmation from the property owner can be obtained to install a bench or shelter on private property. On

an annual basis, the Transit/Transportation Manager will identify potential sites and prepare an installation priority list.

After review of the priority list by other public works staff, the Transit/Transportation Manager will contact adjacent property owners by telephone (with follow-up correspondence) to notify them of intentions to install a passenger amenity. Adjacent property owners include all owners of parcels within a 50-foot radius of placement of the bus stop sign. If an adjacent property owner protests installation at the site, Park City Transit will not immediately install it until a protest proceeding is completed. However, if passenger boardings at that bus stop exceed 20 passengers per day for a bench or 60 passengers per day for a shelter, Park City Transit will begin proceedings to install the amenity while the protest is being processed.

The protest proceedings will begin with a written notice to adjacent property owners (return-receipt delivery) explaining Park City Transit's intent to install the passenger amenity, with a copy to either the City Manager or Summit County Manager (as appropriate). This notice will detail the action being taken, projected milestones, and protest procedures available to the complainant.

- Passenger Load Standard – For passenger safety and comfort, vehicles should be sized and the transit service operated to require standees on no more than 20 percent of the runs for any route, and to avoid any recurring loads of more than 150 percent of the seated capacity.

- Accident Standard – Maintain a minimum of 50,000 miles traveled between preventable collision accidents, and 25,000 miles between all types of non-collision preventable accidents (i.e., employee injuries).

- Maintenance Standard – Maintain a minimum of 20,000 miles between road calls. Road calls are defined as any time passenger service is interrupted more than five minutes due to a mechanical failure (except for flat tires).

- Vehicle Cleanliness Standard – The exterior of each vehicle used in service will be washed daily in winter, and as needed during the summer (consistent with the City Water Conservation Program). Vehicle interiors will be swept daily and detailed at least weekly. Vehicle detailing includes mopping the floor, washing the windows, and removing any minor stains that may have accumulated on the passenger seats. A vehicle that experiences a major stain will be removed from service as soon as possible and cleaned/repaired before re-entering service.

- Service Frequency Standard – Provide regularly-scheduled service with a maximum headway of 60 minutes. Specifically, Summit County and Park City will strive to attain the following service frequency standards (in minutes):

Service Corridor	***Winter***	***Non-Winter***
Prospector Square/Deer Valley	20	20
Park Meadows/Deer Valley	20	20
Thaynes Canyon/Deer Valley	20	20
Silver Lake/Empire Pass	30	30
Bonanza Express	20	N/A
Kimball Junction – Park City	20	30
Kimball Junction – Silver Summit	60	60
Kimball Junction – Pinebrook	30	30
The Canyons Route	20	20

- Service Area Standard – Maximize the area provided with transit service while maintaining minimum service efficiency standards. Summit County and Park City will strive to provide service within ¼ mile of all major employment, medical, shopping, and institutional centers, and of all residential areas with four or more dwellings per acre. Major employment centers are defined as an industrial or commercial zone that employs 200 or more non-agricultural, non-construction employees.

- Service Quality Standard – Increase service levels where warranted and financially feasible to maintain the existing service quality. Below is a summary of pertinent service quality objectives:

  Seasonal Visitor Services

  - Offer direct day-time bus service connecting major hotels and condominium centers with Park City, Deer Valley and Canyons ski areas without requiring a transfer between buses.

  - Offer direct evening bus service connecting major hotels and condominium centers with Old Town without requiring a transfer between buses.

  - Offer convenient bus links to restaurants and visitor attractions in Silver Lake and the Kimball area.

  - Increase the frequency of service to lodging establishments and ski areas on routes when extra "tripper" sections are called for on more than 65 percent of daily runs.

  - Offer direct "front door" service at major hotel complexes in the service area where feasible. Work with hotel owners and city/county transportation officials to develop convenient bus stops where "front door" service is not safe or practical.

  - Minimize delays during the winter season at the Old Town Transit Center for buses traveling between the Park City Mountain Resort, the Deer Valley Resort and The Canyons Resort.

  Tourism Promotion and Visitor Transportation

  - Increase the percentage of visitors who travel between the Salt Lake International Airport and Park City/Kimball Area without an automobile.

  - Develop a marketing program to enable travel agents to sell car-free visitor packages and to increase public awareness of car-free travel options to and within the study area.

  - Develop joint marketing agreements involving Park City Transit, private airport shuttle services and one or more Park City-based car rental agencies.

  - Add vehicle capacity to regular Park City and Kimball Area transit routes as needed to accommodate increased demand resulting from travel agency marketing and sales efforts.

Regional Employee Transportation

- Provide transportation services necessary to help provide an adequate supply of workers for area employers.

- Increase the supply of available parking for visitors by minimizing the use of local in-town parking spaces by employees.

- Insure that commuter services provide area workers with direct and convenient access to employment sites.

- Work with major employers to expand existing employee transportation programs.

- Develop subscription commuter bus programs for outlying communities if commitments are received from enough individuals to insure that revenues will cover at least 85 percent of direct operating expenses.

- Vehicle Accessibility Standard – Maintain a fully accessible transit fleet (as defined by the Americans with Disabilities Act of 1990).

- Vehicle Spare Ratio Standard – Maintain sufficient fleet spare ratios to ensure adequate capacity for regularly-scheduled and tripper services. At a minimum, a 20 percent spare ratio should be maintained for each type of vehicle in each respective service category.

- Cost and Revenue Standards – Limit operating cost increases for the visitor transit program to the rate of increase in transit-dedicated funding, including tax and license revenues, unless a significant shift occurs in the percentage of visitors who utilize the bus system.

- Fare Standard – Maintain free fixed-route service within the Park City and Snyderville Basin areas.

POTENTIAL ADDITIONAL INTER-REGIONAL AGREEMENTS

If the Park City transit program is expanded outside of the Park City/Snyderville Basin area, an agreement regarding funding and management of the expanded services would be required. In particular, service to Heber City in Wasatch County would require an intergovernmental agreement. Similar to the existing agreement regarding Snyderville Basin services, this agreement would need to define the scope of the services to be provided, a decision-making process, and a mechanism by which cost responsibilities would be allocated to the new jurisdiction(s).

A key issue with this option is the appropriate funding level. While it is relatively straightforward to calculate the marginal operating costs and subsidies associated with the expansion of service outside of the current limits, there are often long discussions held over the proportion of fixed costs (such as administrative salaries, maintenance facility costs, advertising costs and vehicle costs) that should be paid by the "contracting" jurisdiction. In the short-term, establishing the funding level based upon the marginal cost can ensure that the residents of Park City and the Snyderville Basin area do not subsidize outlying residents, while providing the benefits of an expanded regional transit system to all jurisdictions. However, in the long-term, the costs

associated with fixed transit items indicate that some proportion of fixed costs should be paid by the smaller jurisdictions.

An intergovernmental agreement has the following advantages:

- It is relatively easy to implement, as it does not require a public vote or establishment of a separate public entity.
- The "contracting" jurisdictions maintain strong control over the design of the service, through the contract.
- Service can be easily modified or terminated, which is particularly beneficial in the first few years of a new service.

Disadvantages of this alternative are as follows:

- The appropriate level of funding for capital and fixed costs is an ongoing issue.
- There is less certainty regarding the long-term permanence of the service. As a result, it is more difficult for Park City and Summit County to make long-term capital or staffing plans, and passengers are not as assured of the long-term availability of service.

ENCOURAGE DEVELOPMENT PATTERNS THAT INCREASE THE POTENTIAL FOR TRANSIT RIDERSHIP

Land use planning has a strong relationship to transportation demand and travel patterns. Land use decisions play an important role in determining the viability of public transportation and the feasibility of serving portions of the community. In recognition of this important relationship, local actions that may be further addressed to encourage transit use in the community are addressed below:

- PCT staff should review all proposed development projects and their subsequent effect on the existing public transportation system.
- Encourage in-fill and redevelopment by designating underdeveloped or declining neighborhoods for public investment.
- Promote mixed land-use in redevelopment areas.
- Adopt transit-oriented development design guidelines.
- Recognize transit-friendly planning and design by sponsoring an annual awards program.
- City ordinances should require that parking be provided at the rear or side of buildings, and that the front of the buildings should be oriented to the street to encourage walking and the use of public transportation.

- Provide comfortable transit facilities and make bus stops attractive through high-quality design and construction and by providing pedestrian amenities such as lighting, seating, and weather protection.

- Sidewalks and other paths to residential and commercial development should connect bus stops.

- Emphasize the provision of pedestrian facilities, as the majority of transit patrons are pedestrians before boarding and after alighting from the bus.

- Provide incentives such as density bonuses or reduced parking requirements for developers who design pedestrian-friendly projects.

- Incorporate pedestrian-friendly design guidelines in street design manuals for all new developments.

MARKETING ALTERNATIVES

Advanced Public Transportation Systems

A key focus of marketing over the coming few years should be in the integration of advanced public transit system technologies into the overall marketing program, including the following:

- Provision of real-time transit arrival/departure information on the web (including smartphones).

- Provision of arrival/departure information at transit centers and other key transit stops.

- Ongoing upkeep of the Google Transit program.

In particular, the provision of transit information by smartphone and other mobile internet devices is rapidly becoming the prevalent form of transit marketing among younger demographic groups.

Route and Schedule Information Changes

PCT currently distributes three schedule marketing pieces for the winter service, a “Transit System Guide” (which includes the color maps of the system), the “Park City Summit County Winter Transit Schedule” and the “Transit System Time Point Guide”. In summer, both a “Transit System Guide” and a “Summer Transit Timetable” is provided. To fully understand the transit system at present, a passenger (or potential passenger) must consult at least two of these pieces.

The Transit System Guide is a good marketing piece, and provides sufficient information to be solely relied on by passengers traveling within the higher frequency areas. (It also is useful to visitors in providing information on other community services.) For lower frequency areas where it is more important to know specific service times, however, the other pieces must also be referred to. While the Winter Transit Schedule and Summer Transit Timetable are reasonably understandable to the “layperson,” the winter Transit System Time Point Guide is confusing to most.

The need to consult a second piece could be reduced by including specific “minutes past the hour” scheduled times at one or two locations on each route as part of the Transit System Guide. For example, a box next to the Jeremy Ranch Park-n-Ride indicating “Service at 00 and 30 minutes past the hour” along with a box next to the Newpark transfer point indicating “Pinebrook Service at 15 and 45 minutes past the hour” would give passengers along the entire Pinebrook leg a good idea of when their specific stop is served. It is also recommended that the “Transit System Time Point Guide” be limited to in-house use only (it is useful in discussing service at specific stops, such as when meeting with lodging property representatives), but not be distributed to the public.

Promotion of Potential New Services

Provision of new services (such as commuter services) will trigger the need for focused marketing efforts, including the following:

- Presentations to major employers and to employee groups. New employee orientation meetings are particularly effective.

- Presentations to social services (such as at Senior Centers) and clubs (Lions, Kiwanis, American Legion, etc.), particularly in the outlying communities.

- Free ride coupons for the first few days of service, distributed through local papers.

- A ribbon-cutting event.

It is also useful to make presentations to Town Councils and other elected groups, as both a means of maintaining positive relations as well as leveraging free local media coverage.

Chapter 9
Potential Funding Sources

The crux of any issue regarding the provision of public service is the matter of funding. Provision of a sustainable, permanent funding source has proven to be the single greatest determinant in the success or failure of transit service. A wide number of potential transit funding sources are available. The following discussion provides an overview of these programs. This discussion will be developed in greater detail as analysis of operating and capital alternatives yield estimates of total future funding requirements.

FEDERAL TRANSIT FUNDING SOURCES

The federal government provides a number of grant programs that assist in transit operations. Key programs providing funding potentially available to the Park City/Summit County (either directly or through partnership with other areas) are presented below. It should be noted that the future of these funding programs and associated funding levels are very uncertain, given the present lack of progress on reauthorization of the federal surface transportation program (SAFETEA-LU).

FTA Section 5309 Bus and Bus Related Equipment and Facilities Program

This FTA program is available for a wide range of transit capital items in urbanized areas. Eligible expenses for which funding can be provided consists of the following:

- purchase of buses for replacement or fleet/service expansion
- bus maintenance and administrative facilities
- transfer facilities and park-and-ride stations
- bus malls, transportation centers and intermodal terminals
- bus rebuilds and bus preventive maintenance
- passenger amenities such as passenger shelters and bus stop signs
- other equipment such as mobile radio units, supervisory vehicles, fare boxes, computers and shop and garage equipment

A local match of 20 percent is typically required, though lower local match requirements pertain to certain projects required for ADA, bicycle, and air quality purposes. A total of $516.2M is allocated to this program for FY 2011 nationwide, including $11.4M in Utah.

A key factor in this funding program is that all funds in recent years have been allocated based on congressional “earmarks.” As such, the availability of funds for Park City and Summit County projects depends greatly on the willingness and ability of local legislators to “carry” the earmark request, and the overall political process of federal transportation funding decision making. While there are currently efforts underway to transform this program to a competitive grant process, it is uncertain how this issue will resolve. This picture is further complicated by the “continuing resolution” status of the federal surface transportation law as allocations in future years are uncertain.

FTA Section 5310 - Elderly and Persons with Disabilities Program

The FTA 5310 program, administered by UDOT, is largely used for purchase of vans for services benefiting the elderly or persons with disabilities. Until recently, recipients of Section 5310 funding were restricted to non-profit organizations; with passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) and subsequent Transportation Equity Act of the 21st Century (TEA-21), however, local governmental jurisdictions are also eligible for funding. This funding source requires a 20 percent local match for capital projects, and a 50 percent local match for operating assistance. In FTA Fiscal Year 2011, a total of $400,736 was apportioned to Utah.

FTA Section 5311 Non-Urbanized Area Formula Program

Federal transit funding for rural areas (areas with population less than 50,000) is currently provided through Section 5311. This program requires a 50 percent local match for operating expenses, and 20 percent for capital and administrative support. A total of $2.05M is available throughout Utah for FY 2010-11. While the number of recipients has been limited in the past (the Ute Nation, Cedar City, Cache County and Park City), this list can be expected to expand in the future, reducing funding available for PCT.

FTA Section 5316 Job Access and Reverse Commute Program (JARC)

The JARC program assists states and localities in developing new or expanded transportation services that connect welfare recipients and other low-income persons to jobs and other employment related services. The JARC grant program is intended to establish a coordinated regional approach to job access challenges. All projects funded under this program must be the result of a collaborative planning process that includes states and metropolitan planning organizations, transportation providers, agencies administering Temporary Assistance to Needy Families and Welfare to Work funds, human services agencies, public housing, child care organizations, employers, states, and affected communities and other stakeholders. The program is expected to leverage other funds that are eligible to be expended for transportation and encourage a coordinated approach to transportation services. Applicable projects are targeted at developing new or expanded mobility management transportation services such as shuttles, vanpools and new bus routes. A total of $68,530 is allocated in FY 2010-11 for Utah jurisdictions below 50,000 in population. This is a potential source of funding for new commute services to Kamas, Coalville or Heber City.

FTA Section 5317 New Freedom (NF)

The New Freedom (NF) or Section 5317 program was introduced in 2006 by SAFETEA-LU and was modeled after JARC (services that expand transit availability beyond that traditionally provided by public transit, at about half of the Section 5316 funding level). Both operating and capital programs are eligible as long as they support new or expanded travel options for persons with disabilities going beyond the Americans with Disabilities Act (ADA) mandate to complement fixed route bus coverage or provide new travel options beyond ADA. Only $31,448 in FY 2011-12 5317 funds are allocated for Utah jurisdictions below 50,000 population. Under the 5317 program, capital projects require a 20 percent local match and operating projects a 50 percent local match.

LOCAL TRANSIT FUNDING SOURCES

Sales Tax

The most common form of local dedicated revenues across the country is a sales and use tax. In Utah, the ability of local jurisdictions to impose a 0.30 cent sales tax to fund public transportation was granted in 1988 by Public Law 59-12-2213. A simple majority vote is required for passage. In addition, the law allows for the tax to be applied in a public transit district that bifurcates a county.

There are many benefits to a sales tax:

- It is a relatively stable source of funding, as it is imposed on a very broad tax base and is very responsive to inflation;
- It is simple to collect, as the mechanisms to collect the tax are already in place;
- It affects all portions of the local economy equally; and
- It provides a flexible source of funding that can be used for capital, maintenance or operating, and for highway, transit, or non-motorized transportation modes.

The local sales and use tax within Park City, specifically dedicated to transit, supplied approximately 40 percent of Park City Transit's operating funding in 2010, as well as local matching funds for FTA operating and capital grants.

The recently-enacted Utah Code 59-12-2214 allows local jurisdictions to levy an additional 0.25 cent sales tax for purposes of funding public transit. This is a potential funding opportunity to expand public transit services.

Main Street Marketing Funding

A recently-initiated program to enhance Main Street in Park City includes $40,000 for transit marketing, with a focus on services that benefit Old Town.

Transient Room Tax

Summit County currently collects a Transient Room Tax. While in the past approximately $40,000 was contributed annually to the Kimball Area Transportation Special Services District, at present no funds are allocated for transit services. Rather, they are being used for promotion and to boost tourism.

Transportation Impact Fees and Assessments

The ability of local governments to impose impact fees is set forth in the Impact Fee Act (Utah State Code Title 11, Chapter 26, Sections 1-5). Transit capital improvements can be funded through an impact fee, as transit programs can reduce the roadway improvements that would otherwise be needed to address the impacts of development. As with fees collected for other purposes, impact fees can only fund projects necessitated by future development (or the proportion of individual projects required by future development). Impact fees may be collected

for transit facility costs such as maintenance facilities, passenger facilities and bus stop improvements, but are not applicable to vehicle purchases.

Summit County's Ordinance 652 established a transportation impact fee program for the Western Snyderville Basin. This program includes impact fees for transit improvements, consisting of partial funding for the transit maintenance facility, a "Kimball Transit Hub" and bus shelters. In addition, ongoing assessments for operations are in place in the Kimball and Canyons areas. At present, Park City does not have a transportation impact fee program that provides funding for transit capital improvements. TIF revenues are a potential source for additional capital program funding, to the degree that the expenditures are eligible under the Impact Fee Act.

Instituting Fares

A discussion of potential transit funding sources must include a look at fares. As fares make transit funding more equitable (those who directly benefit from the service pay at least part of the costs), a fare system has the advantage of increasing the political acceptability of transit. At current ridership levels, it is estimated that a $1.00 base fare (with discounts for seniors, persons with disabilities, and youth, as well as for pass users) would generate on the order of $800,000 per year in additional revenues. However, there would be a number of disadvantages of imposing a fare:

- Ridership would be reduced by approximately 30 to 35 percent. The "hassle factor" of fishing out the fare or pass is particularly high for skiers or boarders. Other benefits to the community, such as reductions in traffic and parking demand, would in turn be negatively impacted.

- Loading time along the routes would be increased. While each passenger boarding would only add a few seconds of delay (particularly if electronic passes are implemented), when multiplied by the high number of boardings at peak times delays to individual runs would be substantial. As a result, the current 20-minute route running times of the Park City core routes could not be maintained, at least in winter. Extending running times (such as to 30 minutes) would either reduce ridership further, or incur additional operating costs to maintain current headways. This could offset any revenues collected by fares.

- Capital costs associated with fare collection and handling is very substantial. Fareboxes can cost several thousand dollars or more, depending on capabilities. Pass vending machines and coin/currency counters would also be required. Security equipment would be needed in the fare counting area, as well.

- Staff time would be required to count fares, make deposits, and maintain equipment.

Overall, implementing fares on the existing local services would be a detriment to the overall transit program, and to the region. It should be noted that numerous transit agencies combine services that require a fare with services that are free to the passenger.

Advertising

One modest but important source of funding for many transit services is on-vehicle advertising. The largest portion of this potential is for exterior advertising, rather than interior "bus card" advertising. The potential funds generated by advertising placed with the vehicles are comparatively low, currently totaling roughly $20,000 per year for PCT.

Chapter 10
Park City/Summit County
Short Range Transit Development Plan

The following Short Range Transit Development Plan has been developed for Summit County and Park City based upon the goals of the region, public input and review, demographic and development trends, the evaluation of alternatives presented in previous chapters, the coordinated elements necessary for an effective public transit services, and legal requirements. This plan is intended to maximize the benefits of public transit service, while remaining within projected financial constraints over the planning period.

The various Service, Capital, and Institutional, Management and Financial elements of the Short Range Transit Plan are presented in three sections below. Together, these plan elements will expand the availability of transit services to the community, provide service to areas not currently served, increase the effectiveness of existing services, provide the community with a viable transportation option to the private automobile, and make the systems more convenient to use and more efficient to operate. Finally, an implementation plan is presented to guide transit improvements over the next seven years. Figure 29 presents a map depicting the service and capital plan elements.

A primary focus of this plan is the improvement of more efficient and frequent services on key corridors and expansion beyond the Park City/Snyderville Basin service areas to the west, east and north.

OPERATING PLAN

Implement SR 224 Corridor 20-Minute Headway Service

The existing Pinebrook and Silver Summit/Highlands Estates routes will be reconfigured based on the Alternative A plan presented in Chapter 5. This will require construction of the Kimball Junction Transit Center (as discussed below), in order to reduce route running time, and is thus scheduled to be implemented in 2014. Under this plan, the existing four buses operating the current service will be reconfigured as follows:

- Two buses will operate express service between the Old Town Transit Center (with an additional stop at the Canyons Transit Center) and the current route segment between Kimball Junction and Jeremy Ranch (modified to serve the Kimball Junction Transit Center rather than Newpark). The overall route will require an hour per round-trip.

- One bus will operate express service between the Old Town Transit Center and the Kimball Junction Transit Center (with a stop at Canyons Transit Center), and also operate a modified Silver Springs route that utilizes I-80 and US 40 in the “off-peak” direction (eastbound in the AM, westbound in the PM) and also serves the Silver Springs Business Park and the Summit County Justice Center. While service to the nine existing stops along Highland Drive between Old Ranch Road and Silver Summit Parkway will be eliminated, this change will increase overall ridership and improve on-time dependability. This overall route will also require one hour per round trip.

- A fourth bus will operate "local" service between Old Town Transit Center and Kimball Junction Transit Center, serving Park City Mountain Resort, Canyons (including stops as far west as Grand Summit), Silver Springs, Bear Hollow (entering in both directions on Bear Cub and exiting at the Bobsled Boulevard/Cutter Lane signal).

As a whole, this route plan will provide express service along the SR 224 corridor every twenty minutes in both directions. Local service to the Silver Springs area will better match the ridership level in this neighborhood, and new service will be provided to Bear Hollow, Silver Creek Business Park and the Summit County Justice Center, as well as the Grand Summit Hotel.

Assuming timely completion of the Kimball Junction Transit Center, this plan element could be implemented for the 2014-15 summer season. This plan is also dependent on implementation of the Kimball Circulator, as discussed below, in order to replace service to the Redstone and Newpark areas.

Implement Kimball Junction Circulator

A new circulator bus route will be operated in the Kimball Junction area, beginning with the opening of the Kimball Junction Transit Center. Every 20 minutes, a loop will operate from the Kimball Junction Transit Center both to the east (serving Redstone, Newpark, the Snyderville Basin Field House and other nearby commercial/lodging properties) as well as to the west (serving Wal-Mart, the Tanger Outlet Center, and the Research Park). This route is important in providing more convenient service to existing areas (such as Redstone), serving new areas as they develop (such as the Kimball Research Park area), and allowing the other County routes to operate more efficiently. A smaller (25 to 30-foot long) transit vehicle will be operated. Depending on the final route, some minor modifications to intersections and onstreet parking may be necessary in the Redstone area, and good snow removal along the route will be important. A schedule from 7:00 AM to 11:00 PM year-round is assumed in this plan, though an earlier end of service may be considered in the off seasons, depending on funding availability.

Improve Canyons Transit Service

Beyond the extension of local SR 224 service to the Grand Summit Hotel (as discussed above), service to the Canyons area will be improved as follows:

- The **Canyons Collector/Express** service plan will be implemented in winter evenings (5:30 PM till Midnight). New stops will be established at the Sundial Lodge, Waldorf Astoria, Silverado Lodge, Hyatt Astoria, and along Red Pine Road and Chalet Drive[4]. One bus will operate on a 40-minute loop that serves these areas directly (as well as the existing stops along Canyons Resort Drive), and then operates an express run along SR 224 to the Old Town Transit Center. This will be particularly convenient for Canyons guests wishing to visit Old Town for dining and entertainment (and vice versa), while persons traveling to other parts of Park City and Deer Valley can make direct transfers to other routes at the Old Town Transit Center. This service would also be timed to provide direct transfers to County route service to and from Kimball Junction, via the Canyons Transit Center, once the changes to the County routes are put into effect. This service plan will also replace the current Canyons daytime summer service plan, providing half-hourly service. Winter evening service will be implemented for the 2011-12 winter season, with summer service using this route starting in

[4] Some streets will require enhanced snow removal/sanding to adequately accommodate transit operations.

the summer of 2012. This service plan introduces transit service to a greater portion of the Canyons (which will become increasingly important as the area develops), provides more convenient service to and from Old Town, and reduces wasteful duplication of service with other PCT routes. Note that the existing Canyons route plan (serving the Prospector and Park City Mountain Resort areas directly, but limiting service in the Canyons to Canyons Resort Drive only) will continue to be operated in Winter daytime periods, as it better serves skier/snowboarder travel patterns.

- With future development, ultimately an internal **Canyons Circulator** will be warranted to provide comprehensive, coordinated service to all key lodging and commercial areas during the winter daytime. This will be particularly important with regards to development in the Frostwood area to the north and the Lower Village area south of the intercept parking lot. Timing for implementation of this improvement will depend on development schedules, but is assumed in this plan for 2015. A 20-minute shuttle will be operated from 7:00 AM to 5:30 PM that provides direct transfers to the every-20-minute express runs along SR 224.

Kamas/Oakley Winter Commuter Route

A winter commuter service will be initiated starting in the winter of 2013-14, connecting Oakley, Kamas and Hideout with Park City via State Highways 32 and 248. This will consist of one westbound run in the morning (arriving in Park City around 7:30 AM), and one eastbound run in the afternoon (departing after 5:00 PM). The bus will be parked overnight in Oakley or Kamas (at a County, UDOT, or municipal lot, to be determined), and the service will optimally be operated by PCT drivers living in the vicinity. A fare of $3.00 per one way trip for general public and $2.00 for youth (age 5-15), elderly (age 65 and above) and disabled will be charged for this service. In addition, monthly passes will be available that provide a 10 percent discount for regular riders. Beyond passenger fares, funding for this service will be provided by a Federal Transit Administration 5316 Job Access – Reverse Commute (JARC) grant, Summit County, and Park City. This service will improve access to jobs by residents in the outlying communities and allow day trips for shopping, errands and recreation, as well as reducing parking and traffic impacts in Park City.

Heber City Commuter Service

A year-round commuter service will be initiated between Heber City and Park City. Due to higher ridership demand, two northbound runs will be operated in the AM commute period (arriving in Park City around 6:30 AM and 7:30 AM) and two southbound runs in the PM commute period (departing around 4:30 PM and 5:30 PM). This route will originate in southern Heber City (near the US 40/US 189 junction), serving stops through central Heber City, at the Utah Valley University Wasatch campus, Stillwater Lodge, Prospector, and the Old Town Transit Center. Similar to the Kamas/Oakley service, the buses will be housed overnight in a public agency lot in the Heber City area, and staffed with drivers living in the same area. A fare of $3.00 per one way trip for general public and $2.00 for youth (age 5-15), elderly (age 65 and above) and disabled will be charged for this service, with a monthly pass providing a 10 percent discount for regular riders. Other funding will be provided by the FTA 5316 JARC program, and Wasatch County and/or Heber City. PCT staff will work with Heber City and Wasatch County to establish stops and park-and-ride opportunities.

Salt Lake City Service

On an equal basis, Summit County and Park City Municipal Corporation will guarantee operating subsidy funding for Utah Transit Authority service connecting Park City, Canyons, Kimball Junction, Jeremy Ranch, the University of Utah campus, and downtown Salt Lake City. Both jurisdictions will provide up to $235,000 per year for up to three years, though this figure is expected to drop as ridership becomes established.[5] This service is expected to provide substantial benefits in both directions, including improved access to Park City/Summit County jobs and recreation by Wasatch Front residents, access to jobs, educational opportunities and entertainment "down the hill" for Park City/Summit County residents, and reductions in parking need, traffic levels, and air pollution.

Operate Full Park City Service Until Midnight in the Winter and Peak Summer Seasons

The full City Route service will be extended until Midnight during the winter season, as well as the peak summer season from mid-June through Labor Day. The current late-night winter service (operating between 10:55 PM and 2:00 AM, consisting of two buses operating half-hourly on longer, combined routes) reduces the convenience of transit service. In summer, the end of service around 10:30 PM limits ridership potential, and reduces ridership during the earlier hours of the operating day (as travelers not able to complete a round trip may choose to drive or not to travel). This element will be implemented for the 2011-12 winter season. Like other service elements, the effectiveness of this service will be evaluated on at least an annual basis.

Reduce Reservation Requirement on Quinn's Junction Dial-A-Ride to One Hour

While ridership on the Quinn's Junction DAR service has increased in recent years, it is still not achieving its full potential. One limitation to use is the current requirement for passengers to make reservations at least two hours in advance. While this requirement was initially implemented to provide the opportunity to use the DAR resources in Paratransit service between DAR trips, in actuality the DAR van is in almost constant use in DAR service. The reservation requirement will be reduced to at least one hour in advance (other than for standing orders). This will reduce the inconvenience of having to plan at least two hours in advance, while still giving PCT staff the ability to efficiently schedule the service.

Ultimately Replace Quinn's Junction DAR with Fixed Route Service

As the Quinn's Junction area develops, there will be increasing need to convert the current Dial-A-Ride service to a standard fixed-route service (eliminating the need for advance reservations). The incremental cost of establishing fixed route service, however, is substantial as it would need to be accompanied by expansion of Paratransit service to conform to ADA requirements. As the existing Paratransit program is operating close to capacity, this would trigger the need for an additional vehicle and driver, throughout the year.

[5] New transit services typically do not reach full potential ridership until the third year of service.

A fixed route service providing service every 30 minutes should be implemented once development results in adequate need for service[6]. It is recommended that this service be initiated once housing in the area exceeds 150 dwelling units. In addition to enhancing service to all Quinn's Junction land uses, this service will also have the advantage of provided new, convenient express service to the Prospector and Bonanza area. It could provide additional service directly connecting new development in the Bonanza area with Old Town every 30 minutes. It should be noted that if Paratransit service is expanded due to other increases in needs, the marginal cost associated with fixed route service to Quinn's Junction would be reduced. For purposes of this study, service is assumed to be initiated in FY 2015-16.

Service Alternatives Considered and Not Adopted

The following service alternatives were evaluated as part of this study, but are not included in the plan, for the following reasons:

- Silver Creek – Due to the low density of development and distance to this area, service to this area would not be cost-effective. While service could potentially be provided in the future as extension of the Silver Summit route, this would require operation of an additional bus.

- Summit Park **–** An alternative was developed and seriously considered that would serve a transit stop near the Silver Summit (Parley's Lane) interchange. However, the service option selected for inclusion in this plan would serve approximately 35,000 additional transit passenger per year, as it would provide four buses per hour in each direction along the SR 224 corridor rather than the three buses that could be provided if Summit Park could also be served. Serving Summit Park would therefore require operating an additional bus, which would not be an efficient service given the limited ridership potential in the area.

CAPITAL PLAN

Kimball Junction Transit Center

The key facility improvement over the coming few years will be the Kimball Junction Transit Center. This facility is crucial to the realignment of County routes to provide enhanced frequency and efficiency, and also to support planned development in the Kimball Junction area. It can also expand opportunities for intercity and regional transit services. This facility will encompass the following:

- Bays for up to 10 buses plus 2 vans on-site at peak times, allowing independent ingress and egress to each bay at all times
- A transit passenger building of approximately 2,500 square feet, providing indoor waiting areas, restrooms, a transit information booth and a driver break room
- Two access points, allowing buses to return in the direction of approach
- Bike storage
- Landscaping, lighting, and outdoor passenger waiting areas
- Convenient access to nearby activity centers, particularly the Richins Building.

[6] The efficiency and convenience of this service would be substantially enhanced if buses could use the existing emergency access route directly connecting the Quinn's Junction Recreation Complex and the Park City Medical Center.

- Approximately 20 Park-and-Ride spaces, to support Salt Lake City and intercity service.

This facility will cost on the order of $2.4 million for design, permitting, and construction. It is expected to be completed by 2014.

Park City Mountain Resort Transit Center

The Park City Mountain Resort is currently preparing plans for redevelopment of the base area and nearby parking lots. The existing transit center serving this area has long generated operational problems, and warrants replacement and enhancement – particularly in light of the additional transportation demand that redevelopment will create. A new transit center in the base area is envisioned as part of this SRTDP. While dependent on the overall development process, construction is assumed to occur in Fiscal Year 2015-16.

Bonanza Redevelopment

Plans are also being prepared for redevelopment of the Bonanza area (generally bounded by Kearns Boulevard, Bonanza Drive, Ironhorse Drive and Park Avenue). A transit transfer center in this central location will be increasingly important in future years to allow transfers between expanded services (such as Kamas, Quinn's and Heber City routes) and the local Park City and County routes. This facility should provide space for up to four transit buses at a time, and be sited and designed to allow convenient ingress and egress in all directions.

Iron Horse Transit Operations Facility

The improvements to the Ironhorse Transit Operations Facility, currently being completed, will substantially enhance the operations of Park City Transit services. Funding for these improvements have been identified in previous plans and Capital Improvement Programs, and are not included in this plan. However, the expanded facility will result in increased ongoing operating and capital reserve fund costs, which are included in this plan.

Park and Ride Operational Plan

Demand for park-and-ride facilities in the study area is a dynamic mix of commuter, special event, regional, construction, and skier needs. The following regional park-and-ride management plan will be implemented to effectively accommodate the various uses:

- Quarterly, counts of commuter cars will be conducted at park-and-ride locations (both formal lots and observed informal locations) in the region. Prepaid mail back postcards left beneath windshield wipers will also be considered to survey driver's trip purpose, travel mode, and vehicle occupancy.

- On an ongoing basis, offsite parking usage for special events will be monitored. Event organizers will be required to provide the locations used for offsite parking, as well as a count of peak parking use at each location.

- Both the PCMC and County will designate an individual responsible for receiving and recording public comments/complaints regarding parking associated with the uses discussed above.

- On at least an annual basis, City and County staff will meet to (1) review the park-and-ride data, (2) discuss current park-and-ride issues, (3) coordinate the use of park-and-ride facilities for special events (including scheduling of major special events to ensure adequate parking availability and (4) discuss the potential for new park-and-ride facilities, including joint use of parking associated with planned developments.

In addition, both City and County staff will inform PCT staff regarding special events (such as concert and sporting events) that have the potential to significantly impact ridership demand for transit operations.

Advanced Public Transit Systems

Advanced Public Transit System (APTS) technologies are rapidly being implemented throughout the nation, including the Park City Transit system. The PCT will include the following elements:

- **Automatic Vehicle Location** (AVL) systems will be implemented on all transit vehicles. Using Global Positioning System technologies, AVL will allow dispatchers to track in "real time" the location of vehicles, thereby improving connections between routes, reducing service delays, and increasing the effectiveness of tripper bus services to address high passenger loads.

- **Automatic Passenger Count** (APC) technology will track and record the number of persons boarding, deboarding, and on the bus, providing extensive information on how the system is used, and on where tripper services should be provided.

- **Passenger Transit Information Systems** technology will provide the following: (1) real-time information regarding upcoming bus route departures provided on electronic reader boards at the transit centers, (2) real-time information provided on the internet, and (3) automated announcements of major bus stops on the transit buses.

Funding for these improvements has been included in previous plans. Staffing requirements for maintenance and data analysis regarding AVL are discussed below.

Once the APC technology is in place for a full winter or summer season, PCT will begin to use the resulting detailed data to review routing options. If there are portions of routes (such as in Silver Springs) that do not warrant continued service at current levels, modifications to routing will be considered.

Bus Stop Improvement Plan

Bus stop conditions are an important element in the overall quality of a public transit service. As every passenger spends a portion of their trip time at a bus stop, the comfort, attractiveness, safety and sense of security provided at bus stops can be a big element in an individual's decision to use public transit. Substantial improvements have been made in this area over recent years. An annual budget of $25,000 per year for County stops and $25,000 per year for City stops is included in this plan. In addition, stops serving new developments are assumed to be provided by the developer.

Bicycle/Pedestrian Facilities

At one end of their trip or the other, virtually all transit passengers also travel on foot or on bicycle as part of their transit trip. A key element of a successful transit system, therefore, is a convenient system of sidewalks and bikeways serving the transit stops. Park City and Summit County should continue to work with the branches of their respective public works and planning department to review construction plans and scheduling priorities for pedestrian and bicycle improvements to best coordinate with transit passengers' needs. In addition, both Summit County and Park City should continue to procure bicycle racks as part of vehicle purchases, as well as bicycle racks and lockers at bus stops.

Transit Signal Pre-emption

Given the proliferation of traffic signals along the PCT routes, traffic delays generated by signals are resulting in a substantial and increasing cost to the transit program. A "soft" signal pre-emption program will be implemented under which additional signal "green time" will be provided to buses approaching traffic signals near the end of the green indication. Rather than always providing buses with a green signal, these systems simply extend the length of green time up to a predetermined limit as buses approach the signal. Timing of this improvement will depend on the schedule for overall highway corridor improvements. Assuming that signal modifications are made as part of larger programs, the costs associated with placing the hardware on the buses is estimated to be $50,000.

New Vehicles

Vehicle purchases will be required for both replacement of aging fleet, as well as for new services. As shown in Table 38, a total of 15 transit buses, 6 smaller transit vehicles and a trolley will require replacement over the coming seven years. In addition, three administrative/ operational vehicles will be required. Three additional smaller buses will also be needed for expansion of circulator and Paratransit services.

MANAGEMENT PLAN

Establish New Administrative Positions

Over the next several years, PCT administrative staff will be expanded to manage the APTS systems, enhance dispatching and data analysis functions, and expand marketing efforts, and to manage the growing transit fleet and APTS systems. The following new positions will be established:

- **Data Analyst** – This position will be responsible for data collection and analysis including benchmarking, passenger counts, route and schedule efficiency, budget preparation and service billing. It would also be responsible for day-to-day management of the APTS system

- **Marketing Manager** – This position should be responsible for marketing functions, including interior advertising sales, schedule\route map production, brochures, and maintenance of Twitter/Facebook/web page. Much of the salary cost will be offset by eliminating third party contract for interior ad sales.

- **Equipment Coordinator** – This position will be responsible for coordinating equipment (bus and bus equip) readiness. Works closely with fleet maintenance and bus operations staff to ensure transit equipment required to meet scheduling demands is available. Addresses the hardware aspects of the APTS/AVL technology.

TABLE 38: PCT Fleet Replacement Plan

County City

	Projected FY11-12	Projected FY12-13	Projected FY13-14	Projected FY14-15	Projected FY15-16	Projected FY16-17	Projected FY17-18
Transit Bus							
Unit Numbers	--	--	648	653	--	657	662
	--	--	649	654	--	658	663
	--	--	650	655	--	659	664
	--	--	--	656	--	660	665
Number of Units	0	0	3	4	0	4	4
Total County Cost (,000)	$0.0	$0.0	$373.4	$761.9	$0.0	$816.2	$0.0
Total City Cost (,000)	$0.0	$0.0	$746.8	$761.9	$0.0	$816.2	$1,691.4
Small Transit Vehicles							
Unit Numbers	--	--	--	622	--	--	620
	--	--	--	623	--	--	621
	--	--	--	624	--	--	625
Number of Units	0	0	0	3	0	0	3
Total County Cost (,000)	$0.0	$0.0	$0.0	$139.0	$0.0	$0.0	$221.4
Total City Cost (,000)	$0.0	$0.0	$0.0	$277.9	$0.0	$0.0	$435.8
Trolley							
Unit Numbers	--	--	--	--	661	--	--
Number of Units	0	0	0	0	1	0	0
Total City Cost (,000)	$0.0	$0.0	$0.0	$0.0	$402.3	$0.0	$0.0
Support Vehicles							
Unit Numbers	--	--	602	--	--	--	--
	--	--	603	--	--	--	--
	--	--	608	--	--	--	--
Number of Units	0	0	3	0	0	0	0
Total City Cost (,000)	$0.0	$0.0	$109.7	$0.0	$0.0	$0.0	$0.0
TOTAL COUNTY COST (,000)	**$0.0**	**$0.0**	**$373.4**	**$900.9**	**$0.0**	**$816.2**	**$221.4**
TOTAL CITY COST (,000)	**$0.0**	**$0.0**	**$856.5**	**$1,039.8**	**$402.3**	**$816.2**	**$2,127.2**

Source: Park City Transit. Excludes replacement for Units 601, 604, and 605, which are already funded.

Transit Goals and Objectives

This section presents a number of potential goals, objectives, and performance standards for Summit County and Park City's public transit system. It is worth noting that many of these goals inherently conflict with each other, such as the goals of (1) providing a high level of service, and (2) minimize financial cost to the community. In such cases, local officials and residents need to make policy decisions to balance these conflicting goals.

Planning and Management Goal: To evaluate strategies that help management maximize productivity while meeting the transit needs of the community and to develop a transit program that takes into account land development in the service area. In addition, Summit County and Park City will strive to provide services to reduce the use of the private automobile and maximize the use of alternative transportation modes (transit, bicycle, rideshare, etc.) within the respective service areas.

- Planning Standard – The Short-Range Transit Plan shall be updated at a minimum of every five years. This will be a joint effort between Summit County and Park City.

- Service Monitoring Standard – Monitoring reports on the effectiveness and efficiency of transit service will be collected and reviewed monthly.

- Land Use Planning Standard – Park City Transit staff will review development proposals within the service area with pertinent community development and public works departments to study the effects of development on transit service and to ensure land development that is compatible with alternative transportation as identified in the Summit County and Park City General Plans.

Service Effectiveness Goal: To maximize the ridership potential of area transit services.

- Fixed-Route Effectiveness Standard – Maintain the following annual productivity levels by route:

  - Park City Local Regular Route Services – 24 one-way passenger-trips per vehicle service hour.

  - County Kimball Junction Routes – 20 one-way passenger-trips per vehicle service hour.

  - Other County Routes – 10 one-way passenger-trips per vehicle service hour.

  If route productivity figures fall below these standards, staff should conduct route segment analyses to determine what revisions (if any) could be implemented to boost ridership.

- Marketing Standard – Conduct marketing efforts to ensure that all service area residents are aware of area transit services. Conduct targeted marketing efforts for high-potential groups, including visitors, elderly, disabled, students, low-income, and transit-dependent residents.

Service Quality Goal: To provide safe, reliable, and convenient public transit services.

- On-Time Performance Standard – 95 percent of all fixed-route trips should be operated "on-time." On-time is defined as not early and not more than five minutes late.

- Park City Mobility Denial Standard – No pattern of ADA-eligible trip denials (as defined in the Americans with Disabilities Act of 1990) due to capacity constraints. Passengers whose trip request resulted in a denial will be put on a "stand-by list" maintained by the scheduler; all attempts will be made to accommodate that trip should trip cancellations occur. Regardless of whether the trip can be accommodated, the scheduler will discuss the status of the standby request with the passenger at least two hours before the requested trip time. Call backs will occur only during normal office hours. If a denial can be accommodated within the two-hour window by adding capacity, operating staff should do so in the smallest increment possible (no more than a two hour block).

- Passenger Amenity Standard – Shelter should be considered at all bus stops serving 30 or more passenger boardings per day. Seating should be considered at all bus stops serving 15 or more passenger boardings per day. Benches and shelters will only be installed on existing UDOT, Park City or Summit County right-of-way, except where written confirmation from the property owner can be obtained to install a bench or shelter on private property. On an annual basis, the Transit/Transportation Manager will identify potential sites and prepare an installation priority list.

  After review of the priority list by other public works staff, the Transit/Transportation Manager will contact adjacent property owners by telephone (with follow-up correspondence) to notify

them of intentions to install a passenger amenity. Adjacent property owners include all owners of parcels within a 50-foot radius of placement of the bus stop sign. If an adjacent property owner protests installation at the site, Park City Transit will not immediately install it until a protest proceeding is completed. However, if passenger boardings at that bus stop exceed 20 passengers per day for a bench or 60 passengers per day for a shelter, Park City Transit will begin proceedings to install the amenity while the protest is being processed.

The protest proceedings will begin with a written notice to adjacent property owners (return-receipt delivery) explaining Park City Transit's intent to install the passenger amenity, with a copy to either the Park City Mayor or Summit County Chief Administrative Official (as appropriate). This notice will detail the action being taken, projected milestones, and protest procedures available to the complainant.

- Passenger Load Standard – For passenger safety and comfort, vehicles should be sized and the transit service operated to require standees on no more than 20 percent of the runs for any route, and to avoid any recurring loads of more than 150 percent of the seated capacity.

- Accident Standard – Maintain a minimum of 50,000 miles traveled between preventable collision accidents, and 25,000 miles between all types of non-collision preventable accidents (i.e., employee injuries).

- Maintenance Standard – Maintain a minimum of 20,000 miles between road calls. Road calls are defined as any time passenger service is interrupted more than five minutes due to a mechanical failure (except for flat tires).

- Vehicle Cleanliness Standard – The exterior of each vehicle used in service will be washed at least every other day, and the interior will be swept daily and detailed at least weekly. Vehicle detailing includes mopping the floor, washing the windows, and removing any minor stains that may have accumulated on the passenger seats. A vehicle that experiences a major stain will be removed from service as soon as possible and cleaned/repaired before re-entering service.

- Service Frequency Standard – Provide regularly-scheduled service with a maximum headway of 60 minutes. Specifically, Summit County and Park City will strive to attain the following service frequency standards (in minutes):

Service Corridor	***Winter***	***Non-Winter***
Prospector Square/Deer Valley	20	20
Park Meadows/Deer Valley	20	20
Thaynes Canyon/Deer Valley	20	20
Silver Lake/Empire Pass	30	30
Bonanza Express	20	N/A
Kimball Junction – Park City	20	30
Kimball Junction – Silver Summit	60	60
Kimball Junction – Pinebrook	30	30
The Canyons Route	20	20

- Service Area Standard – Maximize the area provided with transit service while maintaining minimum service efficiency standards. Summit County and Park City will strive to provide

service within ¼ mile of all major employment, medical, shopping, and institutional centers, and of all residential areas with four or more dwellings per acre. Major employment centers are defined as an industrial or commercial zone that employs 200 or more non-agricultural, non-construction employees.

- Service Quality Standard – Increase service levels where warranted and financially feasible to maintain the existing service quality. Below is a summary of pertinent service quality objectives:

  Seasonal Visitor Services

  - Offer direct winter day-time bus service connecting major hotels and condominium centers with Park City, Deer Valley and Canyons ski areas without requiring a transfer between buses.

  - Offer direct evening bus service connecting major hotels and condominium centers with Old Town without requiring a transfer between buses.

  - Offer convenient bus links to restaurants and visitor attractions in Silver Lake, Deer Valley, Empire Pass and the Kimball area.

  - Increase the frequency of service to lodging establishments and ski areas on routes when extra "tripper" sections are called for on more than 65 percent of daily runs.

  - Offer direct "front door" service at major hotel complexes in the service area where feasible. Work with hotel owners and city/county transportation officials to develop convenient bus stops where "front door" service is not safe or practical.

  - Minimize delays during the winter season at the Old Town Transit Center for buses traveling between the Park City Mountain Resort, the Deer Valley Resort and The Canyons Resort.

  Tourism Promotion and Visitor Transportation

  - Increase the percentage of visitors who travel between the Salt Lake International Airport and Park City/Kimball Area without an automobile.

  - Develop a marketing program to enable travel agents to sell car-free visitor packages and to increase public awareness of car-free travel options to and within the study area.

  - Develop joint marketing agreements involving Park City Transit, private airport shuttle services and one or more Park City-based car rental agencies.

  - Add vehicle capacity to regular Park City and Kimball Area transit routes as needed to accommodate increased demand resulting from travel agency marketing and sales efforts.

  Regional Employee Transportation

  - Provide transportation services necessary to help provide an adequate supply of workers for area employers.

- Increase the supply of available parking for visitors by minimizing the use of local in-town parking spaces by employees.

- Insure that commuter services provide area workers with direct and convenient access to employment sites.

- Work with major employers to expand existing employee transportation programs.

- Develop subscription commuter bus programs for outlying communities if commitments are received from enough individuals to insure that revenues will cover at least 85 percent of direct operating expenses.

- Vehicle Accessibility Standard – Maintain a fully accessible transit fleet (as defined by the Americans with Disabilities Act of 1990).

- Vehicle Spare Ratio Standard – Maintain sufficient fleet spare ratios to ensure adequate capacity for regularly-scheduled and tripper services. At a minimum, a 20 percent spare ratio should be maintained for each type of vehicle in each respective service category.

- Cost and Revenue Standards – Limit operating cost increases for the visitor transit program to the rate of increase in transit-dedicated funding, including tax and license revenues, unless a significant shift occurs in the percentage of visitors who utilize the bus system.

- Fare Standard – Maintain free fixed-route service within the Park City and Snyderville Basin areas.

Improved Marketing

Advanced Public Transportation Systems

A key focus of marketing over the coming few years will be in the integration of advanced public transit system technologies into the overall marketing program, including the following:

- Provision of real-time transit arrival/departure information on the web (including smartphones).

- Provision of arrival/departure information at transit centers and other key transit stops.

- Ongoing monitoring of ridership and service information through maintenance of the Google Transit web-based application (the main infrastructure for future infrastructure technologies).

In particular, the provision of transit information by smartphone and other mobile internet devices is rapidly becoming the prevalent form of transit marketing among younger demographic groups.

Route and Schedule Information Changes

PCT will enhance the Transit System Guide by including specific “minutes past the hour” scheduled times at one or two locations on each route as part of the Transit System Guide. For

example, a box next to the Jeremy Ranch Park-n-Ride indicating “Service at 00 and 30 minutes past the hour” along with a box next to the Newpark transfer point indicating “Pinebrook Service at 15 and 45 minutes past the hour” would give passengers along the entire Pinebrook leg a good idea of when their specific stop is served. It is also recommended that the “Transit System Time Point Guide” not be widely distributed to the public (as it is confusing if a new rider were to pick it up and think it is the only information piece), though it is worthwhile for internal use and for property managers interested in service to a specific stop.

Promotion of Potential New Services

Provision of new services (such as commuter services) will trigger the need for focused marketing efforts, including the following:

- Presentations to major employers and to employee groups. New employee orientation meetings are particularly effective.

- Presentations to social services (such as at Senior Centers) and clubs (Lions, Kiwanis, American Legion, etc.), particularly in the outlying communities.

- Free ride coupons for the first few days of service, distributed through local papers.

- A ribbon-cutting event.

Park City Maintenance of Bus Stops Systemwide

The Park City Municipal Corporation will take on maintenance of all bus stops in the current service area. This will ensure that all stops are well maintained and cleared of snow in a timely and consistent manner, which is an important factor in attracting and maintaining transit ridership. The costs of the overall maintenance program will be included in the existing cost allocation equation, and allocated to Summit County in proportion of overall service quantities.

FINANCIAL PLAN

FTA Section 5309 Bus and Bus Related Equipment and Facilities Program

FTA Section 5309 is a vital element of capital funding, particularly for improvements in Summit County. This study assumes Summit County and Park City will seek and obtain a total of $6.3 million in FTA Section 5309 funds, with the full potential 80% Federal funding share for eligible projects. These funds are intended to partially fund the following:

- Kimball Junction Transit Center
- Park City Mountain Resort Transit Center
- Bonanza Transit Transfer Center
- Bus, van and trolley replacement
- New buses for Kimball Circulator, Canyons Circulator, and Quinn’s Junction Fixed Route service.

FTA Section 5311 Non-Urbanized Area Formula Program

This program, which is the Federal government's key program for funding transit programs in rural areas of the nation, will be used for a total of $1.95 Million per year in transit services and capital needs. This figure is lower than has been historically received by Park City and Summit County, reflecting the increasing number of 5311-funded transit program around the state. This total is allocated between the County and City based upon the proportion of transit service operated in each jurisdiction.

FTA Section 5316 Job Access Reverse Commute Program

The 5316 program will be used to fund half of the operating subsidy needs for new services to Kamas/Oakley and to Heber City. As these new services will connect low income residents in the outlying communities with employment opportunities in the Park City/Western Summit County area, they will be very consistent with the goals of the 5316 program. Funding levels are expected to range between roughly $22,000 and $25,000 per year, once these new programs are started.

Funding From Wasatch County and/or Heber City

The "local match" for the operating subsidy associated with transit service to Heber City will need to be funded locally by Wasatch County, Heber City, or a combination thereof. Annual funding of roughly $23,000 is expected in the first year of service, dropping to approximately $20,000 per year once full ridership is established. Park City Transit staff will work with Wasatch County and Heber City to discuss funding arrangements (as well as other elements of implementing this service such as stop location and overnight bus storage). Funding allocations between Park City and Summit County will also need to be determined.

Passenger Fare Revenues for Kamas/Oakley and Heber City Services

Once established, the Kamas/Oakley service is expected to generate on the order of $8,000 in fares annually, while the Heber City service will generate roughly $75,000 per year. The Kamas/Oakley revenues will be split evenly between Park City and Summit County, as equal local funding partners in the service.

Maintain or Expand Other Existing Funding Sources

Other existing funding sources are assumed to continue, with the following changes:

- The Kimball Junction Assessment is assumed to double from current levels in FY 2015, in order to partially fund the costs associated with the Kimball Circulator service.

- The Canyons Assessment is assumed to increase starting in FY 2015 (when the current agreement expires) to fund the subsidy required to operate the Canyons Circulator/Express (winter evenings and summer) and Canyons Circulator (winter daytime).

- The Snyderville Basin sales and use tax is assumed to grow by 2.5 percent annually.

- Growth in Transit Sales Tax, Resort Tax, Business License revenues, and Night Rental License Fees are based on forecasts provided by the Park City Finance Office.

Provide Transit Services and Capital Improvements through New and Existing Local, State, and Federal Funding

Existing and new funding programs are relied upon over the Short Range Transit Plan period to fund ongoing operating costs. The financial impacts on operating costs of the recommended Service Plan were developed based upon the current cost model, as shown in Table 26, while the resulting costs are presented in Table 39.

Summit County Transit Services

The following methodology was utilized in developing the Financial Plan for Summit County:

- First, forecasts of annual operating and administrative costs were developed, as presented in Table 39 for 2007 through 2013. "Base case" operating cost forecasts were estimated, assuming a 3 percent annual inflation rate of current costs in the absence of any change in service levels. Next, marginal operating cost estimates were identified for each Service Plan element, based upon the analyses presented in previous sections of this document and the cost model shown in Table 26. Costs for the Kimball Junction (Pink) Route and the Silver Summit/Highland Estates (Brown) Route are allocated between the County and the City based on the proportion of miles and hours operated in each jurisdiction. Half of the Kamas/Oakley Commuter costs are allocated to the County, and the remaining half to the City. These costs also include County funding responsibilities for an allocated proportion of Ironhorse Transit Operations Facility costs, as well as the additional administrative positions.

  In addition, funding for Salt Lake City service of $235,000 in the first year of service is assumed, declining over a three year period as ridership reaches its full potential. Operating costs over the seven-year period will total approximately $17.4 million with the service modifications, which is a 34 percent increase over the base case total of $12.9 million.

- Next, Summit County ridership was estimated for 2004 through 2010, as presented in Table 40. The "base case" ridership reflects expected ridership assuming no changes in service or implementation of fares, and is based upon the forecasts presented in Chapter 5, above. This ridership is assumed to increase at 2 percent per year, reflecting expected population growth. In addition, the ridership potential is factored downward to reflect that full transit ridership of new services is typically not achieved until the third year of service. A reduction of 35 percent in the first year and 10 percent in the second year is assumed, except for expansion of existing services (which is easier to market to the potential ridership) where factors of 20 percent and 5 percent are assumed. The ridership impact of each Service Plan element is then identified and summed. Consistent with the cost allocation, half of the Kamas/Oakley Commuter ridership and Salt Lake City service ridership is allocated to the County, and half to the City. In total, implementing all Service Plan elements is forecast to increase system-wide ridership from a 2017 base case figure of 643,600 one-way passenger-trips per year to a 2017 total with the service improvements of 1,031,400 one-way passenger-trips – a 60 percent increase in ridership.

TABLE 39: Summit County / Park City Transit Plan - Estimated Operating Cost

All Figures in Thousands, Assuming an Annual Inflation Rate of 3 Percent

Project Description	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	7-Year Total
Summit Co. Base Case Operating Cost								
Marginal Operating Costs	$1,420.8	$1,463.4	$1,507.3	$1,552.5	$1,599.1	$1,647.1	$1,696.5	$10,886.6
Allocated Administrative Costs	$268.9	$277.0	$285.3	$293.9	$302.7	$311.8	$321.1	$2,060.6
Total	$1,689.7	$1,740.4	$1,792.6	$1,846.4	$1,901.8	$1,958.8	$2,017.6	$12,947.2
Summit County Service Plan Elements (Marginal Operating Costs)								
County Service Alternative A	$0.0	$0.0	$0.0	$116.0	$119.5	$123.1	$126.8	$485.5
County Winter Service Till 11 PM	$32.9	$33.9	$34.9	$36.0	$37.0	$38.1	$39.3	$252.1
Kimball Circulator (1)	$0.0	$0.0	$0.0	$379.4	$390.8	$402.5	$414.6	$1,587.2
Canyons Collector/Express -- Winter Evenings, Summer	$45.5	$33.9	$34.9	$36.0	$37.0	$38.1	$39.3	$264.7
Canyons Circulator -- Winter Daytime	$0.0	$0.0	$0.0	$0.0	$85.4	$88.0	$90.6	$264.0
Kamas Commuter Winter Service (2)	$0.0	$0.0	$7.6	$7.8	$8.1	$8.3	$8.6	$40.4
Salt Lake Service Operating Support	$235.0	$135.0	$65.0	$0.0	$0.0	$0.0	$0.0	$435.0
Ironhorse Facility Expansion Lease and Capital Renewal	$102.7	$102.7	$102.7	$102.7	$102.7	$102.7	$102.7	$719.2
Data Analyst Position(3)	$0.0	$23.0	$23.6	$29.1	$28.7	$29.6	$30.5	$164.4
Equipment Coordinator Position (3)	$0.0	$0.0	$23.6	$29.1	$28.7	$29.6	$30.5	$141.5
Marketing Manager (3)	$0.0	$0.0	$0.0	$29.1	$28.7	$29.6	$30.5	$117.9
Subtotal Summit Co. Transit Service Plan Elements	*$416.2*	*$328.5*	*$292.3*	*$765.1*	*$866.8*	*$889.8*	*$913.4*	*$4,472.0*
Total Summit Co. Transit Operating Cost	**$2,105.9**	***$2,068.9***	***$2,084.9***	***$2,611.5***	***$2,768.6***	***$2,848.6***	***$2,931.0***	***$17,419.2***
Park City Transit Base Case Operating Cost								
Marginal Operating Costs	$3,310.0	$3,409.3	$3,511.5	$3,616.9	$3,725.4	$3,837.1	$3,952.3	$25,362.4
Allocated Administrative Costs	$627.9	$646.7	$666.1	$686.1	$706.7	$727.9	$749.7	$4,810.9
Other Transportation Expenses in PCT Budget	$565.0	$582.0	$599.4	$617.4	$635.9	$655.0	$674.6	$4,329.3
Total	*$4,502.8*	*$4,637.9*	*$4,777.0*	*$4,920.3*	*$5,067.9*	*$5,220.0*	*$5,376.6*	*$34,502.6*
Park City Transit Service Plan Elements (Marginal Operating Costs)								
Extend Winter Service till Midnight	$68.8	$70.8	$73.0	$75.2	$77.4	$79.7	$82.1	$527.0
Extend Peak Summer Service till Midnight	$1.7	$27.7	$28.5	$29.3	$30.2	$31.1	$32.1	$180.6
Heber Winter Service	$0.0	$37.1	$38.2	$39.3	$40.5	$41.7	$43.0	$239.8
Heber Service in Non-Winter Seasons	$0.0	$27.8	$69.9	$72.0	$74.2	$76.4	$78.7	$399.0
Kamas Commuter Service (Split 50/50)	$14.4	$14.8	$15.2	$15.7	$16.2	$16.6	$17.1	$110.0
Quinns Junction Route & Expansion of Paratransit Service	$0.0	$0.0	$0.0	$0.0	$426.8	$439.6	$452.7	$1,319.1
Salt Lake Service Operating Support	$235.0	$135.0	$65.0	$0.0	$0.0	$0.0	$0.0	$435.0
Data Analyst	$0.0	$53.5	$55.2	$52.1	$54.8	$56.5	$58.2	$330.3
Equipment Coordinator	$0.0	$0.0	$55.2	$52.1	$54.8	$56.5	$58.2	$276.7
Marketing Manager	$0.0	$0.0	$0.0	$52.1	$54.8	$56.5	$58.2	$221.5
Subtotal Park City Transit Service Plan Elements	*$319.8*	*$366.7*	*$400.2*	*$387.7*	*$829.7*	*$854.6*	*$880.2*	$4,039.0
Total Park City Transit Operating Cost (2)	***$4,822.6***	***$5,004.6***	***$5,177.2***	***$5,308.1***	***$5,897.6***	***$6,074.6***	***$6,256.8***	***$38,541.6***
Combined Base Case Operating Cost	**$6,192.5**	***$6,378.3***	***$6,569.6***	***$6,766.7***	***$6,969.7***	***$7,178.8***	***$7,394.2***	***$47,449.8***
Combined Service Plan Elements	**$736.0**	***$695.2***	***$692.5***	***$1,152.8***	***$1,696.5***	***$1,744.4***	***$1,793.6***	***$8,511.0***
Total Operating Cost (1)	**$6,928.5**	***$7,073.4***	***$7,262.1***	***$7,919.6***	***$8,666.2***	***$8,923.2***	***$9,187.8***	***$55,960.8***

Note 1: Funding would need to be finalized before implementation.

Note 2: Assuming a 50%/50% split of costs between the City and the County. Actual cost sharing will be negotiated when service is implemented.

Note 3: County funding for these plan elements provided through allocated administrative cost factor.

Source: LSC Transportation Consultants, Inc.

TABLE 40: Summit County / Park City Transit Plan - Estimated Ridership

All Figures in Thousands

Project Description	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	7-Year Total
Summit Co. Transit Base Case Ridership	570.4	582.0	593.8	605.9	618.2	630.8	643.6	**4,244.7**
Summit Co. Transit Service Plan Elements								
County Service Alternative A	0.0	0.0	0.0	93.2	129.7	147.0	150.0	**519.8**
County Winter Service Till 11 PM	6.2	7.6	8.1	8.3	8.5	8.6	8.8	**56.1**
Kimball Circulator	0.0	0.0	0.0	61.4	85.5	96.9	98.8	**342.6**
Canyons Collector/Express -- Winter Evenings, Summer	19.5	23.7	25.4	25.9	26.4	27.0	27.5	**175.5**
Canyons Circulator -- Winter Daytime	0.0	0.0	0.0	0.0	17.9	21.7	23.3	**62.9**
Kamas Commuter Winter Service [1]	0.0	0.0	2.0	2.8	3.2	3.2	3.3	**14.6**
Salt Lake City Service [1]	37.5	58.5	66.7	71.6	73.1	74.5	76.0	**457.9**
Subtotal Summit Co. Transit Service Plan Elements	*63.2*	*89.7*	*102.3*	*263.2*	*344.1*	*378.9*	*387.8*	***1,629.3***
Net Summit Co. Transit Ridership	**633.7**	**671.7**	**696.1**	**869.1**	**962.3**	**1,009.7**	**1,031.4**	**5,874.1**
Park City Transit Base Case Ridership	*1,155.3*	1,178.8	1,202.8	1,227.3	1,252.3	1,277.8	1,303.8	***8,598.1***
Park City Transit Service Plan Elements								
Extend Winter Service till Midnight	9.4	13.0	14.8	15.1	15.4	15.7	16.0	**99.4**
Extend Peak Summer Service till Midnight	0.0	7.0	7.2	7.3	7.5	7.6	7.8	**44.4**
Kamas Commuter Winter Service [1]	0.0	0.0	2.0	2.8	3.2	3.2	3.3	**14.6**
Heber Winter Service	0.0	8.9	12.4	14.1	14.4	14.7	15.0	**79.4**
Heber Summer Service	0.0	9.8	12.1	14.6	15.7	16.0	16.4	**84.6**
Quinns Junction Route	0.0	0.0	0.0	0.0	73.8	102.6	116.3	**292.7**
Salt Lake City Service [1]	37.5	58.5	66.7	71.6	73.1	74.5	76.0	**457.9**
Subtotal Park City Transit Service Plan Elements	*46.8*	*97.3*	*115.2*	*125.6*	*203.0*	*234.4*	*250.8*	***1,073.1***
Net Park City Transit Ridership	**1,202.2**	**1,276.1**	**1,318.0**	**1,352.9**	**1,455.3**	**1,512.2**	**1,554.6**	**9,671.3**
Combined Base Case Ridership	**1,725.8**	**1,760.8**	**1,796.6**	**1,833.2**	**1,870.5**	**1,908.6**	**1,947.4**	**12,842.9**
Combined Service Plan Elements	**110.1**	**187.0**	**217.5**	**388.8**	**547.1**	**613.4**	**638.6**	**2,702.5**
Net Ridership	**1,835.8**	**1,947.8**	**2,014.1**	**2,222.0**	**2,417.6**	**2,522.0**	**2,586.0**	**15,545.3**

Note 1: Allocated 50% County / 50% City.

Source: LSC Transportation Consultants, Inc.

- The next element necessary in the development of the Financial Plan is estimation of the capital costs for vehicles, passenger amenities, passenger facility improvements, and operating equipment, as presented in Table 41 for each year of the Short Range Transit Development Plan period. Service expansion will require two mini-buses, and the County will be responsible for replacement of vehicles used in County service (as shown in Table 39). All revenue vehicles will be diesel-powered. In addition, the Capital Plan assumes implementation of the following:

  - Initial work on a Kimball Transit Center (with Park-and-Ride) in 2012 with completion by 2014.

  - A bus stop improvement program throughout the planning period of $25,000 (increasing with inflation).

  County capital costs over the seven-year period will total approximately $5.4 million.

- The results of Tables 39 through 41 were used to develop the Financial Plan, as presented for each of the seven years of the Short Range Transit Plan period in Table 42. This Financial Plan incorporates funding assumptions for individual funding programs as discussed above. As shown, the total operating revenues are estimated to equal $2.44 million in 2011-12, rising to $3.18 million in FY 2017. Subtracted from the annual operating costs, a net positive balance of $218,500 is estimated for the current year. Positive operating balances are provided through the seven year planning period, with a balance of $82,500 generated in FY 2015.

- The County capital financial plan is shown in the bottom portion of Table 41, and is based on the following:

  - The Canyons assessment is assumed to provide a total of $30,000 towards development of bus stops in the Canyons.

  - The Western Snyderville Basin Traffic Impact Fee is assumed to provide a total of $250,000, with the majority allocated for the Kimball Junction Transit Center.

  - FTA 5309 funds allocated towards County responsibilities are calculated as 80 percent of the annual County costs associated with the Kimball Transit Center (a 100% County responsibility) and the County responsibilities for vehicle replacement and fleet expansion.

  As indicated, the existing capital reserve fund of $1,075,000 maintains a positive balance through the plan period, ending with a fund balance of $153,400 by FY 2018.

Park City Transit Services

Similar to the discussion regarding development of the Financial Plan for Summit County, the following methodology was utilized in developing the Financial Plan for Park City, as shown in Table 43:

TABLE 41: Summit County / Park City Transit Capital Plan

All Figures in Thousands

Project Description	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	7-Year Total
Transit Buses								
Cost of Replacement Vehicles: County	$0.0	$0.0	$373.4	$761.9	$0.0	$816.2	$0.0	**$1,951.5**
Cost of Replacement Vehicles: City	$0.0	$0.0	$746.8	$761.9	$0.0	$816.2	$1,691.4	**$4,016.2**
Transit Minibuses								
Cost of Replacement Vehicles: County	$0.0	$0.0	$0.0	$139.0	$0.0	$0.0	$221.4	**$360.4**
Cost of Replacement Vehicles: City	$0.0	$0.0	$0.0	$277.9	$0.0	$0.0	$435.8	**$713.7**
Number: County Expansion	*0*	*0*	*0*	*1*	*1*	*0*	*0*	***2.0***
Number: City Expansion	*0*	*0*	*0*	*0*	*1*	*0*	*0*	***1.0***
Cost of Expansion Vehicles: County [1]	$0.0	$0.0	$0.0	$139.0	$143.2	$0.0	$0.0	**$282.2**
Cost of Expansion Vehicles: City [1]	$0.0	$0.0	$0.0	$0.0	$143.2	$0.0	$0.0	**$143.2**
Trolley Replica Replacement	$0.0	$0.0	$0.0	$0.0	$402.3	$0.0	$0.0	**$402.3**
Non-Revenue Vehicles	$0.0	$0.0	$109.7	$0.0	$0.0	$0.0	$0.0	**$109.7**
Kimball Junction Transit Center[2]	$0.0	$270.0	$2,290.0	$0.0	$0.0	$0.0	$0.0	**$2,560.0**
Park City Mountain Resort Transfer Center[2]	$0.0	$0.0	$0.0	$0.0	$1,500.0	$0.0	$0.0	**$1,500.0**
Bonanza Park Transit Transfer Center [2]	$0.0	$0.0	$0.0	$0.0	$200.0	$0.0	$0.0	**$200.0**
Transit Signal Priority	$0.0	$0.0	$50.0	$0.0	$0.0	$0.0	$0.0	**$50.0**
Summit Co. Bus Stop Shelters/Improvements [3]	$25.0	$25.8	$26.5	$27.3	$28.1	$29.0	$29.9	**$191.6**
Park City Bus Stop Shelters/Improvements [3]	$25.0	$25.8	$26.5	$27.3	$28.1	$29.0	$29.9	**$191.6**
Total Summit Co. / Park City Capital Costs [4]	***$50.0***	***$321.6***	***$3,622.9***	***$2,134.3***	***$2,444.8***	***$1,690.4***	***$2,408.4***	**$12,672.3**
County Capital Costs	$25.0	$295.8	$2,714.9	$1,067.2	$171.3	$845.2	$251.3	**$5,370.6**
- 5309 Eligible	$0.0	$270.0	$2,688.4	$1,039.9	$143.2	$816.2	$221.4	**$5,179.0**
City Capital Costs	$25.0	$25.8	$908.0	$1,067.1	$2,273.5	$845.2	$2,157.1	**$7,301.7**
- 5309 Eligible	$0.0	$0.0	$721.8	$1,039.8	$2,245.4	$816.2	$2,127.2	**$6,950.4**

Note 1: This analysis assumes that small buses cost $139,000 per unit for 2WD in 2014-15 dollars (3.0 percent annual inflation assumed).

Note 2: These figures are planning-level cost estimates only. Costs and allocations will be determined more accurately as site and program are finalized.

Note 3: Bus stop improvements include bus stop benches, shelters, site improvements and bus stop signs.

Note 4: While capital costs associated with completion of the Ironhorse Operations Facility will occur during this plan, they have been previously budgeted and are not included in this plan.

Note 5: County costs consist of County vehicle purchases, Kimball Junction Transit Center, bus stop improvements and half of transit signal priority program.

Note 6: City costs consist of City vehicle purchases, trolley replacement, non-revenue vehicles, PCMR and Bonanza Park Transfer Centers, bus stop improvements and half of transit signal priority program.

Source: LSC Transportation Consultants, Inc.

TABLE 42: Summit County Financial Plan

All Figures in Thousands

Project Description	2012	2013	2014	2015	2016	2017	2018	7-Year Total
OPERATING PLAN								
Base Case Costs (Including Allocated Administrative Costs)	$1,715.0	$1,766.5	$1,819.5	$1,874.1	$1,930.3	$1,988.2	$2,046.1	**$13,139.7**
Service Plan Elements [1]								
Marginal Operating Costs	$427.6	$341.2	$550.6	$781.6	$866.8	$889.8	$913.4	***$4,771.0***
Allocated Administrative Costs	$14.9	$13.1	$60.3	$112.1	$128.5	$132.4	$136.3	***$597.5***
Total Costs	*$2,157.5*	*$2,120.8*	*$2,430.4*	*$2,767.7*	*$2,925.6*	*$3,010.3*	*$3,095.8*	***$18,508.1***
Operating Revenues								
Snyderville Basin Sales & Use Tax [2]	$1,400.0	$1,435.0	$1,470.9	$1,507.6	$1,545.3	$1,584.0	$1,623.6	**$10,566.4**
Kamas Commuter Service Passenger Fares	$0.0	$0.7	$3.8	$3.9	$4.0	$4.1	$4.1	**$20.6**
The Canyons Assessment [3]	$343.0	$343.0	$343.0	$544.4	$642.7	$662.0	$681.8	**$3,560.0**
Kimball Transit Assessment [4]	$75.0	$76.5	$78.0	$159.2	$162.4	$165.6	$168.9	**$885.6**
Donations	$12.0	$14.2	$14.9	$15.5	$16.1	$16.6	$17.1	**$106.3**
Bus Advertising	$10.0	$10.0	$10.0	$10.0	$10.0	$10.0	$10.0	**$70.0**
FTA Section 5316 JARC Operating Funds	$0.0	$0.4	$1.9	$2.0	$2.0	$2.1	$2.2	**$10.6**
FTA Section 5311 Operating Funds	$599.0	$581.2	$643.4	$702.0	$670.8	$670.8	$670.8	**$4,537.8**
Total	*$2,439.0*	*$2,461.0*	*$2,565.8*	*$2,944.6*	*$3,053.3*	*$3,115.1*	*$3,178.6*	***$19,757.4***
Balance	***$281.5***	***$340.2***	***$135.5***	***$176.9***	***$127.6***	***$104.8***	***$82.8***	***$1,249.2***
CAPITAL PLAN								
Capital Costs (From Table 42)	$25.0	$669.2	$3,381.4	$166.3	$844.3	$250.4	$29.9	**$5,366.5**
Capital Revenues								
Beginning Fund Balance	$1,100.0	$1,075.0	$970.5	$473.0	$447.9	$256.6	$183.3	
Capital Reserve Funds	$25.0	$104.5	$497.5	$25.1	$191.3	$73.3	$29.9	**$946.6**
The Canyons Assessment	$0.0	$0.0	$0.0	$30.0	$0.0	$0.0	$0.0	**$30.0**
Western Snyderville Basin Traffic Impact Fee	$0.0	$50.0	$200.0	$0.0	$0.0	$0.0	$0.0	**$250.0**
FTA 5309	$0.0	$514.7	$2,683.9	$111.2	$653.0	$177.1	$0.0	**$4,139.9**
Total	*$25.0*	*$669.2*	*$3,381.4*	*$166.3*	*$844.3*	*$250.4*	*$29.9*	***$5,366.5***
Ending Fund Balance [3]	**$1,075.0**	**$970.5**	**$473.0**	**$447.9**	**$256.6**	**$183.3**	**$153.4**	

Note 1: Includes allocated administrative cost factor.

Note 2: At 1 percent annual growth rate, per County direction.

Note 3: Existing assessment plus operating cost of Circulator and Express/Circulator services and associated allocated overhead costs after renegotiation of agreement in December 2014.

Note 4: Assumes doubling of assessment rate in 2015 to partially fund Kimball Circulator

Source: LSC Transportation Consultants, Inc.

TABLE 43: Park City Financial Plan

All Figures in Thousands

Project Description	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	7-Year Total
OPERATING PLAN								
Base Case Costs (Includes Allocated Administrative Costs)	$4,502.8	$4,637.9	$4,777.0	$4,920.3	$5,067.9	$5,220.0	$5,376.6	**$34,502.6**
Service Plan Elements	$319.8	$366.7	$400.2	$387.7	$829.7	$854.6	$880.2	**$4,039.0**
Total Costs	*$4,822.6*	*$5,004.6*	*$5,177.2*	*$5,308.1*	*$5,897.6*	*$6,074.6*	*$6,256.8*	***$38,541.6***
Operating Revenues								
Transit Sales Tax [1]	$1,710.0	$1,883.6	$1,944.1	$2,004.6	$2,065.1	$2,125.6	$2,186.1	**$13,919.1**
Resort Tax	$1,349.0	$1,601.6	$1,653.1	$1,704.5	$1,756.0	$1,807.4	$1,858.9	**$11,730.5**
Business Licenses	$920.0	$843.6	$857.4	$871.2	$885.0	$898.8	$912.6	**$6,188.6**
Night Rental License Fee	$222.0	$225.0	$225.0	$225.0	$225.0	$225.0	$225.0	**$1,572.0**
FTA 5311 [2]	$1,353.7	$1,364.7	$640.6	$397.7	$507.5	$549.0	$595.8	**$5,409.0**
FTA Section 5316 JARC Operating Funds	$0.0	$9.0	$23.4	$19.7	$19.7	$20.6	$21.6	**$114.1**
Donations/Fare Revenue	$50.0	$59.0	$61.9	$64.5	$66.9	$69.2	$71.3	**$442.8**
Kamas Commuter Service Passenger Fares	$0.0	$0.0	$2.5	$3.5	$4.0	$4.1	$4.1	**$18.2**
Heber City Service Passenger Fares	$0.0	$46.8	$61.3	$71.9	$75.3	$76.9	$78.4	**$410.7**
Paid Parking Revenues	$40.0	$40.0	$40.0	$40.0	$40.0	$40.0	$40.0	**$280.0**
Bus Advertising	$17.0	$25.0	$25.0	$25.0	$25.0	$25.0	$25.0	**$167.0**
Interest Earnings	$80.0	$80.0	$80.0	$80.0	$80.0	$80.0	$80.0	**$560.0**
Wasatch County and/or Heber City	$0.0	$9.0	$23.4	$19.7	$19.7	$20.6	$21.6	**$114.1**
County Funding for Administrative Costs of Service Expansion	$14.9	$12.8	$14.7	$109.0	$128.5	$132.4	$136.3	**$548.6**
Total	*$5,756.6*	*$6,200.2*	*$5,652.4*	*$5,636.4*	*$5,897.6*	*$6,074.6*	*$6,256.8*	***$41,474.7***
Balance	***$934.0***	***$1,195.6***	***$475.1***	***$328.4***	***$0.0***	***$0.0***	***$0.0***	***$2,933.1***
CAPITAL PLAN								
Capital Costs (From Table 42)	$25.0	$25.8	$908.0	$1,067.1	$2,273.5	$845.2	$2,157.1	**$7,301.7**
Capital Revenues								
Capital Reserve Funds	($125.0)	($124.2)	$29.7	($89.3)	$167.1	($111.5)	$159.1	**($94.1)**
Real Estate Transfer Fee	$150.0	$150.0	$151.9	$153.8	$155.7	$157.6	$159.6	**$1,078.7**
FTA Section 5309 [3]	$0.0	$0.0	$0.0	$148.9	$1,178.9	$68.8	$1,155.0	**$2,551.6**
FTA Section 5311 [2]	$0.0	$0.0	$726.4	$853.7	$771.8	$730.2	$683.5	**$3,765.5**
Total	*$25.0*	*$25.8*	*$908.0*	*$1,067.1*	*$2,273.5*	*$845.2*	*$2,157.1*	***$7,301.7***
Balance	***$0.0***	***$0.0***	***$0.0***	***$0.0***	***$0.0***	***$0.0***	***$0.0***	
CAPITAL RESERVE FUND BALANCE								
Beginning Fund Balance	$10,650.0	$11,709.0	$13,028.8	$13,474.3	$13,891.9	$13,724.8	$13,836.3	
Transfers from Operating Surplus	$934.0	$1,195.6	$475.1	$328.4	$0.0	$0.0	$0.0	
Capital Expenses	($125.0)	($124.2)	$29.7	($89.3)	$167.1	($111.5)	$159.1	
Ending Fund Balance	$11,709.0	$13,028.8	$13,474.3	$13,891.9	$13,724.8	$13,836.3	$13,677.2	

Note 1: Assumes all existing revenues allocated to transit. As an example, diversion of 5 percent starting in FY 2014-15 would reduce transit operating revenues by approximately $230,000 per year.

Note 2: Allocation of 5311 funding between capital and operating categories may change depending on funding needs and availability.

Note 3: 5309 funding is dependent up the discretionary grant process, and on capital funding available through other sources. Full 80 percent federal funding share of remaining capital requirements for eligible projects assumed.

Source: LSC Transportation Consultants, Inc.

- First, forecasts of annual operating and administrative costs were developed for Park City Transit services, as presented in Table 39, using the same forecasting assumptions described above. Operating and administrative costs over the seven-year period will total approximately $38.5 million with the service modifications, which is a 12 percent increase from the base case total of $34.5 million. Note that this base cost includes $565,000 in non-transit annual costs (rising with inflation) incurred by the Transportation Department that use revenue sources identified in this plan.

- Next, ridership on Park City Transit services was estimated for Fiscal Year 2004-05 through Fiscal Year 2010-11, as presented in Table 40. The "base case" ridership reflects expected ridership assuming no changes in service, and is based upon the forecasts presented in Chapter 8 above. The ridership impact of each Service Plan element is then identified and summed (adjusted for the growth factor associated with new services). In total, implementing all Service Plan elements is forecast to increase system-wide ridership from a Fiscal Year 2017-18 base case figure of 1,303,800 one-way passenger-trips per year to a Fiscal Year 2017-18 total with the service improvements of 1,554,600 one-way passenger-trips – a 19 percent increase in ridership.

- The next element necessary in the development of the Financial Plan is estimation of the capital costs for vehicles, passenger amenities, passenger facility improvements and operating equipment, as shown in Table 41 for each year of the Short Range Transit Plan period. One expansion vehicle is needed for additional On Call services. All revenue vehicles will be diesel-powered. In addition, three non-revenue vehicles will be replaced during the plan period. Finally, the Capital Plan assumes the following implementation of other City transit capital items:

  - Public sector participation in a Park City Mountain Resort Transit Center and a Bonanza Transit Transfer Center, assumed to occur in FY 2015-16.

  - Transit signal priority program in FY 2013-14.

  - Ongoing bus stop improvements.

  Park City Transit's capital costs over the seven-year period will total approximately $7.3 million.

  The results of Tables 39 through 41 were used to develop the Financial Plan, as presented for each of the seven years of the Short Range Transit Plan period in Table 43, and incorporating the following revenue sources:

  - County funding for allocated overhead costs, including allocated overhead costs for service expansions.

  - Transit sales tax revenues, resort tax revenues, business license fees, and night rental license fees, as discussed above.

  - Fare revenue and bus advertising revenues, assumed to increase at 3 percent per year.

  Total operating revenues are forecast to increase from a FY 2011-12 level of $5.8 million to a FY 2013-14 level of $6.3 million. Subtracting operating costs, this yields a net positive operating surplus for the first four years of the plan period. These surplus operating revenues are assumed to flow into the capital reserve fund.

- The City transit capital financial plan is shown in the bottom portion of Table 43. Capital funding sources are assumed to consist of the following:

    - FTA Section 5311 funding. When needed to fund eligible capital programs, these funds are allocated to capital projects, up to the maximum 80 percent federal funding proportion. However, starting in FY 2017-18, additional available 5311 funds will need to be shifted to fund operating costs.

    - FTA Section 5309 funds are allocated to funding 80 percent of the City's capital costs, excluding the bus stop improvements, non-revenue vehicle replacement, and signal preemption costs, and excluding other available capital funding. This assumes the City is successful with all 5309 applications.

    - Real estate transfer fees, assumed to equal $150,000 per year in FY 2011-12 increasing with inflation.

Capital reserve funds are used to make up any shortfall in capital funding. Under this plan the City transit capital reserve fund will end up with a 2017-18 ending positive fund balance of $13.7 million. Even if the City is not fully successful with obtaining discretionary Federal capital grant programs, this fund balance indicates that capital needs of the City program can be met.

IMPLEMENTATION PLAN

The implementation schedule for this plan is as follows:

City Fiscal Year 2011-12 / County Fiscal Year 2012

- Extend services till Midnight on the Park Meadows, Prospector Square, Prospector Express and Thaynes Canyon routes throughout the winter and in the peak summer season

- Implement winter evening Canyons Circulator/Express service, including establishment of new stops.

- Extend winter service till 11 PM on the Kimball Junction and Silver Summit/Highland Estates route.

- Reduce reservations requirement for Quinn's Junction Dial-A-Ride to one hour in advance.

- Coordinate with Heber City and Wasatch County regarding funding and design of Heber City service.

- Support Park City – Salt Lake City service.

- Implement AVL system, and plan for signal pre-emption.

- Finalize plans and permitting for Kimball Junction Transit Center

- Implement park-and-ride management program.

- Finalize agreement between Park City and Summit County for City maintenance of bus stops in the county, and begin City maintenance of bus stops citywide.
- Continue bus stop enhancement program throughout the system.

City Fiscal Year 2012-13 / County Fiscal Year 2013

- Implement year-round service between Heber City and Park City.
- Continue to support Park City – Salt Lake City service.
- Review routing based upon passenger activity data generated by AVL system.
- Establish and fill the Data Analyst position.
- Finalize plans and stop locations for Kamas service, as well as funding agreements.
- Begin construction of Kimball Junction Transit Center.
- Continue bus stop enhancement program throughout the system.

City Fiscal Year 2013-14 / County Fiscal Year 2014

- Finalize plans and stop locations for Kimball Circulator
- Finalize schedules and stops for revisions to Kimball Junction and Silver Summit/Highland Estates routes.
- Implement winter Kamas Commuter service.
- Continue to support Park City – Salt Lake City service.
- Establish and fill the Equipment Coordinator position.
- Complete construction of the Kimball Junction Transit Center.
- Continue bus stop enhancement program throughout the system.
- Purchase three transit buses.
- Purchase three transit support vehicles.

City Fiscal Year 2014-15 / County Fiscal Year 2015

- Implement 20 minute headway express service on SR 224, with hourly local route.
- Modify Silver Summit/Highland Estates route.
- Implement Kimball Junction Circulator.

- Finalize plans and stop locations for Canyons Circulator
- Establish and fill the Marketing Manager position.
- Continue bus stop enhancement program throughout the system.
- Purchase four transit buses and three smaller transit vehicles

City Fiscal Year 2015-16 / County Fiscal Year 2016

- Implement Canyons Circulator.
- Conduct Short Range Transit Development Plan update study.
- Continue bus stop enhancement program throughout the system.
- Purchase a replacement trolley vehicle.

City Fiscal Year 2016-17 / County Fiscal Year 2017

- Continue bus stop enhancement program throughout the system.
- Purchase four transit buses

City Fiscal Year 2017-18 / County Fiscal Year 2018

- Continue bus stop enhancement program throughout the system.
- Purchase four transit buses and three smaller transit vehicles.

There are also elements of this plan (such as transit passenger facility improvements at Park City Mountain Resort and Bonanza, and implementation of fixed route Quinn's Junction service) that will occur during this planning period, but which are dependent on private development schedules.