Park City and Summit County Short Range Transit Development Plan

Final Report

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Prepared for
Park City Municipal Corporation

and
Summit County, Utah

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Chapter 1
Introduction

Transit is vibrant in Park City, Utah. Park City Transit is a robust transit system that makes a difference in the community. The system is poised to continue to improve and expand and that effort will be guided by this Park City, Summit County Short Range Transit Development Plan. This plan is steered by the commitment to ensuring that the overall public transportation system continues to improve and remain accessible, interconnected, sustainable and multimodal, serving both local residents and visitors.

THE COMMITMENT TO TRANSIT

The city and county's commitment to transit are best expressed through a review of the most recent plans for Park City and Summit County, the latter specifically focusing on Snyderville Basin where the vast majority of population resides and the most significant traffic issues occur along SR 224 and SR 248 during the winter.

City Needs

The city's broad goals in its General Plan[1] call for maintaining:

- The small town nature
- The natural setting
- A sense of community
- The historic character

Transit in Park City has a role in maintaining broad community goals. A theme throughout the General Plan includes expanding public transit presence in order to reduce auto traffic, vital to the city's goals. Expanded transit is critical to each goal and nowhere is it more evident than where it serves to support affordable housing goals and as part of the solution to parking. Goal 3 of the General Plan focuses on transit.

Goal 3: Speaks to the need for continued and expanded transit: "Park City will encourage alternative modes of transportation on a regional and local scale to maintain the small town character." The goal calls for:

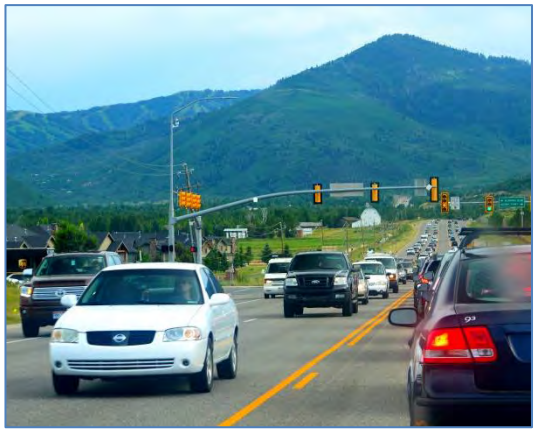
[1] Park City General Plan, 2014

> *"A major focus of transportation decisions is the end user. There are competing end-user interests in Park City between visitors and local residents. In order to effectuate a paradigm shift in preference of public transportation over the single-occupancy vehicle, the public transportation system must function to attract both the visitor and the local alike."*

Goal 3- B: *Prioritize efficient public transportation over widening of roads to maintain the Small Town experience of narrow roads, modest traffic, and Complete Streets.*

Goal 3-C: *Public transportation routes should be designed to increase efficiency of passenger trips and capture increased ridership of visitors and locals.*

County Needs



The emphasis of this analysis is western Summit County, specifically Snyderville Basin and the SR 224 corridor, where the most severe traffic exists. Traffic on SR 224 is mounting as a result of growth in the area and the large influx of day trippers and longer term visitors employees and commuters going through the Kimball Junction area.

Snyderville Basin General Plan (2015) calls for addressing regional trips through mass transit as well as developing mass transit along the SR 224 corridor. The Snyderville Basin Transportation Plan[2] calls for infrastructure and service improvements, and multimodal and express service (with infrastructure improvements) on SR 224, with an emphasis on service at the Canyons.

> *"The draft Short Range Transportation Plan by Park City and Summit County for the Snyderville Basin considered services outside the area to improve services within the Basin. This includes options to service Eastern Summit County as well as potential connections to Salt Lake and Heber. In general, unless a service meets adopted transit service polices of 10 riders per hour, it is not recommended."*

Eastern Summit County Master Transportation Plan (2013) pays little attention to transit in its predominantly rural jurisdictions. As a result of this high threshold (in essence a performance measure more suited to Park City or Salt Lake City than rural Summit County), the plan only recommended winter transit/commuter service to Kamas and no service to Coalville.

[2] Snyderville Basin Long Range Transportation Plan: Summary of Existing Conditions and Short Term Needs Identification, August 2014

A Commitment to Transit

Park City and Summit County are committed to transit as part of the solution to maintaining quality of life for residents and visitors. The peer review demonstrates that Park City Transit operates a high volume service. This combination of city and county will go a long way toward ensuring the system continues to grow and evolve as the area grows and changes.

Park City Transit has made a difference in parking and traffic issues that inevitably arise as visitor's numbers reach their peak in the winter season. As much as transit has helped in reducing auto traffic, new practical service designs have been recommended. They include intercepting day tripper auto traffic at Interstate 80 and U.S. 40 with park and ride lots and some form of express service and exclusive right of way for transit to major destinations. This would eliminate additional traffic, while gaining both priority and rapid transit service. Most importantly this fast comfortable service can attract new riders to the system.

THE PLANNING PROCESS

This plan was developed over the past eight months and comprised a wide range of efforts including the review of existing services, analysis of demographics, land uses and needs, meetings with staff and management, public meetings, field observations, riding of each bus route twice and interviews with stakeholders. The process included the methodical development of a series of technical memoranda that provide extensive detail. They include:

- Appendix A - Technical Memorandum 1: Demographics, Land Uses and Travel Patterns
- Appendix B - Technical Memorandum 2: Review of Existing Services
- Appendix C - Technical Memorandum 3: Transit Demand Analysis
- Appendix D - Technical Memorandum 4: Development of Alternatives

These memoranda are summarized in the following chapters. For readers interested in the full detailed analysis, the consultants recommend reviewing these technical memoranda.

This plan includes the following chapters:

- Chapter 1: Introduction
- Chapter 2: Review of Demographics and Land Uses
- Chapter 3: Review of Existing Services
- Chapter 4: Transit Demand Analysis
- Chapter 5: Development of Service and Organizational Alternatives
- Chapter 6: Short Range Plan Activities
- Chapter 7: Seven Year Financial Analysis and Projections

Key Themes and Goals

Subsequent to outreach efforts, analysis of services and demographics it became evident that a variety of themes resonated throughout the process.

1. **Ensure Park City Transit is operating at maximum efficiency** – Peak season sees high usage of transit. It is important to ensure service is as efficient and effective as possible.

2. **Ensure connectivity with bicycle and pedestrian modes** - Transit, pedestrians and bicyclists go hand-in-hand. All bus riders are pedestrians or cyclists. Transit enhances both cycling and walking by allowing people to travel longer distances. It is important to ensure connectivity between pedestrian and bicycle pathways.

3. **Review and make recommendations for each route** - The main focus of this effort was on reviewing routes and identifying low performers.

4. **Review potential for enhanced express or bus rapid transit corridors** - Enhanced transit service, with increased frequencies in the SR 224 corridor from Kimball Junction.

5. **Environmental justice** - Transit needs to reach low income residents and those with limited English skills and otherwise disadvantaged through compliance with Title VI of the Civil Rights Act, and Limited English Proficiency (LEP) requirements.

6. **Infrastructure needs** - Facilities and bus stops were reviewed and there should be a need to upgrade some stops and shelters. Planned park and ride lots should be required to support a more frequent Kimball Junction to Park City express service.

7. **Staffing - Preparing for future growth** - Peak season demands on service require adding new and returning drivers and training operators to proficiency. Marketing and joint marketing with the private sector is another area that needs professional staff as this position can pay for itself.

8. **Addressing Transportation Demand Management (TDM)** - Approaches to reduce the use of cars through strong transit, parking constraints in Park City and expanded parking on the outskirts of town. These activities should determine the utility of service from Kimball Junction.

9. **Provide extensive outreach** - Outreach is done through interviews, meetings and riding buses. Stakeholders include community, political, business leaders, human service agency advocates as well as other interested persons/organizations.

10. **Highlight transit successes in Park City and Summit County** - Park City Transit is a vibrant system that compares very favorably to peer systems.

Chapter 2
Demographics, Land Uses and Travel Patterns

INTRODUCTION

This chapter describes demographic transit attributes of the study area which consists of Park City, Summit County and Heber City in Wasatch County. The intent is to identify areas in need of transit as either origins or destinations. The analysis includes the study and service area demographic profile, service area characteristics including major destinations and land uses, local travel patterns, and a summary of economic conditions and future growth. For further details related to this analysis, see Appendix A.

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 its skiing opportunities and is becoming increasingly known for a variety of other recreational, cultural and historical resources and events. Park City and Snyderville Basin are dominated by resort and destination based areas including two distinct ski resorts with three base areas, a historic downtown as well as housing and lodging to accommodate these destinations. Figures 2-1 and 2-2 illustrate the study area and current service area.

As a major seasonal tourism destination, there is considerable fluctuation in population, activity, and travel patterns throughout the year. According to the Park City Chamber of Commerce 2015 Park City and Summit County Economic Profile, peak winter season (mid-December – mid April) sees over 40% of the total overnight visitors in the area for the year. This impact, coupled with day trip skiers from the Salt Lake area, creates a substantial traffic burden on major service area corridors.

Figure 2-1: Short Range Transit Development Plan Study Area

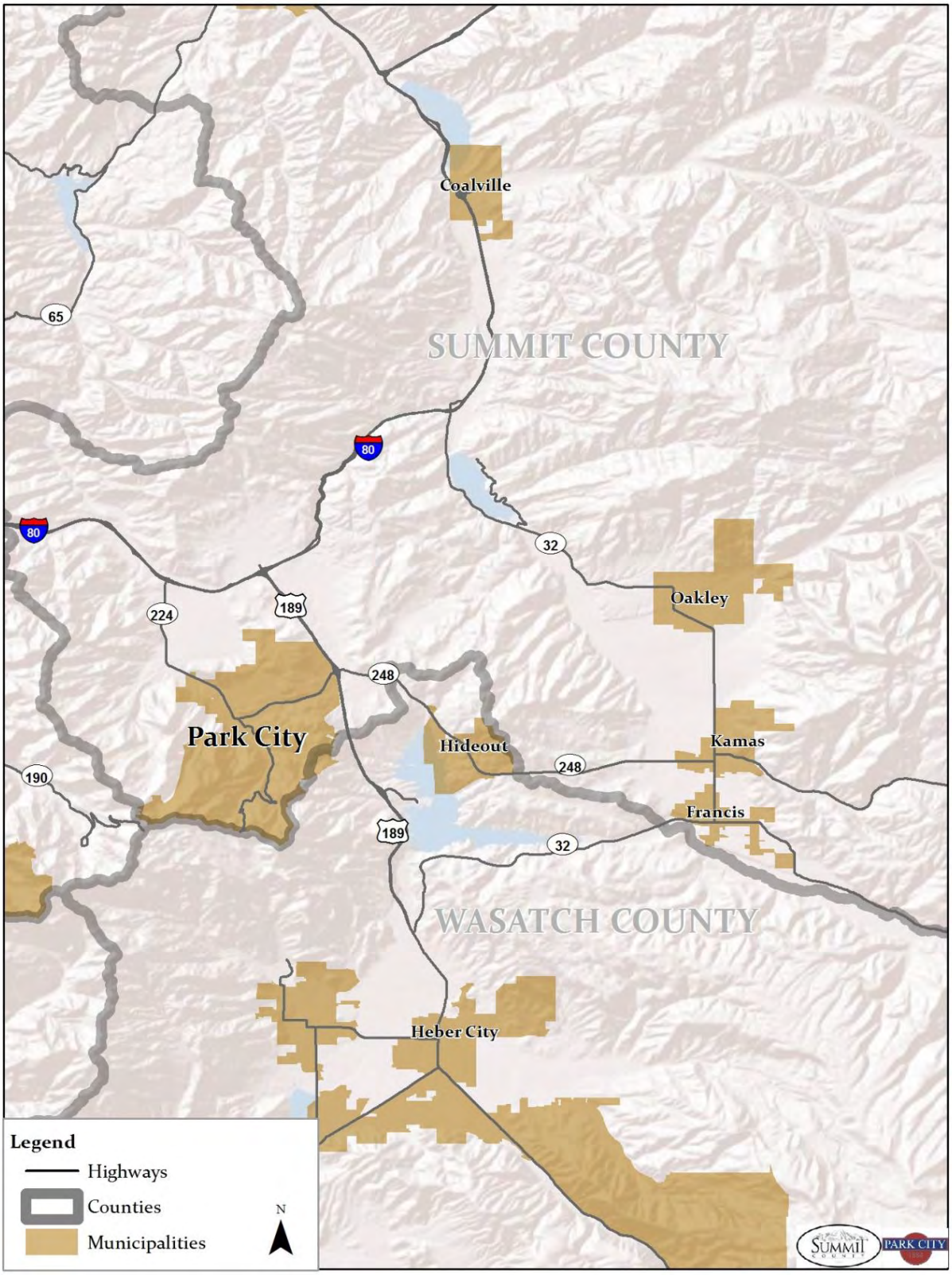
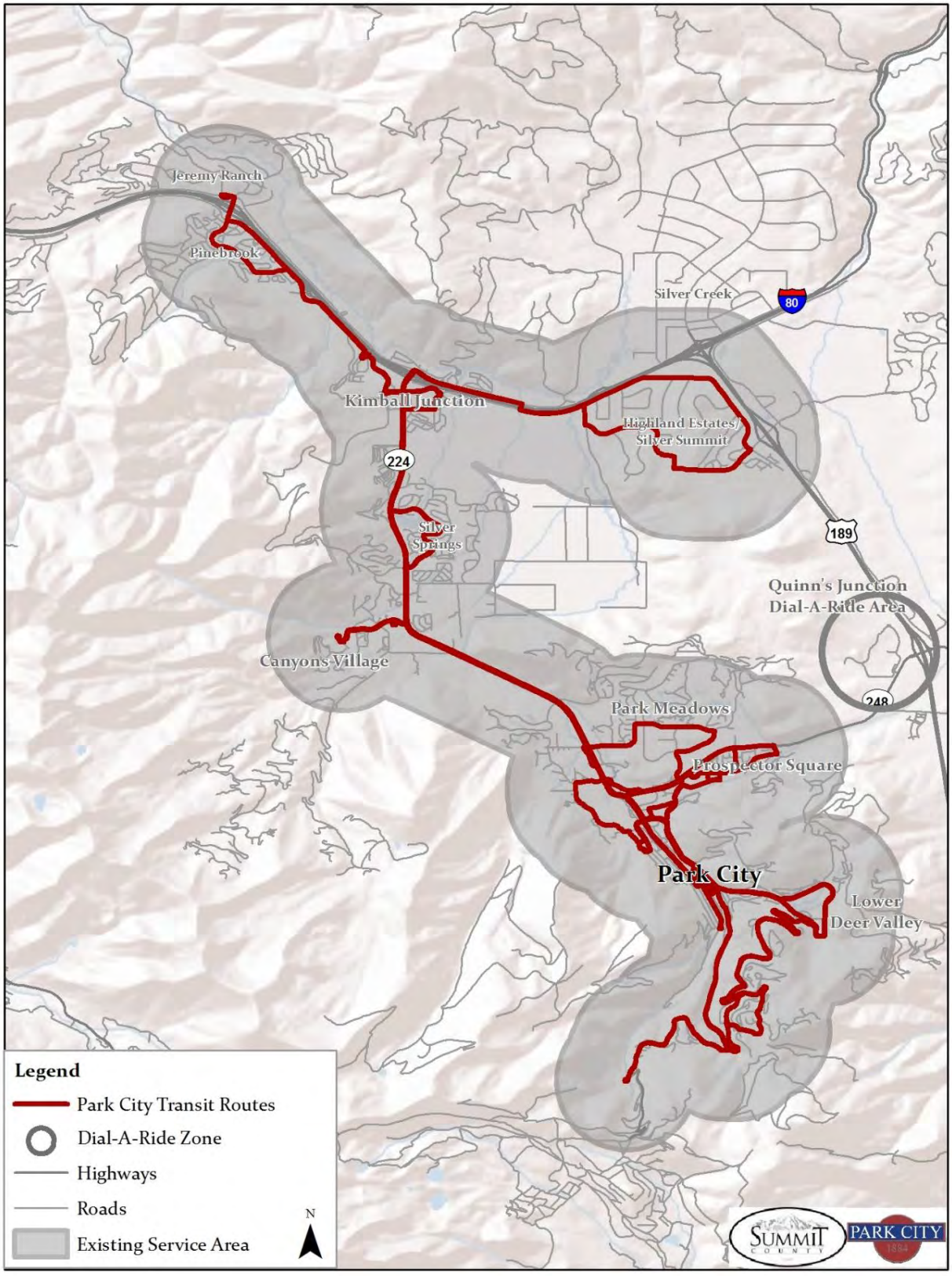


Figure 2-2: Park City and Summit County Transit Service Area



DEMOGRAPHICS

This section includes a review of the population of the study area, an analysis of population density by season and the transit dependent and Title VI analyses.

Population

For Park City and Summit County there are two distinct population groups that are essential to account for in a transit demographic analysis. Transit serves the local resident population. Transit is also an essential service for the visitor population. Table 2-1 depicts the local resident population. As shown in the table, approximately 24,000 people live in the service area (Park City and the Snyderville Basin), comprising 66% of Summit County population. The population has grown by less than one percent in Summit County over the last four years. However, Park City has seen six percent growth in population since 2010.

The service area population varies significantly by season. The winter season is far busier than other seasons and requires additional transit service from December to mid-April. Service also sees a significant increase during prime vacation days and the Sundance Film Festival. The summer season from June to September sees a significant number of overnight visitors. Shoulder seasons, Mid-April until June and September to December, have the lowest overnight visitor population.

Table 2-1: Summit County Resident Population

Population	2014	2010
Park City	8,058	7,558
Snyderville Basin	16,500	16,000
Total Service Area	**24,558**	**23,558**
Summit County	36,483	36,324

Source: US Census American Fact Finder

Table 2-2 shows the Park City overnight visitor population related to the local resident population. During peak winter and summer seasons, visitors outnumber residents. This influx of visitors has significant impacts on the population profile of the service area. Many areas in which large hotels are located have very few full time residents. The population density profile, when including visitors and winter employees, looks markedly different during the off-peak season compared to peak seasons.

Table 2-2: 2014 Park City Overnight Visitor Population Data

Visitor Data	2014 Visitors per Day	Park City Population	2014 Population Including Visitors (visitor + residents)	Overnight Visitors Percent of Total Population
Annual Average	**9,656**	**7,962**	**17,618**	**55%**
Winter (Dec-April)	13,783	7,962	21,745	63%
Summer (June-Sep)	10,113	7,962	18,075	56%
Shoulders (April-June, Sep-Dec)	6,081	7,962	14,043	43%

Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

Population Density

Population density is an important indicator for transit service. As a general rule, areas with over 1,000 people per square mile (or major trip destinations) can support fixed route transit service. Population density in the Park City area varies by season. Figure 2-3 shows resident population density, which can be considered off-peak season density.

Figure 2-4 depicts population density taking into account overnight visitor population during peak season. The differences in population density are striking and reflect where overnight visitors tend to "reside" while in the area.

Transit Dependence Index

Transit Dependence Index (TDI) is an aggregate measure that may be associated with mapping software to effectively display relative concentrations of transit dependent populations (youth, elderly, persons with disabilities and zero car households) within a study area. Figure 2-5 depicts the TDI for the study area for 2014. Areas with the highest need for public transit based on the concentration of transit dependent cohorts consists of Heber City and Park City. Figure 2-6 shows the TDI for the service area. The Kearns Boulevard Corridor, Silver Springs and Pinebrook show the highest public transit need based on transit dependent populations.

Title VI Analysis

The Title VI analysis identifies the location of low income individuals, locations of minorities, and locations of households with limited English proficiency. Data comes from the 2013 American Community Survey five year estimates. This analysis should assist in ensuring that vulnerable groups are not disproportionately impacted by service adjustments. Figure 2-7 depicts the concentration of households below the poverty line within the study area. As

Figure 2-3: Service Area Density - Population per Square Mile (Residents Only)

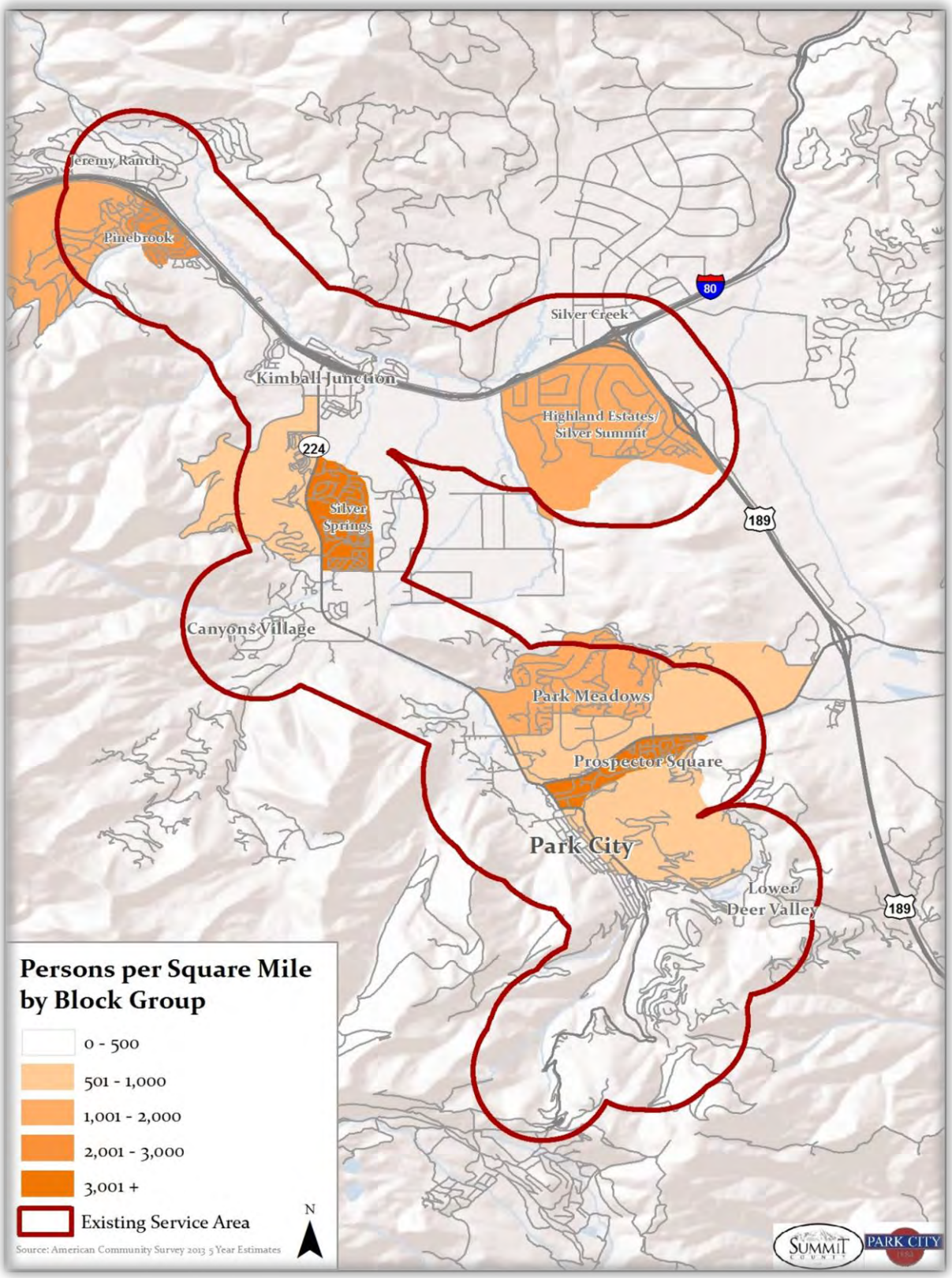


Figure 2-4: Service Area Peak Season Population Density (Residents and Overnight Visitors)

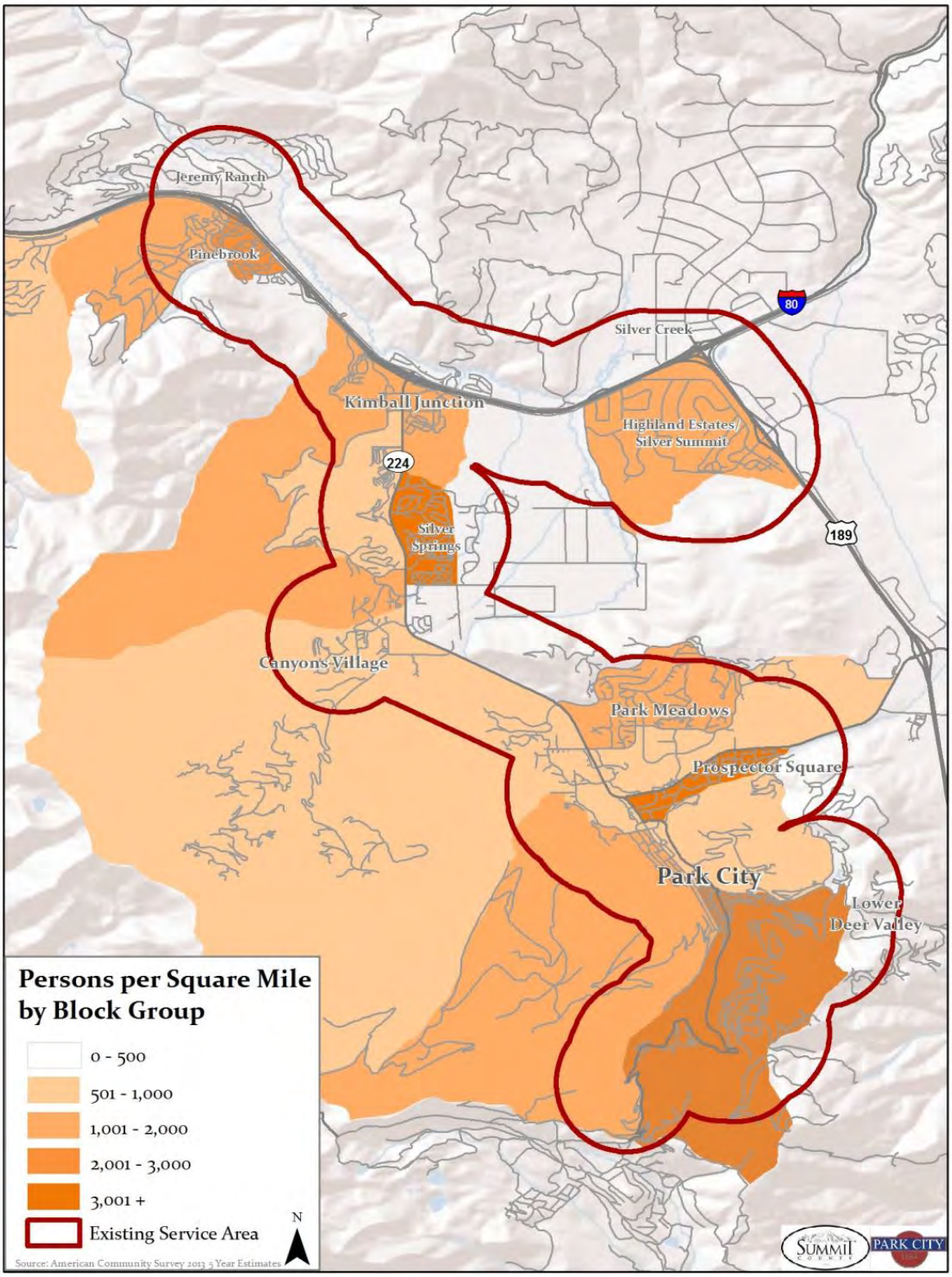


Figure 2-5: Study Area Transit Dependence Index

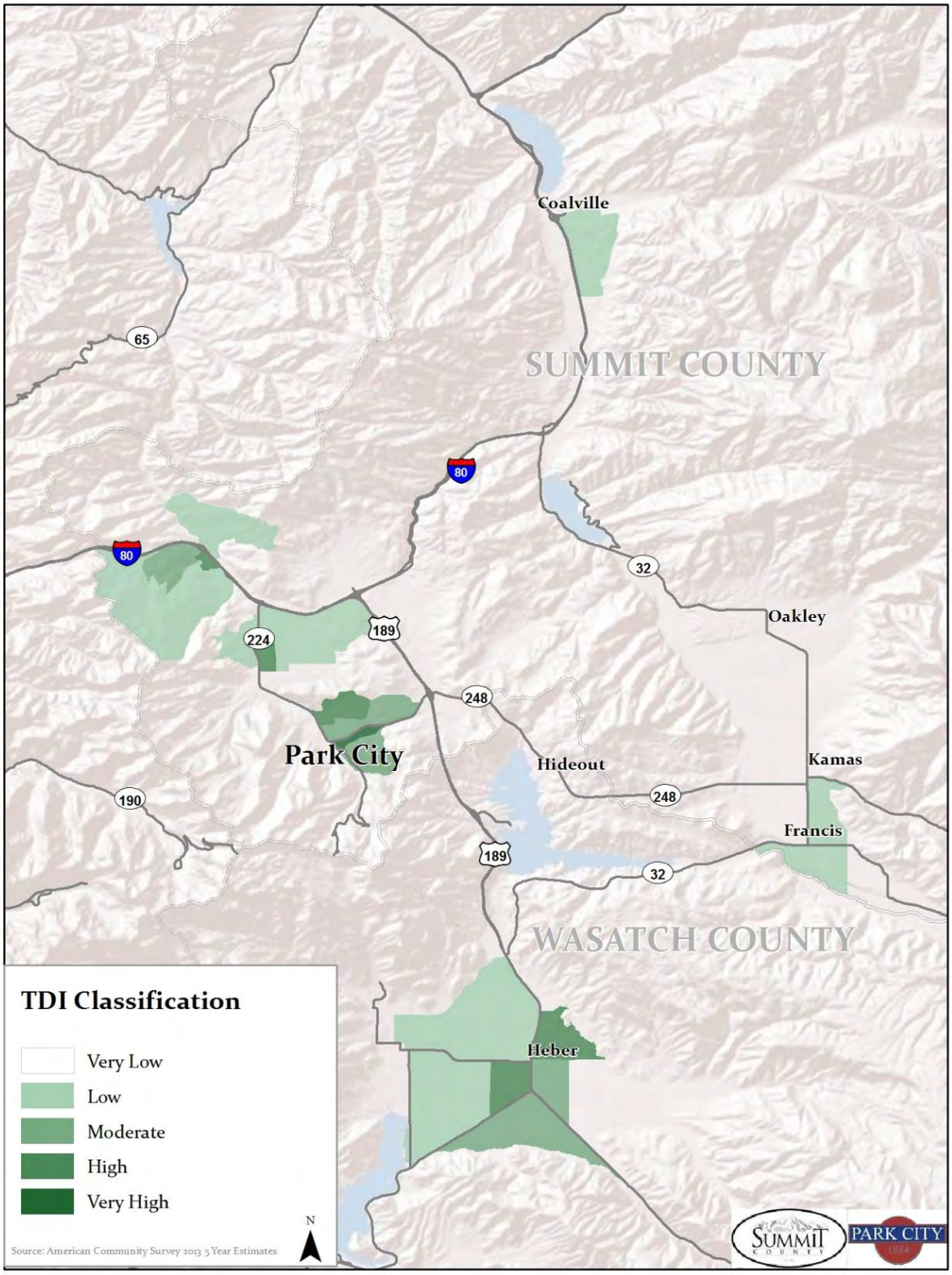


Figure 2-6: Service Area Transit Dependence Index

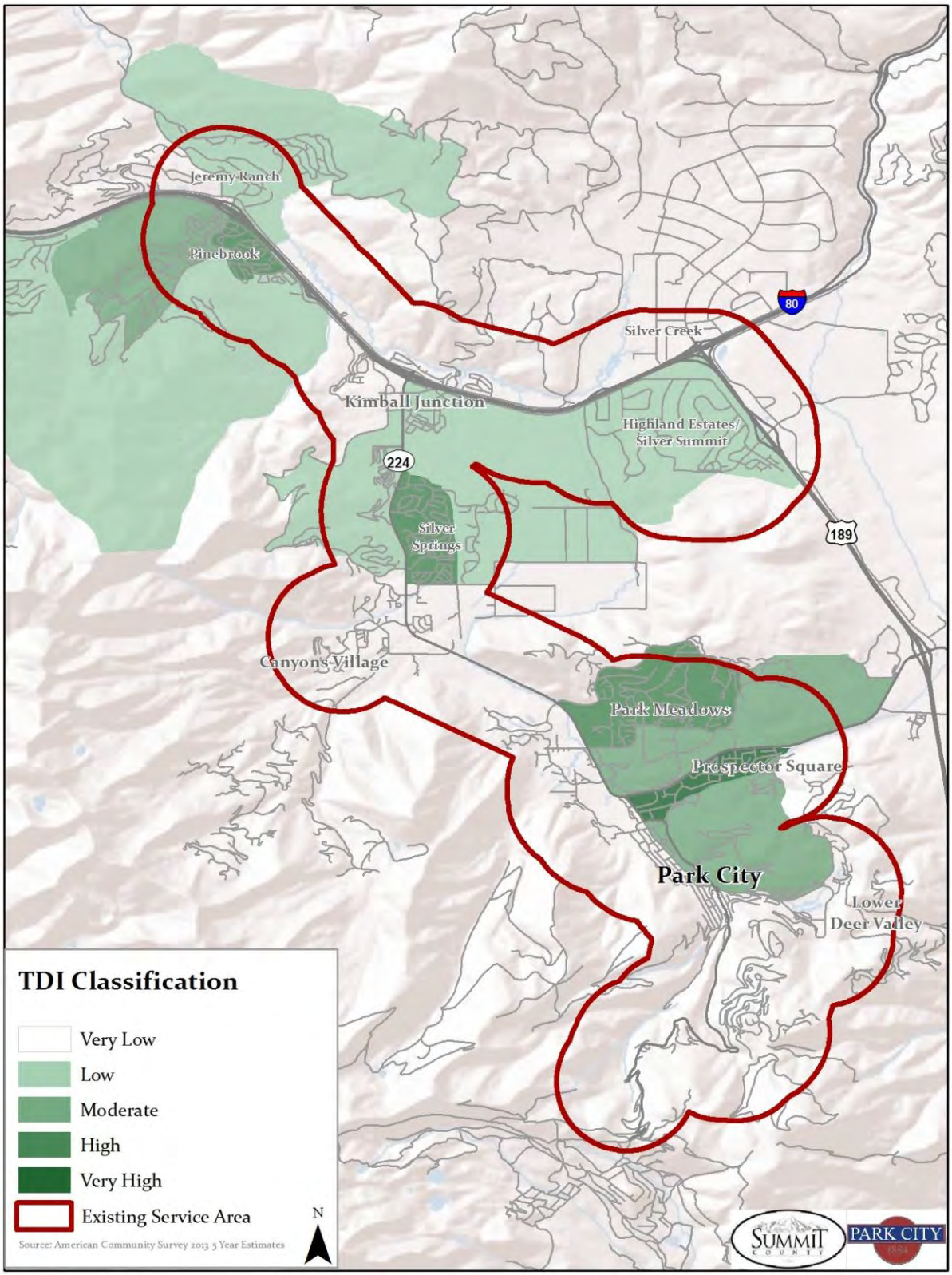
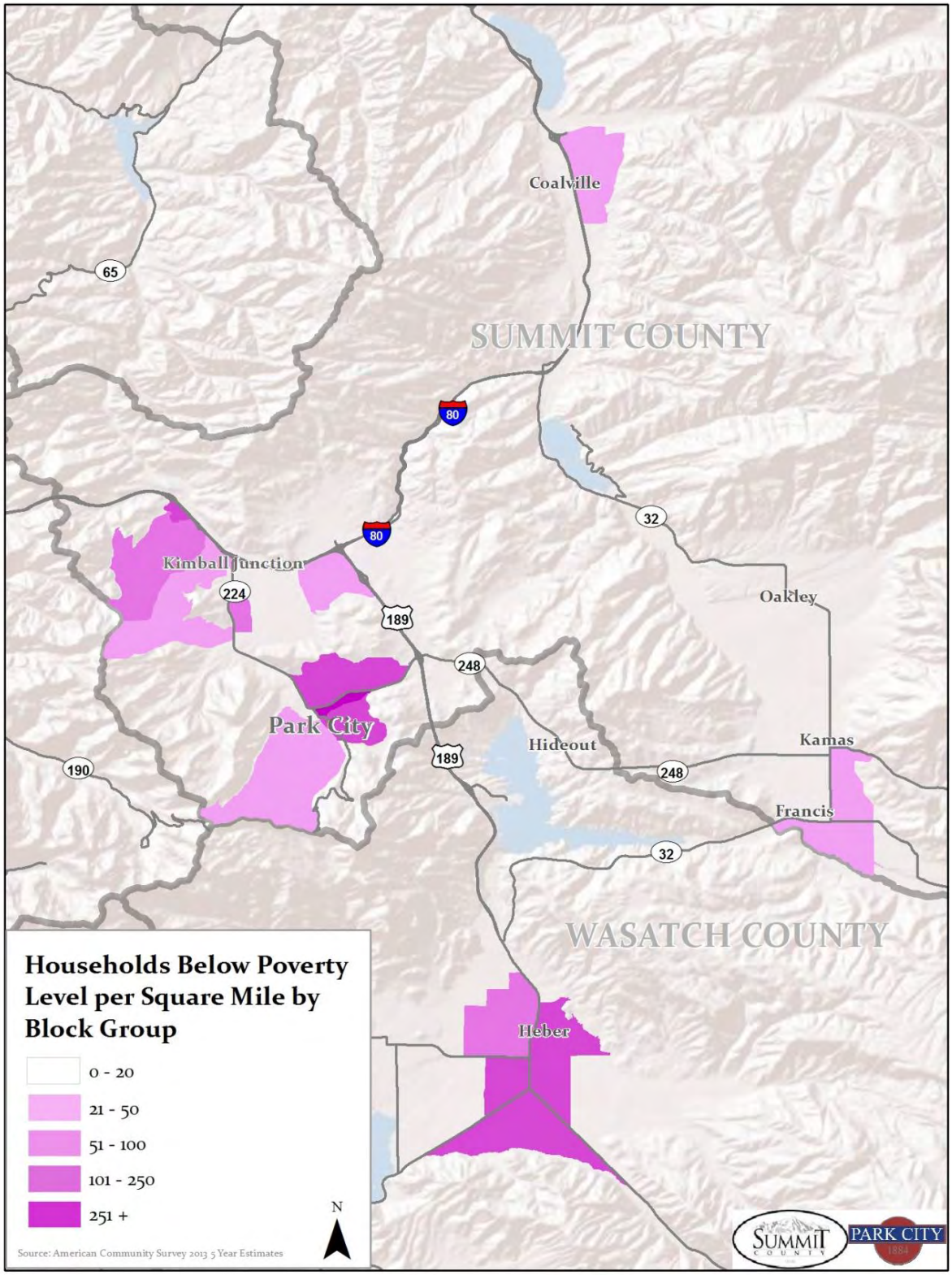


Figure 2-7: Study Area Households Below the Poverty Level per Square Mile



shown, Park City and Heber City have the highest concentrations of households below the poverty line. Figure 2-8 shows the number of minorities per square mile in the study area. Park City and Heber City show the highest minority populations per square mile.

Figure 2-9 shows the highest concentrations of people who have limited English proficiency. This represents less than 5% of the study area population and yet has the highest concentration in Central Park City and Heber City.

Special Events

Park City is home to many special events that attract visitors from around the world. Special events are extremely important to Park City Transit service. They produce significant demand and ridership for the system and require additional planning, operations and staffing during major events. Park City Transit provides increased levels of service during major events in order to provide a high level experience to visitors and offset traffic and parking issues.

Many events create significant demand for transit services and require extensive operations planning and preparation. Due to limited parking in the Old Town area of Park City many single day events and parades (Miner's Day and Independence Day) require event goers to park in remote lots and use transit to access the event.

Demographic Needs Summary

Within the service area, several patterns emerge from the demographic needs assessment. Areas that showed high population densities such as Kearns Boulevard and areas with a high percentage of residents that are transit dependent include:

- Kearns Boulevard Corridor
- Pinebrook
- Silver Springs
- Kimball Junction
- Silver Summit/Highland Estates
- Park Meadows

In regards to visitor populations, Deer Valley, Park City Resort base area and Canyons Village have the highest number of lodging and visitor visits. Park City Transit has developed a system that serves all of these geographic areas.

Park City has the most expensive housing in Summit County. As a result, many workers in Park City commute from other areas within the study area. The analysis shows the highest concentration of people and transit dependent populations outside of Park City area include Heber City, Coalville and Kamas, which show moderate need.

Figure 2-8: Study Area Minority Population per Square Mile

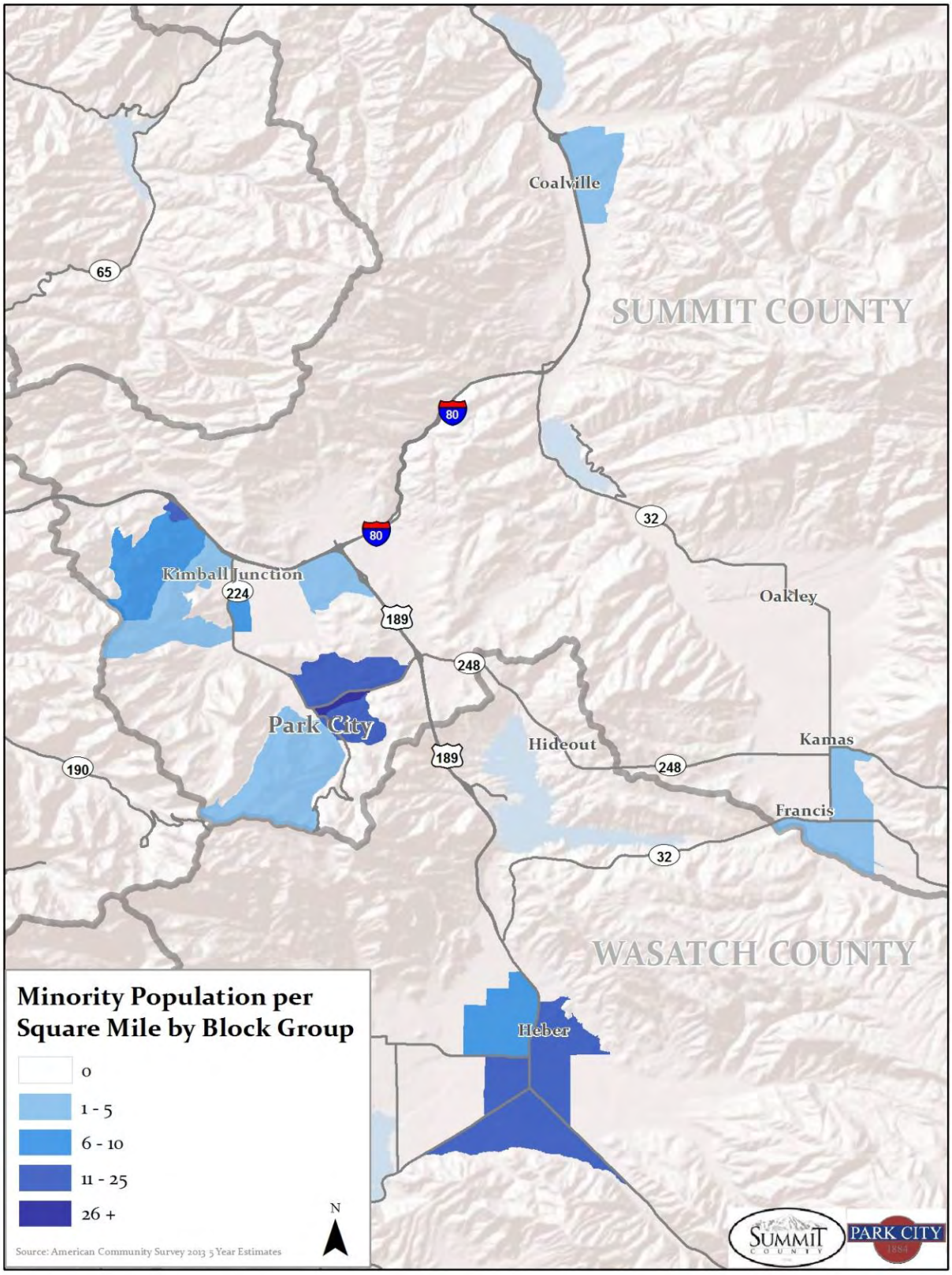
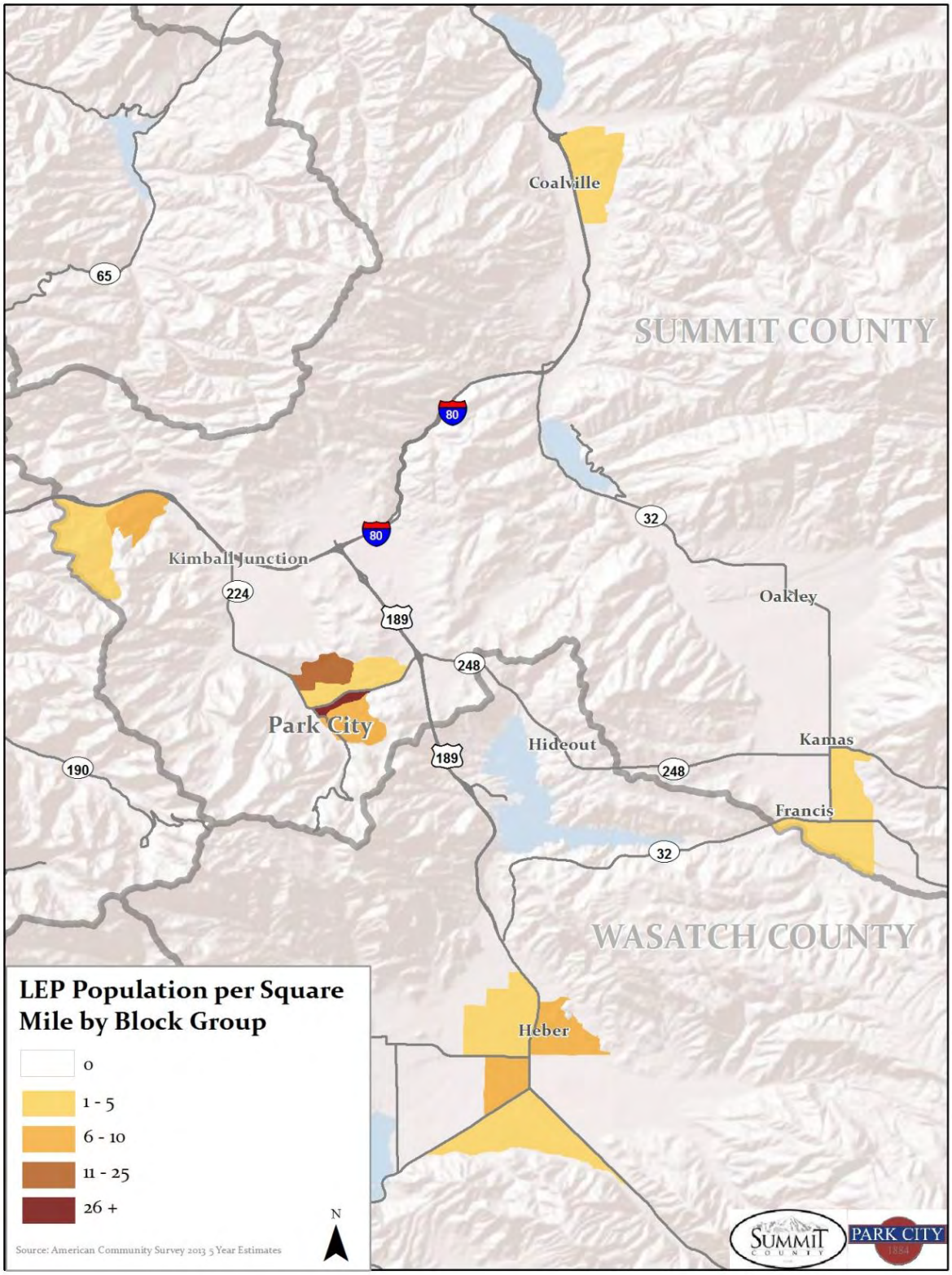


Figure 2-9: Study Area Population with Limited English Proficiency per Square Mile



LAND USES

Major land uses are identified as origins, from which a concentrated transit demand is generated, and destinations, to which both transit dependent persons and choice riders are attracted (Figure 2-10). They include major attractions/tourism locations, educational facilities, human service agencies, medical facilities, schools, and major shopping destinations.

TRAVEL PATTERNS

Park City has unique seasonal travel patterns due to the abundance of destinations and proximity to Salt Lake City. Many residents, workers and visitors travel in and out of the service area frequently. According to the recent SR 224 Corridor Study, during peak visitor seasons SR 224 can be at capacity and I-80 can see significant traffic volumes between Park City and Salt Lake City. The Existing Conditions section of the 2015 Park City Transportation Demand Management Study reveals local travel patterns to major employment areas from residential areas in Silver Springs, Kimball Junction, Silver Summit/Highland Estates and Park City, which can create a traffic burden on major arterials.

Regional Travel Patterns

Summit County is a major visitor destination and subsequently a major employment destination. Everyday thousands of workers from outside the study area come to work in Summit County.

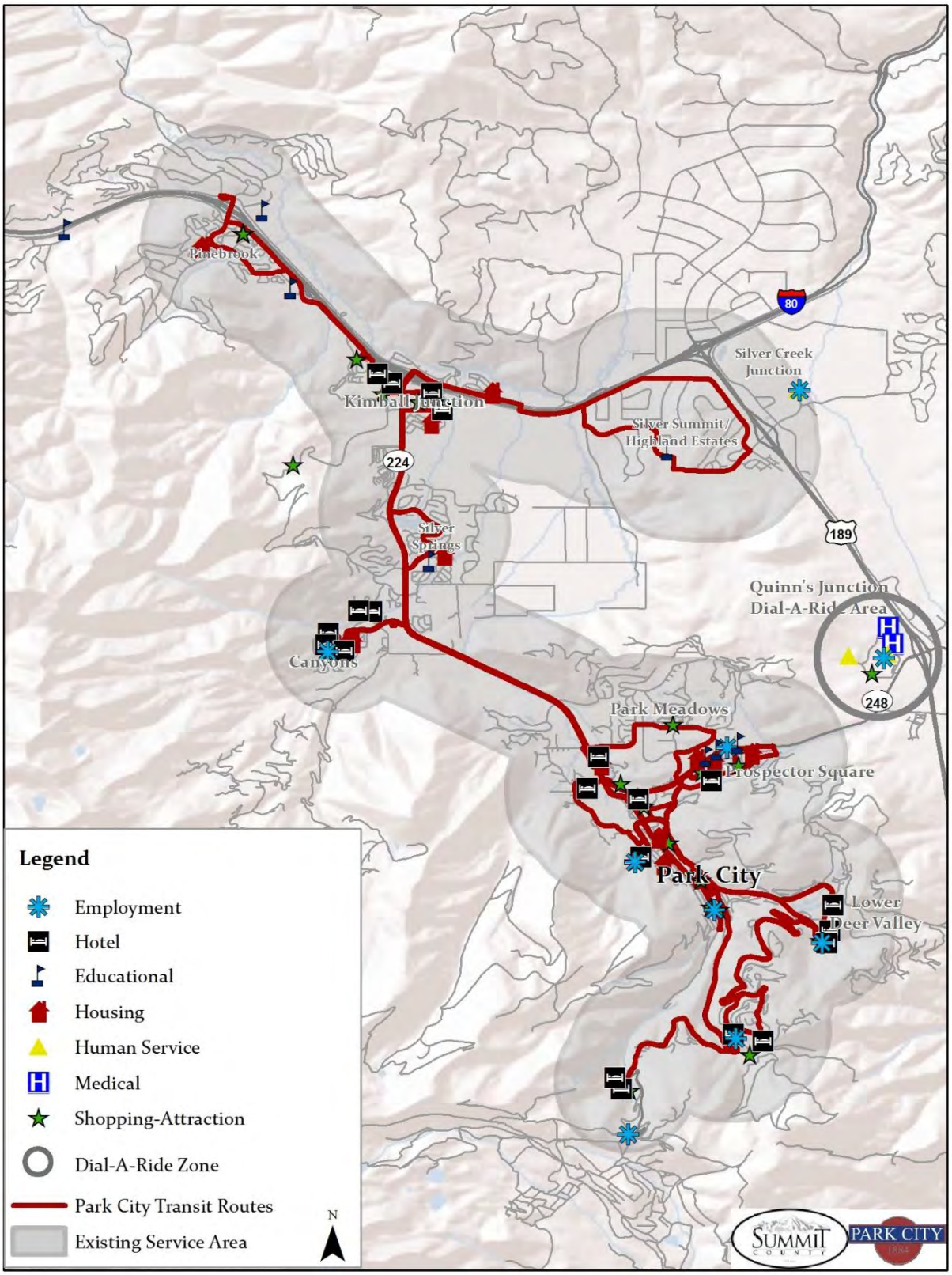
Table 2-3 shows where people live who work in Summit County. As shown, 60 percent of employees who work in Summit County live outside Summit County. This is a very significant percentage adding significant daily traffic. Of all out-of-county commuters coming into Summit County, 51% come from Salt Lake County, 33% from Wasatch County and 16% from other counties.

Table 2-3: Where People Live Who Work in Summit County

Summit County Employee s	Percentage
Live in Summit County	40%
Live Outside Summit County	60%
Other Summit County Employees	
Live in Salt Lake County	51%
Live in Wasatch County	33%
Live in Other Counties	16%
Total Number of Employees	**22,604**

Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

Figure 2-10: Service Area Local Trip Generators and Fixed Route Coverage



Chapter 3
Review of Existing Transit Services

INTRODUCTION

All transit systems should regularly seek a system review to determine if the transit system is operating:

- Efficiently – Defined as doing things right: Is Park City Transit operating efficiently compared to peers and more importantly to itself over time?

- Effectively – Defined as doing the right things: Is Park City Transit serving customers in need, local residents, visitors and commuters? Is the service appropriate?

This chapter is a summary of existing services. For greater detail, see Appendix B - Technical Memorandum 2: Review of Existing Services. Included in this appendix are detailed route profiles for all routes.

General Overview – Park City Transit

Park City Transit offers a robust level of service for a community of its size. This is indicative of a locale that attracts many visitors throughout much of the year. Park City Transit operates fixed route and ADA paratransit within Park City and parts of Summit County, depicted in Figure 3-1. Park City Transit operates about 73,602 hours and 1,096,171 miles of fixed route and special events service annually (using 2014 data).

Approximately 67% of annual service hours are operated within the Park City limits and 33% of service hours are within the county.[3] The service level shifts multiple times over the year to meet the specific needs of each season. Tables 3-1 through Table 3-3 detail seasonal performance by route. Most notable is the winter season from early December to mid-April. Winter is by far the busiest season, putting a strain on the system as it is also the most difficult operating environment due to cold temperatures, snow and ice. This combination of factors makes Park City a very difficult operating environment in the winter.

[3] Source: Park City Municipal Corporation Miles-Hours-Ridership by Route. FY 2014 Summary

Figure 3-1: Park City Transit Service Area

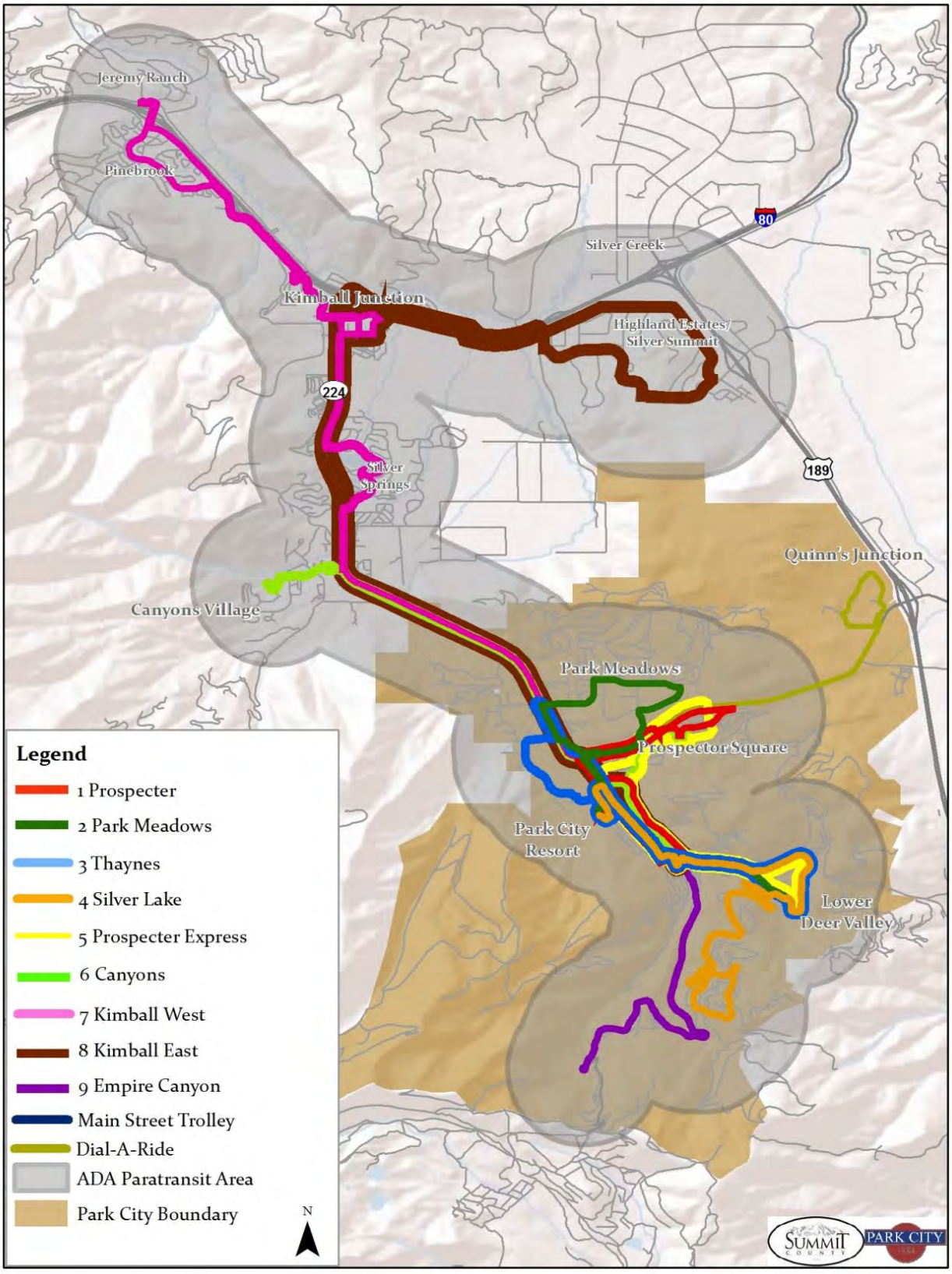


Table 3-1: 2014 Winter Fixed Route Data and Performance

Winter Peak (December 12 - April 12)	Ridership	One-Way Trips per Day	Service Hours	Service Miles	One-Way Trips per Service Hour	Round Trip Miles	Peak Vehicles	Scheduled Running Times	Headways
1 Red - Prospector Square	145,356	1,191.44	4,113	50,685	35.34	9	2	7:25 am-11:45 pm	20 Minute
2 Green - Park Meadows	162,564	1,332.49	5,714	63,351	28.45	9	3	7:38 am-11:15 pm	20 Minute
3 Blue - Thaynes Canyon	143,961	1,180.01	3,861	48,797	37.29	8.7	2	7-28 am-11:48 pm	20 Minute
4 Orange - Silver Lake	85,174	698.15	2,460	32,296	34.62	11.6	2	6:15 am-6:15 pm	30 Minute
5 Yellow - Prospector Express	104,268	854.66	3,796	43,886	27.47	7.5	2	7:43 am-10:43 pm	20 Minute
6 Lime – Canyons	71,938	589.66	2,737	34,531	26.28	13.4	2	6:24 am-5:15 pm	30 Minute
7 Pink - Kimball West	196,049	1,606.96	6,118	100,361	32.04	25	3	5:40 am-10:40 pm	30 Minute
8 Brown - Kimball East	54,201	444.27	2,128	50,880	25.47	22.8	1	6:30 am-11:59 pm	60 Minute
9 Purple - Empire Express	35,148	288.10	2,013	33,178	17.46	7.5	1	6:28 am-10:28 pm	30 Minute
Main Street Trolley	26,613	218.14	1,586	15,335	16.78	2.1	1	10:00 am-11:00 pm	N/A
Sundance	67,658	6,765.80	813	11,111	83.22	-	5	-	N/A
Tripper Bus*	-	-	-	-	-	-	2	-	N/A
Paratransit/Dial-a-Ride	-	-	-	-	-	-	3	-	N/A
Park City Transit Total	**1,092,930**	**8,958.44**	**35,339**	**484,411**	**30.93**	**-**	**29**	**-**	**-**
UTA PC-SLC Connect	24,847	205.35	1,455	24,156	17.08	66	3	3 am/pm round trips	N/A

Source: Park City Municipal Corporation 2014 Service Data
*Tripper miles, hours and ridership are included in the routes they support.

Table 3-2: 2014 Summer Fixed Route Data and Performance

Summer (June 5 - September 1)	Ridership	One-Way Trips per Day	Service Hours	Service Miles	One-Way Trips per Service Hour	Round Trip Miles	Peak Vehicles	Scheduled Running Times	Headways
1 Red - Prospector Square	96,457	1,083.79	2,410	35,718	40.02	9	2	7:14 am-11:53 pm	20 Minute
2 Green - Park Meadows	66,778	750.31	3,327	43,655	20.07	9.1	2	7:13 am-11:51 pm	20 Minute
4 Orange - Silver Lake	13,466	151.30	712	8,409	18.91	7.8	1	10:00 am-6:00 pm	30 Minute
6 Lime – Canyons	13,520	151.91	838	15,931	16.13	13.1	1	7:30 am-5:05 pm	40 Minute
7 Pink - Kimball West	85,563	961.38	3,500	60,701	24.45	25	3	7:00 am-10:15 pm	30 Minute
8 Brown - Kimball East	31,673	355.88	1,357	17,396	23.34	22.8	1	7:05 am-10:00 pm	60 Minute
9 Purple - Empire Express	11,178	125.60	759	12,313	14.73	7.5	1	7:43 am-4:13 pm	30 Minute
Main Street Trolley	25,416	285.57	1,052	10,154	24.16	2.1	1	10:00 am-10:00 pm	N/A
Tripper Bus*	-	-	-	-	-	-	2	-	N/A
Paratransit/Dial-a-Ride	-	-	-	-	-	-	3	-	N/A
Park City Transit Total	**344,051**	**3,865.74**	**13,955**	**204,27**	**24.65**	**-**	**17**	**-**	**-**
UTA PC-SLC Connect	5,788	89.05	672	11,748	8.61	66	2	3 am/pm one way	N/A

Source: Park City Municipal Corporation 2014 Service Data
*Tripper miles, hours and ridership are included in the routes they support.

Table 3-3: 2014 Shoulder Season Fixed Route Data and Performance

Shoulders (September 2 - December 11, and April 13 - June 4)	Ridership	One-Way Trips per Day	Service Hours	Service Miles	One-Way Trips per Service Hour	Round Trip Miles	Peak Vehicles	Headways
1 Red - Prospector Square	94,756	615.30	3,682	59,172	25.7	9	2	20 Minute
2 Green Park Meadows	65,600	425.97	5,758	72,322	11.3	9.1	2	20 Minute
4 Orange - Silver Lake*	3,079	146.62	229	3,153	13.4	7.8	1	30 Minute
6 Lime – Canyons	14,116	91.66	3,991	29,939	3.54	13.1	1	40 Minute
7 Pink - Kimball West	96,243	624.95	6,240	105,442	15.4	25	3	30 Minute
8 Brown - Kimball East	36,147	234.72	2,321	55,037	15.5	22.8	1	60 Minute
9 Purple - Empire Express*	1,362	64.86	231	3,640	5.90	7.5	1	30 Minute
Main Street Trolley	18,964	#DIV/0!	1,851	17,801	10.2	2.1	1	N/A
Tripper Bus**	-	-	-	-	-	-	2	N/A
Paratransit/Dial-a-Ride	-	-	-	-	-	-	3	N/A
Park City Transit Total	**330,267**	**2,144.59**	**24,303**	**346,506**	**13.5**	**-**	**17**	**-**
UTA PC-SLC Connect	10,646	93.39	1,526	20,328	6.98	66	2	N/A

Source: Park City Municipal Corporation 2014 Service Data
* These routes only operate at the end of the fall shoulder season
**Tripper miles, hours and ridership are included in the routes they support.

The service is primarily fixed route in nature including Americans with Disabilities Act (ADA) complementary paratransit. One route is a hybrid fixed route requiring a phone call to activate. Customers must get to a bus stop to be picked up. This is termed a "dial-a-ride" but is unlike other dial a ride services which pick people up at their origin point (unlike the bus stop at Park City). Commuter service to Salt Lake City is operated through Utah Transit Authority (UTA).

There is one basic route structure with notable route-by-route changes between seasons – winter, summer and shoulders. These seasonal changes include headway/frequency changes during peak and shoulder seasons, route modifications, and some route suspensions. Summer routes are illustrated in Figure 3-2. Winter routes are depicted in Figure 3-3, demonstrating the coverage area differences.

EXISTING SERVICE

Park City is a mountain resort community with high volume ridership during the winter. There are only a handful of these systems across the country, making each one unique. Some unique operating features of Park City Transit include:

- A service designed for minimal transfers between routes and modes
- Current operation on shoulders of SR 224 in winter season during specified hours
- True commitment to transit among the local governments, businesses, visitors and residents
- Major seasonal changes necessitated by population fluctuations
- Special events such as Sundance Film Festival that raise service level significantly

Overall Performance

Review of overall performance is tied to two factors. The consultants look at peer transit systems to determine if Park City Transit is operating within "normal parameters." Normal parameters are defined for these purposes as within the range of peer systems as determined below. Once it is established that Park City Transit is not an outlier and is operating within a "normal" range, the focus becomes one of comparing Park City Transit to itself over time.

Peer Review

Park City Transit's performance measures and other characteristics were reviewed in the context of comparable ski oriented mountain transit systems of similar size. Five "peer" systems in Colorado, California, Nevada and Idaho were selected which share some characteristics with Park City (Table 3-4). Peer reviews necessitate consistent data and performance measures. For

Figure 3-2: Park City Transit Summer Routes

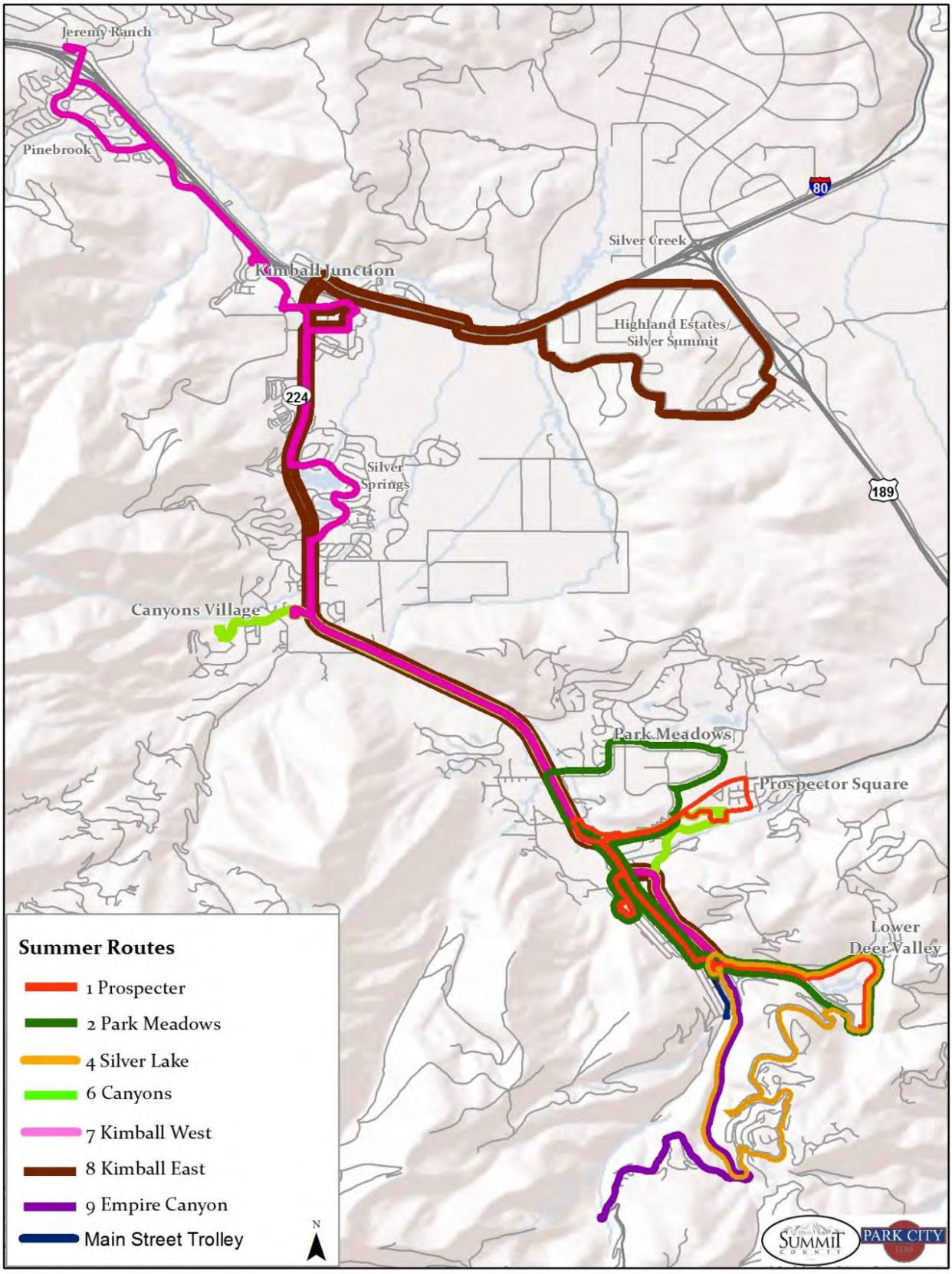
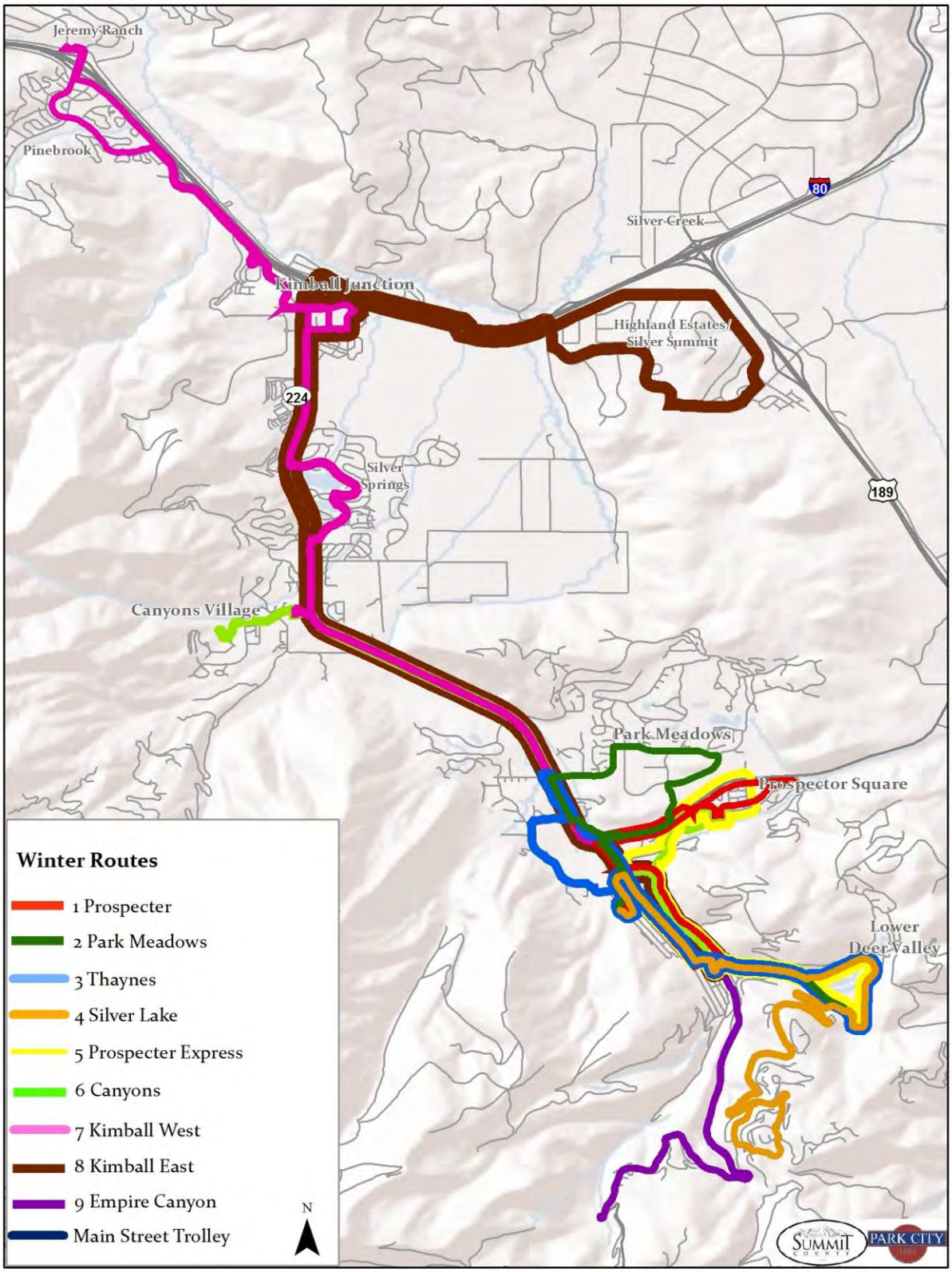


Figure 3-3: Park City Transit Winter Routes



these purposes the consultants used National Transportation Database (NTD) data for each system. 2013 is the most up to date data available at this time.

Table 3-4 2013 Peer Service Area Populations and Operations Funding Levels

Area	Service Area Population	Revenue Sources				
		Federal	Local	Fare Box	Contract	Total
Summit County	28,649	$59,600	$9,506,401	$30,442	$581,463	$10,177,9
Town of Vail	5,311	$0	$4,200,000	$0	$0	$4,200,00
Roaring Fork Transportation Authority	58,470	$890,000	$10,877,348	$4,002,475	$7,705,536	$23,475,359
Tahoe Transportation District	50,289	$1,597,736	$2,600,090	$737,212	$0	$4,935,038
Mountain Rides (Sun Valley)	14,414	$598,012	$1,213,373	$356,875	$0	$2,168,260
Park City Transit	**24,558**	**$1,462,300**	**$7,249,843**	**$36,243**	**$70,827**	**$8,819,21**

Source: National Transit Database 2013 Rural Data Summary and Vail Public Works Department

Peer Review Summary

Table 3-5 depicts the National Transit Database data for all peer systems and Park City Transit for 2013. With the exception of Vail and its small service area, Park City Transit is a top performer amongst its peers with 26 one-way trips per service hour. Overall, Park City Transit performs well compared to peers and is comfortably within the "normal" range of peers.

Historical Perspective

Park City Transit has maintained relatively stable ridership over the past 5 years as depicted in Table 3-6. Ridership (fixed route not including special events) went from a high of 1,791,066 in 2013 to a low in 2012 of 1,725,412 with a total variance of 3.7 percent over 4 years. In essence, stable ridership. Productivity closely mirrored ridership as did costs. Ridership generally reflects visitor numbers and gross receipts. To some extent ridership is correlated to the numbers of visitors in any given year which is dependent on many uncontrollable factors such as weather and the economy. Visitor nights were their highest in 2011 and lowest in 2012 correlating with the fluctuations in ridership.

Table 3-5: Peer Review System Data

System	One-Way Trips	Service Hours	Service Miles	Fare	Operational Expenditures	One-Way Trips per Service Hour	Service MPH	Reported Cost per Service Hour	Cost per One Way Trip
Summit County CO	2,484,799	111,389	1,579,828	Free	$10,177,906	22	14	$91.37	$4.10
Summit Stage	1,870,374	80,591	1,335,000	Free	$8,643,722	23	17	$107.25	$4.62
Town of Breckenridge	614,425	30,798	244,828	Free	$1,534,184	20	8	$49.81	$2.50
Town of Vail	3,200,000	62,000	640,000	Free	$4,200,000	52	10	$67.74	$1.31
Roaring Fork Transportation Authority	3,868,195	176,796	3,293,374	Local Service - Free. Regional service $1 - $10	$23,475,359	22	19	$132.78	$6.07
Tahoe Transportation District	795,298	55,574	821,004	Free - $4 Depending on Route	$4,935,038	14	15	$88.80	$6.21
Mountain Rides (Sun Valley)	483,892	40,402	901,241	Local Service - Free. Regional service $4 - $6	$2,168,260	12	22	$53.67	$4.48
Park City Transit	**1,929,659**	**73,202**	**1,074,753**	**Free**	**$7,044,620**	**26**	**15**	**$96.24**	**$3.65**

Source: National Transit Database 2013 Rural Data Summary and Vail Public Works Department and Park City Transit
*Includes facility development costs

Table 3-6: Park City Transit: Fixed Route System Performance 2011 – 2014

Season		One-Way Trips	Service Hours	Service Miles	One-Way Trips Per Service Hour	Service MPH
2011	Spring	117,720	8,952	142,408	13.15	15.91
	Summer	258,580	12,809	202,811	20.19	15.83
	Fall	176,708	12,492	198,304	14.15	15.87
	Winter	1,229,215	36,977	509,831	33.24	13.79
	2011 Subtotal	**1,782,223**	**71,229**	**1,053,354**	**25.02**	**14.79**
	Sundance	94,118	813	11,111	115.77	13.67
	Event Tripper	92,592	1,138	24,410	81.36	21.45
Total		**1,968,933**	**73,180**	**1,088,875**	**26.91**	**14.88**
2012	Spring	115,400	8,263	130,411	13.97	15.78
	Summer	251,409	12,491	198,354	20.13	15.88
	Fall	184,113	13,982	220,684	13.17	15.78
	Winter	1,174,490	38,445	525,329	30.55	13.66
	2012 Subtotal	**1,725,412**	**73,181**	**1,074,778**	**23.58**	**14.69**
	Sundance	65,192	813	11,111	80.19	13.67
	Event Tripper	89,629	1,174	25,310	76.34	21.56
Total		**1,880,233**	**75,168**	**1,111,199**	**25.01**	**14.78**
Percent Change		**-4.50%**	**2.72%**	**2.05%**	**-7.03%**	**-0.65%**
2013	Spring	77,631	6,473	102,155	11.99	15.78
	Summer	400,962	14,454	229,894	27.74	15.91
	Fall	187,805	13,583	214,618	13.83	15.80
	Winter	1,124,668	37,197	514,354	30.24	13.83
	2013 Subtotal	**1,791,066**	**71,707**	**1,061,021**	**30.24**	**14.80**
	Sundance	74,462	813	11,111	91.59	13.67
	Event Tripper	64,131	1,169	27,702	54.86	23.70
Total		**1,929,659**	**73,689**	**1,099,834**	**26.19**	**14.93**
Percent Change		**2.63%**	**-1.97%**	**-1.02%**	**4.69%**	**0.96%**
2014	Spring	100,886	7,264	114,792	13.89	15.80
	Summer	322,787	14,062	220,692	22.95	15.69
	Fall	226,651	15,160	235,224	14.95	15.52
	Winter	1,075,178	35,134	486,650	30.60	13.85
	2014 Subtotal	**1,725,502**	**71,620**	**1,057,358**	**24.09**	**14.76**
	Sundance	67,658	813	11,111	83.22	13.67
	Event Tripper	39,000	1,169	27,702	33.36	23.70
Total		**1,832,160**	**73,602**	**1,096,171**	**24.89**	**14.89**
Percent Change		**-5.05%**	**-0.12%**	**-0.33%**	**-4.94%**	**-0.22%**

Source: Park City Municipal Corporation

Seasonal Performance

To understand Park City Transit's operation and operating environment, it is essential to discuss seasonal changes and how those changes affect the operation of service. One of the unique and demanding aspects of Park City Transit service is that it operates in three different seasons – winter (mid-December to mid-April), summer (June to mid-September), and shoulder seasons (mid- April to June and mid-September to mid-December).

It is important to understand the issues revolving around seasonal changes and operating challenges posed in this tourist environment. Few systems face these challenges. These challenges include:

- Major seasonal route changes due to shifts in ridership and needs. This affects staffing, marketing/brochures and the scheduling of maintenance.

- Seasonal staffing changes make recruitment and retention of vehicle operators a major function of management.

- Winter poses other unique challenges:
  - Traffic becomes a challenge and the use of shoulder lanes from Kimball Junction is an excellent start toward a bus rapid transit (BRT) service.
  - The sheer volume of riders throughout the winter is punctuated by special events producing extremely high ridership.
  - Slower operating speeds in the winter. Snow and ice combined with heavy passenger loads pose significant challenges, for the operation of vehicles and access to buses and bus stops by customers.
  - Many riders carry skis, posing potential hazards inside the vehicle.
  - Experienced and well-trained vehicle operators are required. For safe winter driving, there is no substitute for experienced vehicle operators. This makes the task of recruitment and retention more important than in most other operating environments.

- Fluctuations based on the economy are typical for tourist areas and often the reverse of non-tourist based cities. Ridership typically increases in most locales during poor economic times, but in cities such as Park City a poor economy keeps visitors home and ridership is suppressed.

Detailed route profiles are found in Appendix No. B.

Main Street Trolley

The Main Street Trolley is a local circulator flag stop service that travels the length of Main Street and connects to Old Town Transit Center. Service runs from 10:00 a.m. to 11:00 p.m. on approximately 15 minute headways. According to Park City Transit, the trolley provided 70,993 one-way trips in 2014. Average annual productivity is 15.8 one-way trips per service hour, with highest productivity and ridership in the summer at 25 one-way trips per hour, followed by winter at 17 trips per hour and shoulders at 10 trips per hour.

Dial-a-Ride

Quinn's Junction Dial a Ride provides service to the growing Quinn's Junction area which includes a number of employment, medical and recreational destinations. This service is not a dial a ride using any contemporary definition of the term[4]. Quinn's Junction Dial a Ride follows a fixed route that must be activated by a telephone call and scheduled through dispatch. The customer must also make their way to a bus stop as they would in fixed route. The service can be scheduled on the same day of travel. Table 3-7 details Quinn's Junction Dial a Ride over the past three years. Since 2013 the service performance has remained steady at approximately 1.6 one-way trips per hour.

Table 3-7: Quinn's Junction Dial a Ride Ridership and Performance

Quins Junction Dial-A-Ride	2013	2014	2015
One-Way Trips	7,416	7,834	7,465
One-Way Trips per Hour	1.6	1.7	1.6

Source: Park City Municipal Corporation – 2014 Data

ADA Complementary Paratransit

ADA paratransit operates within ¾ mile of fixed route service (depicted in Figure 3-1). Ridership is similar to comparable active lifestyle communities. Approximately 30 one-way trips are taken per weekday (Table 3-8). Customers are typically local residents, with occasional visitors with disabilities that would qualify for ADA. Staff state that they do not turn down any valid requests (zero denials).

[4] The American Public Transit Association, the Transportation Research Board, the Federal Transit Administration and others all define dial a ride as an origin to destination (curb to curb) service. Park City Transit's dial a ride requires riders to get to a bus stop.

Table 3-8: ADA Complementary Paratransit Performance

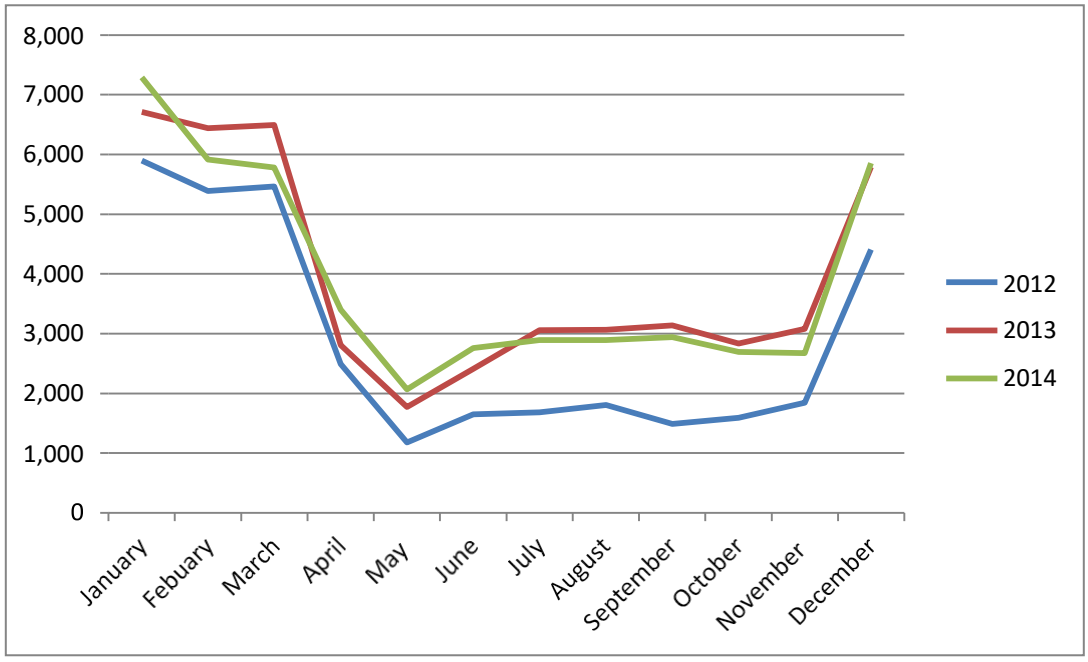
ADA Paratransit	2013	2014	2015
One-Way Trips	7,238	6,389	7,729
Service Hours	7,476	7,009	7,126
Service Miles	60,463	55,693	65,332
One-Way Trips per Hour	0.97	0.91	1.08
MPH	8.09	7.95	9.17

Source: Park City Municipal Corporation

Commuter Service

In conjunction with Park City Transit, Utah Transportation Authority (UTA) operates commuter service to and from Salt Lake City on weekdays. Ridership is highest during the winter season as employment needs increase in Park City. The service operates three morning and evening round trips and carries approximately 17 one-way trips per hour in the winter and eight in the summer. Figure 3-4 depicts the monthly ridership trends.

Figure 3-4: UTA SLC-PC Connect Ridership Trends



Source: Park City Municipal Corporation

Meeting City and County Needs

City and county needs are best expressed through a review of the most recent plans for Park City and Summit County defined in their general and transportation plans, the latter specifically focusing on the Snyderville Basin where the vast majority of the population resides and the most significant traffic issues occur during the winter.

City Needs

The city's broad goals in its General Plan call for maintaining:

- The small town nature
- The natural setting
- A sense of community
- The historic character

Transit in Park City has a significant role in maintaining the goals of the General Plan. A theme throughout the plan includes expanding public transit presence in order to reduce auto traffic, so vital to the city's goals.

Expanded transit is critical to each of the other goals and nowhere is it more evident than where it serves to support affordable housing goals and serves as part of the solution to parking issues. Peak season parking lots should be essential to a successful BRT.

County Needs

The emphasis of this analysis is western Summit County, specifically Snyderville Basin and the SR 224 corridor, where the most severe traffic exists. Traffic on SR 224 is mounting as a result of growth in the area and the large influx of day trippers and longer term visitors going through the Kimball Junction area.

Snyderville Basin General Plan calls for addressing regional trips through mass transit as well as developing mass transit along the SR 224 corridor. The Snyderville Basin Transportation Plan calls for infrastructure and service improvements, and multimodal and express service (with infrastructure improvements) on SR 224 with an emphasis on service at the Canyons.

Organizational Structure

Park City Transit as part of Park City is managed and directly operated by Park City Transit staff and is supported by other city departments and staff. Park City has a contractual relationship to operate service within Summit County beyond the Park City municipal limits.

Park City Transit is recognized as a rural transit system by the Federal Transit Administration (FTA) (Section 5311 rural funding) and receives some funding from the Federal Government. What makes Park City Transit, and other systems like it, successful is the local government(s) commitment to transit through a dedicated funding stream. With a strong management staff, high ridership and a solid funding base, the organizational structure under the city with contractual arrangements with Summit County, is strong. There does not appear to be an operational or financial reason why the overall organizational approach should change.

Staffing Levels

While the organizational structure of Park City Transit is strong, the demands of seasonal changes require full time staff in the areas of: personnel recruitment/training, marketing, an information technology specialist and an administrative assistant. This is particularly important for recruitment/retention and training which is very challenging in this environment. Without these staff, it may be difficult for Park City Transit to meet the staffing levels for the future.

Vehicle Review

Park City Transit primarily operates 35-foot heavy duty Gillig transit coaches, typically designed for 12 years of service or 400-500,000 miles, depending on the service requirements. Park City Transit at times operates intense levels of service in a difficult environment of heavy passenger loads and severe winter weather. For the most part, the heavy duty Gillig transit coaches are used in fixed route service. There are 29 Gillig transit coaches in the fleet. Many are due for replacement before the end of the planning cycle.

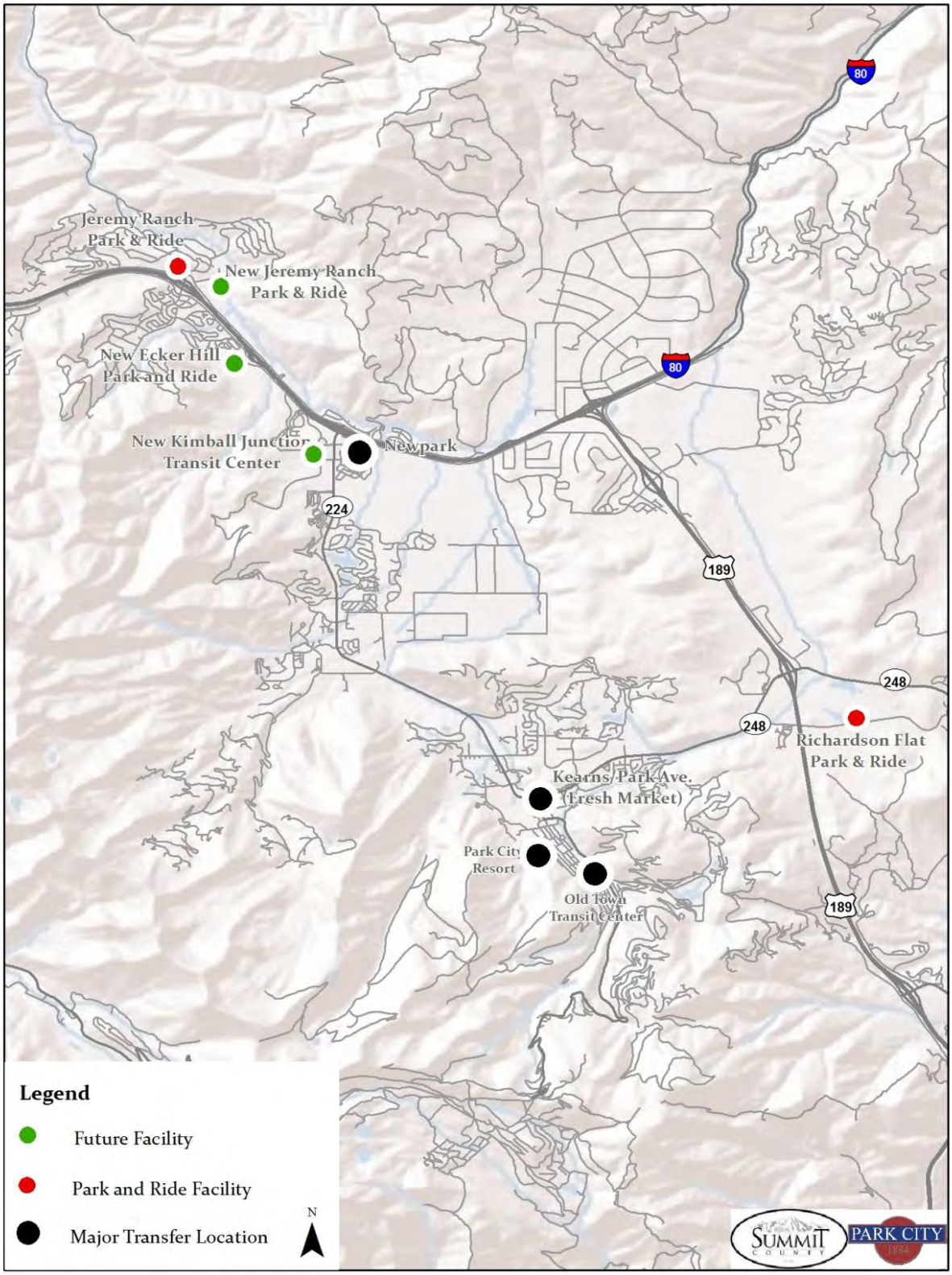
Operating Facilities

The system has a number of facilities in place, is building a transit center and the city and county are planning other facilities (Figure 3-5). These facilities revolve around:

1. Transit Facilities:
    - Kimball Junction – Currently this stop is east of SR 224 in the Newpark development, on the street. This will be moved to the west side of SR 224 southeast of the Walmart at a purpose built facility.
    - Kearns/Park Ave – An informal transfer point for people wanting to transfer to or from an east-west route and a north-south route
    - Old Town Transit Center – It is well designed to be a transit center with the addition of a protected cross walk for pedestrians to safely cross the bus lanes.
    - Park City Resort – A major stop serves seven routes also in need of pedestrian control.

2. Park and Ride Facilities: Park and Ride facilities are critical to any future BRT type service. Figure 3-5 depicts three proposed facilities in the north and Richardson Flat Park and Ride lot.

Figure 3-5: Current and Proposed Operating Facilities



3. The Richardson Flats facility: Already built has very poor access from U.S. 40 from the east making it difficult to use unless access is improved from U.S. 40 and a traffic light is placed at Richardson Flat Road and SR 248.

4. Shelters: There are 42 shelters throughout the system, most are of one type with varying sizes. Some shelters may not be completely accessible as they do not have room for a person using a wheelchair.

5. Operations Facility: Park City Transit has an operating complex centrally located in Park City. This includes the operations and management offices, maintenance and seasonal driver housing all located together. These facilities may need expansion shortly.

Review of Current Planning Efforts

As part of this planning process it is important to coordinate with other transportation related planning efforts in the area. This project is coordinated with a Transportation Demand Management Plan and the Bonanza Park/Park Avenue Parking Study.

FINANCIAL REVIEW

The availability of operating budget data (Table 3-8) supplied by Park City staff is limited to the line items of:

- Personnel – includes Park City Transit staff
- Materials, Supplies and Services
- Inter-fund Transfer – This includes all of the services conducted by non-transit, city staff, including: human resources, accounting, finance, procurement and other services supplied by the city.

Park City Transit is fortunate to have a diverse base of funding. Table 3-9 illustrates this diverse variety of funding sources including two taxes, funds from licenses and fees from the city and the county, Federal funds and other small line items. The city maintains a capital replacement fund. The diversity of funding, dedicated tax and capital fund gives Park City Transit a stable revenue stream, but additional funds will be required to keep up with the service area's growth in the coming years.

Table 3-8: FY 2013 – 2015 Park City Transit Operating and Capital Expenses

Operating Expenses			
	2013	**2014**	**2015**
Personnel	$3,825,020	$4,029,019	$4,117,711
Materials, Supplies, Services	$792,586	$853,589	$1,133,507
Inter-fund Transfer	$2,425,000	$2,337,885	$2,552,082
Total	**$7,044,620**	**$7,222,508**	**$7,805,314**
Capital			
	2013	**2014**	**2015**
Expenditures	$1,369,897	$2,466,267	$615,740
Budgeted Amount	($2,505,262)	$3,415,777	$6,001,258

Source: Park City Municipal Corporation

Table 3-9: FY 2013 – 2015 Park City Transit Revenue

Revenue	2013	2014	2015
Mass Transit Sales Tax	$2,014,354	$2,100,451	$2,166,227
Resort Tax Transportation	$1,853,909	$1,918,682	$1,966,848
Business Licenses	$805,951	$811,606	$905,481
Night Rent License Fee	$145,526	$140,107	$134,533
Federal Assistance (Operating and Capital)	$1,200,950	$2,827,961	$1,630,990
Sale Of Assets	-	-	$3,420
Fare Revenue (Box Donations)	$36,243	$71,978	$31,078
Bus Advertising	$70,827	$55,910	$49,200
Regional Transit Revenue*	$1,578,128	$1,479,268	$1,691,820
Other Donations	$65,988	$60,913	$60,912
Interest Earnings	$105,732	$80,657	$80,000
Other Miscellaneous	$23,202	$14,639	$4,225
Other Contributions -Real Estate Transfer Fee	$266,456	$391,814	$348,059
Total	**$8,167,266**	**$9,953,987**	**$9,072,793**

Source: Park City Municipal Corporation
*Summit County payment for contracted transit service

Table 3-10 details operating costs and cost performance measures, which have remained stable over the past three years. Operating costs have increased due to corresponding increases in hours and miles. The bottom line cost per hour has gone up 5 percent in two years, a modest cost increase.

Table 3-10: Park City Transit Operating and Cost Performance Measures

Cost Performance Measure	2013	2014
Operating Costs	$7,044,620	$7,222,508
Ridership	1,929,659	1,832,160
Service Hours	73,202	71,423
Service Miles	1,074,753	1,056,676
Cost Per One-Way Trip	$3.65	$3.94
Cost Per Hour	$96.24	$101.12
Cost Per Mile	$6.55	$6.84

Source: Park City Municipal Corporation

SUMMARY OF EXISTING SERVICES

Park City Transit operates a vibrant system that adapts well to the constant change required of such a service. Highlights of the assessment include:

- **Park City Transit compares well to peers** – In the peer review, Park City Transit does well in terms of performance and costs, being securely within the peer's range of performance and in many cases performing better than peers.

- **Overall performance is stable** – Ridership is strongly related to the success of the winter season. Ridership has remained stable since the recovery from the Great Recession. The all- important productivity has remained high as well.

- **Unique service design** – Rather than the standard timed transfer approach, Park City Transit minimizes transfers by having many routes going on the same roads for significant period. Due to the desire to minimize transfers, there is considerable duplication of routes throughout much of the service area as routes from various locations all need to go downtown. This is part of the unique design to eliminate transfers.

- **Flexible/diverse funding base** – Park City Transit has a strong and diverse funding base making the system as secure as possible. Funding comes from a variety of sources and like Park City Transit's peers; most funding comes from the local level.

- **Strong local commitment to transit** – Park City and Summit County have a clear commitment to transit. The desire of the community to retain its small town atmosphere and reduce auto traffic through transit and other tools is clear and focused.

- **Vehicles** – Park City Transit has a number of older buses that will need replacement within the next five years. About 62 percent of the fleet may be eligible for replacement over the next five years.

- **Facilities** – Park City Transit has excellent facilities with a new transit facility being built at Kimball Junction. There are few park and ride facilities at this time. Park and ride lots should be critical to the success of a Bus Rapid Transit (BRT) style service on SR 224.

Chapter 4
Transit Demand Analysis

INTRODUCTION

Transit demand is defined as the potential use of transit given a particular set of services and circumstances. Demand is driven by the infrastructure, parking, demand management policies and the national and state economies. For example (this is for illustrative purposes only), in the winter, demand estimates would be increased with adequate remote/intercept parking and rapid express service on SR 224 and/or additional parking limitations at major destinations.

For the purposes of the identification of unmet needs and understanding demand this chapter reviews demand in a status quo environment, with ridership dependent visitor nights. Demand for specific improvements such as bus lanes and parking limitations are identified in the next Chapter when we present strategies. Following are the tasks that make up the demand estimates:

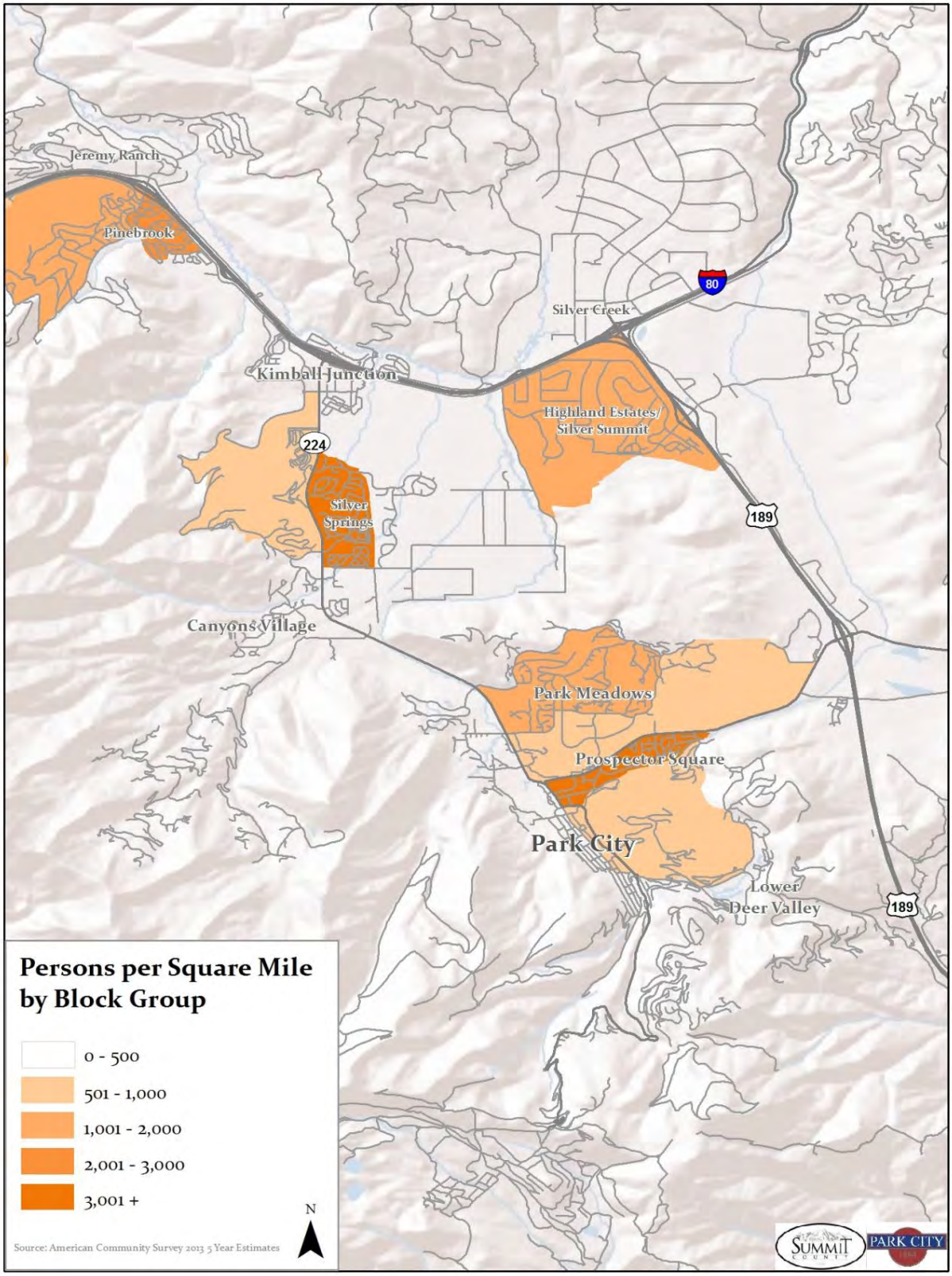
1. **Demographics and Land Uses** – This effort, critical to this demand analysis was completed as part of Technical Memorandum No. 1. It will be summarized as part of this analysis.
2. **Community Assessment of Transit Needs** – The second step in the demand analysis is the review of unmet transit needs. This effort utilizes the demographic and land use analysis coupled with the needs expressed in the outreach efforts.
3. **Potential Unmet Needs** – Based on the review of demographics and land uses, coupled with the community outreach efforts, unmet needs are based on: areas, types of riders and time of day.
4. **Demand Potential** – In this section the consultants review the various market segments and demand estimates for each segment.

As highlighted in the previous chapter, under the current structure, ridership/productivity at Park City Transit is excellent compared to peers. Based on the stress to the system (minimal back up vehicles) in the winter, the current winter season is close to capacity at this time. For a reader that would like greater detail, please see Appendix C – Transit Demand Analysis.

Population Density and Transit Dependent Index

Population density is an important indicator for transit service. As a general rule, areas with over 1,000 people per square mile (or major trip destinations) can support fixed route transit service. Population density in the greater Park City area varies by season. Figure 4-1 shows the resident population density, which can also be considered off-peak season density. Areas with

Figure 4-1: Park City Population Density



over 1,000 people per square mile include central Park City, including the neighborhoods of Prospector Square and Park Meadows, Silver Springs, Silver Summit/Highland Estates, and Pinebrook. Areas with the highest concentration of people are along Kearns Blvd and in Silver Springs.

The peak overnight visitor per block group depiction (Figure 4-2) was calculated by allocating peak visitors to block groups by the number of lodging units in each area. As a result we see block groups in Kimball Junction, Deer Valley, Park City Resort base area and Canyons Village exceed the 1,000 people per square mile threshold. These tourism based block groups are geographically large relative to other block groups in the service area. While shading of the full block group might lead one to believe that there is significant density throughout, this is not the case. For each overnight visitor based block groups shown, overnight visitor populations are located in close proximity to the SR 224 corridor.

Demographic Needs Summary

Within the service area, several patterns emerge from the demographic needs assessment. Areas that showed high concentration categories for population and transit dependence include:

- Kearns Boulevard Corridor
- Pinebrook
- Silver Springs
- Kimball Junction
- Silver Summit/Highland Estates
- Park Meadows

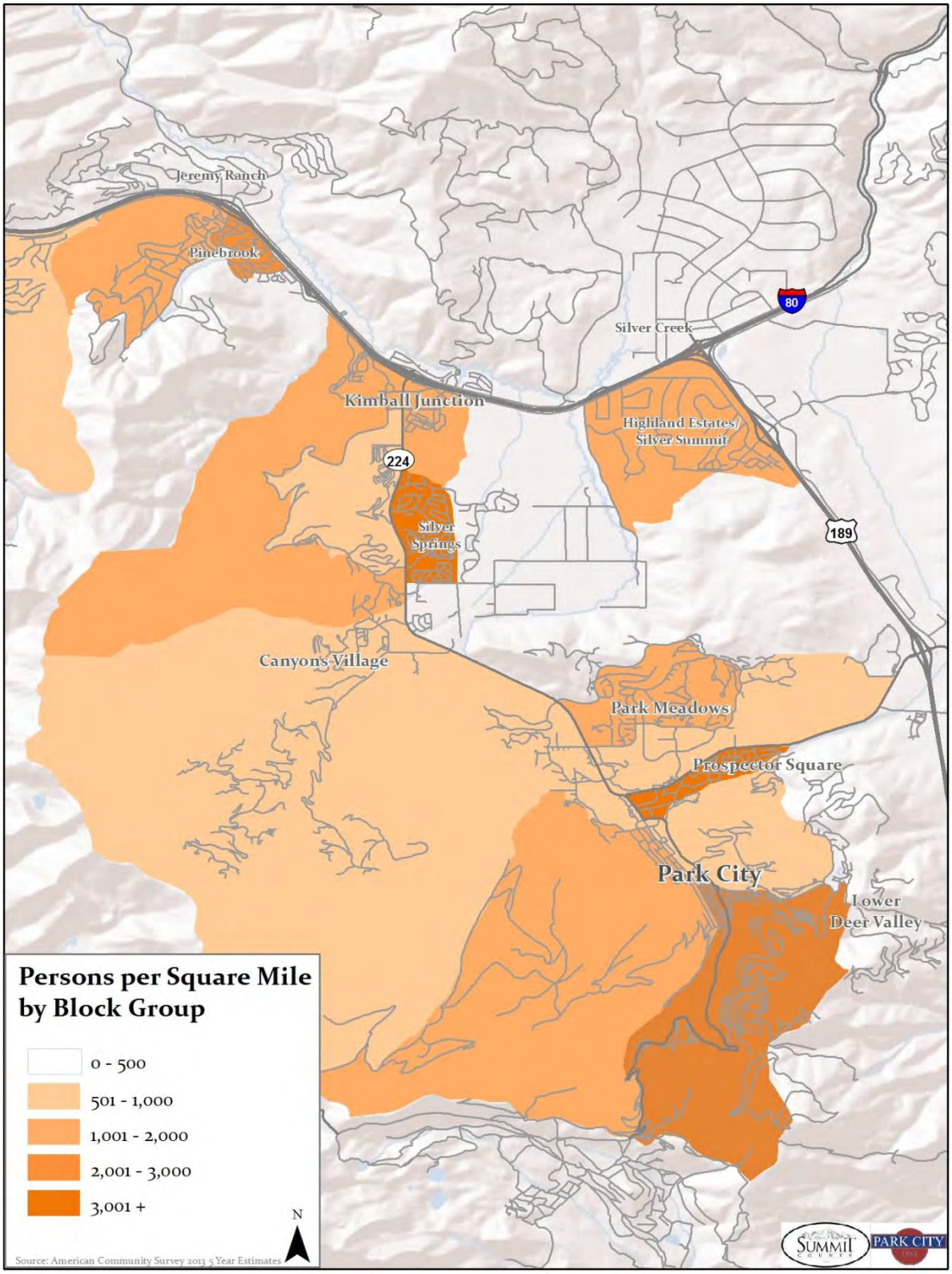
For the most part these areas are well served at this time. In regards to tourist populations, areas in Deer Valley, Park City Resort base area and Canyons Village have the highest amount of lodging and tourist visits. Park City Transit has developed a system that serves all of these geographic areas.

Park City has the most expensive housing in Summit County. As a result, many workers in Park City commute from other areas within the study area. In addition to Salt Lake City, analysis of the study area shows that the highest concentration of people and transit dependent populations outside of Park City area include:

- Heber City
- Coalville
- Kamas

Based on the demographic analysis Heber City, Coalville, and Kamas, all outside of the current Park City Transit service area, show a moderate need for public transportation

Figure 4-2: Park City Visitor and Local Population Density



service relative to the population as a whole. Actual numbers of people needing service should be low due to the relatively low population of the area.

Land Use Summary

Land uses often determine the level of need for transit. While an area may have few residents and low densities, it may have shopping, hospitals, hotels or other locations that attract large numbers of residents and/or visitors.

Park City has many tourism based attractions stemming from two ski resorts, Olympic training facilities, recreational areas and cultural areas. Included in this is the recreation center in Park Meadows and Kimball Junction. These locations are frequented by locals and tourists alike. Figure 4-3 depicts all of the major trip generators along with the Park City Transit fixed route coverage area (up to ¾ mile from the fixed route). The only major trip generators that fall outside of the ¾ mile corridor are: the medical facilities, recreational and human service destinations in Quinn's Junction which are served by a modified dial-a-ride service which only picks up passengers at a bus stop; the Utah Olympic Park; and the Summit County Justice Center in Silver Creek.

Overall Assessment Demographics and Land Uses

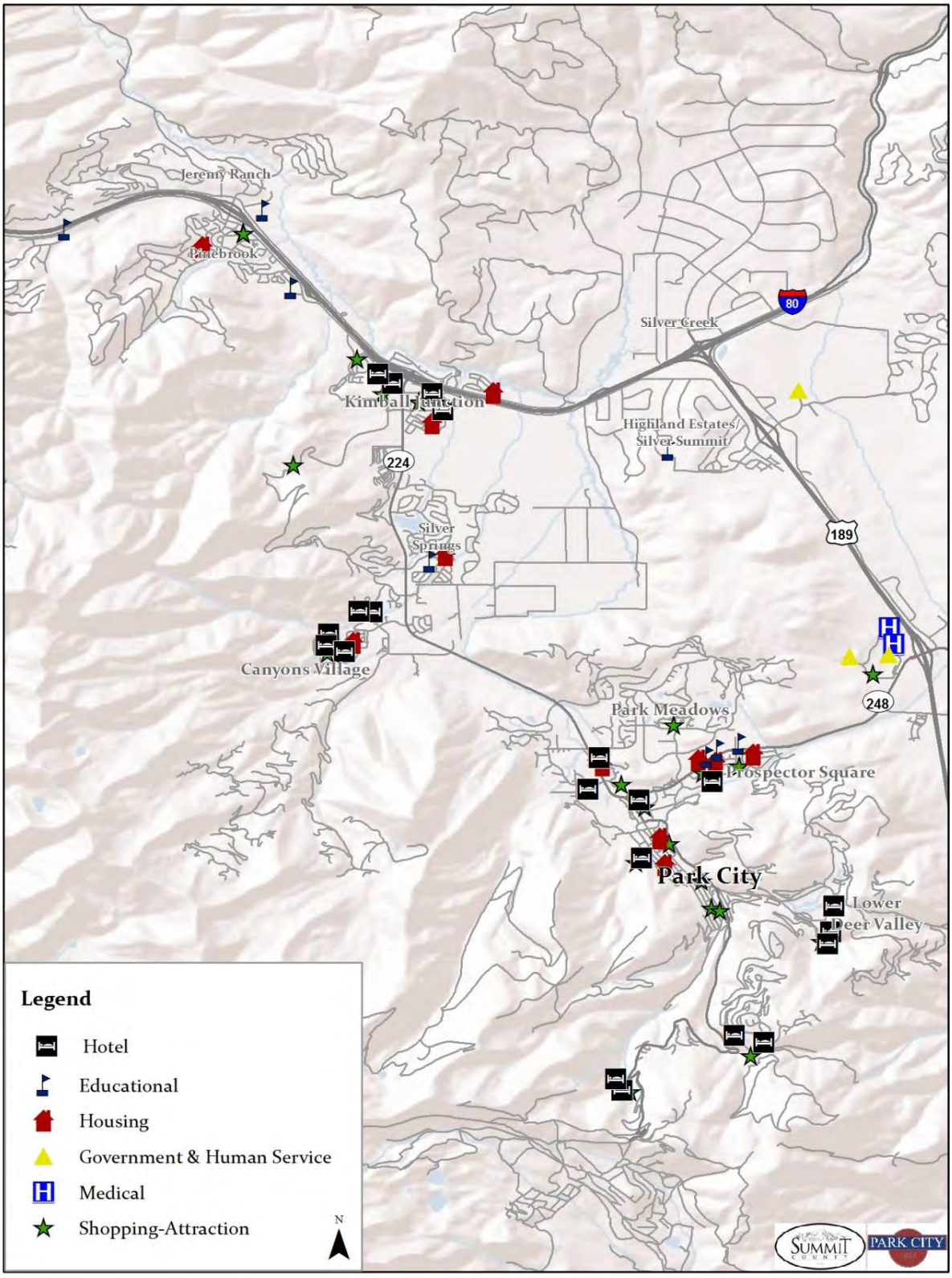
Park City Transit has done a good job in covering virtually all of the major origins and destinations within its service area. There is little need for expansion within the City, with the exception of the Quinn's Junction area. Communities on the edge of the current service area such as Jeremey Ranch and Summit Park are receiving little, if any service at this time. Further outside of the service area the communities in the Kamas Valley and Heber City which have relatively moderate needs, but at a very low level of potential ridership that probably cannot sustain an all-day fixed route service.

Community Assessment of Transportation Needs

This section provides a summary of the unmet transportation needs, gaps in current transit services, and improvements to current services expressed by Park City and Summit County residents through four public listening sessions. These sessions were conducted each evening from 6:00-8:00 p.m. on October 20-22 and December 7, 2015. A summary of needs expressed by a stakeholder group that met on October 21, 2015 is also included. This group included representatives from various resorts and other employers in the area. On-line comments are also taken into account.

The majority of each session was focused on obtaining input from participants on the transit needs and issues, and particularly improvements or changes that local stakeholders would like to see in regard to Park City Transit (Park City Transit) services. During each session local residents expressed their appreciation for the Park City Transit services and were

Figure 4-3: Park City Major Trip Generators



complimentary of the drivers and operations staff. They also provided their suggestions and ideas for improving services. Participants unable to attend the meeting were encouraged to submit comments online through a link on the Park City Transit page, through the Park City Transit app, or via email. The listening sessions were held as follows:

- Listening Session 1: Basin Recreation District Offices October 20, 2015
- Listening Session 2: Stakeholders – Park City Library October 21, 2015
- Listening Session 3: Park City Library October 21, 2015
- Listening Session 4: Summit County Field House October 22, 2015
- Listening Session 5: South Summit Middle School in Kamas December 7th, 2015
- Online Comments

Summary of Community Based Needs

Following is a summary of the key issues as expressed by participants of the outreach efforts. Full minutes and details from each meeting are in Attachment A to this document. The key issues revolved around:

- Where services or other improvements are needed,
- Who needs improved or expanded services,
- When expanded or improved services are needed,
- How these needs could best be met.
- Other needs

Where Needs Exist

The review of where needs exist as expressed in the community and stakeholder meetings are illustrated in two maps. Figure 4-4 shows the areas of need based on community input for Park City. The community identified areas of current and potential transportation needs in Silver Summit, Silver Creek and Quinn's Junction. The desire to see expanded services serving Pinebrook and Jeremy Ranch, Kimball Junction, Deep Park Meadows, Aspen Springs, Upper Deer Valley and Empire Pass is shown. Park City Transit has tested expanded service in many of these areas with mixed results. Figure 4-5 depicts the same data at the Study Area scale. As shown there was input on expanded service in the Kamas Valley, the portion of Wasatch County between Quinn's Junction and Kamas, and Heber City.

- Heber City
- Coalville
- Kamas

Based on the demographic analysis Heber City, Coalville, and Kamas, all outside of the current Park City Transit service area, show a moderate need for public transportation service relative to the population as a whole, although the actual numbers of people needing service

Figure 4-4: Local Needs Identified by Participants in Outreach Effort

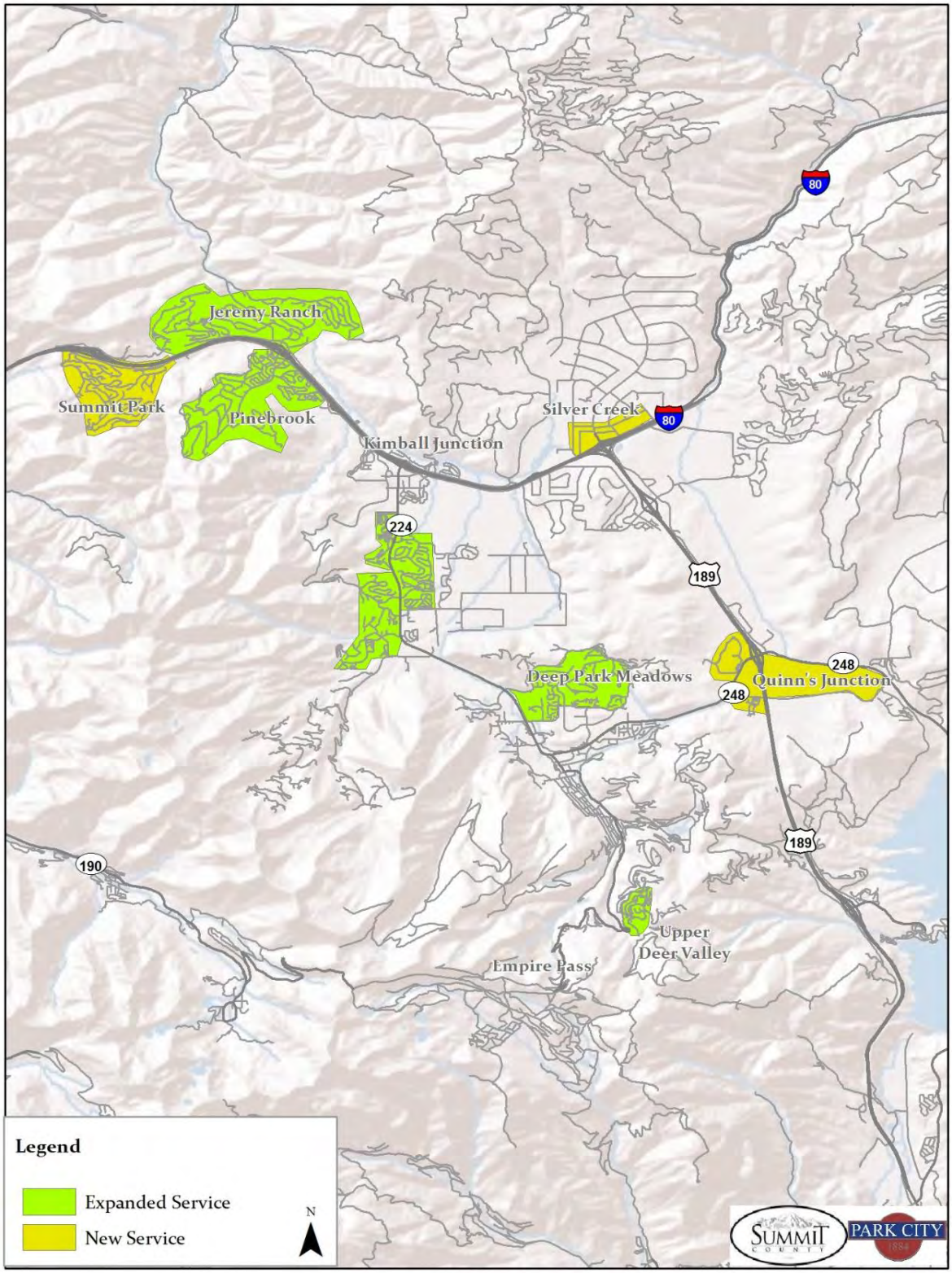
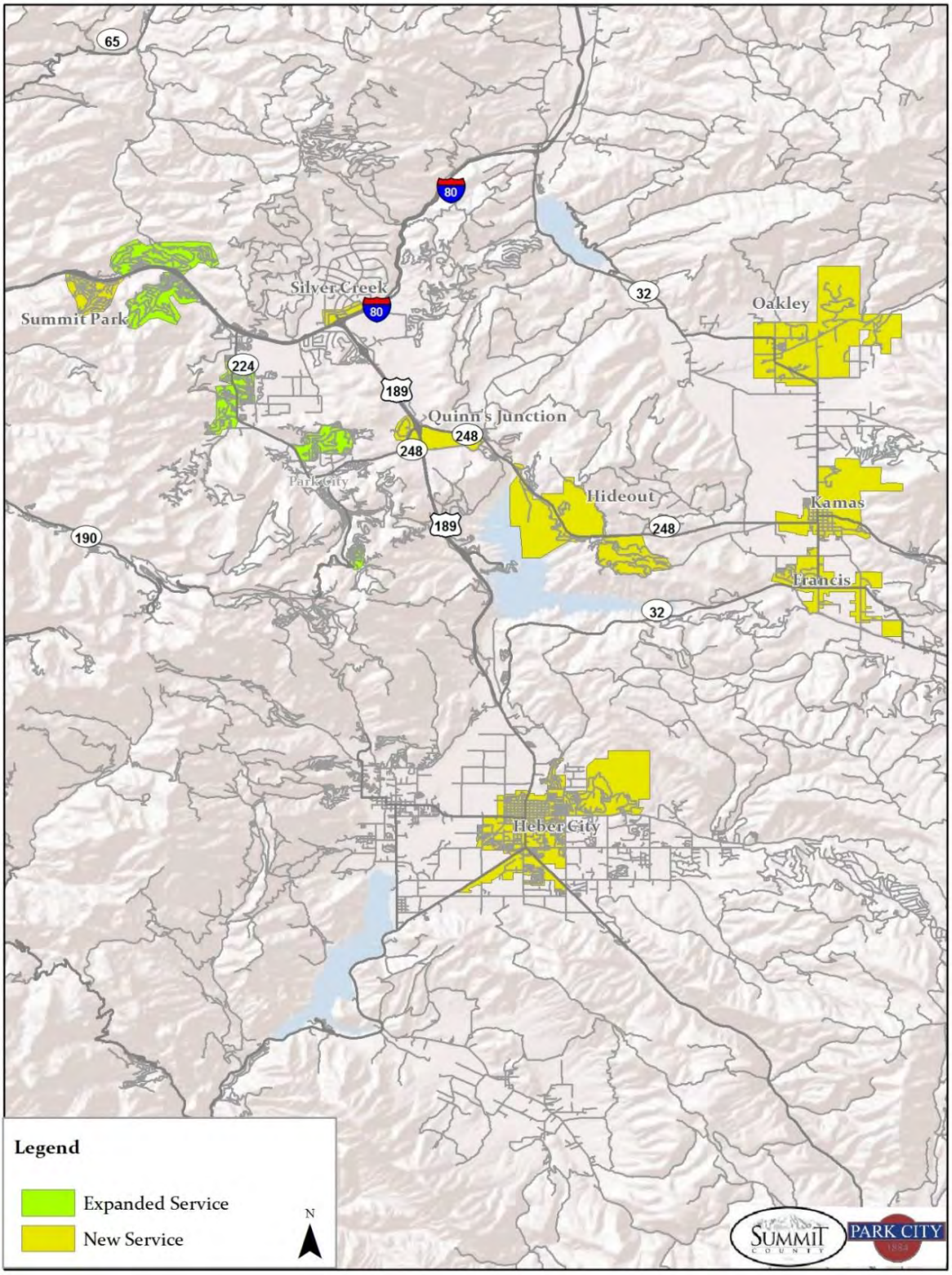


Figure 4-5: Regional Needs Identified by Participants in Outreach Effort



should be low due to the relatively low population of the area. The next chapter will discuss alternatives and strategies for addressing these needs.

New in Summit County, Wasatch County *and Heber City*

Comments included requests for new service in the following neighborhoods and communities:

- Silver Creek
- Silver Summit
- Summit Park
- Heber City
- Timberline and Summit Park Neighborhoods.
- Sun Peak just north of Canyons
- Willow Creek subdivision
- Employment services: Kamas and the Kamas Valley, Oakley, Francis. These areas include Hideout, Todd Hollow, Keetley, Jordanelle, and Deer Mountain
- Expanded park and ride capacity was requested in Kimball Junction to accommodate use of bus service into downtown Park City
- Expanded service is needed to Jeremy Ranch and Pinebrook
- Later service to Silver Lake and Empire Pass for service workers
- Expanded service to Salt Lake City, especially a midday trip. Weekend service and service to the airport was also recommended
- Expanded service in Spring Creek
- Service to Guardsman Pass during the recreation season was stated as a need

Who

- Commuters – from Summit County communities surrounding Park City and Wasatch County particularly both Heber City and Salt Lake City
- There is need to ensure bike riders can continue to use the transit service
- School aged children would benefit from services that allows them to reach recreational centers and extracurricular activities in the Kamas Valley

When

Service Hours

- More frequent service is needed on the Brown Route, especially during special events. Participants noted that often the bus is full at these times unless someone boards at the early portion of the route
- Extended service hours, both in the morning and evenings, are needed to accommodate early and late work shifts
- There is a need for earlier service to Deer Valley
- More frequent service is needed, especially during peak hours in the morning and afternoon

- Participants noted that sometimes the bus arrives/departs a stop before the stated time on the Park City Transit app.
- Safe late night shuttle service on Main Street for service workers

Seasonal Needs

- Many participants expressed the desire to see the Empire Pass and Silver Lake routes run beyond Labor Day
- The seasonal changes are confusing to the riders. There was an expressed need for more consistency throughout the year

How

- Reconfigure some of the service around Main Street and into the transit center.
- Intercept lots on the perimeter of Park City so that people can leave their cars there and ride into town.
- There is a need for more express routes as opposed to local service.
- Neighborhood feeders or dial a ride services are needed to connect riders with express routes.
- Residents expressed the desire to see more bus stops with benches and shelters.

Infrastructure Issues

- The Richardson Flat park and ride lot is not used. Participants noted that it would be great if it was a resort employee lot with non-stop service to the resorts.
- Information at bus stops should be in Spanish particularly the Bonanza/Prospector area.
- More trash cans are needed at bus stops. Sponsorship program to get more trash cans at stops should be explored.
- Bus stops should have more lighting or some way to signal drivers to stop in dark areas. A button with flashing bus stop signs was one idea mentioned.
- Residents expressed the desire to see more bus stops with benches and shelters.
- Improved signage for traffic to resorts and parking facilities
- Additional ski lockers can make using transit easier
- Bus Rapid Transit (BRT) lanes (morning and evening peak hours) could be an option in the center of SR 224, and SR 248.
- Improved signage for traffic to resorts and parking facilities is needed.

Routes

- A desire to see a reverse route into Park Meadows was expressed, as the current loop isn't convenient for many residents.

- Express park and ride service with direct links to the ski resorts is needed. Making stops along the way makes transit unattractive to many resort employees and skiers.
- Many participants want to see more park and rides throughout the service area that have express service to ski areas.
- A stronger partnership between Park City Transit and private industry was noted as an opportunity to expand services.
- There needs to be better marketing of the fact that Park City Transit services are fare free.
- Participants asked about the possibility of new racks that can accommodate more skis.

Other

- Additional bike racks on Park City Transit buses are needed to accommodate more non-motorized transportation. Electric bikes should also be considered.
- Enhanced shelters – "Hospitality stops" – are needed.
- Any new development should include construction of a bus shelter.
- Long term planning should include consideration of Maglev technology.
- One participant asked how this plan will dovetail with plans in Wasatch County.
- There is a need for a pedestrian/biking bridge over I-80 so that people can use the park and ride on the north side of the highway and walk or bike to Kimball Junction instead of driving.
- Concerns were expressed regarding road construction and the impact on maintaining on-time bus services.
- More marketing is needed by resorts to ensure visitors are aware of the Park City Transit services.

Assessment of Unmet Needs

As discussed previously the city is very well covered by an abundance of routes during expanded service hours. The one exception is the area around Quinn's Junction. Additionally most of the more populated areas of the county are served. Most of the unmet needs were in the outer areas of the county – areas that are very difficult for fixed route to serve and should produce low ridership under any scenario. These areas included:

- Silver Creek Estates
- Silver Creek
- Silver Summit
- Summit Park
- Heber City, Wasatch County
- Kamas and the Kamas Valley including Oakley, Francis and Woodland

- Areas in Wasatch County between Kamas and Park City. These areas include Hideout, Todd Hollow, Keetley, Jordanelle, and Deer Mountain

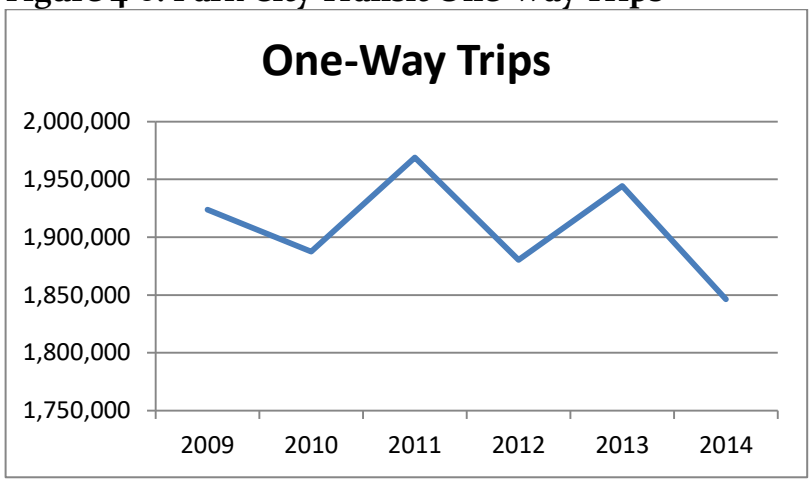
Transit Demand Analysis

This section assesses public transit demand by looking at existing transit usage and current transit mode split. Estimations of future transit demand are based on current transit demand and current transit service.

Trend Analysis

Park City Transit operates about 73,602 hours and 1,096,171 miles of fixed route and special events service annually (using 2014 data). Over 1.8 million one-way trips were completed in 2014. Figure 4-6 displays the transit ridership trends since 2009, which is used as the baseline as 2008 saw a decline in the economy in Park City and around the country. Current ridership is down four percent from 2009 due to changes in the economy and reductions in service hours. Over the six year span of 2009 to 2014 the system a six percent difference between the high of 1,968,933 (2012) one-way trips to a low of 1,846,383 one-way trips (2014). During that time there was a two percent decrease in service hours.

Figure 4-6: Park City Transit One-Way Trips



Source: Park City Municipal Corporation

If no major service changes are made and based on stable conditions, ridership may rise or fall about 5 percent annually depending on service adjustments and ridership should fluctuate accordingly as depicted in Table 4-1. As shown a five percent increase in ridership should result in an average of 5,270 trips per day or 1.92 million one way trips per year. This is consistent with year to year trends over the last six years.

Table 4-1 Potential Ridership Based on 5 percent changes from the Baseline

Season	Average One-Way Transit Trips Per Day	5% Increase	5 % Decrease
Peak	12,130	12,735	11,525
2014 Average	5,020	5,270	4,770

Source: Park City Municipal Corporation

Transit Mode Split

Transit mode split is the percentage of all trips in a service area that are taken on transit. Table 4-2 details the current number of all trips made in Park City and the transit mode split. As shown on average the transit mode split is 3.34 percent. During the peak season it is 4.9 percent. This table projects future ridership based on the growth in the number of trips taken in Park City. Projections by the city indicate a 50 percent increase in trips between 2014 and 2020 and a 100 percent increase from 2014 to 2040. Transit mode split should likely stay within three to 5 percent over the next five to seven years in a status quo scenario.

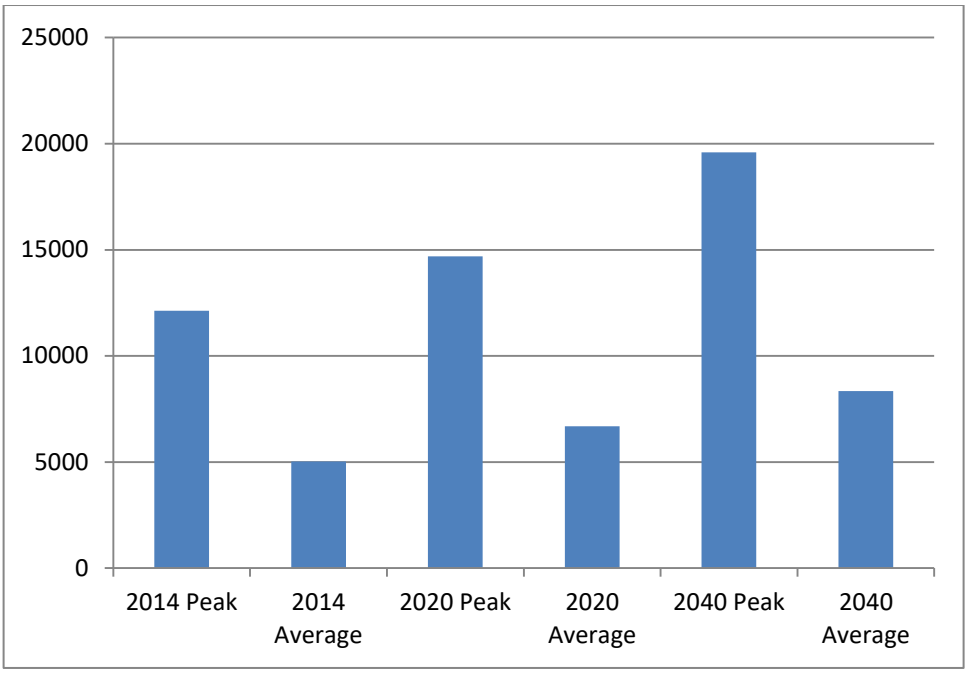
Assuming the transit mode split remains constant increases in one-way trips are depicted in Figure 4-7. As shown, average one-way transit trips per day should increase 33.3 percent by 2020 or to a total of 2,438,200 one-way trips per year. This level of increase should impact transit service and operations and should require additional service and resources to accommodate. Due to the fact that during the peak portions of the season the transit system is currently pushed to peak vehicle capacity additional capital resources including up to an additional eight additional vehicles in the overall fleet should be needed to accommodate such growth.

Table 4-2: Transit Mode Split Projections

Season	Average Daily Person Trips	Average One-Way Transit Trips Per Day	Transit Mode Split
2014 Peak	200,000	9,800	4.90%
2014 Average	150,000	5,020	3.34%
2020 Peak	300,000	14,700	4.90%
2020 Average	200,000	6,680	3.34%
2040 Peak	400,000	19,600	4.90%
2040 Average	250,000	8,350	3.34%

Source: Average Daily Trip Data. Park City Traffic & Transportation Masterplan 2011; Park City Transportation Demand Management Existing Conditions, Peer Research, and Markets & Opportunities. Park City Transit Ridership Data: Park City Municipal Corporation.

Figure 4-7: Park City Daily Ridership Projections Based on Transit Mode Split



Source: Average Daily Trip Data. Park City Traffic & Transportation Masterplan 2011; Park City Transportation Demand Management Existing Conditions, Peer Research, and Markets & Opportunities. Park City Transit Ridership Data: Park City Municipal Corporation.

Overall Assessment of Transit Demand

To assess the overall transit demand we first examine historical and current demand trends (Table 4-2). Over the last six years ridership has not fluctuated up or down more than 5% from one year to another. Assuming that this trend holds true Park City Transit can expect an average range of 4,770 daily one-way trips to 5,270 daily one way trips or between 1, 74 million to 1.92 million one-way trips per year.

Based on a consistent transit mode split and total daily trip projections outlined on the Park City Traffic & Transportation Masterplan average one-way transit trips per day should increase 33.3 percent by 2020 or to a total of 2,438,200 one-way trips per year.

Chapter 5
Development of Alternatives

INTRODUCTION

This chapter summarizes the alternatives developed to address the unmet and under met needs identified in the first three technical memoranda. For all of the detailed strategies please see Appendix D: Technical Memorandum No. 4 – Development of Alternatives. This was a working document designed to initiate a collaborative approach among the stakeholders to select and prioritize the alternatives and strategies that will guide the development of public transit in Park City and Summit County over the next 7 years.

The alternatives focused on the major and minor decision points for determining the ultimate direction of the study. These are not recommendations; rather they are potential strategies that can be employed to address an issue. Park City and Summit County management selected and prioritized (by year) the alternatives to be included in the plan. After development of alternatives, two public forums were held in the City and County.

The development of alternatives and options included the following components:

1. **Review of Existing Structure** – In this section the system structure will be discussed and an alternative timed transfer approach will be considered.

2. **Route Modifications** – As with every transit system, there are growing needs and modification alternatives.

3. **Express Bus/BRT/Fixed Guideway Corridors** – Most important will be to address the growing needs along the SR 224 and SR 248 corridors.

4. **New Service** – Park City Transit provides excellent fixed route coverage in the Park City area. Most new services should be beyond the current service area.

5. **Other Modifications and Recommendations** – Infrastructure, staffing, organizational and related issues will be discussed in this section.

Review of Existing Structure

Park City has an unusual service design in that the system eschews timed transfers and instead operates multiple routes over the same roads often at the same time with different ending locations. This unusual approach has a number of advantages over the traditional timed transfer structure for Park City's unique needs. As was stated by some stakeholders, Park City Transit was purposely designed to minimize transfers, especially for persons with skis and bicycles.

Service Modifications – Potential Changes

As stated above all systems need to fine tune their service on a regular basis to meet ever changing needs. The key for these route modifications is to ensure flexibility to make change on a regular basis. Further, when making these changes, in most circumstances the changes should usually stay in place for at least six months, but preferably one year and be well marketed and promoted before success or failure can be determined.

Replace Low Density Fixed Routes with Call a Bus

Demand response "call a bus" service may have a place in the Park City area (please note that the term "call a bus" is typically referred to as "dial a ride" across the country however that term is used in Park City for a different service model and we use the term "call a bus" for that reason[5]). Call a bus service has a person calling or activating an app shortly before the trip (typically within one hour) and having the vehicle pick them up at the door or a nearby corner and take them somewhere in the call a bus zone. In most urban cases the focus is on connections to nearby fixed route or rail.

These call a bus vehicles can also be used to provide ADA service at the same time. This is a documented practice in the transit industry called "co-mingling" is often used to reduce costs through economies of scale[6]. Technology can assist in the implementation of this approach.

For Park City and Summit County there are two sets of call a bus service alternatives. This first set, discussed here, identifies fixed route segments with low ridership where transit can eliminate the fixed route portion and substitute a call a bus vehicle. The second set of call a bus

[5] The American Public Transit Association, the Transportation Research Board, the Federal Transit Administration and others all define dial a ride as an origin to destination service (curb to curb) service. Park City Transit's dial a ride requires riders to get to a bus stop.

[6] TCRP REPORT 143: *Public Transportation Resource Guide for Co-Mingling ADA and Non-ADA Paratransit Riders, Washington D.C., 2011*

alternatives is for instituting call a bus in unserved areas. Figure 5-1 depicts potential replacement call a bus zones.

Quinn's Junction Fixed Route

Demand has increased in the Quinn's Junction area, specifically the Park City Medical Center, supporting facilities as well as the Park City Ice Arena and Sports Complex, to the point where a fixed route service and corresponding ADA paratransit is justified. It is a growing area that attracts both persons seeking medical care as well as commuters going to work at the medical facilities.

Route 6: Lime - Canyons

This route has undergone a number of changes since the project started. Park City Transit has begun expanded service and express service on this route as a winter 2015- 2016 pilot program. The pilot service operated late into the evenings and is an express during peak hours suspending the Kearns Boulevard portion of the route during these times as other routes can provide the same coverage. For example, a timed meet with Rt. 1 or a new Quinn's Junction route should give riders access across the system. The evening-night service has proven effective to this point.

The problem with this route however is the ridership during the shoulder seasons where productivity drops from 26 one way trips per hour in the winter and 16 trips per hour in the summer down to 3.5 one way trips per hour in the shoulder seasons. This is due in large part to few people at the Canyons in the shoulder season, duplication with other routes and the meandering nature of the route. Call a bus options were presented.

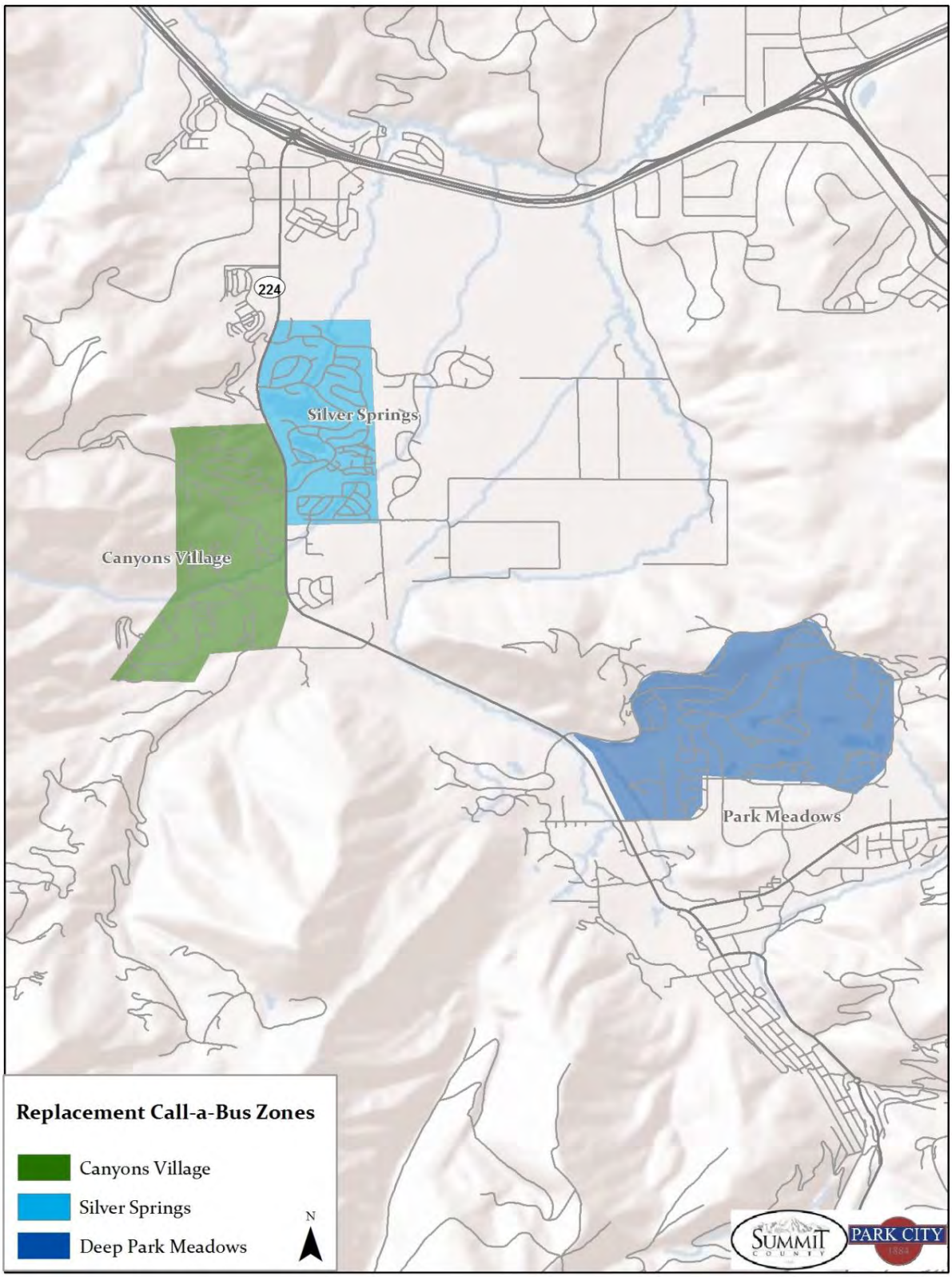
Rt. 4: Orange - Silver Lake and Rt. 9: Purple - Empire Pass Shoulder Extension

There were requests for service during the shoulders seasons. There are about 4 months when these routes do not operate. Each route operates 8 hours per day during the summer. This change proposed to operate the service year round, including operating during the shoulder season at the same hours as summer service.

Park City – Salt Lake City - Expansion

In this alternative, Park City – Salt Lake City service would add an earlier run in the winter and a mid-day run all year. There were a number of requests for earlier service during the outreach. Mid-day runs, while usually unproductive, do help the service generate additional ridership, just knowing they have a way home at mid-day. Under this alternative both 901 and 902 should have a later morning run. Mid-day service could either run separately or can serve both routes with one bus. The service would need to be well marketed and would be most effective if transit demand management techniques are in place related to parking and speed of the

Figure 5-1: Potential Dial-a-Ride Zones to Replace Low Density Fixed Routes



service. A guaranteed ride home program combined with a marketing effort has been known to improve ridership.

Future efforts once express service has been implemented in the SR 224 corridor, PC-SLC service can terminate at a park and ride lot by Interstate 80, where riders can seamlessly transfer to a waiting bus for the rest of the trip. This should allow UTA to double the number of trips and possibly destinations for the PC-SLC service.

Provide Service to the Salt Lake City Airport

Effectively serving the Salt Lake City airport requires regular service throughout the day to Park City, something that would be difficult for transit to accomplish in a cost effective manner. Typically airport service of this distance is provided by the private sector. There are two scenarios that can be applied. Operating the service as an extension of existing Salt Lake City service or develop a public private partnership to encourage the private sector to provide service at a reasonable cost.

Transportation Demand Management

Transportation demand management (TDM) techniques should be a necessity for a successful BRT, express service or other fixed guideway system. For each of these potential solutions to succeed a number of TDM conditions must first be met (in addition to financing). These conditions are as follows:

1. Expanded park and ride opportunities should be required north and/or west of Kimball Junction such as Jeremy Ranch-Pinebrook areas and for express service from the east, Richardson Flat should be made accessible to vehicles north or south on U.S. 40 with slip ramps to Richardson Flat Rd. Without significant intercept parking opportunities, these express or fixed guideway services will not be able to generate originating ridership

2. Constrained parking at the major resorts/employment sites and Old Town for: employees (required to park remotely and take a shuttle) and day trip visitors (recommended and marketed)

3. Fast moving service with few stops and little to no meandering at destinations. Service should be significantly faster than driving/parking time, which is difficult for the short distances involved
    a. Very frequent service – at least every 15-20 minutes
    b. Infrastructure – Real BRT or other fixed guideway solutions should need its own lanes/right of way, adequate signage, stations and signalization, for BRT, pull outs for local bus stops allowing BRT buses and perhaps vanpools to bypass local stops

c. Some form of traffic signal control for BRT.
d. Vehicles – The existing 35 foot buses are adequate for the present time

4. Operating during all commuting hours – most services should start at about the same time. Many persons during the outreach stated they had to be at work by 7 – 7:30 a.m.

5. Very strong marketing campaign to let visitors know they can get around town without a car.

In essence, at this time it is easier for most employees and day trip visitors to drive a car into Park City and park it than to park remotely and take a bus. Without resolution of the parking issue ridership will never be able to support BRT or fixed guideway solutions.

Future Fixed Guideway Services - Planning

As this planning effort is a short range plan, longer term efforts such as major investments in fixed guideway solutions including but not limited to BRT, gondolas and aerial tramways, will require a study specific to the long range (20 year) needs of the community. In most cases these modes would require major parking infrastructure for potential passengers before the system could start. Planning the feasibility of service, securing justification, gaining access to the land, approvals (environmental) and funding and then building the infrastructure along with ensuring all of the minimum transit demand management conditions are met may take many years.

New Services

The current service area is well served by Park City Transit. Almost all areas that can sustain fixed route have service (Quinn's Junction, the exception, is served by a demand activated route), therefore the majority of new services are focused on the County. The alternatives include the following.

Continuation of Pilot Services

Park City Transit and the County implemented new winter pilot service in the winter of 2015-16 to considerable success. These included:

- Revised Rt. 6 service after 3 p.m. express to Old Town and expanded hours until midnight
- Extend Route 7 and 8 until midnight

Kimball Junction Shuttle

The Kimball Junction shuttle would serve both sides of Kimball Junction, East and West as well as the Tanger Outlet Mall, all in the County. This route could operate starting at 7 a.m. and

ending at 7 p.m. (for example) and its purpose would be to allow people to go to multiple destinations while leaving their car parked at the first destination.

Service to Justice Center

The Justice Center is currently not served by fixed route, as the nearest route stops 0.9 miles from the Justice Center, making it too far to be accessed. Close to the Justice Center are a Home Depot and other businesses. Serving these locations can benefit employees in the area, shoppers as well as those needing to go to the Justice Center.

Service to Summit Park

The Summit Park area consists of a very low density community build along roads that are very difficult for buses to traverse. The consultants recommend that any fixed route service proposed remain on Kilby Rd. - Aspen Dr. Only smaller vehicles will be able to access the side roads. This service would connect the area from Summit Park to the Kimball Transit facility. All services are designed to serve peak hour and mid-day service.

New Call a Bus Zones

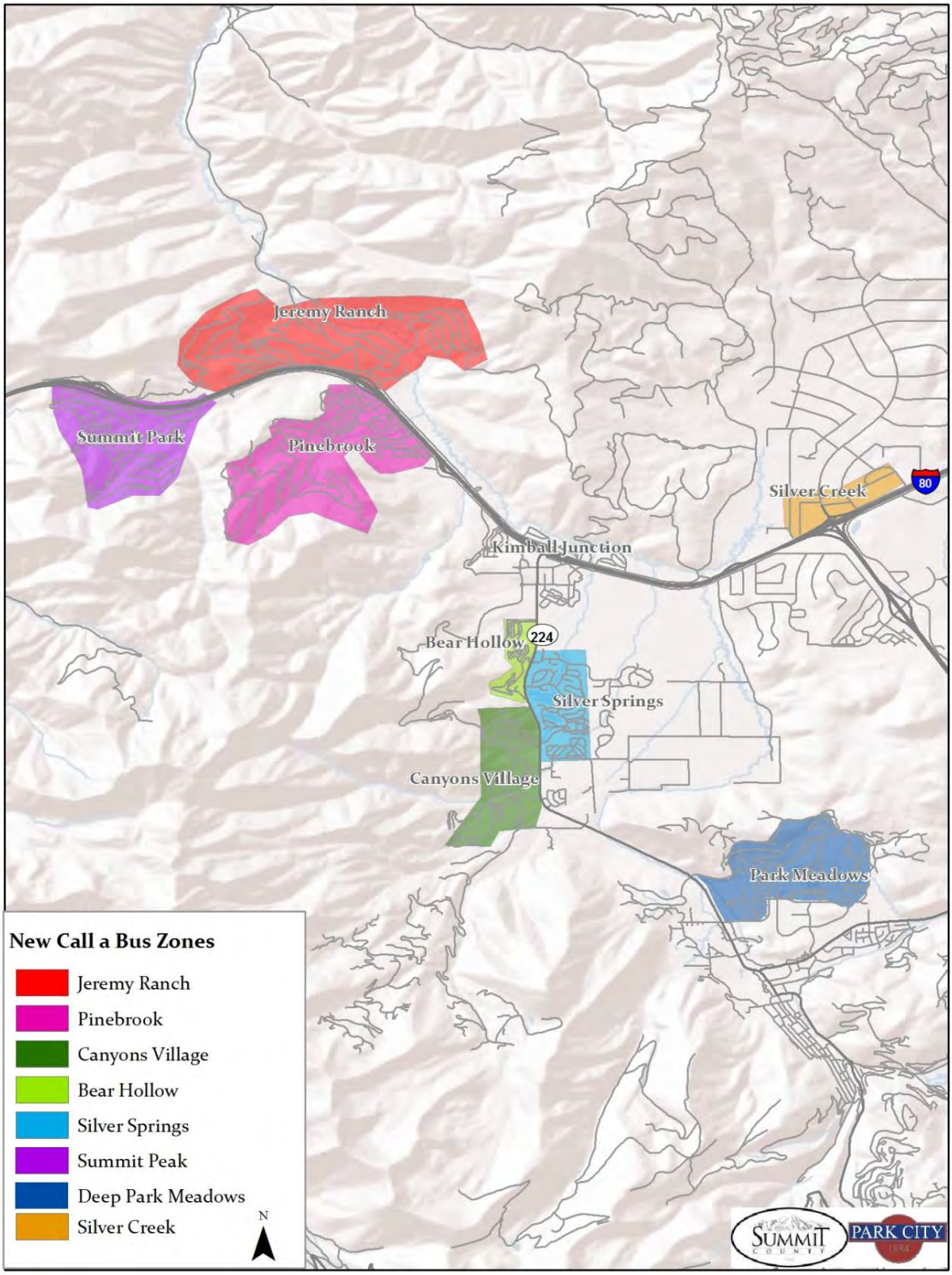
There are a number of communities within the Park City/Summit County area that should not be served by fixed route due to the very low density, lack of through streets and difficulty for buses to maneuver. An alternative to fixed route is a call a bus service where smaller buses or minivans are used and service is limited to the designated community and the nearest fixed route stop.

There are a number of opportunities to implement a call a bus service. In addition to the Silver Springs and Summit Park area discussed previously, call a bus is discussed for a number of potential call a bus zones. These areas are depicted in Figure 5-2.

Canyons Circulator

The Canyons Village is a tourism based area with access to Park City Resort (Canyons Village Base Area), several hotels, condominiums, and shopping. A circulator can serve two purposes: first and foremost to connect condo residents to the ski basin at Canyons. Second this service could provide service to Canyons Transit Hub for access to the entire service area. This service somewhat competes with Rt. 6 as well as the Cabriolet and the Waldorf Gondola, both designed to transport people to the ski basin. This circulator can also function as a call a bus.

Figure 5-2: Potential Call a Bus Zones



Rural and Out of Region Service

The Kamas area (including surrounding communities) has about 6,000 residents and was shown to have a relatively low level of need. However combined with communities around Deer Mountain and surrounding apartment complexes, there is potential for a fixed route service. The most probable service would be commuter service with vanpools or a commuter fixed route bus. Heber City was reviewed as well; however a new privately operated service to Park City has been initiated from Heber City and should be encouraged and provided marketing supported by the City and County.

While the potential ridership conclusions of this study mirrored recent county planning studies, this study team believes there are ways to potentially serve these areas in a cost effective, yet limited fashion:

1. Vanpools – Kamas and the communities along Rt. 248, Heber City, Coalville and other similar communities could support a modest vanpool program.

2. Commuter Bus – This fixed route service would start in the Kamas area and operate via Richardson Flat (once it is practical) into Old Town Transit Center. This service would have one a.m. and one p.m. run designed for commuters.

3. Nurture New Heber City to Park City service – There is currently a private for profit operator in this corridor.

Organization, Finance and Operational Issues

A variety of other alternatives were addressed, including organization and financial issues. The reader is directed to Appendix D - Development of Alternatives. Other issues related to:

- Bicycles on board buses – Guidelines should be developed to guide the customers and vehicle operators related to safety.

- Vehicles and alternative fuels – Currently Park City Transit uses biodiesel fuel. Alternative fuels should continue to be used for the short term. Future consideration should be given to electric buses as they continue to rapidly evolve.

- Facilities including bus stops and shelters – Shelters and pathways should be reviewed and facilities should constrain the flow of pedestrians.

- Staffing – Park City Transit is in need of key staff in marketing, administrative support, recruitment and training.

- Technology – Continue to apply technology as appropriate for customers and staff. Additional electronic real time signage should be placed at key stops and transfer points. As the service includes call a bus zones in the future, PCT should apply its paratransit software and other technology to allow a seamless combination of call a bus with ADA paratransit.

Chapter 6
Service, Organizational and Capital Activities

INTRODUCTION

The purpose of this short range transit plan is to serve as a guide for the future growth of Park City Transit over the next seven years. The plan includes recommendations related to service changes and modifications. Changes include incorporation of new express service, new park and ride lots, and the Kimball Junction Transit Center where new timed transfer services will be implemented. The changes also address growth in the county with a number of new services designed to connect low density communities to fixed route buses and the rest of the system.

The plan was built on the tasks completed previously, including extensive public engagement, demographic and land use analysis, analysis of needs, development of alternatives, and selection of alternatives by the study committee. This plan is consistent with existing city and county plans and associated policies. This plan was also developed to support current planning efforts.

This chapter details year-to-year changes in services, capital infrastructure and administration necessary to:

- Improve existing performance –Changes and modifications are based on shifting nature of needs and basic operations' planning activities.
- Initiate new services –Services include expanded SR 224 and SR 248 corridor service, and addressing needs in under or unserved areas.
- Administrative/management support – The unique nature of Park City Transit as a seasonally based service places additional demands on management that most transit systems typically do not see. Recruiting for seasonal work and ensuring vehicle operators are trained and experienced to drive in difficult conditions makes the administrations functions of marketing, recruitment and training an ongoing set of activities.
- Vehicle and transit infrastructure improvements are critical to success and are detailed on a year-by-year basis.

For each change, costs and capital needs are identified, and suggested routing identified (although final decisions should rest with management staff and policymakers).

Plan Highlights

Park City and Summit County continue to stress the importance of transit through a "transit first" planning philosophy. In this seven year plan, there are a number of major changes being introduced that can have a significant impact on reducing the use of private automobiles in Park City, especially during peak travel times. Highlights of the plan include the following:

1. Call a Bus – These are services designed for low density communities that typically cannot be served effectively by fixed route service. Over the first five years of the plan, Call a Bus service will be set up in four defined zones where an individual can access a vehicle at their door or corner and receive a ride to a transfer point or express bus stop in close proximity to that zone. As these services grow, some zones could justify a fixed route. Ridership demand should be monitored and service changes from "Call a Bus" to fixed route service should be considered when warranted.

2. Kimball Junction Transit Center and Timed Transfer – As this transit center comes on line, services in this area will begin to evolve into a network of timed transfers to allow for seamless access across the service area and Salt Lake City. By 2018, it is anticipated that this area will have a network of circulators in Kimball Junction, neighborhood services east and west, express park and ride and commuter services. The KJTC will serve as a primary hub to connect to east/west routes from the north/south routes and vice versa.

3. Express Service - Expanded express service from park and ride lots to Old Town with 15 minute frequency of service.

4. Continued Fine Tuning – A number of modest service changes are proposed that may improve performance and increase ridership. Additional fine tuning will be needed after new routes are implemented.

5. Preparing for Future Growth – The plan emphasizes the need for building infrastructure and staff to support expanded service in the future. This plan works in concert with other plans recently completed or in process.

6. Regular Service Review – Park City Transit and policymakers should set targets for route performance – in particular pilot projects. This plan will review the processes that the city and county should use to determine reasonable goals.

Service Expansion – An Evolution of Services

A number of the services planned, are new to Park City. The Call a Bus demand response service and park and ride express services are newly recommended services that can grow, and in the case of Call a Bus, evolve into a fixed route if justified by ridership and operating cost.

Call a Bus

Call a Bus service is designed as a starter service for low density areas. It is recommended that this be first introduced in 2017 and expansion continues through 2020. As performance and ridership improve and riders accept the service, it should be monitored closely to see if a fixed route approach can better serve the area. Typically this type of zoned service with trips of limited distance, can manage about 6 one-way trips per hour, plus or minus 2. This can vary depending on each zone's characteristics.

If the Call a Bus service reaches that point an alternative should be made available. What makes this advantageous is that planners know exactly where and when existing passengers get on and off the vehicle so that planning a fixed route becomes a simpler, more predictable and dependable process.

The possibility that a Call a Bus service will not gain acceptance also exists. In the event that the service does not generate the lowest level of acceptable performance, the service should be evaluated and if after attempts to improve the performance fails, service can be eliminated and placed elsewhere.

Park and Ride Express Service

Another new strategy planned for 2018 is the Jeremy Phase 1 Park and Ride express service. A second park and ride service is planned to open in 2020 (Jeremy Phase 2) and a third in 2022 (Phase 3). Serving each route with full express service at 15 minute frequency (16 hours per day for each of the three vehicles) will cost over $2 million per park and ride lot. When the second lot opens in 2020, if able, it should be served by the same route. This will also apply to the third route in 2022, unless demand dictates changes.

Service should be closely monitored for capacity constraints. If or when capacity is reached at a particular time or season, management should program an additional or "tripper" service to ensure all passengers are transported in a timely manner. A tripper bus is placed in service during peak times to meet the demand on a particular route. Once tripper service has reached capacity, consideration should be given to implementing a separate route for the busiest lot. This will be determined based on ridership patterns just prior to the time of implementation.

SERVICE MODIFICATIONS AND NEW SERVICES

This section details service modifications and new services called for in the plan. This should not interfere with Park City Transit making regular changes as need is manifested. Annual and semi-annual changes, modifications and fine tuning of existing services are routine in the transit industry and should continue to be introduced in this plan. It should also be noted that Park City has very distinct peak summer and winter seasons and routes and frequency should be adjusted accordingly to meet the respective summer and winter demand.

The Short Range Transit Development Plan is intended to provide guidance and ensure flexibility in planning and implementation of service:

- Routes detailed in this plan are a guide and should not be considered final until management conducts final operations planning, budgeting, and marketing prior to implementation. Exact routing and timings will be determined by management and policymakers prior to implementation.
- Call a Bus zones also serve as a guide for the plan. The actual zone will be determined by transit staff/planners at the point of implementation.
- Service hours are not exact and should ultimately be determined by needs and funding constraints at the time of potential implementation.
- Implementation timelines of the plan may vary due to a variety of circumstances that cannot be predicted.
- Implementation is always contingent on funding availability.

Transportation Demand Management

Transportation demand management (TDM) activities are critical to success for a variety of routes in the service area. Appropriate TDM techniques will be necessary for a successful express service, BRT "Lite," or potential fixed guideway service in the future. For a potential solution to succeed, a number of TDM measures should first be implemented and/or coordinated (in addition to financing). These conditions are:

1. Expanded park and ride opportunities are required north and/or west of Kimball Junction such as the new Jeremy Ranch Park and Ride facilities for the SR 224 corridor. These facilities are in the planning stage and planned to be opened in conjunction with express service during the term of this plan. For express service from the east on SR 248,

Richardson Flat should be made accessible to vehicles travelling north or south on U.S. 40 with access improvements to Richardson Flat Rd via SR 248 and/or US 40.

2. Managed parking at major resorts/employment sites and Old Town for employees (incentivized to park remotely and take a shuttle) and day trip visitors (recommended and marketed). Additionally, ski lockers at Park City Resort will benefit transit.

3. Operating during commuting hours; services should start at about the same time. During the outreach many persons stated they had to be at work by 7 a.m. – 7:30 a.m.

4. Very strong marketing campaign to let visitors know they can get around town without a car.

ANNUAL SERVICE CHANGES

Service changes are detailed in this section in chronological order by calendar year and by season. For each service change, the following elements are discussed:

- Description of change
- Purpose of change
- Capital needs – vehicles and shelters
- Review of costs
- Impact on ridership and auto reduction

Winter 2016 – 2017

In the first year of the plan there will be initial changes with service. Just as important will be a number of internal activities that Park City Transit should initiate to ensure that the demands of future years can be met. Highlights of the recommended changes in the fall include:

1. Continue Winter Enhancements to Routes 6, 7 and 8 – In 2015-16 winter season, Park City Transit extended hours of all three routes and revised Route 6 as a direct link from Canyons to Park City Resort and Old Town. Implemented as a pilot it gained very significant ridership and has been deemed a significant success. Park City Transit should continue to work with private partners to fund and maintain this service.

2. Increase Frequency of Route 8 – One bus should be added to Route 8, increasing frequency from one bus per hour to 30 minute service.

Another key activity will be to seek funds and initiate a procurement for new buses to meet the requirement of the plan. Management should also initiate the hiring process for new staff discussed in detail in the section on Administration and Management, below.

Table 6-1 summarizes the costs associated with each recommendation listed in the first year of the plan. Costs for fixed route will be $115 per hour in this period.

Table 6-1: Winter 2016 – 2017 Service Expansions

	Service	Existing Service Hours	New Service Hours	Service Hour per Day Increase	Winter 2016 – 2017 Additional Costs	Potential Daily Ridership/ Reduction in Autos
1	Continue Prior Winter Service Levels (120 Days) and Enhancements: Rt. 6-Canyons, Rt. 7-Kimball Junction West and Rt. 8-Kimball Junction East Express	10,983	13,143	18	$248,400	294 / 139
2	Increase Frequency of Rt. 8 Kimball Junction East to 30 mins	2,040	4,080	17	$234,600	222 / 105
2016 - 2017 Totals		**-**	**17,223**	**35**	**$493,000**	**516 / 244**

1. Continue Prior Winter Service Levels and Enhancements: Route 6-Canyons, Route 7-Kimball Junction West and Route 8-Kimball Junction East Express

Park City Transit operated expanded and express services on these routes as a winter 2015- 2016 pilot program. Pilot service on all three routes extended hours of service from 6:00 a.m. to midnight. Route 6 operated as an express service beginning at 2:30 until midnight and suspending the Kearns Blvd. portion of the route during these times as other routes provide the same coverage. For example, a timed meet with Route 1 or a new Quinn's Junction route should give riders access across the system.

The evening-night service has proven effective to this point with productivity at about 16.6 one way trips per hour, which is excellent for late night service. Ridership increased about 300 one way trips per day. This service gives residents and visitors an option to driving after dinner and reveling, a significant added benefit. Additionally, parking is very limited in Old Town during these peak times and this service helped alleviate parking demand in City owned and operated parking facilities.

These service extensions result in an increase of 18 service hours daily and over the five month period add $248,400 costs to the system per winter, based on the cost figure of $115 per hour for fixed route service. This service should continue as a regular winter service. Table 6-2 details the service expansion by route. Please note that the second Route 8 bus costs and ridership changes (see next service change) is included in the next table. No additional shelters or other facilities are necessary for this service.

The purpose of these changes is to provide options for passengers on these routes. This is particularly important for commuters using the Jeremey Ranch Park and Ride lot as service is limited before 8:30 a.m. One additional bus should be needed.

Table 6-2: Winter Service Expansions for County Routes (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Rt. 6 - Lime - Canyons	2	6	12	180 / 85
Rt. 7 - Pink - Kimball West	2	2	4	82 / 39
Rt. 8 - Brown - Kimball East	1	2	2	32 / 15

2. Increase Frequency of Route 8 Kimball Junction East

There are opportunities to start with a modest express service and a full detailed long range corridor analysis. As funding for infrastructure becomes available, the next steps toward full BRT or other fixed guideway mode can be implemented based on the future corridor analysis. Currently Route 8 operates as a direct service from Kimball Junction to Old Town on an hourly basis. With an additional bus, this service will operate every 30 minutes. It is a direct route because unlike Route 7 (30 minute headways) it does not meander into Silver Springs. These two routes when combined will offer four buses per hour between Kimball Junction and Canyons and two additional buses per hour from Canyons to the Bonanza Park/Prospector Square area for a total of six buses per hour in the winter.

This option calls for adding one bus to Route 8 and increasing service frequency to every 30 minutes. Service span is proposed to be 17 hours and cost approximately $235,000 for the four month period (Table 6-3). One additional bus should be needed.

Table 6-3: Rt. 8 – Brown - Kimball East Expansion (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Rt. 8 - Brown - Kimball East	1	17	17	222 / 105

Using ridership elasticities to determine potential ridership, for every 10% increase in frequency is a corresponding increase of ridership of 5% (0.5 service increase elasticity). As service levels have increased 100%, ridership can be expected to increase 50%. Ridership on this route has averaged about 444 daily one way trips. This can increase by 222 to bring daily ridership to 666

one way trips. Using the average riders per vehicle figure of 1.9 yields a potential reduction of 105 daily vehicle trips.

2017

In 2017 a number of major activities are proposed to be implemented. However, the implementation of activities is dependent on funding availability for operations and vehicles. These activities include the following:

1. Introduction of Call a Bus services – The first Call a Bus service will be introduced at this time, allowing Route 7 to by-pass Silver Springs. This vehicle will serve Canyons Village, Sun Peak and Silver Springs. Service will be provided to destinations in the zone and the designated fixed route transfer point. Service can be activated by a call within one hour.

2. Extend summer and shoulder service – The County is seeking consistency of service hours between Routes 7 and 8 with the Park City service, which includes service both earlier and later than currently.

3. Initiation of Kimball Junction Circulator – With the completion of the new transit center at Kimball Junction, the first of many changes is the new circulator service, connecting both the east and west sides of the Kimball Junction commercial and residential areas.

4. Adjustments to Routes 1 and 5 to eliminate an unprotected left turn.

5. Quinn's Junction Fixed Route and ADA Paratransit – A fixed route is recommended to serve the hospital, National Ability Center, County Health Department, recreation facilities, and other land uses in the Quinn's Junction area. Complementary paratransit is required to be provided.

6. Consolidating Paratransit Services – At this time the ADA service area will expand as service will be available to the medical complex and County Health Department in Quinn's Junction. At the same time Call a Bus service will be initiated as well.

Table 6-4 summarizes the costs associated with each change listed in this year of the plan. Hourly costs for the second year will be $117 per hour, in 2017 dollars.

Table 6-4: 2017 Service Expansions

Service		Existing Service Hours	New Service Hours	Service Hour per Day Increase	2017 Additional Costs	Potential Daily Ridership/ Reduction in Autos
1	Canyons/Sun Peak/Silver Springs Call a Bus - New Service	0	4,745	13	$450,775	55 / 26
2	Extend Rt. 8-Kimball Junction East and Rt. 7-Kimball Junction West Hours (Summer and Shoulders for 240 Days/Yr.)	8,160	9,600	6	$168,480	113 / 36
3	Kimball Junction Circulator	0	3,120	26	$365,040	192 / 91
4	Prospector Square Adjustment	-	0	0	$0	0 / 0
5	Quinn's Junction ADA Paratransit	4,600	6,973	6.5	$229,388	120 / 57
2017 Totals		**-**	**27,985**	**49**	**$1,209,683**	**480 / 210**

1. Canyons/Bear Hollow/Silver Springs Call a Bus - New Service

Canyons Village is a resort center that provides with access to Park City Resort via the Canyons Village Base Area. The Canyons Village includes several hotels, condominiums, a golf course, dining, and shopping. Currently Route 6 is the only route that directly serves the resort center primarily connecting visitors and employees to Park City and the Park City Resort base area located in Park City.

A Call a Bus service is proposed for this area for 13 hours per day all year, to provide service to Canyons Transit Hub for access to the entire service area (Figure 6-1). Each of these communities together can support one call a bus vehicle. Trips can be provided anywhere in the zone including the Canyons Transit Hub. The short nature of trips allows for a much higher productivity as the bus should respond within one hour. Service should be tied into the software system currently used by Park City Transit. In the future, Park City Transit should invest in an app that will allow customers to request a vehicle from their smart phone.

Based on a 13 hour per day schedule, $95 per hour as a cost for paratransit service and operating non-winter months, this service requires about 4,745 hours of service and should cost approximately $450,775 in the first year (12 months) of service (Table 6-5). One bus should be able to serve each area and provide service to the nearest fixed route bus. All trips by their nature should be short.

Figure 6-1: Canyons/Bear Hollow/Silver Springs Call a Bus Areas

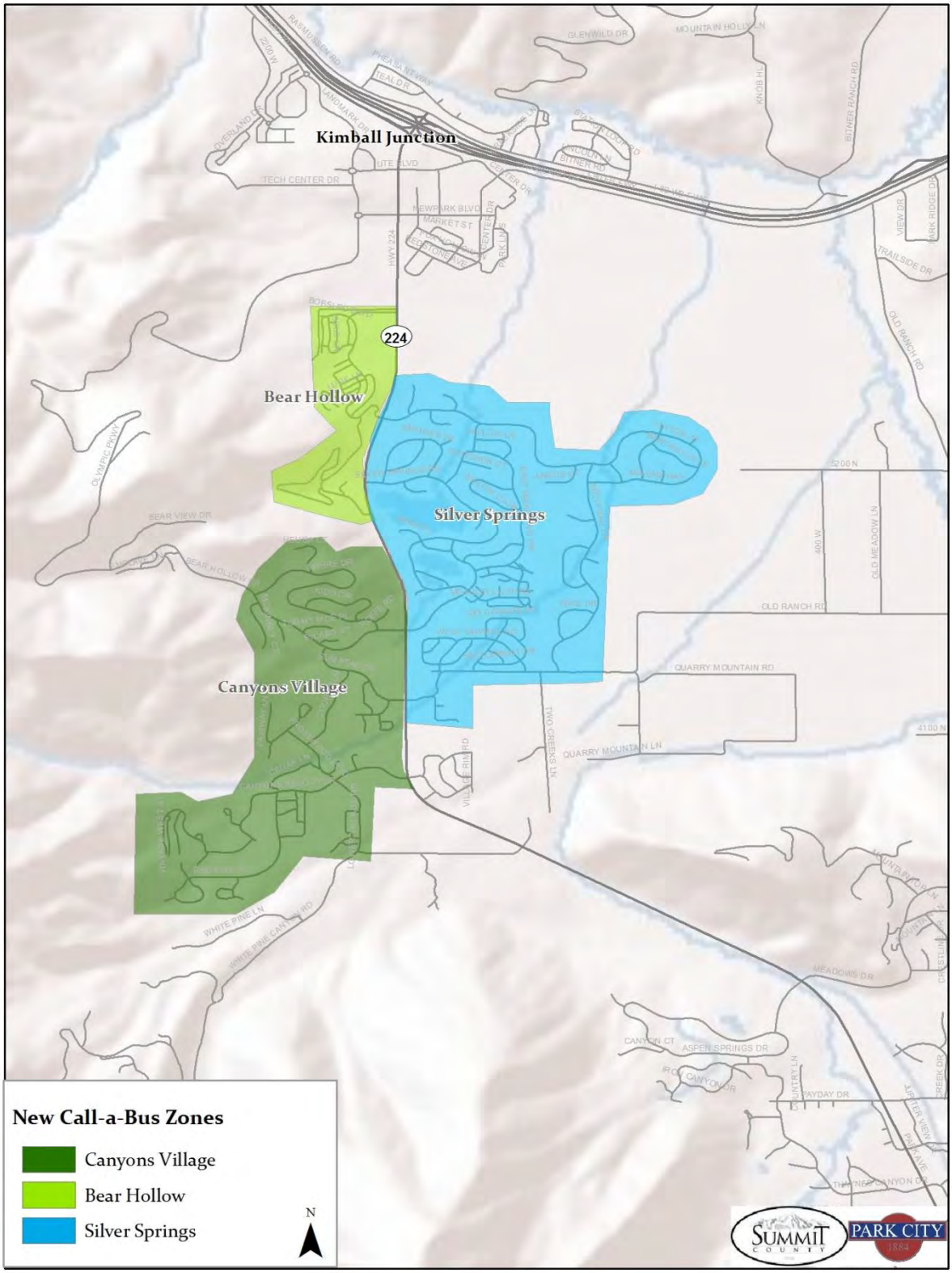


Table 6-5: Canyons/Bear Hollow/Silver Springs Call a Bus New Service (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Canyons/Bear Hollow/Silver Springs Call a Bus	1	13	13	55 / 26

As with all Call a Bus services, as ridership grows and Call a Bus reaches capacity, a fixed route can be implemented based on the origins, destinations and times of the call of bus riders. Capacity is different for different areas in paratransit service. Capacity is reached when the service can no longer keep up with demand (about 7 one way trips per hour).

Initially this service will generate 3 – 4 one way trips per hour – more during the winter and much less in the shoulder seasons. Initially this service can generate about 55 one way trips per day reducing auto traffic by about 26 vehicle trips when applying the occupancy rate of 1.9 passengers per personal vehicle.

2. Extend County Service Hours in Summer and Shoulder Seasons

Under this service extension, AM and PM enhancements are made to current Route 7 and Route 8 during summer and shoulder months (8 months) to match service hours in Park City. The objective is to provide consistent and seamless service in all parts of the service area. Each route is planned to be extended to operate from approximately 7:00 a.m. to 12:00 a.m. This should require an additional 6 hours of service per day, resulting in an increase in costs for service of approximately $170,000. This service should not require any additional vehicles.

This service will mirror the service extension in the winter of 2015-16 discussed above. In order to determine potential ridership, the average seasonal ridership reduction system wide is about (based on 2014 reported ridership) 67% of winter service. Winter service averaged 82 daily trips on Route 7 from 9 p.m. to midnight and 31 on Route 8. Average shoulder and summer daily ridership between 9 p.m. and midnight should be about 55 trips (a reduction of 26 vehicle trips) on Route 7 and ridership should be approximately 21 on Route 8 (with a reduction of 10 vehicle trips). Table 6-6 details hours and ridership.

Table 6-6: Summer Service Expansions for County Routes (Daily) 2017

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Rt. 7 - Pink - Kimball West	2	2	4	55 / 26
Rt. 8 - Brown - Kimball East	1	2	2	21 / 10

3. Kimball Junction Transit Center – Circulator Service

The Kimball Junction Circulator is planned to be the first step in bringing a timed transfer network to the northern part of the service area. The plan calls for a variety of local circulators to have timed meets with express service. All services are planned to be in place by 2022.

1. Implement circulator 2017
2. Implement express from Jeremy Phase 1 Park and Ride (2018)
3. Implement modified Salt Lake City Commuter service (2018)
4. Implement Jeremy Phase 2 Express service (2020)
5. Implement third phase of new Jeremy Park and ride service (2022)

Circulator service should be implemented in the winter 2017 – 2018. The service level will include 15 minute frequency, using two buses.

The Kimball Junction circulator would serve both sides of Kimball Junction, East and West and Tanger Outlet Mall. Figure 6-2 depicts possible routing. The route would connect Tanger Outlet Mall on the west side with the Walmart area and Kimball Junction East (Redstone and Newpark). This route could operate starting at 9 a.m. and end at 9 p.m. and its purpose would be to allow people to go to multiple destinations while leaving their car parked at the first destination reinforcing the "park once" philosophy. It would also serve to connect the two sides of Kimball Junction. This route would have timed connections with Routes 7 and 8 and later, with express service, where feasible.

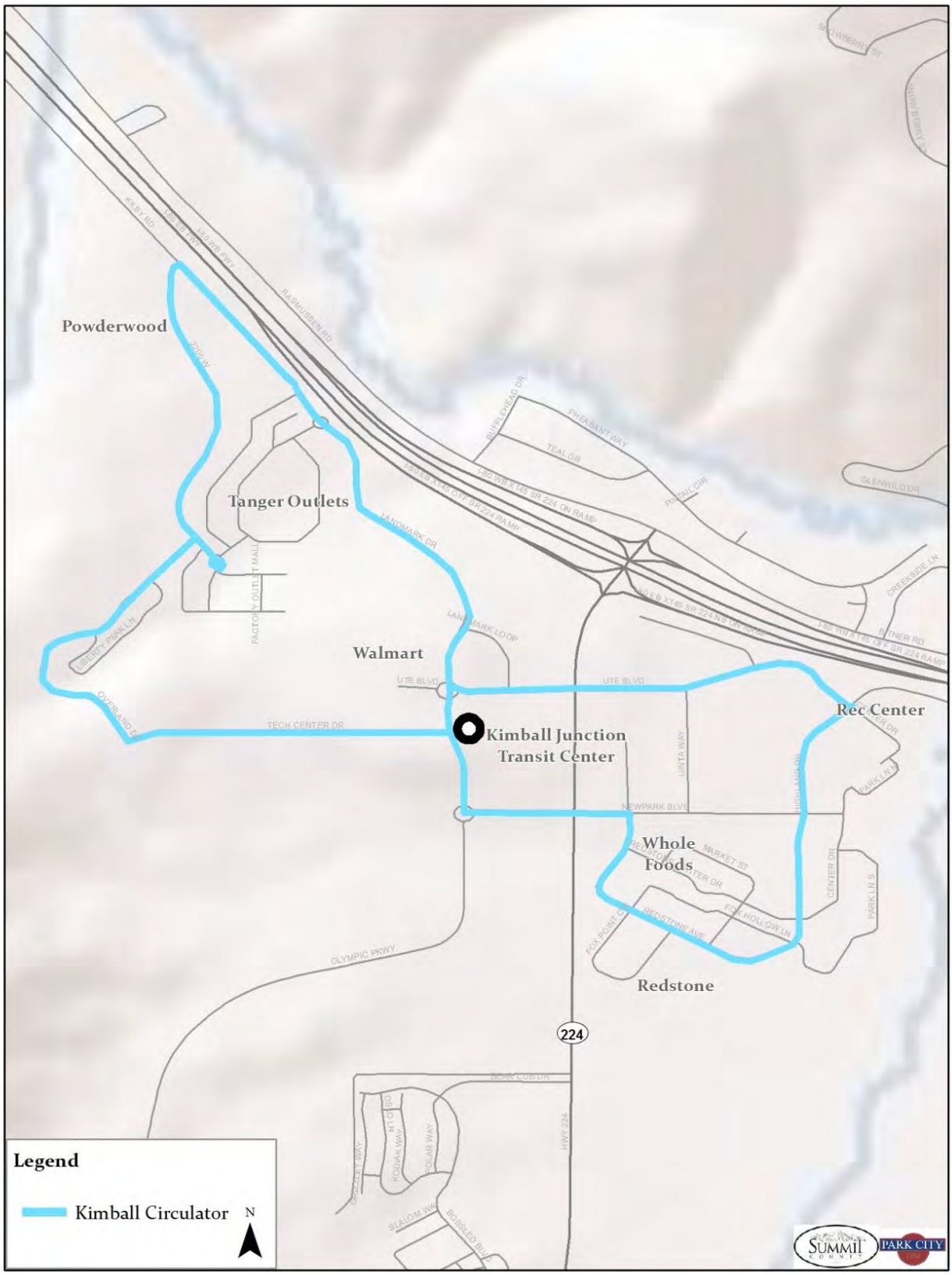
The service provides for 15 minute headways using two buses, 13 hours per day, 365 days per year. This high level of service will cost about $1 million per year. This service should start in the fall costing $365,040 in 2017. Ridership will initially generate about 8 one way trips per vehicle hour (16 trips per hour) should generate about 192 one way trips per day. This can reduce vehicle traffic by about 91 vehicle trips per day.

As this is a new service, three additional buses should be needed (including a spare vehicle). Park City Transit should use small buses (cutaway), as ridership should probably not fill a large bus. Small buses cost approximately $180,000. As each trip is short in nature, ease and speed of boarding and alighting is important, small buses with two doors are ideal for this type of service in order to reduce dwell (vehicle sitting) time. Table 6-7 depicts this data.

Table 6-7: Kimball Circulator – New Route Fall 2017

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Kimball Circulator	2	13	26	192 / 91

Figure 6-2: Kimball Circulator Illustration



4. Revisions to Prospector Area Routes

The purpose of this route revision is to eliminate an unprotected left turn that often adds time to the trip (Figure 6-3) and creates an unsafe situation for both the bus driver and passengers as well as for traveling public. It is recommended that Routes 1 and 5 be adjusted to eliminate this movement. This change should not impact coverage or ridership, and should improve safety and running time. This is the type of change that should be done wherever issues such as this arise. There are no additional costs associated with this change.

5. Quinn's Junction Fixed Route

This route replaces the existing "Dial a Ride" service with a true fixed route and Americans with Disabilities Act (ADA) Complementary Paratransit service. The Quinn's Junction area is growing and attracting persons seeking medical care as well as commuters going to work at medical facilities. The existing demand activated service requires an individual to call and request a ride and then walk to the bus stop. This service generates very low ridership in its current form.

This route will provide access to Park City Medical Center and supporting medical facilities, Park City Ice Arena and Sports Complex, the County Health Department, and ultimately address the growing number of recreational facilities in the area. For the near future, this route should serve the west side of U.S. Route 40 as depicted in Figure 6-4.

The route proposes a shuttle style service between the medical complex and the intersection of Park Avenue and Kearns Blvd. where riders can transfer to go north or south. A timed transfer with Routes 6, 7 and/or 8 would be advantageous for riders. At about 7 miles per round trip, it may be possible to operate on ½ hour frequency with one bus during most days and times. A second option would have the route operate to Park City Resort and/or Old Town Transit Center, and expand the headway (40 minutes). An additional "tripper" bus may be added during peak hours on SR 248 based on demand.

ADA Paratransit

ADA paratransit coverage would have to expand to meet the need to the hospital and other facilities. It is anticipated that the National Ability Center may place some of its clients on this service, but in fact they may be more interested in fixed route service, which is closer to their mission. Park City Transit, working with National Ability Center, can develop protocols to maximize usage of fixed route for these riders and minimize ADA costs. This can apply to seniors or persons with disabilities as well.

In this approach every attempt is made to ensure ease of access on fixed route so that riders self-select fixed route for its convenience. Research and experience indicates that some ADA riders may opt out to fixed route where possible as it can be done spur of the moment and allows for greater independence for persons able to ride fixed route.

Figure 6-3: Winter Prospector Realignment

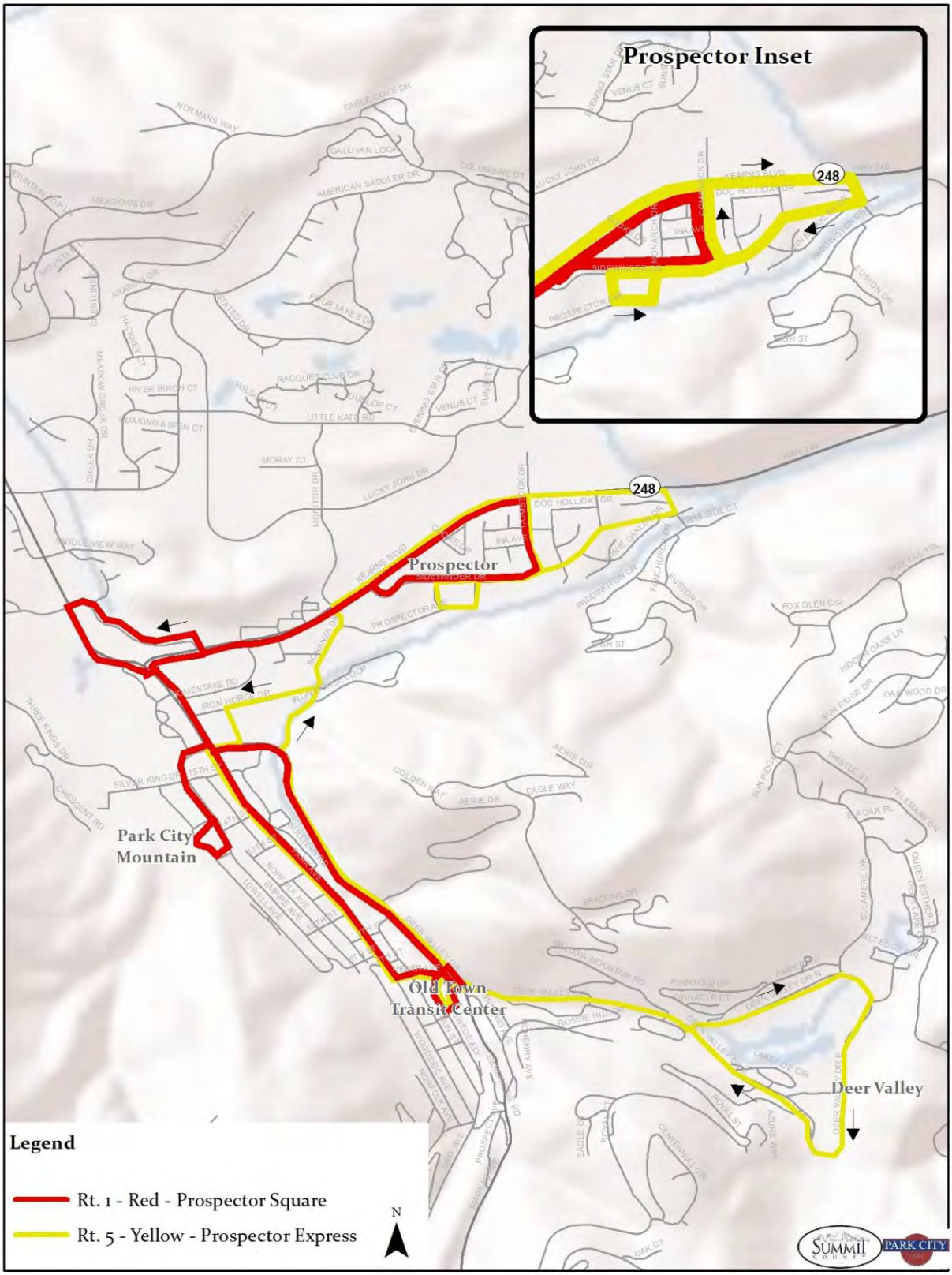
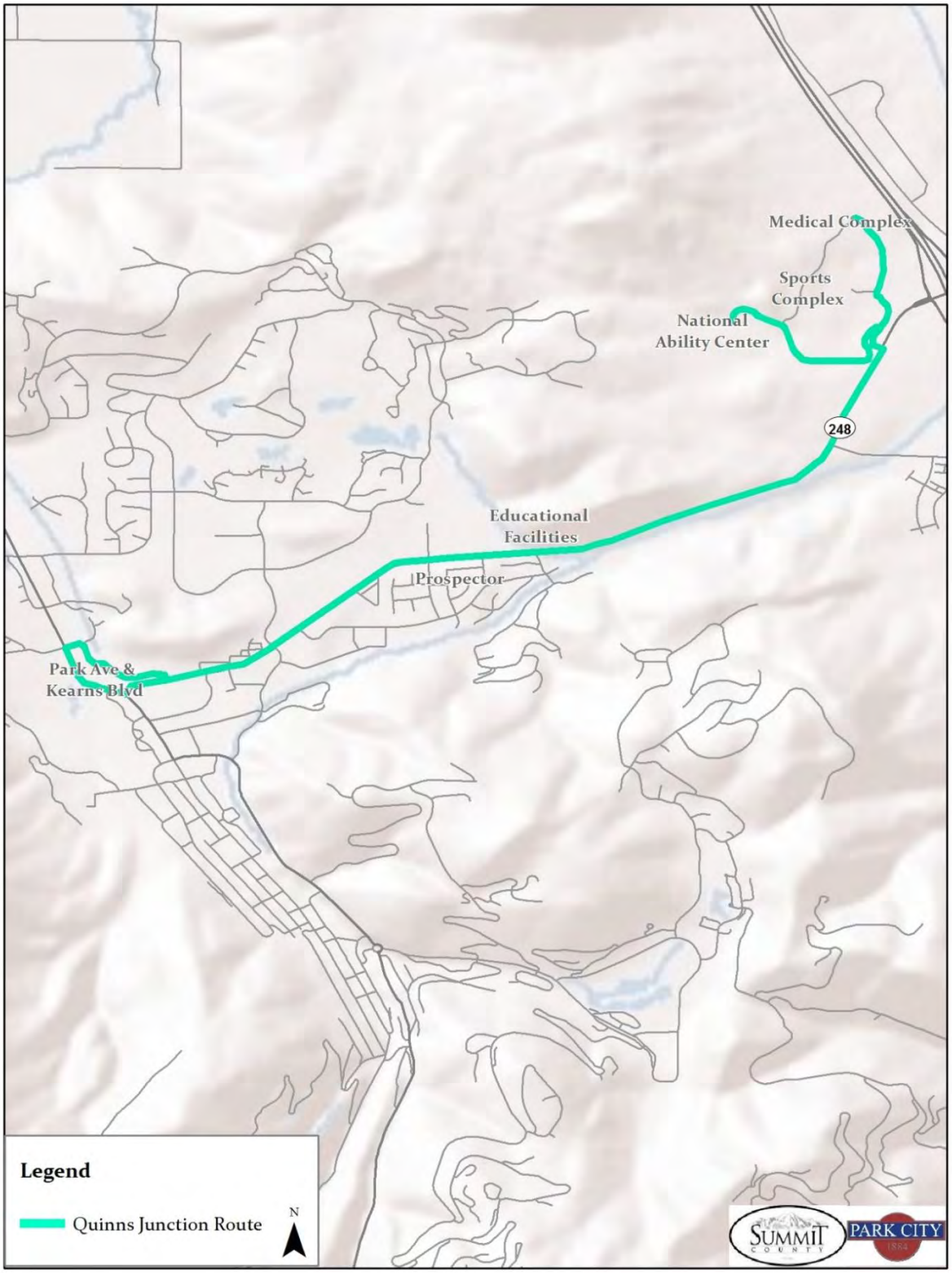


Figure 6-4: Quinn's Junction Fixed Route



Fixed route mobility training programs and a strong ADA certification program should ensure that riders get service based on need. This combined program is inexpensive to implement, if kept simple, and pays for itself (by diverting trips to fixed route) in less than one year.

Potential Cost and Ridership

The current Quinn's Junction service provides about 4,600 hours of service annually (based on Park City Transit data) or about 12 hours per day and generates 1.6 one way trips per hour. Operating a new service at 12 hours a day while eliminating existing service would result in no additional fixed route costs. Sixteen hours per day will require an additional 4 hours per day or 1,500 additional hours of service. Assuming a per hour cost of $117 (adjusted for inflation), the cost to expand hours of service is $170,820 annually. Table 6-8 depicts costs for ADA paratransit and assumes no expansion of fixed route.

Based on service to other parts of the service area, this route should initially generate about 10 one way trips per hour, or 120 one way trips per day (a reduction of about 57 auto trips daily). This should grow to about 20 one way trips per hour over the next 2 – 3 years.

Table 6-8: Quinn's Junction – New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Quinn's Junction Route ADA Paratransit	1	6.5	6.5	120 / 57

ADA service on the Quinn's Junction route may see 10-20 one way trips per day, depending on the eligibility and training process. This may require additional ADA service costs during peak hours. With the proper mobility training and eligibility certification processes, some ADA riders may be able to use fixed route.

Assuming an average productivity of 1.5 one way trips per hour, the cost for each trip would be $63. At 10 one way trips per day (on average) the additional ADA costs should be $228,000 annually.

Overall, leaving daily service hours at 12 will keep costs similar to the present dial-a-ride service. Additional costs associated with this service are ADA costs, at about $228,000 annually. Ridership should increase significantly.

Vehicle needs include one heavy duty bus and a paratransit vehicle.

6. Consolidate Paratransit Operations

At this point in time, paratransit should be expanding, both as Call a Bus and as ADA paratransit in the Quinn's Junction area. While these are two different types of paratransit, there are more than enough commonalities to allow for sharing of resources and scheduling all trips together using the technology available to PCT. Vehicle operators of either service will be cross trained to handle any call.

Park City Transit has good software and accompanying technologies such as digital communication and automatic vehicle locator to go with the automated scheduling software. This software is capable of determining the service parameters of each type service and can prioritize ADA trips as necessary (or a trained dispatcher can over-rule the software). The Call a Bus service calls for dynamic dispatching of those "immediate response" trips while being able to identify any paratransit vehicle as an option for any trip. With properly trained dispatch staff, this kind of dynamic scheduling and assigning of trip to a vehicle in service can take place in a matter of seconds, without voice communication.

For example if an ADA rider is on board and the operator is dispatched to pick up a Silver Springs Call a Bus rider while on the way to a destination (as determined by the software system and the dispatcher), these riders can be comingled and reduce the overall cost and need for transit. The only requirement is that this does not interfere with the ADA rider's on-time performance or their ride time not to go over the system maximum.

To ensure this can happen, Park City Transit should provide staff with advanced training on the Strategen software to ensure the requirements of this new combination of services can be met and properly scheduled to maximize performance. This can allow for real time scheduling and service.

Eligibility Certification and Mobility Training

Park City Transit should institute a new eligibility process that identifies who can possibly use fixed route given the right set of circumstances. This process would place Park City Transit in the mainstream in terms of eligibility certification. A new eligibility process that requires all applicants to be interviewed in person should be implemented. The objective is to ensure that only those ADA riders that cannot use fixed route should be eligible for ADA. As part of this effort, Park City Transit with the county should set up a new eligibility process and a mobility training program that can pay for itself within 2 – 3 trips diverted to fixed route.

Trip by trip determination should be self-selection, that is, Park City Transit should strive to make it easy for persons with disabilities to ride fixed route through effective screening, mobility training, accessible pathways, bus stops and shelters.

The combination of activities can effectively reduce ADA paratransit use while ensuring all have a ride. Self-selection is effective and appropriate for Park City and can divert up to 10% paratransit trips in a city with as extensive a service level as Park City Transit.

2018

In 2018, a number of very important changes should take place, requiring significant effort on the part of management and staff. These include:

1. The Jeremy Phase 1 Park and Ride Facility to Open – Timed transfer will be initiated between the circulator, express, neighborhood routes and commuter buses where 5 – 6 buses will be meeting. Changes as a result of this new facility include:
    a. Express service should be initiated from the Jeremy Ranch area. Buses will operate on 15 minute headways.
    b. Truncate Salt Lake City – Park City Service – This service should end at Kimball Junction Transit Center with a seamless transfer to an express bus into Park City, allowing for considerable additional service to Salt Lake City.

2. Kamas Commuter Service – This new service should include two buses operating 3-4 hours in the morning and the evening.
3. Silver Creek Call a Bus – The Silver Creek should receive Call a Bus service that will be shared with other services.

4. Richardson Flat Shuttle – This service will operate from Richardson Flat Park and Ride to Old Town via Park City Resort. This service will operate 2 p.m. to 2 a.m.
5. Guaranteed Ride Home – This new program will be marketed and implemented to allow commuters (Salt Lake City and Kamas) to receive a mid-day ride home in the event of an emergency.

Table 6-9 summarizes costs associated with each change listed in this year of the plan. Costs for the third year will be $120 per hour in 2018 dollars.

Table 6-9: 2018 Service Expansions

Service		Existing Service Hours	New Service Hours	Service Hour per Day Increase	2018 Additional Costs	Potential Daily Ridership Increase/ Reduction in Autos
1A	Jeremy Phase 1 Express - Park and Ride 3 Months	0	4,380	48	$525,600	960 / 455
2	Commuter Service Kamas Valley	0	1,920	16	$690,000	80 / 38
3	Silver Creek Call-a-Bus – New Service	0	1,460	4	$141,620	8 / 3
4	Richardson Flat Shuttle	0	8,760	24	$1,051,200	120 / 57
5	Initiate 'Guaranteed Ride Home" Program – New Service	-	-	-	$10,000	-
2018 Totals		**-**	**16,520**	**92**	**$2,418,420**	**1,168 / 595**

1. Implement Full Express and Timed Transfer Service – SR 224 – New Service

In 2018, the second round of major changes will take place. These changes will focus on initiating new express service from the current Jeremy Ranch lot and new Jeremy Phase 1 and completing a timed transfer network in Kimball Junction:

a. Express service should be initiated from Jeremy Phase 1. Buses will operate on 15 minute headways.
b. Truncate Salt Lake City – Park City Service – This service should end at Kimball Junction Transit Center with a seamless transfer to an express bus into Park City, allowing for considerable additional service to Salt Lake City.

At this point, timed transfers will be initiated between the circulator, express, neighborhood routes and commuter buses where 5 – 6 buses will be meeting at the Kimball Junction Transit Center. Changes as a result of this new park and ride facility include:

1A. Implement Express Service Old Town to Jeremy Phase 1 Park and Ride

The Jeremy Phase 1 Park and Ride facility is planned to open in the fall of 2018. At this time a new express bus service will be initiated from the Jeremy Ranch area through Kimball Junction Transit Center and then make stops at Canyons, Kearns Boulevard/Park Avenue, PCR and Old Town. This route is depicted in Figure 6-5. It will require 4 buses (includes one spare) to maintain 15 minute headways. Operating 16 hours per day from 6 a.m. to 10 p.m. will require

17,500 hours and cost over $2 million or over $525,000 for service starting in the fall. Reducing service during early and late hours could reduce hours to 14,600 (or less) and this would cost $1.75 million annually or $438,000 for service starting in the fall. Table 6-10 summarizes the data.

Table 6-10: SR 224 Express – New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
SR 224 Express	3	16	48	960 / 455

1B. Revise PC-SLC Connect Service

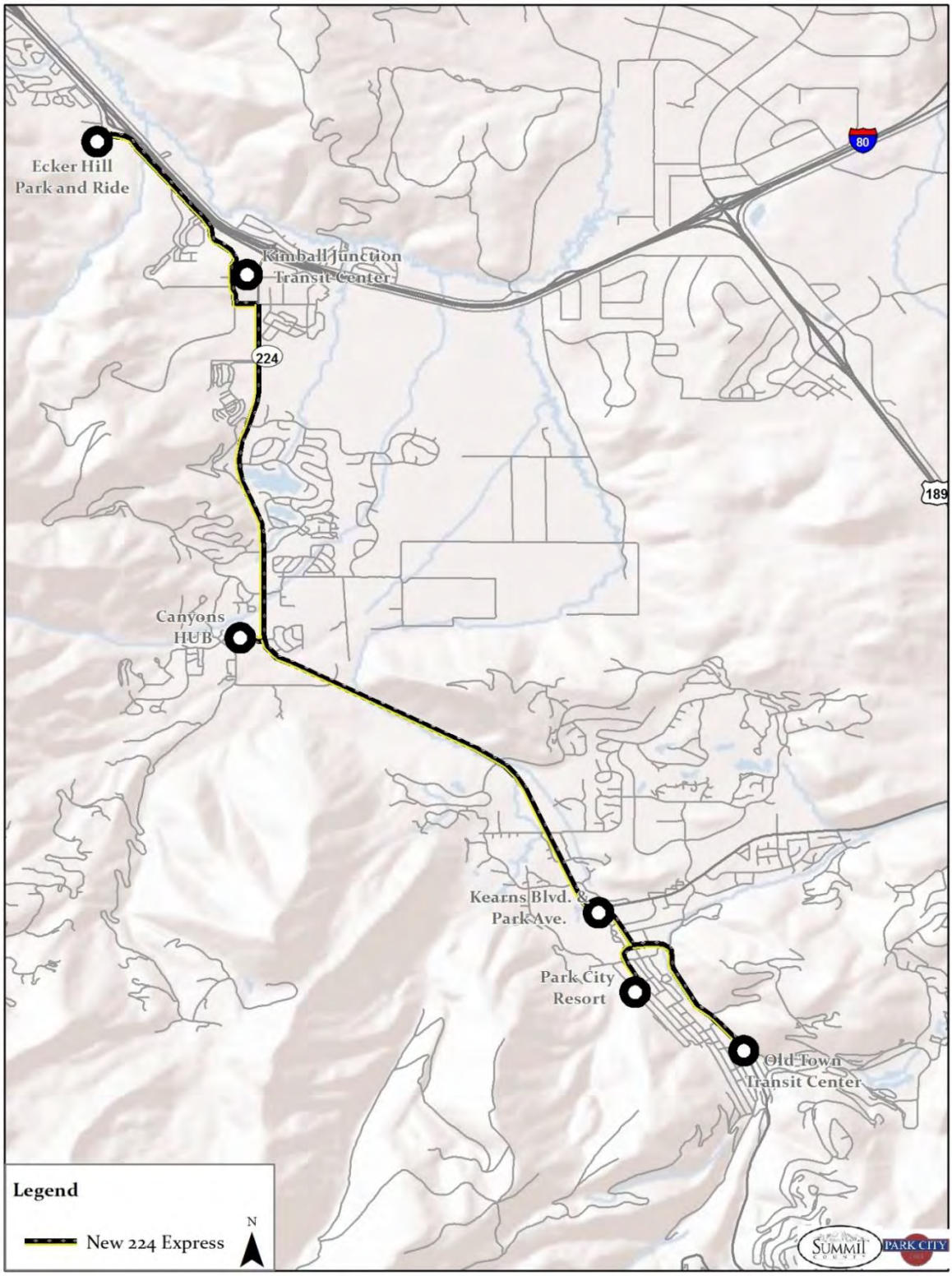
This is a two-step revision of service to increase service:

1. **Route Structure** - Change the route structure of the PC-SLC Connect Service to terminate service at Kimball Junction Transit Center and have a timed meet with the new express buses to allow for rapid, seamless service to destinations south. This should allow the second step to occur.

2. **Additional Round Trips** - The reduced route time allows for a number of additional trips to and from Salt Lake City in the morning and evening and/or a mid-day round trip as well for the same cost.

Increasing daily runs should allow every other bus to go to an alternative destination, choosing from the University of Utah, downtown, the airport, TRAX and light rail connections. These destinations should be determined collaboratively between Park City, Summit County and UTA. Market research should be conducted to determine most popular possible origins/destinations in Salt Lake City.

Figure 6-5: SR 224 Express Service – Example



2. Commuter Service Kamas Valley – Winter

The Kamas area (including surrounding communities) has about 6,000 residents and was shown to have a relatively low level of need due to the low population numbers and low density. There is potential, however, for a targeted fixed route commuter service when communities on SR 248 are included: Kamas, Hideout, Deer Mountain and surrounding apartment complexes.

This fixed route service would start in the Kamas area and operate on SR 248 via Richardson Flat (when the facility becomes functional) into Old Town Transit Center with north transfer options at Kearns Blvd. and Park Ave (Figure 6-6). This service distance from Kamas to Old Town via Park City Resort is 17 miles and would take 45 minutes to an hour, possibly longer if Richardson Flat Road is used. The return for a second trip would take about 30-45 minutes allowing each vehicle to make two trips both morning and evening for a total of four trips from the Kamas area in the morning and four trips returning in the evening.

In order to properly serve Oakley and/or Francis, a small park and ride facility in an existing parking lot (governmental, private retailer for example) should be needed in Kamas. There would be an option to have the vehicle operate to whichever of the two communities demonstrates the most ridership. This lot should be in place prior to service implementation. This route would benefit from transit demand management activities (TDM).

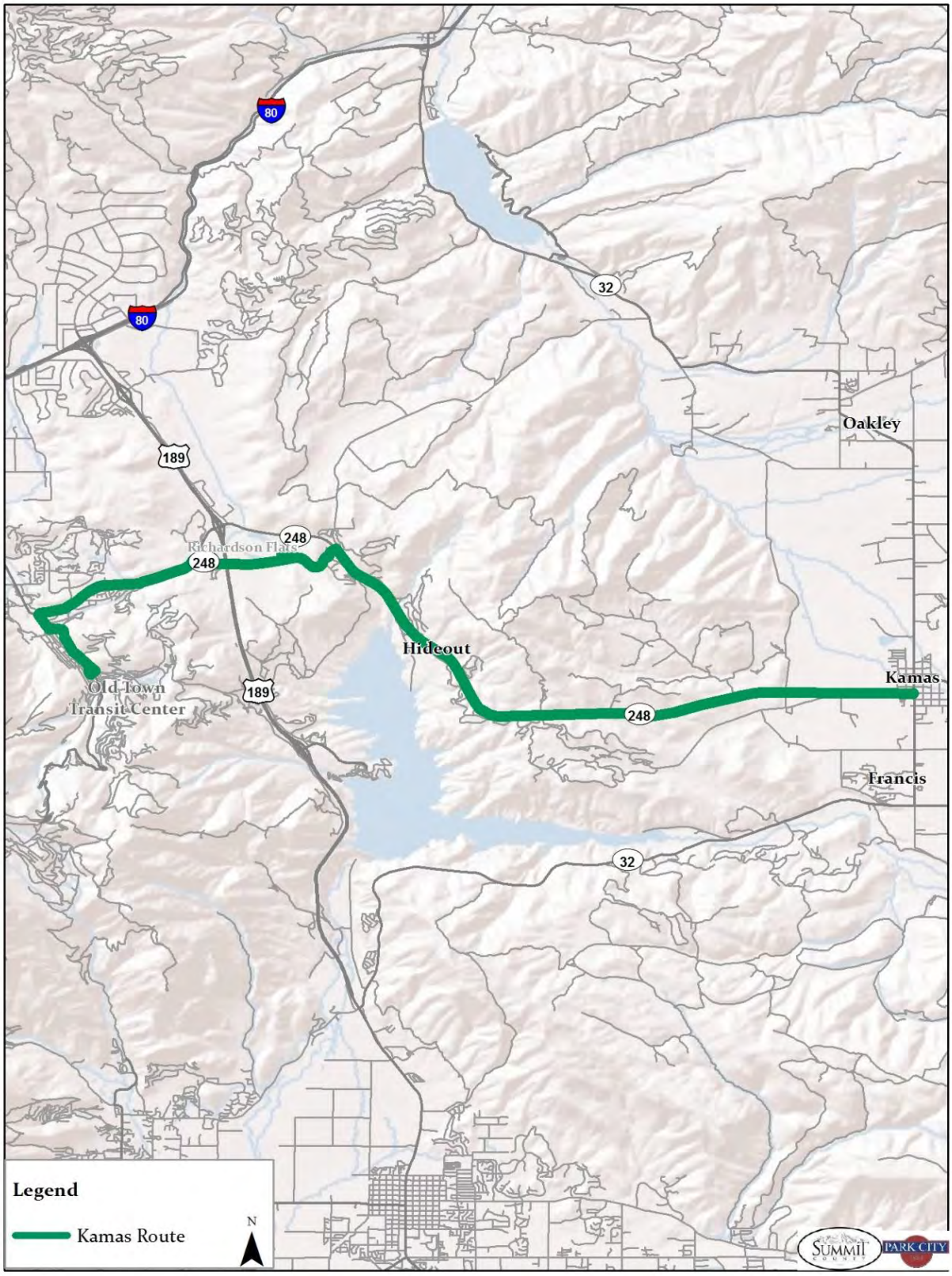
Operating two small (cutaway) buses, including deadheading to and from Kamas and Park City for three hours in the morning and evening, would require each vehicle to operate four hours in the morning and evening daily for two morning and two evening runs. Cost for this four month period would be about $230,000. Annual costs are $690,000. If vehicles are stationed in Kamas each night, costs can be reduced considerably (2 hours per day). Table 6-11 summarizes this data.

Table 6-11: Kamas Commuter – New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Kamas Commuter	2	8	16	80 / 38

This area can generate up to 10 one way trips per round trip. With four morning and four evening round trips up to 80 one way trips can be provided on this route, diverting about 38 trips per day. In the future this should be a more attractive option if parking is constrained and buses receive preferential HOV treatment on SR 248.

Figure 6-6: Kamas Route Illustration



There are fare issues on this route as some of the route is in Wasatch County (passengers in Hideout and Deer Mountain) requiring either a government contribution to the service (annually based on service levels), fare for persons wanting to go to or from Wasatch County, or operate in "closed door" service through those communities.

3. Silver Creek Call a Bus – New Service

The Silver Creek area (Figure 6-7) is a low density suburban community north of Interstate 80. The needs analysis determined that this area does not have sufficient density to support fixed route at this time. The area can support part of a Call a Bus vehicle, sharing resources with other Call a Bus services and ADA complementary paratransit service.

This Call a Bus route covers a small zone with a parking lot which can be used as a park and ride lot on Silver Creek Road and Valley Drive. This route should meet Route 8 (timed) at Silver Creek Drive and Highland Drive (or other location) and can give passengers access system-wide.

Cost structure allows for sharing costs among the Call a Bus services and ADA service. Cost for this service ($97 per hour) assuming 365 days per year at four hours per day should be about $141,000. One additional vehicle should be needed. This vehicle could be a small cutaway or a minivan/MV-1 type light duty vehicle would be appropriate. Table 6-12 summarizes the data.

Table 6-12: Silver Creek Call a Bus – New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Silver Creek Call a Bus	1	4	4	8 / 3

As a low density service area, ridership on this service should be low under any scenario. It is estimated that about 2 one way trips per hour will be provided by this service or 8 one way trips per day with a reduction of 3 vehicle trips daily. If ridership increases, service hours may have to be expanded to meet the growing need.

4. Implement Richardson Flat Shuttle – New Service

This shuttle service will operate 2 p.m. to 2 a.m. using two heavy duty coaches on 15 minute frequency (Figure 6-8). Potential parking management strategies in Old Town, including paid parking, may make this service more attractive. This route requires enhanced access from U.S. 40 and a controlled intersection at Richardson Flat Road and SR248/Kearns Boulevard. Table 6-13 summarizes the data.

Figure 6-7: Silver Creek Call a Bus

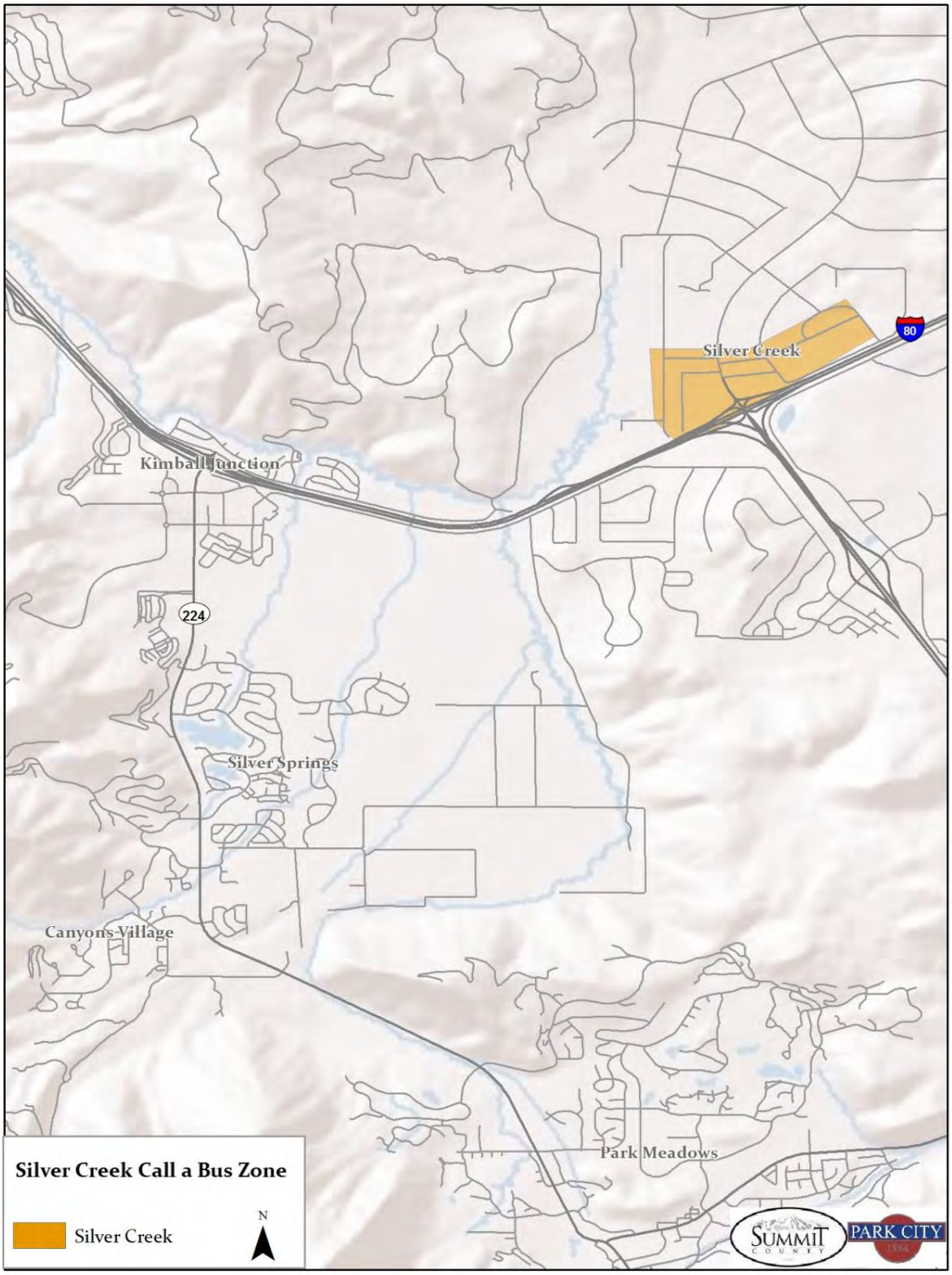
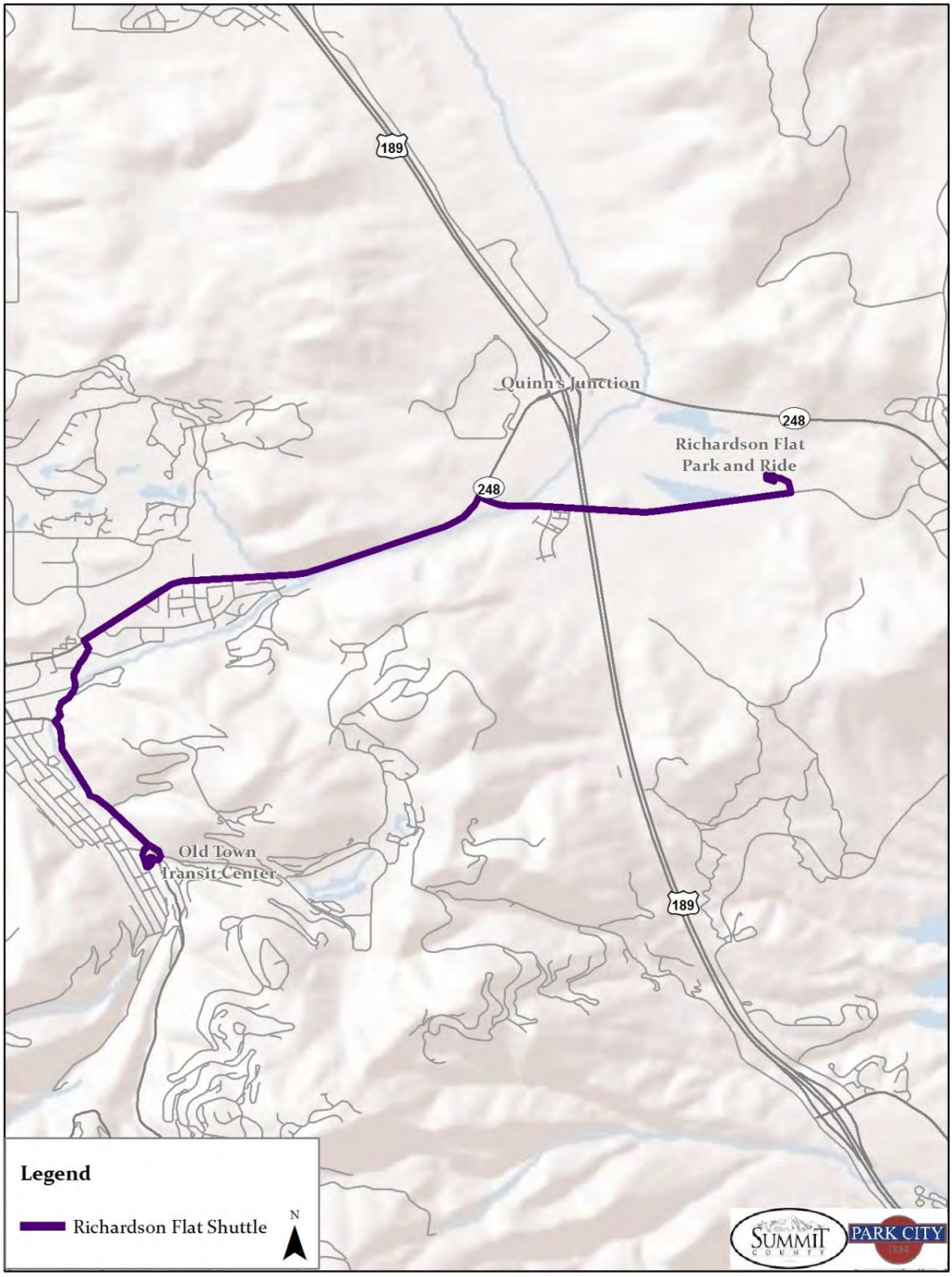


Figure 6-8: Richardson Flat Shuttle



This route travels much the same route as the new Quinn's Junction, Kamas routes and Route 1. Therefore new ridership will be restricted to Richardson Flat Park and Ride lot. This service requires 24 hours of service daily (8,760 hours annually), for an annual cost of $1 million. This service can generate 5 one way trips per hour in initially or 120 one way trips per day, eliminating about 57 daily vehicle trips. As parking constraints are increased and access to the park and ride lot improves, that ridership could increase.

Table 6-13: Richardson Flat Shuttle – New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Richardson Flat Shuttle	2	12	24	120 / 57

5. Initiate 'Guaranteed Ride Home" Program – New Service

A guaranteed-ride-home program helps support transit use because it helps employees overcome the fear of being stranded in the event of unexpected overtime or family emergency that would require the employee to leave work during non-commute hours. On-site marketing, through transit fairs and other events, helps support a transit benefits program by making employees who may not have used transit in the past to be more aware of available transit services and how they operate. A recent Transit Cooperative Research Program (TCRP) report[7] finds there is evidence that these two programs working together can increase the mode share of transit trips.

Many transit systems institute a guaranteed ride home program to support their commuter services such as SLC-PC service. The program would provide back-up for passengers that need to return during hours that the service is not operating. This service should be provided for commuters in each direction, with limitations on the number of trips provided per person. The cost is typically the fare. The service should utilize private providers under contract. Funds should support marketing of the program and paying for individual trips.

It is recommended that up to $10,000 be allocated for marketing efforts and to pay for one way trips. After the first year, the budget should be reassessed.

[7] TCRP Report No. 107: Analyzing the Effectiveness of Commuter Benefits Programs, Transportation Research Board, Washington D.C. 2005

2019

In 2019 there will be new services:

1. Summit Park/Jeremy Ranch and Pinebrook Call a Bus – New Call a Bus service will be implemented to Jeremy Park and Ride lot for access to local and express service to Kimball Junction, Park City and Salt Lake City.

2. Deep Park Meadows/Aspen Springs Call a Bus – A second new Call a Bus service to local fixed route service.

3. Salt Lake City Airport Service – This includes subsidizing the private sector and providing an airport lounge (in 2020) for waiting passengers

Table 6-14 summarizes costs associated with each change listed in this year of the plan. Costs for the fourth year will be $122 in 2017 dollars.

Table 6-14: 2019 Service Expansions

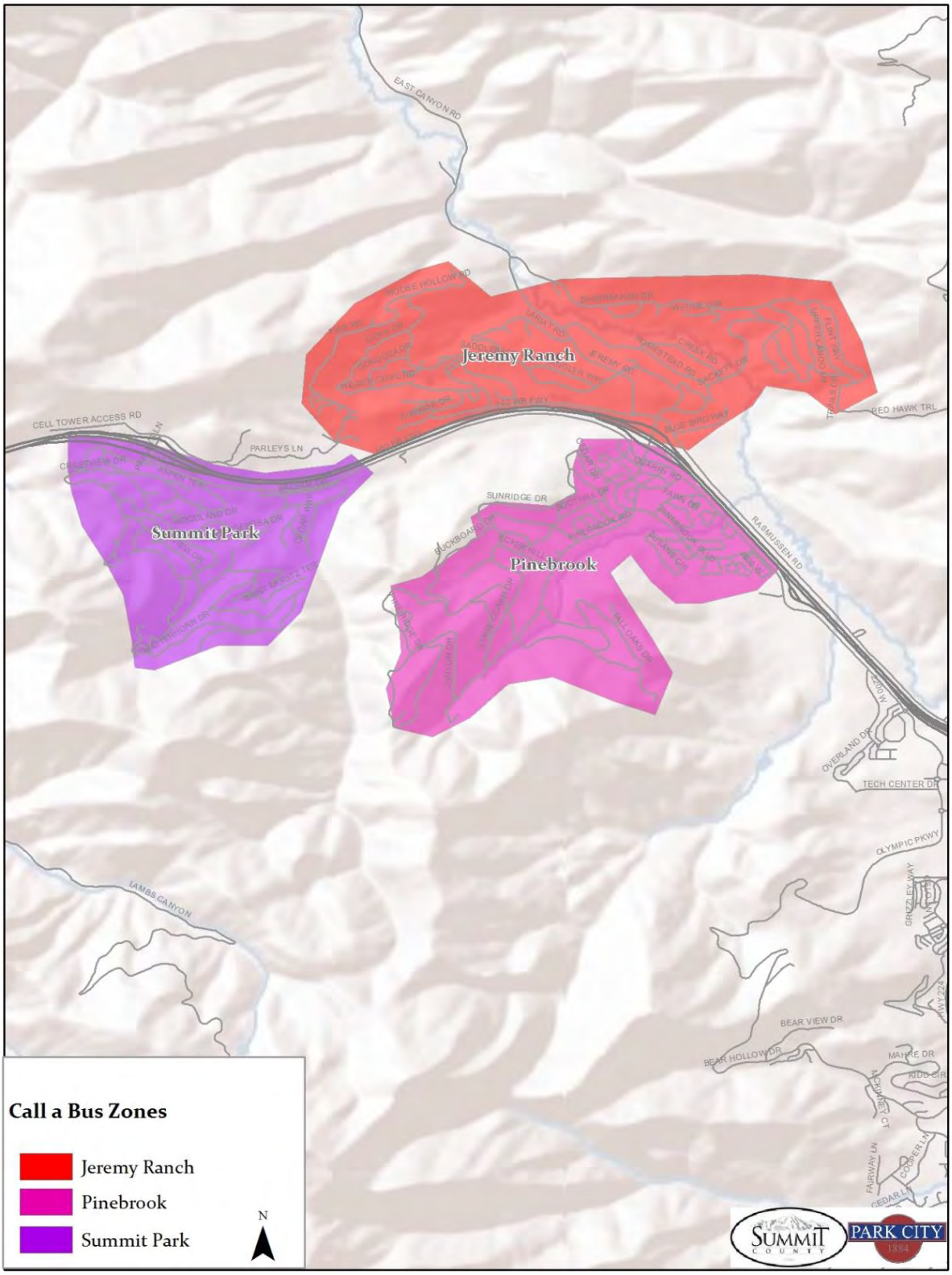
Service		Existing Service Hours	New Service Hours	Service Hour per Day Increase	2019 Additional Costs	Potential Daily Ridership Increase/ Reduction in Autos
1	Summit Park/Jeremy Ranch and Pinebrook Call a Bus	0	1,460	4	$178,120	8 / 3
2	Deep Park Meadows/Aspen Springs Call-a-Bus	0	2,900	8	$287,100	16 / 7
3	SLC Airport Service	-	TBD	TBD	$50,000	TBD
2019 Totals		**-**	**4,360**	**12**	**$515,220**	**24 / 10**

1. Summit Park/Jeremy Ranch/Pinebrook Call a Bus

The Summit Park/Jeremy Ranch/Pinebrook area consists of low density communities built along roads that are difficult for buses to traverse. This area, depicted in Figure 6-9 will become a Call a Bus zone. Service will be provided to the Jeremy Ranch or Jeremy Phase 1 Park and Ride facilities where 15 minute express and 30 minute local service is available to Kimball Junction and Old Town. Table 6- 15 summarizes the data for this service.

As a low density service area, ridership on this service should be low under any scenario. It is estimated that about 2 one way trips per hour will be provided by this service or 8 one way trips per day with a reduction of 3 vehicle trips daily. If ridership increases, service hours may

Figure 6-9: Summit Park/Jeremy Ranch/Pinebrook Call a Bus



have to be expanded to meet the growing need. Four hours of service will be needed daily for an annual total of $178,120. One small bus will be needed for this service.

Table 6-15: Summit Park/Jeremy Ranch/Pinebrook Call a Bus– New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Daily Hours	Potential Daily Ridership/ Reduction in Autos
Summit Park/Jeremy Ranch and Pinebrook Call a Bus	1	4	4	8 / 3

2. Deep Park Meadow/Aspen Springs Call a Bus

The second and larger, more populated Call a Bus zone should be Deep Park Meadows/Aspen Springs, starting ½ of a mile from Park Meadows fixed route. Passengers will be taken to the vicinity of Kearns Boulevard and Park Avenue for passengers to access the entire service area (Figure 6-10).

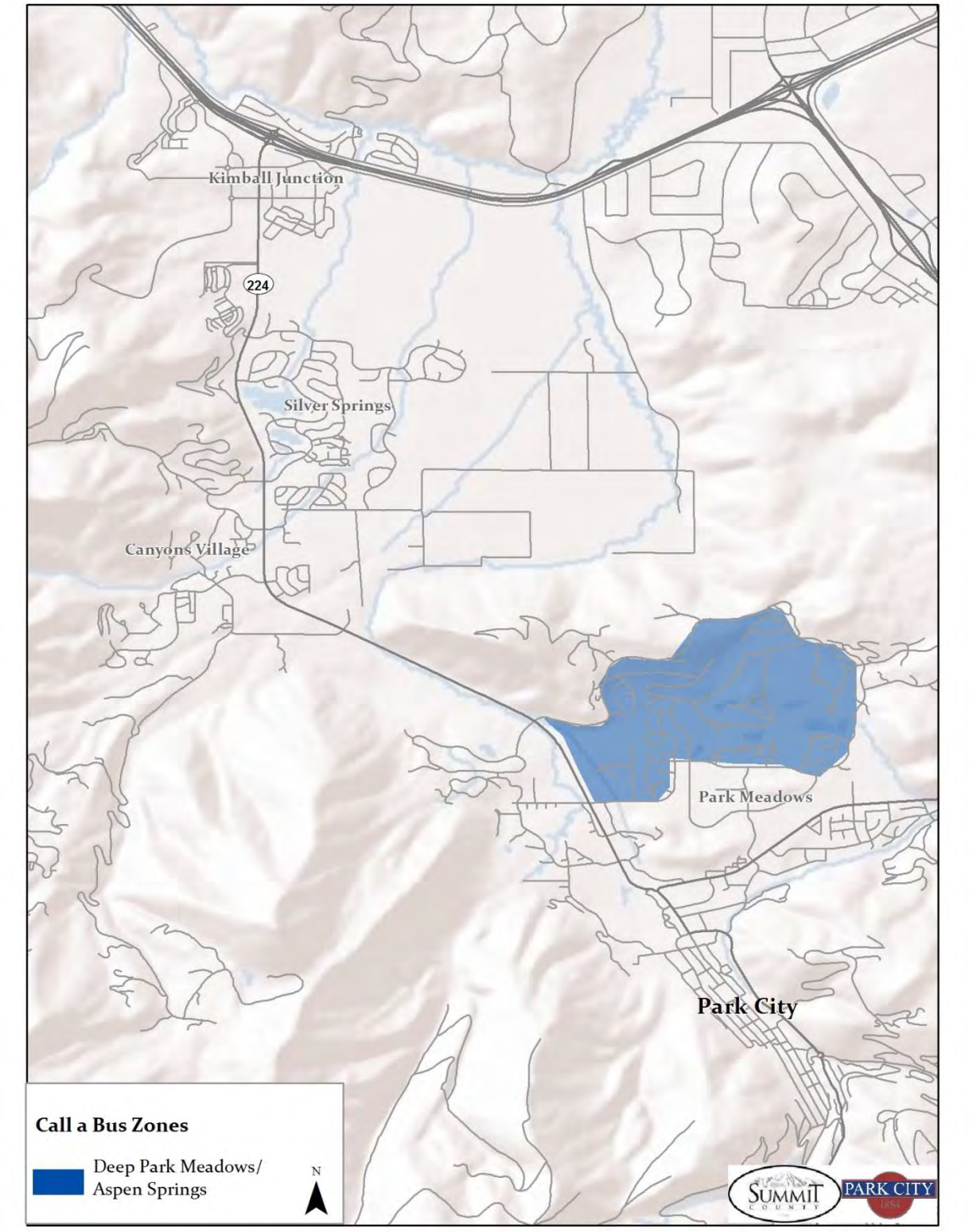
As a low density service area, ridership on this service should be low under any scenario. It is estimated that about 2 one way trips per hour will be provided by this service or 16 one way trips per day with a reduction of 7 vehicle trips daily. If ridership increases, service hours may have to be expanded to meet the growing need.

As with most of the other Call a Bus zones, this area may not need a full time vehicle. This approach calls for 2,900 hours at $95 per hour of service (as adjusted for inflation) at an annual cost of $350,000. Table 6-16 details the service increase. One small bus will be needed for this service.

Table 6-16: Deep Park Meadows/Aspen Springs Call a Bus – New Route (Daily)

Route	Vehicles	Additional Daily Hours per Vehicle	Total Additional Hours Daily	Potential Daily Ridership/ Reduction in Autos
Deep Park Meadows/Aspen Springs Call a Bus	1	8	8	16 / 7

Figure 6-10: Deep Park Meadows/Aspen Springs Call a Bus



3. Salt Lake City Airport Service

In reaching the goal of reducing auto traffic, the airport presents opportunities. While a certain percentage of visitors will always take their cars, many that are flying in or coming from Salt Lake City can have the option to spend their time in Park City carless. Working with the private sector, a regular airport service should be initiated. Park City and Summit County should participate in marketing and promotional activities designed to encourage visitors to eschew a private auto while visiting. To successfully implement this service, there may be a need to provide subsidies to support the private sector as they build service. Subsidies and promotional benefits to private operators will be a requirement for regularly scheduled service among as many private providers as can meet Park City Transit's requirements. These private sector providers would agree to be monitored to ensure the subsidy is only applied when necessary.

This private sector service should be a combination of scheduled service, hotel and airport service, limousine and shuttles. A web site and app should be developed and maintained where potential passengers can receive "one stop" information and ticket purchasing, not only for airport services but for Park City Transit as well to ensure seamless service.

While much of this service will be profitable with a reasonable fare, certain days, hours and shoulder seasons may require a subsidy to operate. The entity responsible for developing this program (city or county) will negotiate with private providers to determine the type of service, costs, fares and potential subsidy. It is estimated that up to $50,000 in subsidies annually may be needed to ensure that timely service is available.

It is also recommended that the airport service provide a Park City Lounge at the Salt Lake City Airport to allow riders to wait for their bus to Park City. This lounge would be outside the security zone and provide a dedicated waiting area with passenger amenities and visitor information. The airport will be completing a new terminal in 2020 and at that time it is recommended the lounge be incorporated into the new terminal project – discussed in detail in 2020 below. Please note that planning for this lounge should begin through initial contact with appropriate airport management. A similar lounge currently exists at the Reno/Tahoe International Airport which provides airport service to the resorts and casinos located on the South Shore of Lake Tahoe.

2020

In 2020 additional services will be implemented:

1. Jeremy Ranch Phase 2 Park and Ride – The new facility is planned for completion in 2020 and should receive express service every 15 minutes.

2. Initiate Heber City Commuter Service – Providing peak hour commuter service for the Heber City area.

3. Airport Lounge - Open the Salt Lake City Airport Lounge for passengers waiting to take a bus to Park City. It could be made available to all persons taking a bus, limo, or shuttle to Park City. This will be predicated on the ability to gain access to space at the new terminal slated to open 2020.

Table 6-17 details the costs and potential ridership for these projects. Per hour costs are calculated at $122 per hour (adjusted for inflation).

Table 6-17: 2020 Service Expansions

Service		Existing Service Hours	New Service Hours	Service Hour per Day Increase	2019 Additional Costs	Potential Daily Ridership Increase/ Reduction in Autos
1	Jeremy Ranch Park and Ride	0	2,190	6	$267,180	960 / 455
2	Heber City Commuter Service	0	2,190	6	$267,180	40 / 18
3	SLC Airport Lounge	-	-	-	$250,000	-
2020 Totals		**-**	**4,380**	**12**	**$784,360**	**1000/473**

1. Jeremy Phase 2 Park and Ride Express

The new Jeremy Ranch Park and Ride facility will be opened in 2020 and will be served by transit. Initially it would be excessive to have a second set of express routes every 15 minutes, needing 8 buses an hour in addition to another four buses per hour on Routes 7 and 8.

The recommended approach uses the Jeremy Phase 1 buses in service to both lots. If the Jeremy Phase 1 Express is operating above 60% full during peak hours, an additional peak hour "tripper" bus should be deployed during peak hours (6 hours per day). As service continues to build through 2022, consideration should be made to adding another tripper bus or setting up a new route for Jeremy.

2. Heber City Commuter Service

Heber City in Wasatch County is a primary origin for commuters into the Park City area. If interest is shown from Heber City or Wasatch County a service can be implemented. In lieu of local government support a fare can be instituted, but the amount of the fare would have to be

high enough to meet costs. High fares would reduce ridership however, a fare based service may be more attractive when coupled with parking management strategies.

If interest is generated it is proposed to operate one small bus six hours a day yielding two round trips in the morning and two in the evening. Assuming a cost of $122 per hour 365 days per year the annual cost should be $267,000. Ridership should be modest at 10 trips per round trip. This could result in 40 trips per day and a reduction of 18 vehicle trips.

3. Secure Airport Lounge

To complement the expanded and subsidized airport service, Park City and Summit County will secure space near baggage claim, where passengers can wait for a bus. This process should start in 2017 by making contact with Salt Lake City Airport management to ensure they understand the need for this space.

Competition for space will be significant, with award going to the highest responsible bidder. County and city planners should monitor the construction and ultimately the procurement process starting immediately.

For purposes of this estimate, annual lease costs will be estimated at $8,000 per month with restrooms. The facility will require a full time staff person to clean the space, stock refreshments and assist passengers. Large monitors will be required with information on the next bus to Park City. These may also be costs associated with the higher level of security found at the airport. Costs all together may be about $200,000 - 250,000 annually.

2021 - 2022

The final years of the plan are purposely left flexible as adjustments may have to be made as conditions change. The most important activities to take place in the final 2 years include implementing the activities in the plan that were not implemented on time for reasons of funding, need and interest in the expanded service. Also important is the assessment of the service to ensure each route is performing as expected.

1. Implement Express Service from Jeremy Ranch Phase 3

Jeremy Ranch 3 is planned to open in 2022. The recommended approach will be to use Jeremy Phase 1 or Jeremy Phase 2 routes until such time as those routes operate above 60% of capacity. At that point decisions can be made to either operate tripper service or implement a new route at a high frequency. For that reason, a cost is not placed on this service at this time.

New Service Summary

Table 6-18 depicts the additional cost per year to implement new services. These services are included each year of the plan to show the cost of new service changes over the 7 years of the plan. Costs are increased two percent annually to adjust for inflation.

CAPITAL NEEDS

This section focuses on vehicle and shelter needs for Park City Transit.

Vehicle Needs

For the near term, Park City Transit should continue to purchase diesel fueled heavy duty transit coaches for fixed route service and continue to use a B-10 biodiesel mix to harmful emissions. These buses currently cost about $700,000 each. ADA paratransit services and Call a Bus service can use small buses (typically cutaway buses) costing about $180,000 and ramp equipped minivans or MV-1 type accessible vehicles ($80,000).

Bus and paratransit vehicle technology is changing rapidly as battery technology is becoming more advanced. For the short term, Park City Transit should continue utilizing the existing technologies it is equipped to maintain and operate. Future bus procurements should be determined on a case by case basis at the time.

Table 6-19 details expansion vehicle needs by year for this project. Prior to a major change in vehicle technology, Park City Transit must secure infrastructure funding to ensure Park City Transit has facilities and equipment to maintain and operate these new vehicles. Table 6-20 details costs of vehicles by year. For purposes of this plan, all paratransit vehicles are cutaway vehicles rather than smaller minivan sized vehicles. This will allow management to determine at the time, if a smaller vehicle is warranted.

Shelters and Bus Stops

In 2017 a full bus stop assessment will be conducted to determine bus stop and shelter needs and to ensure all stops are attractive, safe and accessible. The inventory and capital plan coming from this review will prioritize shelters and other bus stop amenities including bike racks, trash receptacles, benches, and static and real time traveler information.

Shelters will be custom designed to fit in with the unique architecture of the area and are estimated by city and county management to cost $50,000 each. Up to ten shelters will be placed at major stops currently without shelters or those in need of an additional shelter or an upgrade.

Table 6-18: 2017 – 2020 Cost Summary*

Service	2016-2017 Additional Cost	2017 Additional Cost	2018 Additional Cost	2019 Additional Cost	2020 Additional Cost	2016/2017 - 2020 Addition Cost
Continue Prior Winter Service Levels (120 Days) and Enhancements: Rt. 6-Canyons, Rt. 7-Kimball Junction West and Rt. 8-Kimball Junction East Express	$248,400	$252,720	$259,200	$263,520	$267,840	**$1,291,680**
Increase Frequency of Rt. 8 Kimball Junction East	$234,600	$238,680	$244,800	$248,880	$252,960	**$1,219,920**
Canyons/Sun Peak/Silver Springs Call a Bus - New Service	-	$450,775	$460,265	$469,755	$479,245	**$1,860,040**
Extend Routes 8-Kimball Junction East and Rt. 7-Kimball Junction West Hours (Summer and Shoulders. 240 Days)	-	$168,480	$172,800	$175,680	$178,560	**$695,520**
Kimball Junction Circulator	-	$365,040	$1,138,800	$1,157,780	$1,176,760	**$3,838,380**
Quinn's Junction ADA Paratransit**	-	$229,388	$229,388	$229,388	$229,388	**$917,552**
Jeremy Phase 1 Express - Park and Ride	-	-	$525,600	$2,137,440	$2,172,480	**$4,835,520**
Commuter Service Kamas Valley	-	-	$690,000	$702,720	$714,240	**$2,106,960**
Silver Creek Call-a-Bus – New Service	-	-	$141,620	$144,540	$147,460	**$433,620**
Richardson Flat Shuttle	-	-	$1,051,200	$1,068,720	$1,086,240	**$3,206,160**
Guaranteed Ride Home Program	-	-	$10,000	$10,000	$10,000	**$30,000**
Summit Park/Jeremy Ranch and Pinebrook Call a Bus	-	-	-	$178,120	$181,040	**$359,160**
Deep Park Meadows/Aspen Springs Call-a-Bus	-	-	-	$287,100	$292,900	**$580,000**
SLC Airport Service	-	-	-	$50,000	$50,000	**$100,000**
Jeremy Ranch Park and Ride	-	-	-	-	$267,180	**$267,180**
Heber City commuter Service	-	-	-	-	$267,180	**$267,180**
SLC Airport Lounge	-	-	-	-	$250,000	**$250,000**
Yearly Totals	**$483,000**	**$1,703,695**	**$4,923,673**	**$7,123,643**	**$8,023,473**	**$22,258,872**

*Cost over and above 2015

** Productivity improvements will keep cost per trip lower

Major Infrastructure

Park and ride lots are being planned to make express/BRT successful. In the north, two new facilities are being proposed and planned for the 2018 – 2020 completion. The first lot is the Jeremy Phase 1 facility on the south side of I-80 along Kilby Road. The second facility, slated for 2020 is Jeremy Ranch Phase 2, with a Phase 3 expansion set for 2022.

In the case of the Richardson Flat facility, while certainly large enough, it's effective use is contingent on infrastructure improvements such as access improvements to U.S. 40 and a protected turn at SR 248 and Richardson Flat Rd. These activities are being planned through other efforts conducted by the city and county.

Capital Facilities Each Year

- Add new shelters in new service areas or as warranted by demand. The plan calls for adding ten shelters over four years.
- Vehicles will be needed in six of the seven years of the plan for expansion. The plan calls for the ordering of spare vehicles as appropriate.

2017

- Completion of Kimball Junction Transit Center - Completion of this transit center will initiate timed transfer at this facility.
- Reconfiguration of pedestrian pathways at Old Town Transit Center and Park City Resort –Requires accessible pathways and limits to pedestrian access on active bus ways.
- Paratransit Technology – Park City Transit should secure advanced training and ensure it is receiving the appropriate updates. Ensure technology (digital displays) is working as intended.
- Analyze and plan for signal pre-emption on SR 224.

2018

- Jeremy Ranch Phase 1 Park and Ride – This new facility is planned to open in the fall of 2018. Implement signal preemption as a pilot, if feasible.

2020

- Jeremy Ranch Phase 2 Park and Ride

2022

- Jeremy Ranch Phase 2 Park and Ride

Table 6-19: Additional Vehicle and Shelter Needs 2016-2022

Service	2016	2017	2018	2019	2020	2021	2022
Route 8 Expansion	1 Heavy Duty						
CAB - Canyons/Silver Springs		1 Cutaway					
Kimball Circulator		2 Heavy Duty					
Quinn's Junction Fixed Route and ADA		1 Heavy Duty 1 Cutaway					
Jeremy Ranch 1 Park and Ride			3 Heavy Duty				
Kamas Commuter			2 Cutaway				
Richardson Flat Park and Ride			2 Heavy Duty				
CAB - Silver Creek			1 Cutaway				
CAB - Summit Park/Jeremy/Pinebrook and Deep Park Meadow				1 Cutaway			
Jeremy Ranch 2 Park and Ride					1 Heavy Duty		
Heber City Commuter					1 Cutaway		
Jeremy Ranch 3 Park and Ride							Potential for 1 Heavy Duty
Spare Vehicles		1 Heavy Duty	1 Heavy Duty	1 Cutaway	1 Cutaway		
Total Vehicles	**1 Heavy Duty**	**4 Heavy Duty 2 Cutaway**	**6 Heavy Duty 2 Cutaway**	**2 Cutaway**	**1 Heavy Duty 2 Cutaway**		**Optional**
Shelters		3	3	2	2		

Table 6-20: Vehicle and Shelter Capital Costs by Year 2016-2022

Service	2016	2017	2018	2019	2020	2021	2022	Total Cost per Service
Route 8 Expansion	$700,000							$700,000
CAB - Canyons/Silver Springs		$180,000						$180,000
Kimball Circulator		$1,400,000						$1,400,000
Quinn's Junction Fixed Route and ADA		$880,000						$880,000
Jeremy Ranch 1 Park and Ride			$2,100,000					$2,100,000
Kamas Commuter			$360,000					$360,000
Richardson Flat Park and Ride			$1,400,000					$1,400,000
CAB - Silver Creek			$180,000					$180,000
CAB - Summit Park/Jeremy/Pinebrook and Deep Park Meadow				$180,000				$180,000
Jeremy Ranch 2 Park and Ride					$700,000			$700,000
Heber City Commuter					$180,000			$180,000
Jeremy Ranch 3 Park and Ride							$700,000	$700,000
Spare Vehicles		$700,000	$700,000	$180,000	$180,000			$1,760,000
Total Vehicle Cost	$700,000	$3,160,000	$4,560,000	$360,000	$1,060,000	$0	$700,000	$10,540,000
Shelters		150,000	150,000	100,000	100,000			$500,000
Total Cost Vehicles and Shelters	**$700,000**	**$3,310,000**	**$4,710,000**	**$460,000**	**$1,160,000**	**$0**	**$700,000**	**$11,540,000**

Administrative and Management Activities

There are administrative functions and activities that need to be carried out with each requiring support staff to meet the challenges.

Administrative and Management Activities by Year

In each year, management will regularly assess performance of each route in the system and make periodic adjustments to improve service. This includes adjusting Call a Bus and express service to keep up with the need.

2017

Studies and Planning

- Assess bus stops for safety and accessibility – Develop an inventory, and bus stop and pathway improvement priorities. This should be on an electronic database that can be accessed as part of a trip planner function.

- Conduct a focused corridor study for SR 224 and complete design for SR 248. This study should help determine the long-term future of transit and can be used as a guide for decision makers while the SR 248 design and construction should facilitate implementation of the recommendations contained in this plan.

Ensure Staffing Needs Are Met

As the service area continues to expand and the system prepares for growth, demands placed on management and staff increases in light of the need to gear up for winter service – an activity that is, in essence, a year round endeavor.

Critical to the continued success of Park City Transit is the need for additional management and administrative staffing to meet growing demands placed on the service. Specific needs include a recruitment and training manager, marketing specialist and administrative support.

- **Park City Transit - Recruitment and Training** – With the necessary seasonal adjustments and four month peak season, ensuring there are enough fully trained and experienced vehicle operators during the winter is a challenge. Challenges include difficult operating conditions of crowded buses, difficult weather conditions and operating a full bus with standees in harsh weather conditions. This position will cost $90,000 for wages, fringe and overhead.

- **Park City Transit - Marketing** – A marketing specialist should be used to promote

service, begin a leave-your-car campaign and sell sponsorships and partnerships to businesses. This position can assume grant writing duties and ensure that Park City Transit applies for every appropriate grant opportunity. An additional function can include quarterly customer surveys to determine satisfaction, additional needs and demographics. This position will cost $90,000 for wages, fringe and overhead.

- **Park City Transit - Administrative Support** – This position is needed to support management staff including the two new staff positions discussed above. The position should produce reports and provide a wide range of support for Park City Transit management. This position will cost $90,000 for wages, fringe and overhead.

- **Park City Transit - Full Time IT Support** – An additional support staff person is needed to ensure the technology investment is working at peak efficiency. The position will cost the city, $90,000.

- **County – Infrastructure Support** – The County needs an individual to maintain shelters and bus stops, including disposing of trash, fixing problems, cleaning and maintaining shelters. This will cost the county $77,000.

Conduct Assessments of Services

Regular assessment and planning efforts are required to ensure the most efficient and effective service possible. Typical planning efforts include:

- Transit data analysis
- Route adjustments – Due to changes in traffic, construction and location of facilities;
- Timing adjustments –Due to traffic and other factors
- Changes in each route's hours of service
- Pilot projects to determine if a new route is warranted – These should typically be in place six months as a minimum.
- Continue exploration of service expansion into Wasatch County including Heber City

With the wide variety of new services planned for implementation over the next five years, it will be incumbent upon Park City Transit to set route goals, track performance and assess the route's performance. This monthly assessment calls for setting appropriate performance goals for Park City Transit and individual routes. Each route should be assessed individually.

With the introduction of two new types of service, Call a Bus and express service, it will be important to set performance goals and then adjust those goals based on performance for the first six months as well as focused marketing campaign. As a guide, we turn to the definitive transit Cooperative Research Program Report No. 136. *Guidebook for Rural Demand Response*

Transportation: Measuring, Assessing and Improving Performance[8].

Key measures that should be benchmarked and tracked monthly include the following:

- **Ridership** – The bottom line for transit is one way trips.
- **One way passenger trips per hour** - This is the true measure of productivity and directly influences cost per trip. It is the key measure for performance.
- **Operating cost per vehicle hour/mile** – This is based on actual costs to operate the service. This includes all operating and administrative costs.
- **Operating cost per one way passenger trip** – This is a combination of the cost per hour and number of trips per hour. The higher the productivity, the lower the cost per trip.
- **Safety incidents per 100,000 vehicle miles** – This includes all accidents and incidents.
- **On-time performance** – On-time performance for paratransit can be measured at pick-up, drop–off, or both. Fixed route on-time performance can be measured at key timing points or at end points. This measure will be based on season as weather and traffic can severely impact on-time performance. Management should use on-time performance to adjust schedules and buses to better meet the actual performance the system is capable of.

Setting of Performance Benchmarks

Performance measures are vital tools for management's use in ensuring that service is meeting expectations. It is those expectations that form the basis for benchmarking performance. Setting benchmarks and performance goals is an on-going process: set by season, tracked monthly, assessed quarterly and adjusted as goals are met.

As agreed upon by stakeholders, rather than set goals in this plan, management should have the flexibility of setting realistic goals. This is a step by step process:

1. The first step is to establish a baseline of performance for existing services by season as was done in the analysis in Chapter 2. Using 2015 performance as the baseline, initial new benchmarks can be developed. These are modest improvements of about 5% over current performance.

2. For new services such as Call a Bus, new benchmarks will need to be set and then adjusted after the first six months to reflect the actual operating environment. Initially one way trips per hour can be set at two which will help set other benchmarks. Again seasonal adjustments are appropriate for Park City Transit.

[8] TCRP Report No. 136 *Guidebook for Rural Demand Response Transportation: Measuring, Assessing and Improving Performance,* Transportation Research Boar d, 2009

3. Once benchmarks are set, management should track performance of new routes either daily or weekly. Established routes can be tracked monthly.

4. Once benchmarks have been developed, they will be posted for staff to see and work together to achieve. Management should post progress to the goal weekly and ensure the subcontractor is committed to these modest goals.

5. After achievement of a performance goal, staff can celebrate their achievement and then set a new modest goal for management and staff to achieve –an achievable/modest goal of about 5%.

2018

Management activities in 2018 include ongoing monitoring.

2019 - 2022

- Continue changes and modifications as necessary.
- Review park and ride for expanded service to Jeremy Ranch Phase 3
- Review Call a Bus activities and expand or modify as needed
- Conduct new short range plan.

SUMMARY

The plan is aggressive in that there are a number of new services and service designs that Park City Transit will be implementing. The core service remains intact as that continues to generate excellent ridership in all seasons. Much of the new services will be in lower density areas or express commuter service.

New facilities will be opening during the term of this project, including the Kimball Junction Transit Center where four or more buses will be having timed meets every 15 – 30 minutes, three park and ride lots alongside Interstate 80 and the Richardson Flat facility. Routes should be revised and added to serve these facilities.

All activities and the timing of implementation are dependent on the availability of Federal and local funding at the time of implementation. The final chapter addresses the financial projections.

Chapter 7
Financial Analysis and Projections

INTRODUCTION

Park City Transit has a diverse funding base that includes a variety of funding sources including: two dedicated sales taxes, funds from city and county licenses and fees and Federal funds. This diversity of funding gives Park City Transit a stable funding stream for the current level of service provided. While funding is stable for the present, if transit is going to continue to grow and contribute to the solution of transportation problems in the Park City area, new sources of funding must be identified to ensure sustainability of the existing service while planning for the continued growth of the overall system. Indeed, the plan (Chapter 6) sets forth an ambitious program of expansion to prepare for growth, meet the needs of the unserved, underserved and to reduce the traffic and auto usage in the service area. This will most certainly require additional capital and operating sources of funding.

This final chapter of the plan includes a review and projection of funding sources for public transit in Park City and Summit County including a discussion of future Federal Transit Administration (FTA) funding.

POTENTIAL REVENUE SOURCES

This section reviews funding sources and discusses their potential for the future. Projecting future funding sources is an imprecise effort at best. Fixing America's Surface Transportation (FAST) Act will allow for a steady source of funds for the next 3 years (2020). The funding from the state may change as more areas seek to use the limited rural Federal transit funds. Beyond that the vagaries of politics and the economy play an essential role in future funding sources. Efforts to predict the future of federal funding particularly presidential election year can be difficult.

There are trends however, that can be identified and projections can be made based on those trends. The first part of this section will discuss the myriad of funding sources, many of which Park City Transit already uses.

Existing Funding Sources

Park City Transit receives rural transit funding through Federal Transit Administration (FTA) grants that are administered through the UDOT. Current FTA funding programs that are appropriate for rural transit are discussed in the first section followed by a discussion of other funding sources. It is most likely that these funding sources will be in place through 2020.

FTA Grant Programs Administered by Utah Department of Transportation (UDOT) Public Transit Team (PTT)

Park City Transit does a good job of accessing Federal transit funds for rural areas:

- Section 5311 - Formula Grants for Rural Areas
- Section 5339 - Grants for Buses and Bus Facilities

Less directly applicable but still potentially feasible for partial funding include:

- Section 5310 - Enhanced Mobility of Seniors and Individuals with Disabilities – potentially to support aspects of the service that are specifically enhanced to better serve seniors and people with disabilities

Section 5311 - Formula Grants for Rural Areas

The Section 5311 program provides formula funding for the purpose of supporting public transportation for people living in areas with populations less than 50,000. Park City Transit is currently a recipient of these funds and it is not likely that there will be additional 5311 funds available. Between 2013 and 2015 Park City Transit has received $5.7 Million in operating and capital grants.

Section 5311 funds may be used for public transportation projects and intercity bus transportation projects in any area outside of an urbanized and small urban area. Rural transit funding has been in place for over 30 years. Hundreds of transit systems in every state use this funding for operations and capital. This funding in Utah and most states, is limited and must be distributed to a number of transit systems.

In Utah, the growth in rural and small urban areas raises the possibility that more rural areas will be seeking Section 5311 funding (particularly in the rapidly growing southwestern part of the state). While funding for 5311 will not be increasing, Park City could conceivably lose funding over the next seven years as unserved and growing rural areas in Utah seek to share in the limited funding.

Section 5339 - Grants for Buses and Bus Facilities

The Section 5339 program provides federal funding to support the continuation and expansion of public transportation through capital projects to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities. UDOT PTT administers and provides Section 5339 funding for small urban and rural areas—areas with populations less than 200,000. UDOT PTT policy is to prioritize projects that replace existing vehicles or expand existing services as well as projects that include bus-related facilities.

Eligible subrecipients in Utah include public agencies or private non-profit organizations engaged in public transportation, including those providing services open to a segment of the general public, as defined by age, disability, or low income.

With the passage of FAST Act, there are two new discretionary programs created under Section 5339 federal program described below:

- **Bus Program discretionary funding** – With at least 10% per fiscal year to be awarded to projects in rural areas.

- **Low & No Emissions Bus Program discretionary funding** – Which funds purchase or lease of zero-emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities such as recharging, refueling, and maintenance facilities. A low or no-emission bus is defined as a passenger vehicle used to provide public transportation that significantly reduces energy consumption, air pollution, or direct carbon emissions, when compared to a standard vehicle.

  At the federal policy level, the federal funding share for these vehicles can be up to 90%, and up to 95% for related "Low-No" equipment and facilities such as recharging or refueling facilities. UDOT may elect to limit the federal share to a lower level (such as 80%). Park city has been awarded as FTA 5339A grant for $3.9 million for six rapid charge electric busses to be used on their main line service

Section 5310 - Enhanced Mobility of Seniors and Individuals with Disabilities

Section 5310 provides capital funding to improve mobility for seniors and individuals with disabilities by removing barriers to accessing transportation services and expanding available transportation mobility options. Eligible projects are limited to either:

- Public transportation capital projects that are planned, designed, and carried out to meet the specific needs of seniors and individuals with disabilities, or

- Additional public transportation projects that:
  - Exceed ADA minimum requirements, or
  - Improve access to fixed route service and decrease reliance by individuals with disabilities on ADA-complementary paratransit service, or
  - Provide alternatives to public transportation that assist seniors and individuals with disabilities with transportation.

In order to be eligible for Section 5310 program funding, a project must be included in the appropriate locally developed coordinated public transit - human service transportation plan.

Potential Sources - Other Federal Funds

FTA periodically announces new one-time or annual grant opportunities for targeted purposes, most of which could be applied to this corridor service due to the wide variety of needs it can serve. Most notable are TIGER grants. Since 2009, Congress has dedicated $4.6 billion for seven rounds of TIGER to fund projects that have an impact on the nation, a region or a metropolitan area. See more information at:
https://www.transportation.gov/tiger/about#sthash.KEixnxhN.dpuf .

About 28% of this funding has gone to transit projects, including rural areas. This on-going grant process (if continued under the next administration) provides an excellent opportunity to procure vehicles, facilities and other capital needs.

There are regular grant opportunities for a variety of needs, such as serving job access (Ladders of Opportunity grants for example) or targeted funds for alternative fueled vehicles. These regular opportunities can help launch the service expansion with the capital support needed.

Local Funding Sources

Unlike most modest rural transit systems that use local funding as critical Federal match, the proposed service is typically more robust due to the visitor economy generating far more jobs in concentrated locations and bringing more people into the region than their population would otherwise suggest. Combined with the relatively small Section 5311 funding, this results in the bulk of operations funding for the long term to be local in nature, typical of similar systems that operate in resort communities.

Sales Tax - Sustainability

Unlike many rural transit systems, Park City Transit does not depend on Federal funds for the bulk of its funding. The most sustainable approach to funding Park City Transit is through sales taxes, some of which are already employed by Park City Transit. In Utah, there are a variety of sales taxes available for transit use. Park City Transit uses:

- Utah's Mass Transit Tax ($4.1 million)
- A resort tax ($4.1 million)

Two new taxes are recommended. These sales taxes also require voter approval by city, town or countywide. The advantage of a sales tax is that much of the cost for transit will be paid by visitors. There are two additional sales tax options that should be considered by Park City and Summit County. These include the Additional Mass Transit Tax available for operating service and a County Option Sales Tax available for capital expenses, each estimated to generate approximately $4.1 million. This $8.2 million will sustain much of the growth of the service.

Depending on the tax sought, some of these funds cannot be used to supplant existing funds and must be used for new or expanded service, however with all of the new services proposed, this should not be a problem.

Summary – Future Funding Projections

Park City continues to have a diverse funding base with a mix of local funds, dedicated tax revenue and Federal funding. Future projections are relatively stable at this time:

- **FTA Section 5311 and other Federal Grants** – These funding sources will remain available to Park City Transit through at least 2020. While the overall funding level nationally and in Utah will remain stable, the level of funding available to Park City may see changes as more cities are considering the application for Section 5311 funding, increasing the competition for these funds. For the near term, at best funding will remain stable.
- **Existing Local Tax Revenue** – Currently there are two taxes; a Mass Transit Tax and resort tax for transportation. It is estimated that these sources of funds will increase at two percent per year.
- **License Fees, Revenues and other funds** – This includes a variety of local sources and County funds. These sources should also increase at about two percent annually.
- **Potential Transit Sales Taxes** – Two additional taxes are proposed. An additional mass transit tax for operations and a county sales tax that would include funds for transit capital needs. Each should generate about $4.1 Million annually. These will increase at two percent annually.

These funding sources are summarized in Table 7-1 Future Funding Projections.

PARK CITY SUMMIT COUNTY FUTURE TRANSIT NEED

This plan brings forward an ambitious set of new services to meet the needs of residents and visitors in Park City and Summit County. The FY 2015 operating budget (includes administration) according to Park City was $7,805,000. This will serve as the budget baseline of existing services. Two percent per year is added in for each year to account for general increases in costs. This is reflected in Table 7-2 along with projected costs of each new or modified service. Table 7-3 taken from Chapter 6 summarizes costs by project, by year in an unconstrained environment.

The costs of operating new service will exceed the level of funding available if both of the Additional Mass Transit Tax proposals are not passed. Without the additional sales taxes, none of the services will be able to be implemented and the system will remain status quo for the foreseeable future. As can be seen, system costs are planned to double by 2019 due to the wide variety of new services implemented. Even if both tax proposals are passed there are

diminishing returns every year within the time frame of this planning horizon and capital expenses may consume some surplus in funding.

If all of the projected expansion projects are to be implemented, it will be incumbent on city and county management to find additional sources of funds to meet the demands of the plan. Lack of funds may require plans to be scaled back or postponed in the future, however if funds are made available, this plan can be implemented as recommended in this plan.

Capital funding for vehicles and shelters will require about $11.5 million over 7 years less than will be available through sales taxes). Table 7-4 summarizes those costs.

Park City Transit is using a wide range of funds to operate service. There are two more promising sources of tax revenue that can yield $4.1 Million a year each for both operations and capital needs. The passage of these taxes will provide sustainable funding to Park City Transit, however, it will be difficult to realize full implementation of this this plan. Finding additional ongoing sources of funds that are in the millions of dollars is a very difficult task. It is unlikely that the Federal government or the state government will provide additional on-going funds at the levels called for in the plan. The most likely source of significant additional funds on an on-going basis are local City and County funds.

Table 7-1: Future Funding Projections

Funding Source	2015	2016	2017	2018	2019	2020	2021	2022
FTA Grants	$1,630,000	$1,630,000	$1,630,000	$1,630,000	$1,630,000	$1,630,000	$1,630,000	$1,630,000
Mass Transit Tax	$2,166,227	$2,209,552	$2,253,743	$2,298,817	$2,344,794	$2,391,690	$2,439,523	$2,488,314
Resort Tax	$1,966,848	$2,006,185	$2,046,309	$2,087,235	$2,128,980	$2,171,559	$2,214,990	$2,259,290
Licenses, fees, fund transfers	$2,042,239	$2,115,684	$2,190,598	$2,267,010	$2,344,950	$2,424,448	$2,505,537	$2,588,248
Total Current Sources	**$7,805,314**	**$7,961,420**	**$8,120,649**	**$8,283,062**	**$8,448,723**	**$8,617,697**	**$8,790,051**	**$8,965,852**
Additional Mass Transit Tax			$4,100,000	$4,182,000	$4,265,640	$4,350,953	$4,437,972	$4,526,731
Total Operating Revenue (Existing and potential)	**$7,805,314**	**$7,961,420**	**$12,220,649**	**$12,465,062**	**$12,714,363**	**$12,968,650**	**$13,228,023**	**$13,492,583**
County Tax			$4,100,000	$4,182,000	$4,265,640	$4,350,953	$4,437,972	$4,526,731

*Assumes 2 percent annual growth

Table 7-2: 2017 – 2020 Cost Summary*

Service	2016-2017 Additional Cost	2017 Additional Cost	2018 Additional Cost	2019 Additional Cost	2020 Additional Cost	2016/2017 - 2020 Addition Cost
Continue Prior Winter Service Levels (120 Days) and Enhancements: Rt. 6-Canyons, Rt. 7-Kimball Junction West and Rt. 8-Kimball Junction East Express	$248,400	$252,720	$259,200	$263,520	$267,840	**$1,291,680**
Increase Frequency of Rt. 8 Kimball Junction East	$234,600	$238,680	$244,800	$248,880	$252,960	**$1,219,920**
Canyons/Sun Peak/Silver Springs Call a Bus - New Service	-	$450,775	$460,265	$469,755	$479,245	**$1,860,040**
Extend Routes 8-Kimball Junction East and Rt. 7-Kimball Junction West Hours (Summer and Shoulders. 240 Days)	-	$168,480	$172,800	$175,680	$178,560	**$695,520**
Kimball Junction Circulator	-	$365,040	$1,138,800	$1,157,780	$1,176,760	**$3,838,380**
Quinn's Junction ADA Paratransit**	-	$229,388	$229,388	$229,388	$229,388	**$917,552**
Jeremy Phase 1 Express - Park and Ride	-	-	$525,600	$2,137,440	$2,172,480	**$4,835,520**
Commuter Service Kamas Valley	-	-	$690,000	$702,720	$714,240	**$2,106,960**
Silver Creek Call-a-Bus – New Service	-	-	$141,620	$144,540	$147,460	**$433,620**
Richardson Flat Shuttle	-	-	$1,051,200	$1,068,720	$1,086,240	**$3,206,160**
Guaranteed Ride Home Program	-	-	$10,000	$10,000	$10,000	**$30,000**
Summit Park/Jeremy Ranch and Pinebrook Call a Bus	-	-	-	$178,120	$181,040	**$359,160**
Deep Park Meadows/Aspen Springs Call-a-Bus	-	-	-	$287,100	$292,900	**$580,000**
SLC Airport Service	-	-	-	$50,000	$50,000	**$100,000**
Jeremy Ranch Park and Ride	-	-	-	-	$267,180	**$267,180**
Heber City commuter Service	-	-	-	-	$267,180	**$267,180**
SLC Airport Lounge	-	-	-	-	$250,000	**$250,000**
Yearly Totals	**$483,000**	**$1,703,695**	**$4,923,673**	**$7,123,643**	**$8,023,473**	**$22,258,872**

*Cost over and above 2015

** Productivity improvements will keep cost per trip lower

Table 7-3: Annual Unconstrained Operating Cost of Service 2016 - 2022

Year	2015	2016	2017	2018	2019	2020	2021	2022	Totals 2016 - 2022
Cost of Existing Services	$7,805,314	$7,961,420	$8,120,649	$8,283,062	$8,448,723	$8,617,697	$8,790,051	$8,965,852	-
Expansion Costs Since 2015		**$483,000**	**$1,703,695**	**$4,464,073**	**$6,655,163**	**$7,547,313**	$7,698,259	$7,852,224	-
Additional Staff**		$270,000	$275,400	$280,908	$286,526	$292,257	$298,102	$304,064	-
Total Unconstrained Operating Budget	**$7,805,314**	**$8,714,420**	**$10,099,744**	**$13,028,043**	**$15,390,412**	**$16,457,267**	**$16,786,412**	**$17,122,141**	-
Additional Annual Operating Costs		$753,000	$1,979,095	$4,744,981	$6,941,689	$7,839,570	$7,996,361	$8,156,289	$38,410,985
Additional Mass Transit Tax Revenue			$4,100,000	$4,182,000	$4,265,640	$4,350,953	$4,437,972	$4,526,731	$25,863,296
Additional Sales Tax Revenue			$4,100,000	$4,182,000	$4,265,640	$4,350,953	$4,437,972	$4,526,731	$25,863,296

Table 7-4: Annual Unconstrained Capital Costs 2016-2022

Year	2016	2017	2018	2019	2020	2021	2022
Vehicles	$700,000	$3,310,000	$4,710,000	$460,000	$1,160,000	$0	$700,000
Shelters		150,000	150,000	100,000	100,000		
Total Capital Costs	**$700,000**	**$3,460,000**	**$4,860,000**	**$560,000**	**$1,260,000**	**$0**	**$700,000**

Appendix A
Technical Memorandum No. 1: Demographics, Land Uses and Travel Patterns

Technical Memorandum No. 1: Demographics, Land Uses and Travel Patterns

1. INTRODUCTION

This technical memorandum describes the demographic transit attributes of the study area which consists of Park City, Summit County and Heber City in Wasatch County. The intent is to identify areas in need of transit as either origins or destinations. The analysis includes: the study and service area demographic profile, the service area characteristics including major destinations and land uses, local travel patterns, and a summary of economic conditions and future growth.

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 its skiing opportunities and is becoming increasingly known for a variety of other recreational, cultural and historical resources and events. Park City and the Snyderville Basin are dominated by resort and destination based areas including two distinct ski resorts with three base areas, a historic downtown as well as housing and lodging to accommodate these destinations.

It is important to note that as a major seasonal tourism destination there is a considerable fluctuation in population, activity, and travel patterns throughout the year. According to Park City Chamber of Commerce 2015 Park City and Summit County Economic Profile, the peak winter season (mid December – mid April) sees over 40% of the total overnight visitors in the area for the year. This impact, coupled with day trip skiers from the Salt Lake area, creates a substantial traffic burden on the major service area corridors.

The analysis will focus on the study area and the service area:

- Study area – for the purposes of this short range transit development plan it is important to examine the potential in regional connectivity. The study area encompasses Summit County including the towns of Park City, Coalville, Oakley, Kamas, and Francis. Also included in the study area is Heber City in western Wasatch County. Many of these locations in the study area have little to no transit service and fall outside of the Park City Transit service area. Figure 1-1 depicts the regional, study area.
- Service area – this area consist of the places already served by Park City Transit. This area includes Park City, Snyderville Basin, Canyons Village, Quinn's Junction and Kimball Junction. Figure 1-2 shows the service area, including the Park City Transit routes with a ¾ mile buffer around the routes. The ¾ mile buffer is the required Americans with Disabilities Act (ADA) complementary paratransit service area. In a community such as Park City, with many pedestrians and bicycle riders, the ¾ mile buffer can be considered the area in which a transit route can capture ridership.

Figure 1-1: Short Range Transit Development Plan Study Area

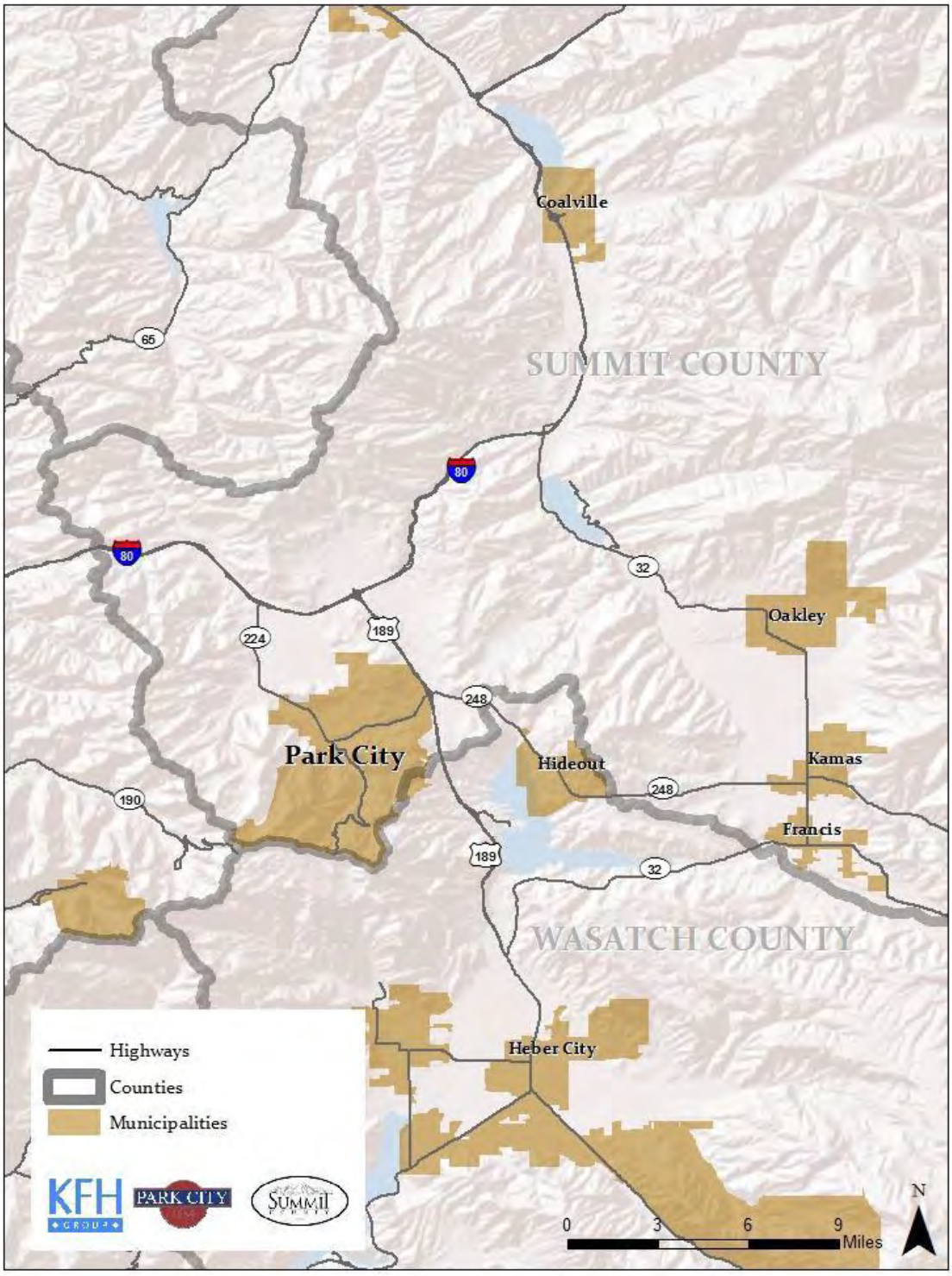
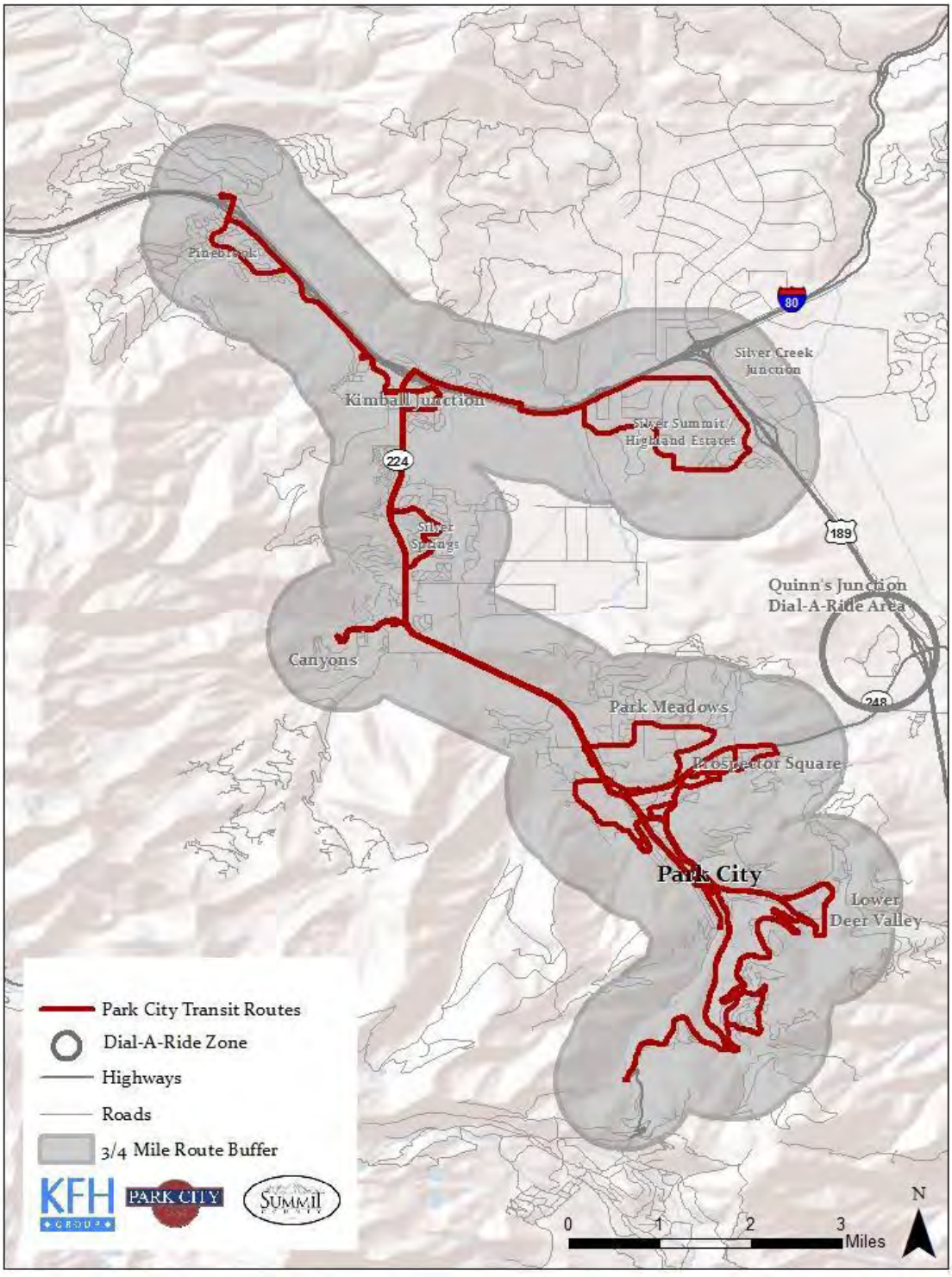


Figure 1-2: Park City and Summit County Transit Service Area



2. DEMOGRAPHICS

First will be a review the population of the study area. This will be followed by an analysis of the all-important population density by season. The last part of this section of the technical memorandum is the transit dependent analysis along with a Title VI analysis.

Population

For Park City and Summit County there are two distinct population groups that are essential to account for in a transit demographic analysis. First and foremost, transit serves the local resident population. Also, transit is an essential service for the tourist population. Table 1-1 depicts the local resident population. As shown in the table, approximately 24,000 people live in the service area (Park City and the Snyderville Basin), comprising 66% of the total Summit County population. The population has grown by less than one percent in Summit County over the last four years. However, Park City has seen six percent growth in population since 2010.

The service area population varies significantly by season. The winter season is far busier than other seasons and requires additional transit service from December to mid-April. Service also sees a significant increase during prime vacation days and the Sundance Films Festival. The summer season from June to September also sees a significant number of overnight visitors. The shoulder seasons of Mid-April until June and September to December have the lowest overnight visitor population.

Table 1-1: Summit County Resident Population

Population	2014	2010
Park City	8,058	7,558
Snyderville Basin	16,500	16,000
Total Service Area	24,558	23,558
Summit County	36,483	36,324

Source: US Census American Fact Finder

Table 1-2 shows the Park City overnight visitor population related to the local resident population. During the peak winter and summer season, tourists outnumber residents. This influx of visitors has significant impacts on the population profile of the service area. Many of the areas in which the large hotels are located have very few full time residents. The population density profile when including visitors and winter employees looks markedly different during the off-peak season compared to the peak seasons.

Table 1-2: 2014 Park City Overnight Visitor Population Data

Visitor Data	2014 Visitors per Day	Park City Population	2014 Population Including Visitors (tourist + residents)	Overnight Visitors Percent of Total Population
Total	8,497	7,962	16,459	52%
Winter (Dec-April)	13,783	7,962	21,745	63%
Summer (June-Sep)	10,113	7,962	18,075	56%
Shoulders (April-June, Sep-Dec)	6,081	7,962	14,043	43%

Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

Figure 1-3 depicts the population per Census block group for the study area. Many of the most populated block groups are also the largest in geographic area. Areas of western Wasatch County including Heber City, as well as parts of Summit County including central Park City, neighborhoods in Kimball Junction, Coalville and Oakley have the block groups with the highest population and densities within small sections of the block group. It should be noted that while these block groups show low or moderate density overall, there are certain parts of these block groups that have very significant densities and are noted on these maps. This is important for transit planning purposes.

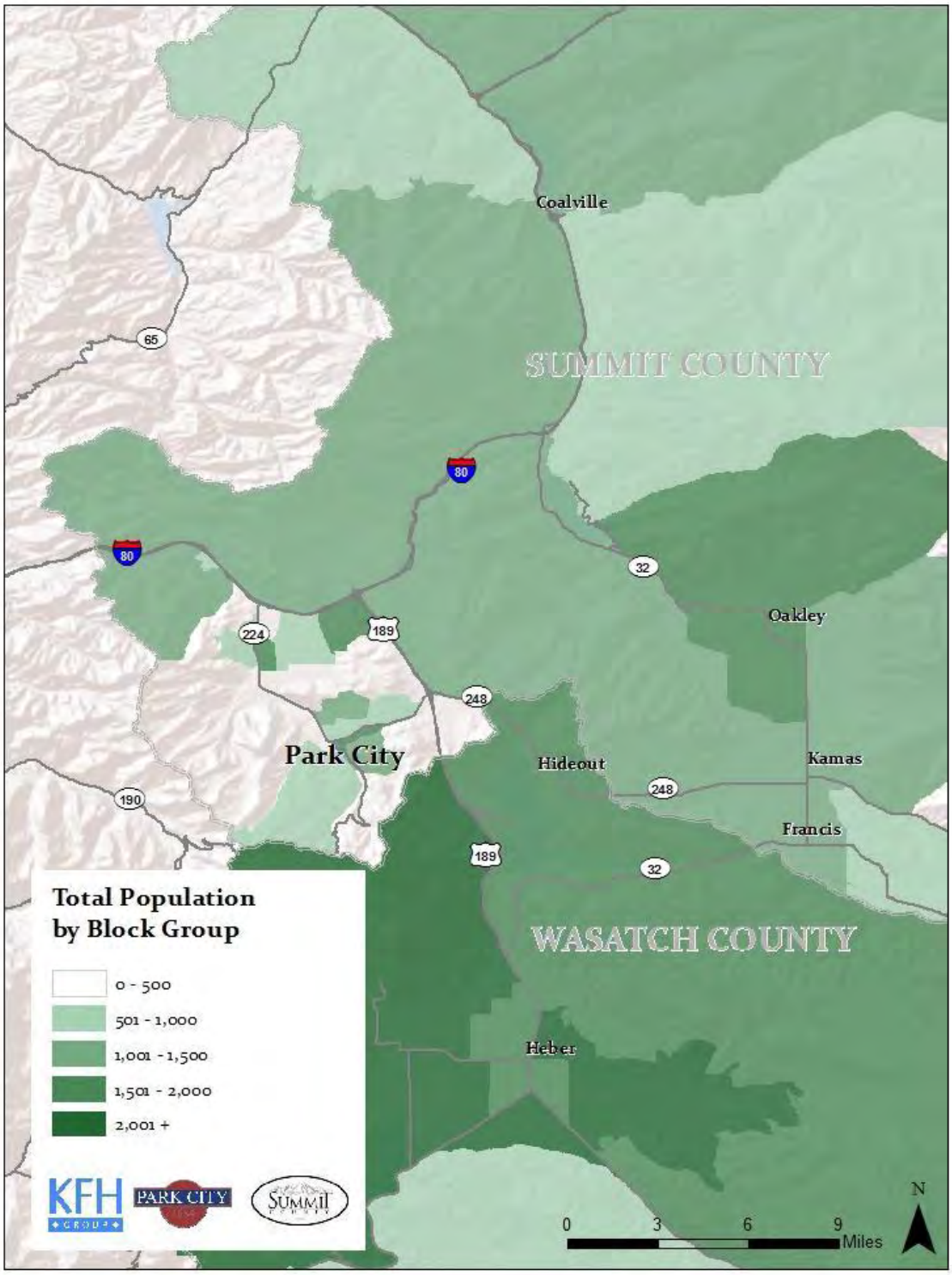
Figure 1-4 shows the population per block group for the Park City Transit service area. As shown the block groups with the highest populations are along Kearns Blvd. in Park City, Silver Springs, and the Silver Summit/Highland Estates area. Of note is the Redstone neighborhood in Kimball Junction. This Census block group just southeast of the I-80/Highway 224 interchange shows only 239 total residents according to the ACS 2013 5 Year Estimates. Anecdotally it is understood from discussions with local county and transit staff, site visits and public outreach efforts that there is considerably more population in this area.

Population Density

Population density is an important indicator for transit service. As a general rule, areas with over 1,000 people per square mile (or major trip destinations) can support fixed route transit service. Clearly, population density in the Park City area varies by season. Figure 1-5 shows the resident population density, which can also be considered the off-peak season density. The areas with over 1,000 people per square mile include central Park City including Prospector Square and Park Meadows, Silver Springs, Silver Summit/Highland Estates, and Pinebrook. The areas with the highest concentration of people are along Kearns Blvd and in Silver Springs.

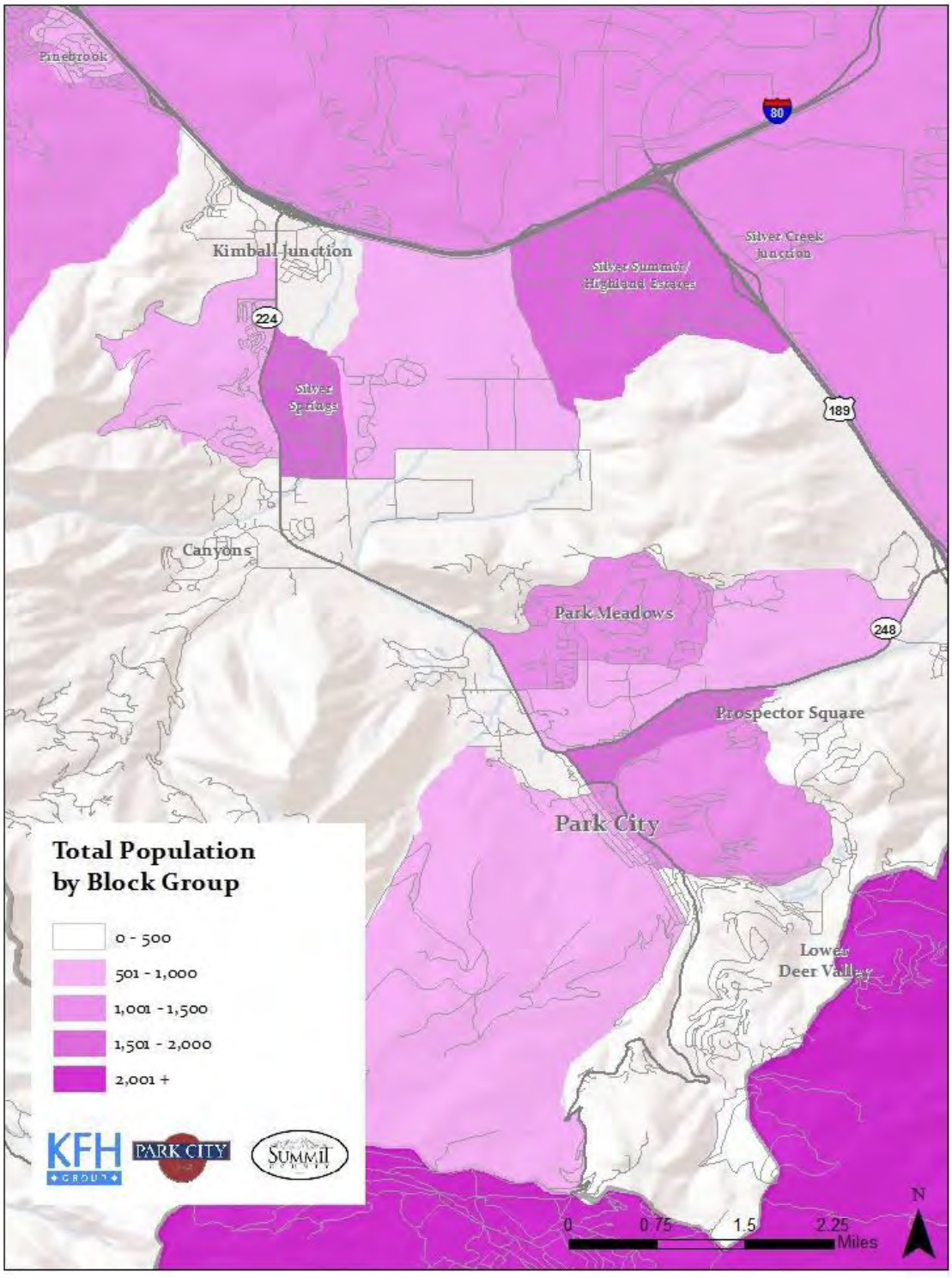
Figure 1-6 depicts the population density taking into account the overnight visitor population during the peak season. The differences in population density are striking and reflect where

Figure 1-3: Study Area Total Population by Block Group



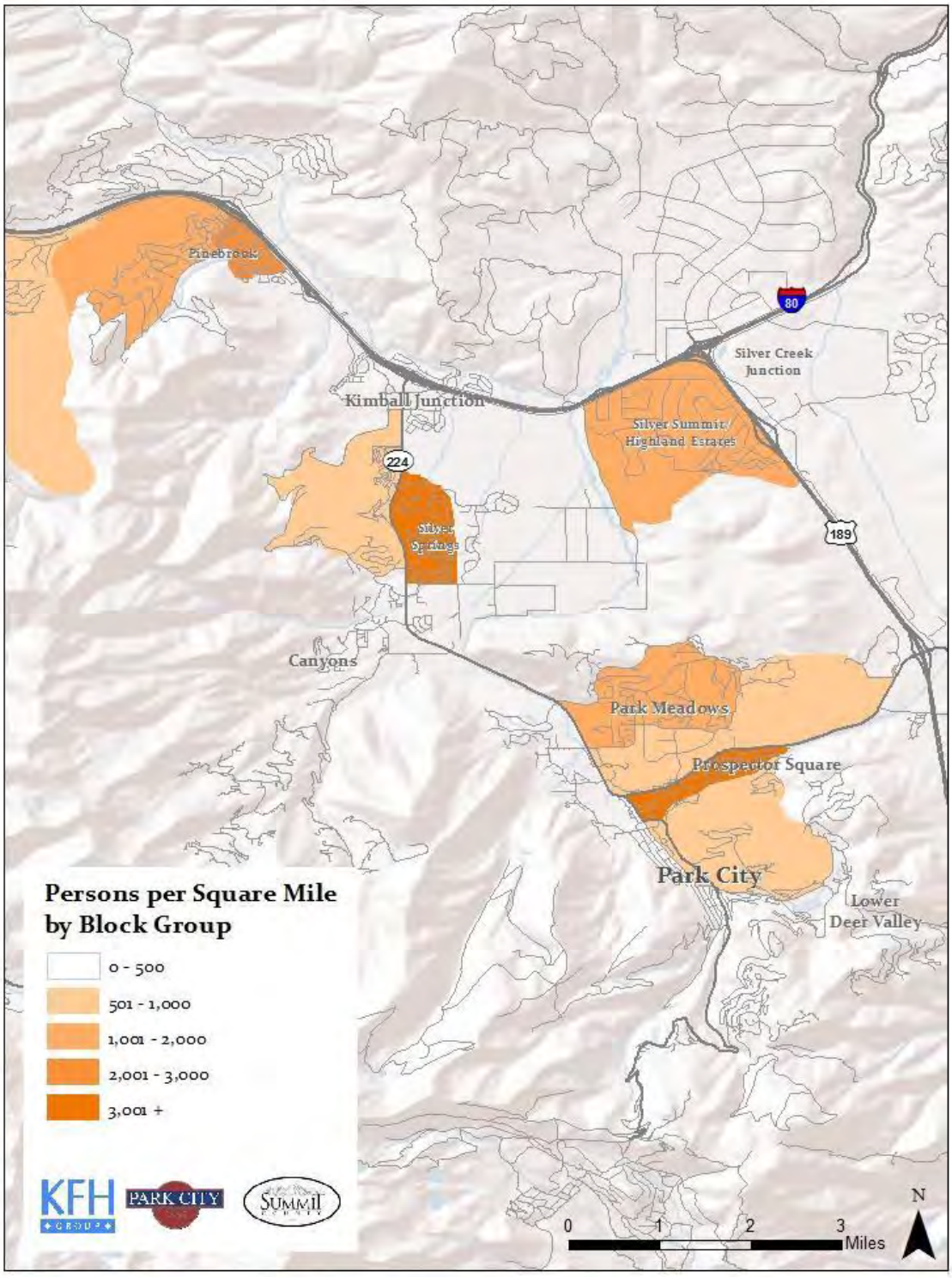
Source: American Community Survey 2013 5 Year Estimates

Figure 1-4: Service Area Total Population by Block Group



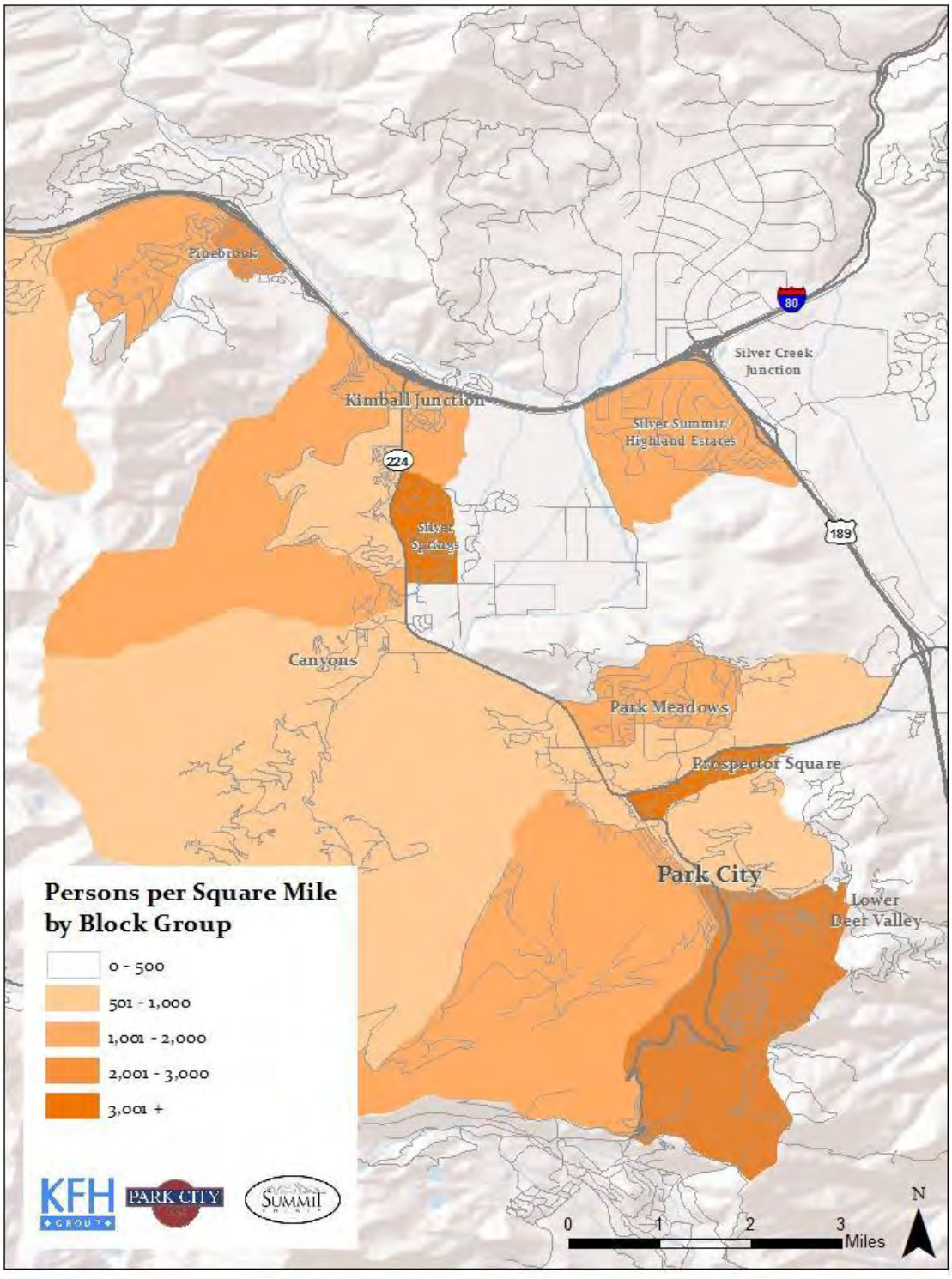
Source: American Community Survey 2013 5 Year Estimates

Figure 1-5: Service Area Density - Population per Square Mile (Residents Only)



Source: American Community Survey 2013 5 Year Estimates

Figure 1-6: Service Area Peak Season Population Density (Residents and Overnight Visitors)



Source: American Community Survey 2013 5 Year Estimates

Overnight visitors tend to "reside" while in the area. The peak overnight visitor per block group depiction was calculated by allocating the peak visitors to block groups by the number of lodging units in each area. As a result we see the block groups in Kimball Junction, Deer Valley, Park City Mountain base area and the Canyons Village exceed the 1,000 people per square mile threshold. These tourism based block groups are geographically large relative to other block groups in the service area. While the shading of the full block group might lead one to believe that there is significant density throughout, this is not the case. For each of the overnight visitor based block groups shown, the overnight visitor populations are located in close proximity to the Highway 224 corridor.

Transit Dependent Populations

Public transportation needs are defined in part by identifying the relative size and location of those segments within the general population that are most likely to depend on transit services.

In the study area there are residents with characteristics that are indicative of dependency on public transit. These characteristic include:

- Households without a vehicle
- Households below the poverty line
- Older adult population (65 and older)
- Youth population (10-17 years)
- Persons with disabilities

The first sets of maps depict each of these characteristics individually for the service area. Mapping the study area for each characteristic will result in very low numbers. The Transit Dependent Index and Title VI maps - each a composite of need do however depict the entire study area. Table 1-3 shows the total population of these cohorts within Summit County followed by a needs description of each group and a mapping analysis detailing the concentration of these populations by Census block group. This helps determine the location of transit dependent populations in comparison to current transit services and the extent to which community needs are met.

Table 1-3: Summit County Transit Dependency Populations

Population	
Summit County	36,324
Low Income Households	3,142
Autoless Households	331
Youth (10-17)	4,643
Seniors (65+)	3,080
Persons with Disabilities	1,899

Source: American Community Survey 2013 5 Year Estimates

Households Without a Vehicle

According to the US Census a household consists of all the people who occupy a housing unit. Households without a vehicle indicate where people live that area most likely to use public transit. Even in a community like Park City where one can be independently mobile walking and riding a bike, non-vehicle households will likely use transit from time to time. Many of these will be winter employees that need reliable transportation to work. Figure 1-7 shows the areas with the highest concentration of households without access to an automobile. These areas consist of the Kearns Blvd. corridor, the neighborhood east of downtown, and Pinebrook.

Households Below the Poverty Line

Households below the poverty line represent a high transit usage category particularly in areas like Park City which offer fare free transit service. Even if these households have access to a car it may be cost prohibitive to operate (fuel, insurance, etc.) the vehicle. Figure 1-8 shows portions of the service area that have the highest concentration of households below the poverty level. These areas consist of the Kearns Blvd. corridor and Pinebrook. The Park city area has many areas of affluence that are indicated on the map as areas with higher concentrations of low income residents. For example, the Park Meadows area has some of the highest property values in the service area. The block group that includes Park Meadows also includes several apartment facilities which house lower income residents, thus indicating the area as having a high concentration of low income residents. The lower income population is concentrated along Kearns Blvd. and does not extend north into the Park Meadows neighborhood.

Older Adult Population

Older adult population is defined as people over the age of 65 years. Many adults in this group remain independently mobile and can continue to use personal automobiles. However, this group does show a higher proportion of transit usage compared to other age cohorts particularly above the age of 80 years old. This can be due to the loss of ability to drive or the preference to not drive. Figure 1-9 shows the locations in the service area with the highest concentrations of people over 65 years in age. Pinebrook has the highest concentration of older adults with Silver Springs and the neighborhoods along Kearns Blvd. and Park Meadows also showing higher densities.

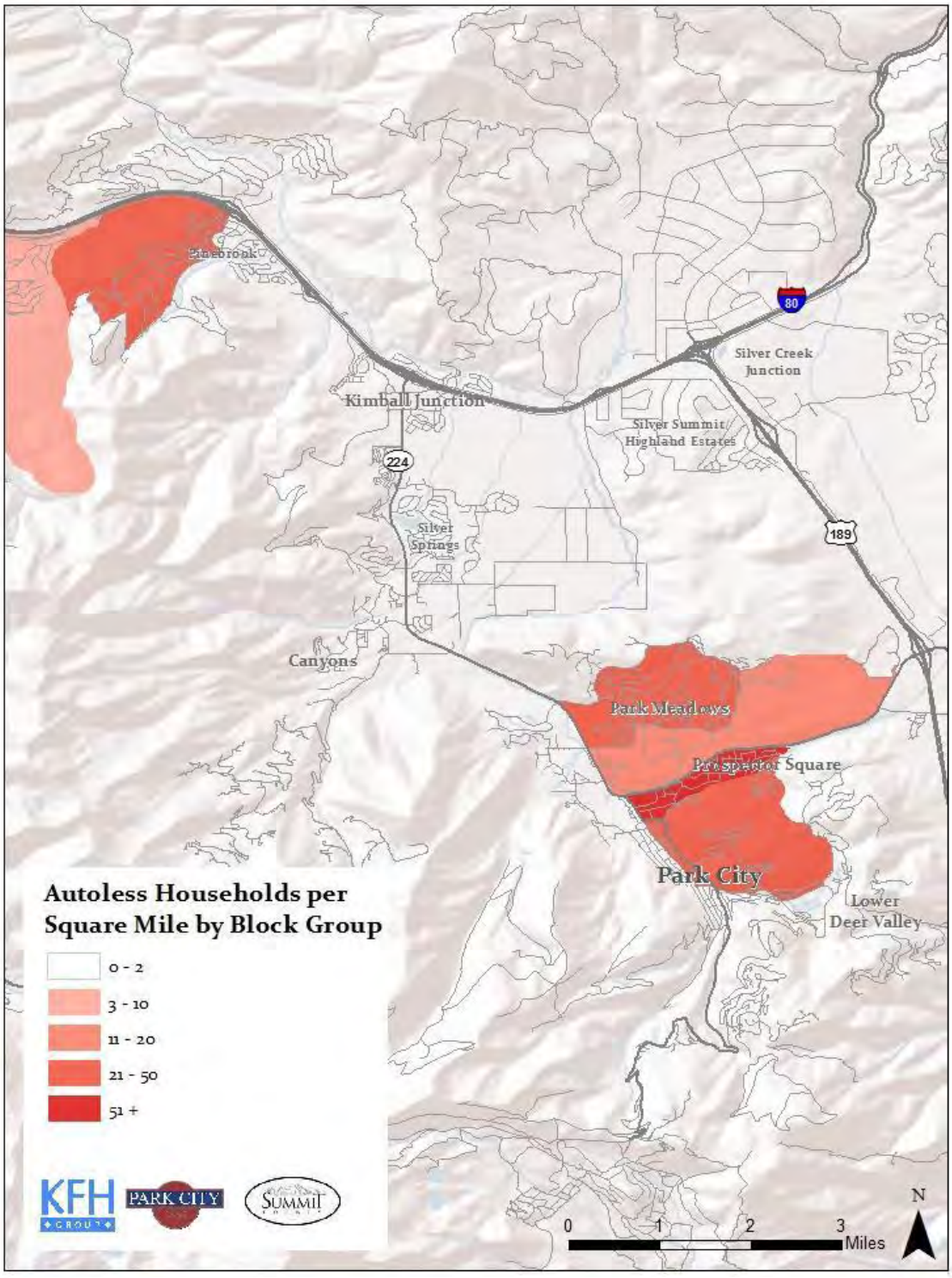
Youth Population

Youth from the ages of 10-17 years are generally old enough to ride public transit services but not yet old enough to drive (or have access to an automobile). Figure 1-10 shows the portions of the service area with the highest concentrations of youth. The Kearns Blvd. corridor and Silver Springs neighborhood have the highest concentrations of youth.

Persons with Disabilities

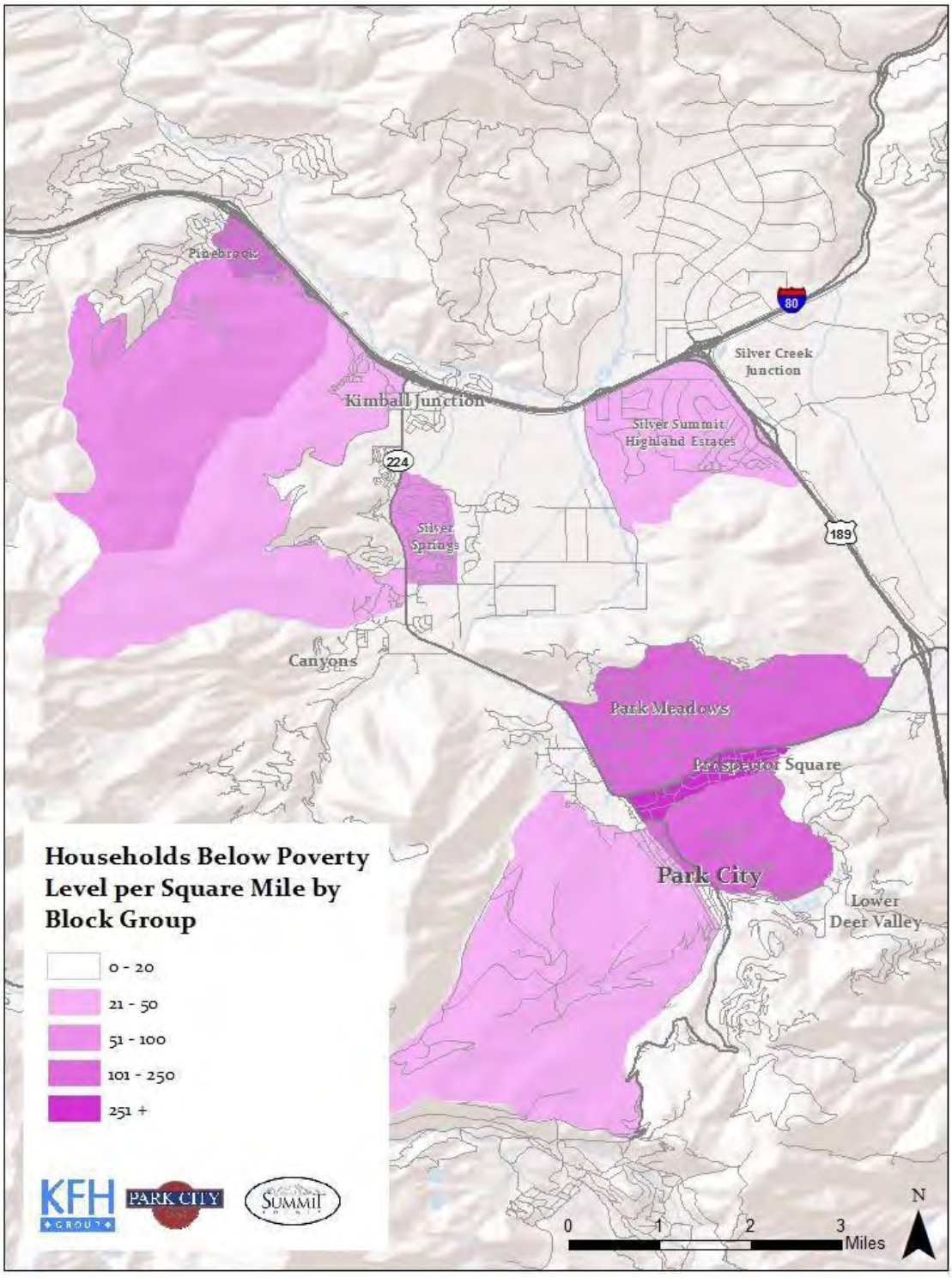
Persons with disabilities often show a higher proportional transit usage compared to other cohorts. Depending on the disability (visual impairment or mobility disability) public transit may

Figure 1-7: Service Area Households without a Vehicle per Square Mile



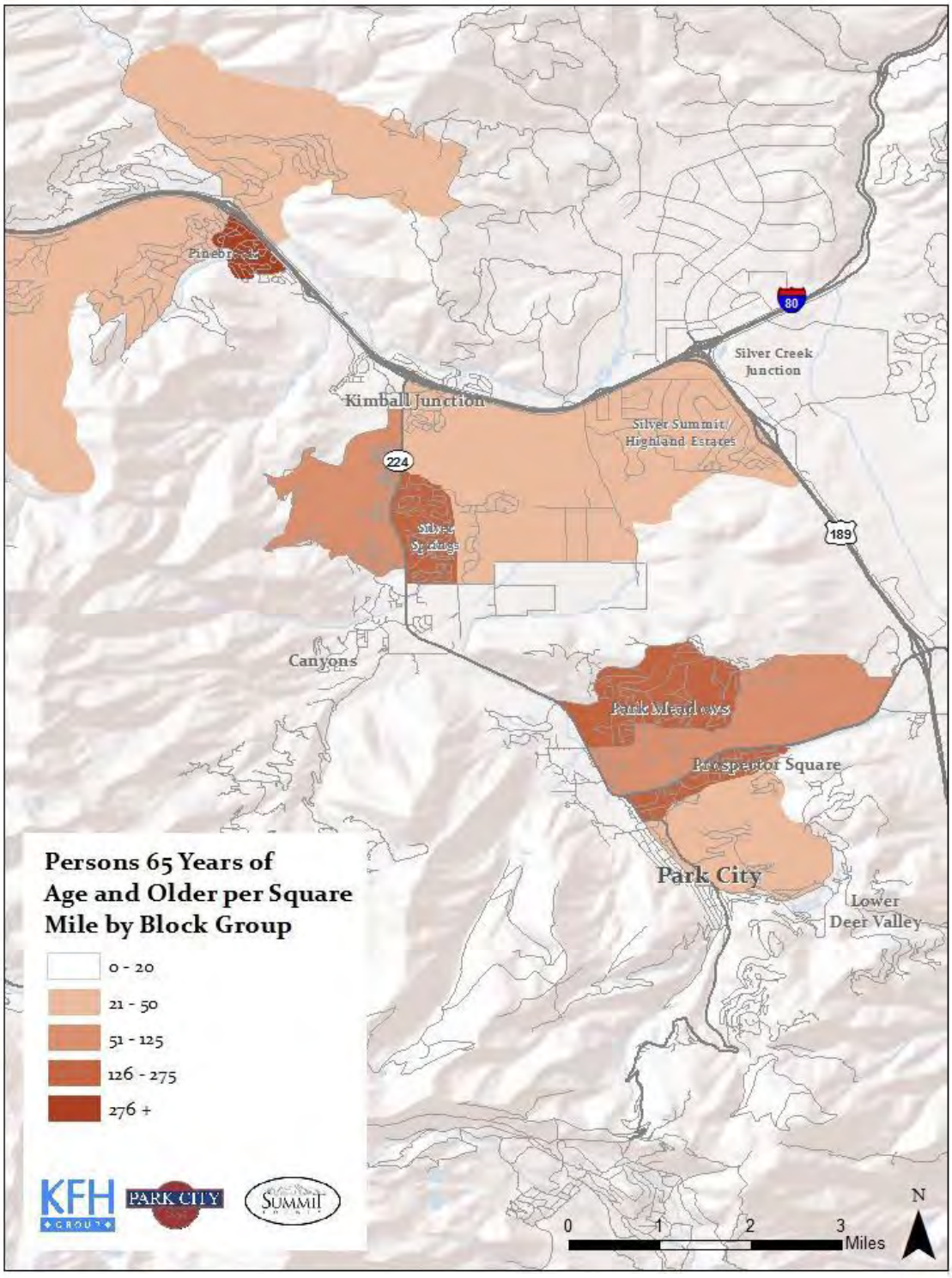
Source: American Community Survey 2013 5 Year Estimates

Figure 1-8: Service Area Households Below the Poverty Level per Square Mile



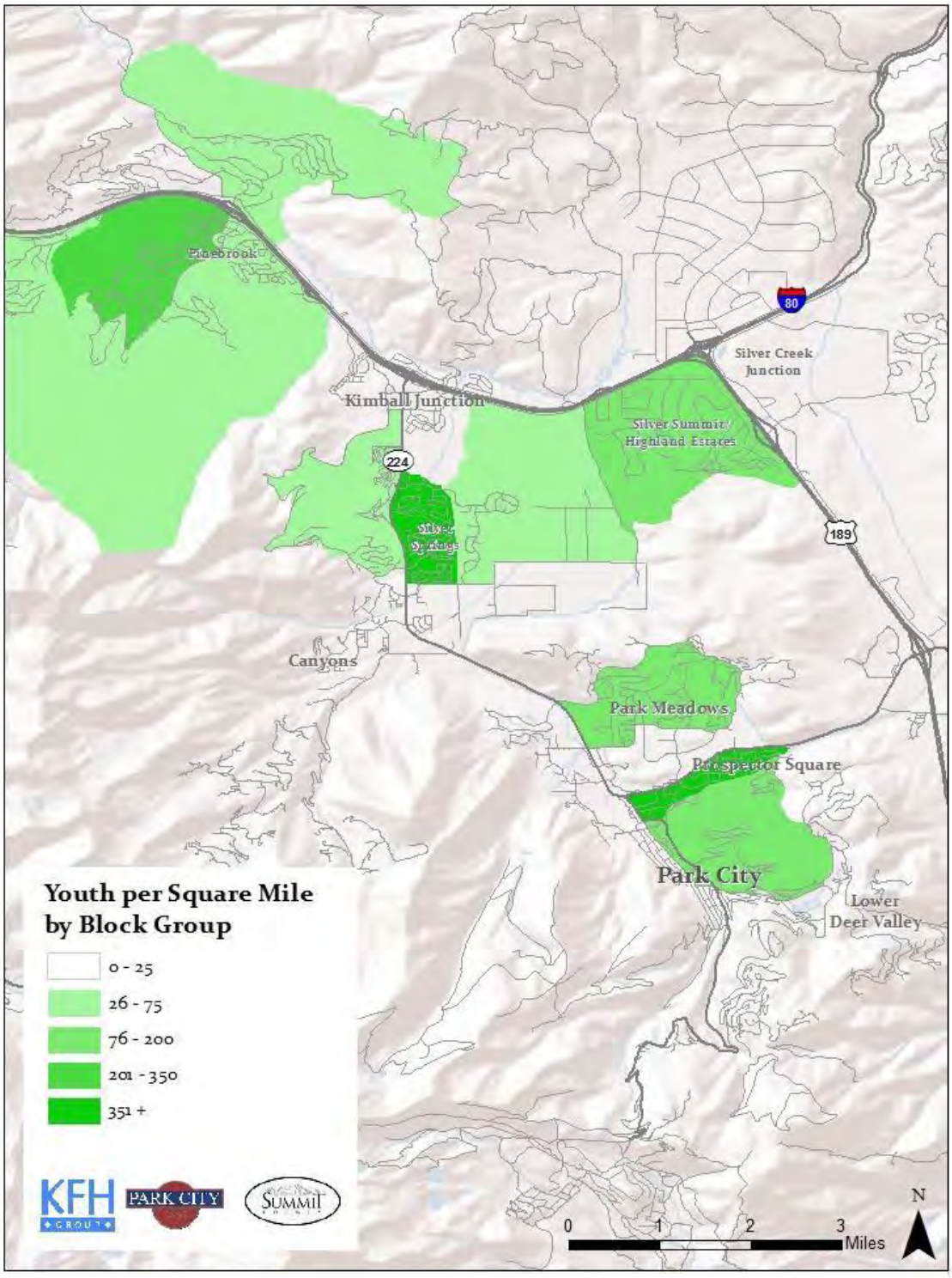
Source: American Community Survey 2013 5 Year Estimates

Figure 1-9: Service Area Persons 65 Years of Age and Older per Square Mile



Source: American Community Survey 2013 5 Year Estimates

Figure 1-10: Service Area Youth (10 – 17 Years of Age) Population per Square Mile



Source: American Community Survey 2013 5 Year Estimates

be the most viable transportation alternative for this group. Figure 1-11 shows the locations in the service area with the highest concentrations of persons with disabilities. The areas along Kearns Blvd., Park Meadows, Silver Springs and Pinebrook show the highest number of people with disabilities.

Transit Dependence Index

The Transit Dependence Index (TDI) is an aggregate measure that may be associated with mapping software to effectively display relative concentrations of transit dependent populations within a study area. The framework for the TDI is based on the findings of a 2004 National Cooperative Highway Research Program (NCHRP) report that examined the process of assessing environmental justice persons and, subsequently, produced an index to locate concentrations of minority and low-income populations. The NCHRP report introduced the Environmental Justice Index (EJI), which the report's authors stated may be modified to include additional protected population factors.

Data Sources

The TDI utilizes data from the American Community Survey (ACS) 2013 five-year estimates, which permit an analysis of socioeconomic characteristics at the block group level, in addition to geographic information (e.g., block group boundaries) supplied by the US Census. An exception to the use of ACS five-year estimates for socioeconomic characteristics is made when measuring the numbers of persons with disabilities, where an alteration to the question in the ACS made during the latest collection period resulted in a disruption in reporting consistency. Therefore, recent US Decennial Census data is used to calculate ten-year population shifts per block group, with this percent change being factored to the most-recent persons with disabilities data that is available at the block group geography.

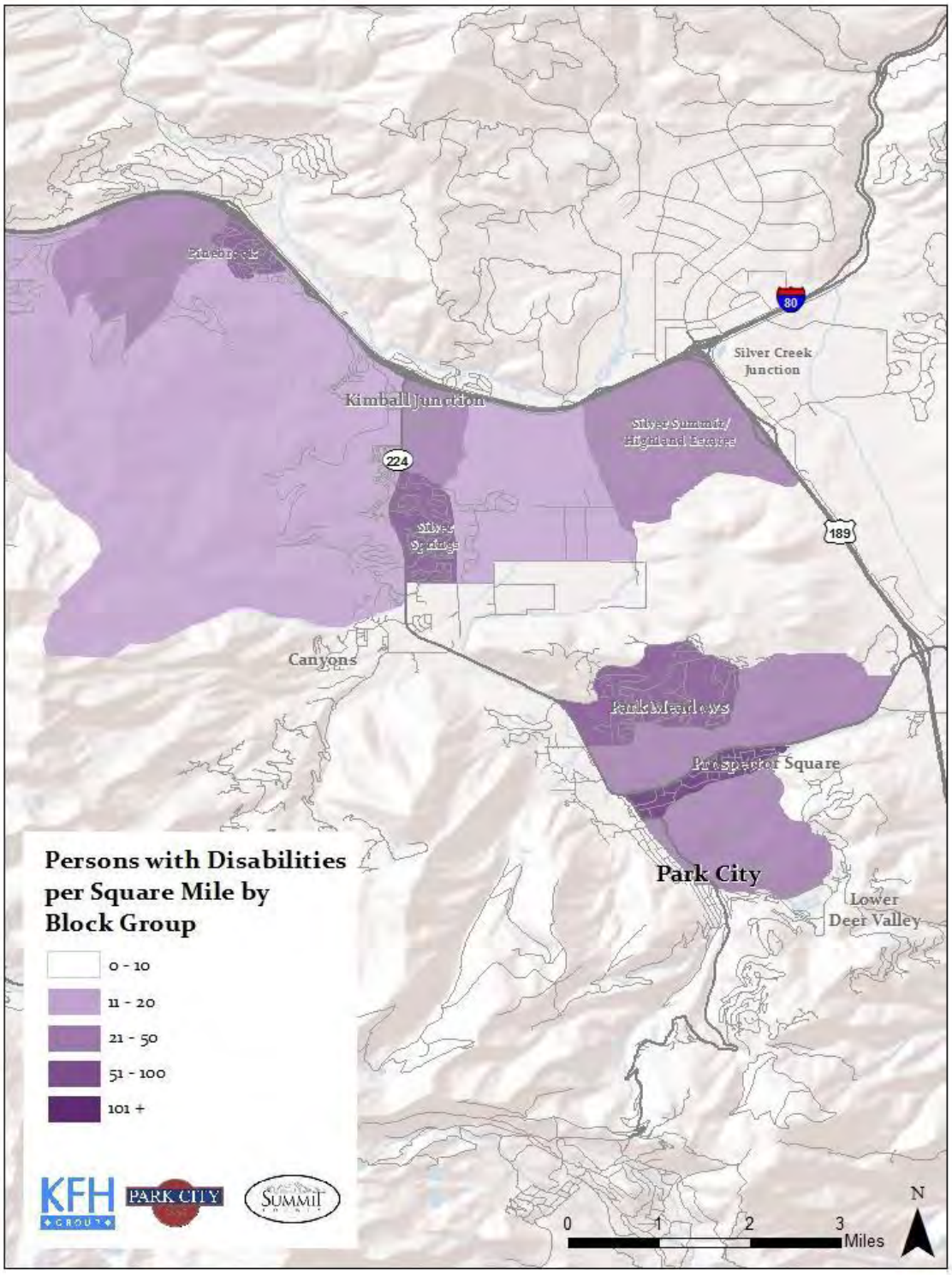
Population Category	Table Source and Number	Table Description
Population Density	ACS - B01003 US Census - AREALAND	Total Population Area in Square Miles (converted from meters)
Zero Vehicle Household	ACS - B25044	Tenure by Vehicles Available
Older Adult Population	ACS - B01001	Sex by Age (65 years & over)
Youth Population	ACS - B01001	Sex by Age (10 - 17 years)
Persons with Disabilities	US Census - P041012 US Census - P041019	Go-Outside-Home Disability (16 - 64 years) Go-Outside-Home Disability (65 years & over)
Below-Poverty Population	ACS - B17021	Poverty Status of Individuals in the Past 12 Months by Living Arrangement

Transit Dependence Index Formula and Factors

TDI = PD x [AVNV + AVE + AVY + AVD + AVBP], where:

- PD = population per square mile
- AVNV = amount of vulnerability based on presence of no vehicle households
- AVE = amount of vulnerability based on presence of older adult population
- AVY = amount of vulnerability based on presence of youth population
- AVD = amount of vulnerability based on presence of persons with disabilities
- AVBP = amount of vulnerability based on presence of below-poverty population

Figure 1-11: Service Area Persons with Disabilities per Square Mile



Source: American Community Survey 2013 5 Year Estimates

Population per Square Mile	PD Value
0	0
> 0 and ≤ 500	1
> 500 and ≤ 1,000	2
> 1,000 and ≤ 2,000	3
> 2,000	4

Number of Vulnerable Persons/Households	AVNV or AVE or AVY or AVD or AVBP Value
< Study Area Average (SAA)	1
≥ SAA and < 1.33 times the SAA	2
≥ 1.33 times the SAA and < 1.67 times the SAA	3
≥ 1.67 times the SAA and < 2.00 times the SAA	4
≥ 2.00 times the SAA	5

The aforementioned factors need to be calculated at both the selected geography of analysis (e.g., block group) and the overall study area (e.g., county) for comparison purposes. Once the values for all six factors are computed, the analyst must insert the values into the TDI formula to calculate the overall index. Scores of the resulting TDI will range from 0 to 100, with a higher score indicating an area where a large number of transit dependent persons are present in an area with a high population density.

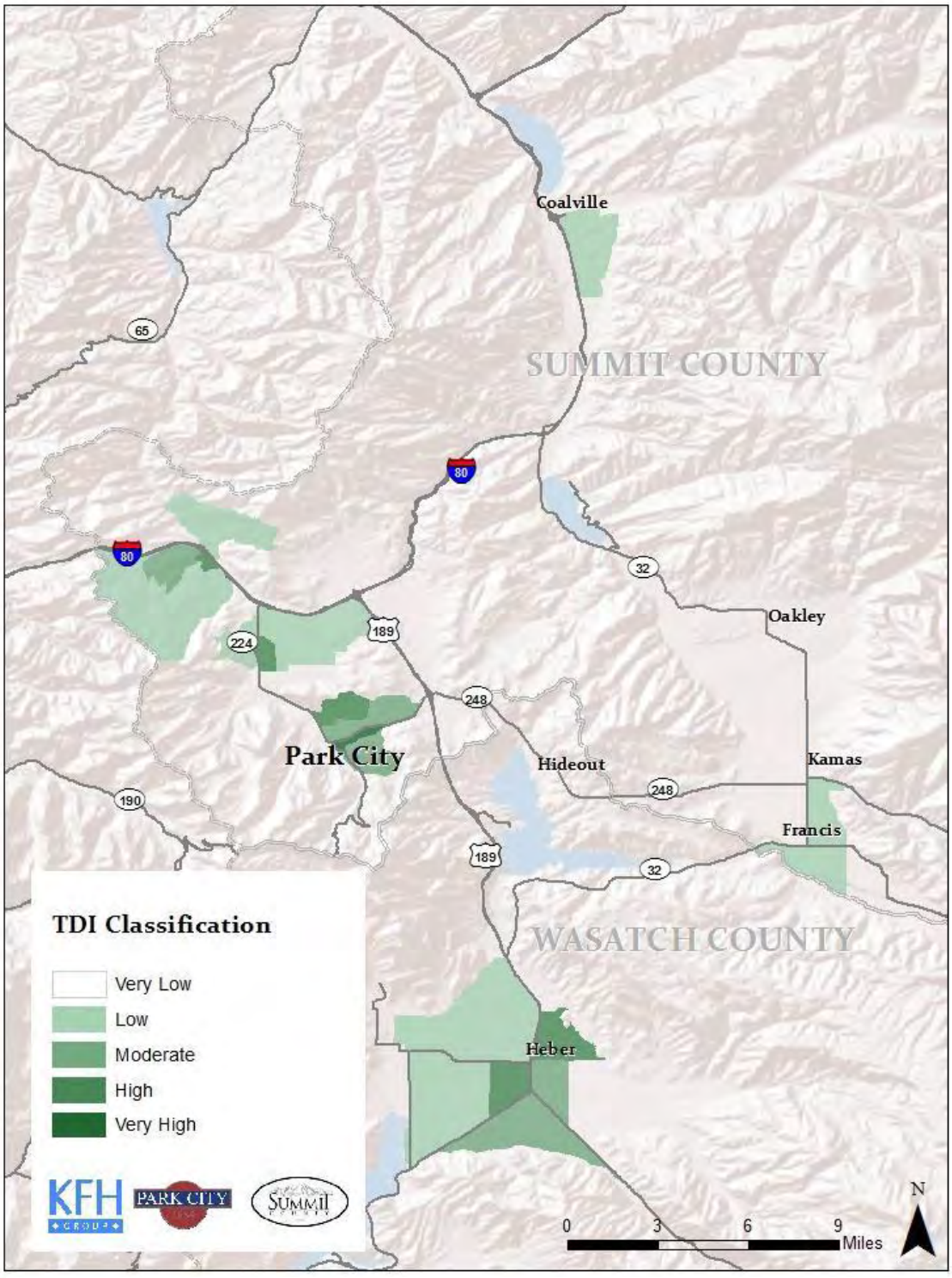
Figure 1-12 depicts the TDI for the study area for 2014. As shown the areas with the highest need for public transit based on the concentration of transit dependent cohorts consists of Heber City and Park City. Figure 1-13 shows the TDI for the service area. The Kearns Blvd. corridor, Silver Springs and Pinebrook shows the highest public transit need based on transit dependent populations. This figure also shows the Park City transit routes connecting with every high need area.

Title VI Analysis

The Title VI analysis identifies the location of low income individuals, locations of minorities, and the locations of households with limited English proficiency. The data comes from the 2013 American Community Survey five year estimates. This analysis will assist in ensuring that vulnerable groups are not disproportionately impacted by service adjustments. Figure 1-14 depicts the concentration of households below the poverty line within the study area. As shown, Park City and Heber City have the highest concentrations of households below the poverty line. Figure 1-15 shows the number of minorities per square mile in the study area. Again, Park City and Heber City show the highest minority populations per square mile.

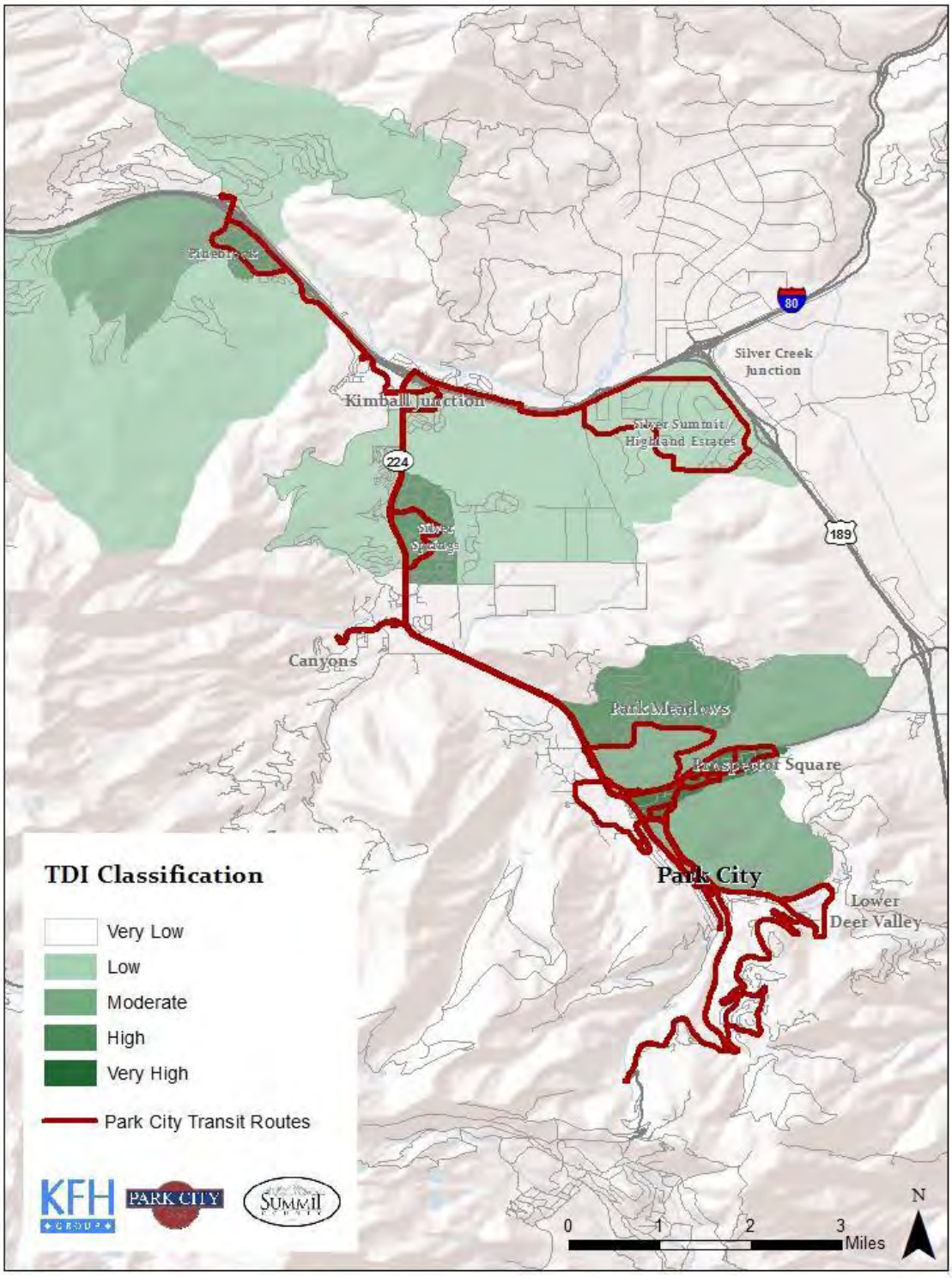
Figure 1-16 shows the highest concentrations of people who have limited English proficiency. This represents less than 5% of the study area population but has the highest concentration in central Park City and Heber City.

Figure 1-12: Study Area Transit Dependence Index



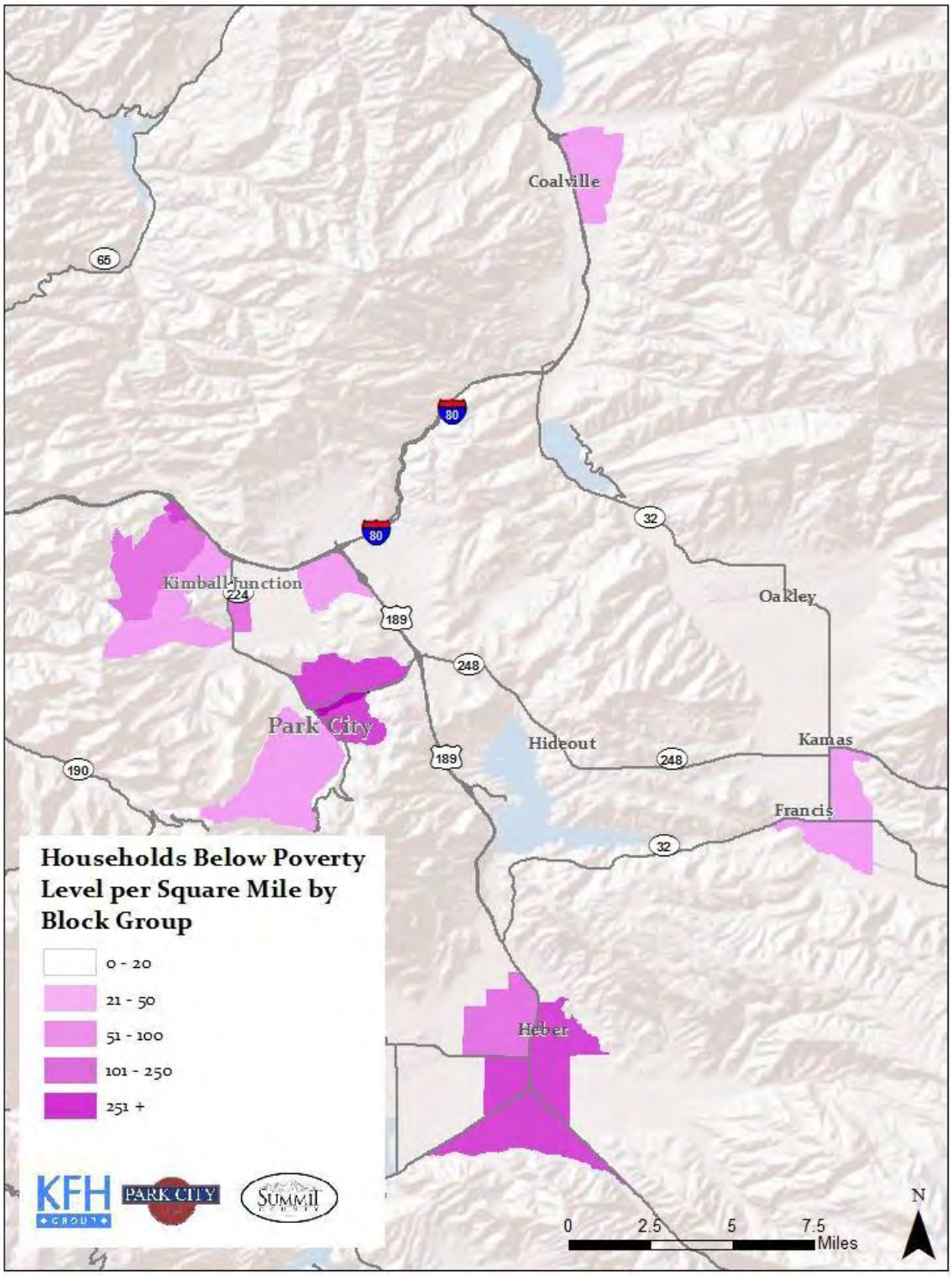
Source: American Community Survey 2013 5 Year Estimates

Figure 1-13: Service Area Transit Dependence Index



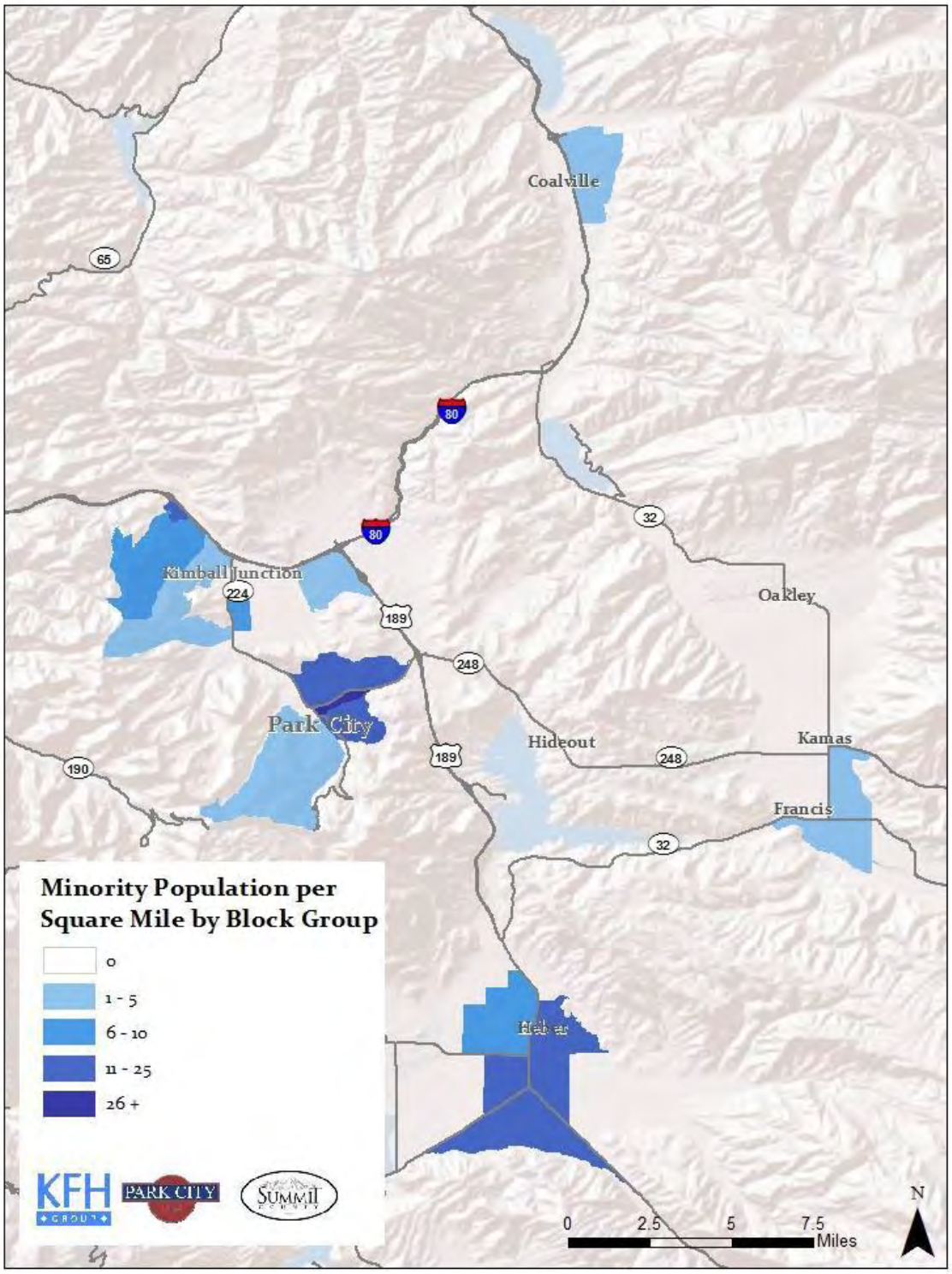
Source: American Community Survey 2013 5 Year Estimates

Figure 1-14: Study Area Households Below the Poverty Level per Square Mile



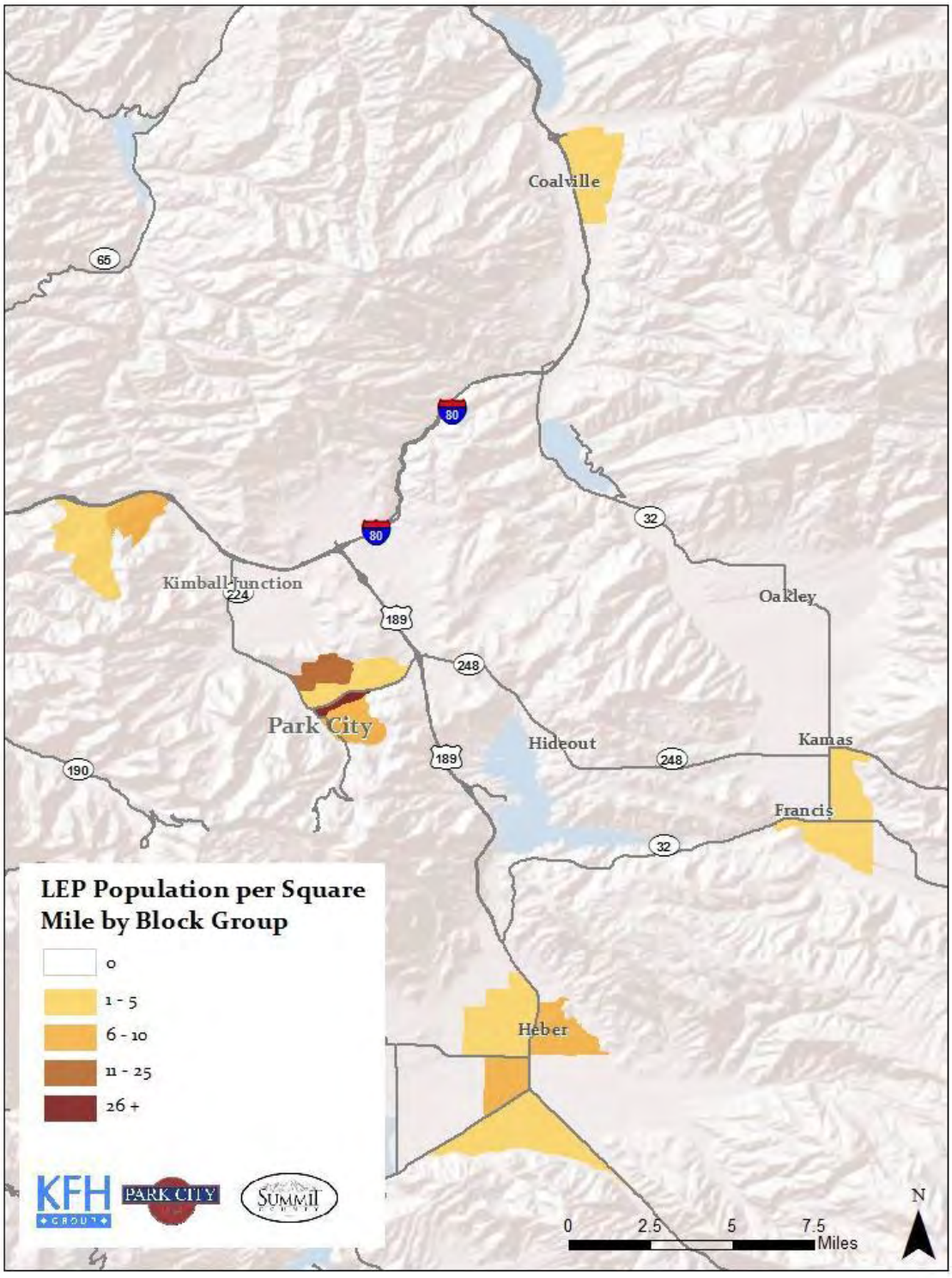
Source: American Community Survey 2013 5 Year Estimates

Figure 1-15: Study Area Minority Population per Square Mile



Source: American Community Survey 2013 5 Year Estimates

Figure 1-16: Study Area Population with Limited English Proficiency per Square Mile



Source: American Community Survey 2013 5 Year Estimates

Special Events

Park City is home to many special events that attract visitors from around the world. Park City Transit provides increased levels of service during the major events in order to provide a high level experience to the visitors and offset traffic and parking issues. Table 1-4 depicts the recurring events.

Many of these events create significant demand for transit services and require extensive operations planning and preparation. Due to limited parking in the Old Town area of Park City many of the single day events and parades (Miner's Day and Independence Day) require event goers to park in remote lots and use transit to access the event. The Kimball Arts Festival is a three day event in early August that has significant transit demand. For this event every bus in the transit system, including the spare vehicles, will be in operation to accommodate resident and tourist needs. The Tour of Utah brings several thousand race fans and bikers into the service area and is a monumental day for summer transit ridership. The Sundance Film Festival is a world renowned event requiring significant additional transit services in the area. Special events are extremely important to the Park City Transit service. They produce significant demand and ridership for the system and require additional planning, operations and staffing during the major events.

Table 1-4: Park City Special Events

Event	Date
Winter	
Celebrity Skifest	December
Sundance Film Festival	January 21 – January 31
Freestyle Ski World Cup	February
Summer	
Park Silly Sunday Market	June - September
Deer Valley Summer Concert Series	June - September
Independence Day Parade	July 4
Triple Crown Softball Western World Series	July
Kimball Arts Festival	Early August
Tour of Utah	August
Park City Film Music Festival	August
Fall	
Miner's Day Parade	Labor Day
Park City Beethoven Festival	October
Halloween	October 31

Demographic Needs Summary

Within the service area, several patterns emerge from the demographic needs assessment. Areas that showed high concentration categories for population and transit dependence include:

- Kearns Blvd. corridor
- Pinebrook
- Silver Springs
- Kimball Junction
- Silver Summit/Highland Estates
- Park Meadows

In regards to tourist populations, Deer Valley, Park City Mountain base area and the Canyons Village have the highest amount of lodging and tourist visits. Park City Transit has developed a system that serves all of these geographic areas.

Park City has the most expensive housing in Summit County. As a result, many workers in Park City commute from other areas within the study area. The analysis of the study area shows that the highest concentration of people and transit dependent populations outside of Park City area include:

- Heber City
- Coalville
- Kamas

Based on the demographic analysis Heber City, Coalville, and Kamas, all outside of the current Park City Transit service area, show a moderate to high need for public transportation service. Subsequent technical memoranda will discuss alternatives and strategies for addressing these needs.

3. LAND USES

Major land uses are identified as origins, from which a concentrated transit demand is generated, and destinations, to which both transit dependent persons and choice riders are attracted. They include major attractions/tourism locations, educational facilities, human service agencies, medical facilities, schools, and major shopping destinations. This subsection will outline the types of major trip generators within the service area.

Major Employers

Providing transit services to major employment locations is advantageous to both the employee, as the individual is provided with direct access to their occupation and subsequent source of income, and the employer, as this entity will have assurance that their current or potential

workforce will have diverse options of accessing the destination. Figure 1-17 lists the major employers in the service area and their locations.

Hotels and Resorts

Park City is a major tourism destination. It is home to several special events attracting tens of thousands of visitors from around the world every year. There are many large hotel and resorts that benefit greatly from a vibrant fare free transit service. Figure 1-18 details the locations of the service area's major hotels and resorts.

Local Trip Generators

Figure 1-19 shows the location of the local trip generators described below.

High Density Housing

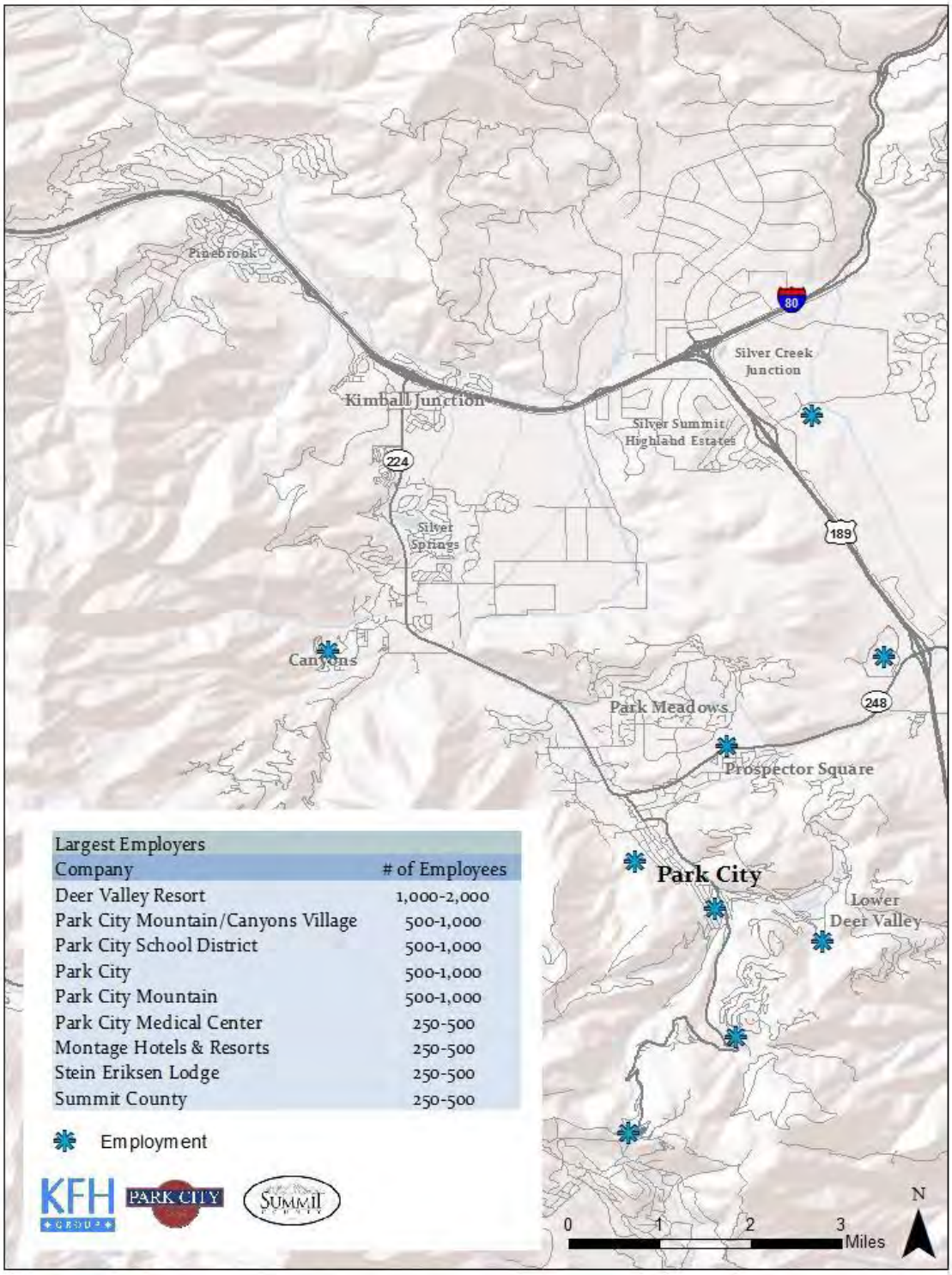
As a complement to the prior analysis of population density, an inventory of high density housing was conducted. This provides another method in determining where concentrations of the population reside. For the purposes of this study, high density housing includes multi-family apartments, condominiums, senior and affordable housing complexes. In the Park city area defining the locations of high density housing can be difficult. Many housing complexes consist of nightly rentals, seasonal employee rentals and owner occupancy units. According to the University of Utah Bureau of Economics and Business Research, Park City had a 41% occupancy rate (owner-occupied and renter-occupied) of total housing units in 2010[1]. Regardless of whether or not the units of higher density facilities are occupied by year round residents, seasonal residents or visitors, these locations are often close to full occupancy during the peak seasons and represent major trip generating locations (See: Figure 1-19 for locations).

Medical Facilities

Medical facilities, classified as general hospitals and their immediate network of outpatient services, represent a significant destination for users of public transportation (See: Figure 1-19 for locations). These facilities have two groups of potential transit users. Medical facilities employ persons likely to use transit and are a frequent commute destination with multiple shifts. As a critical destination for medical services many people will also seek to use the bus to access medical care. Older adults and persons with disabilities often rely more heavily upon the services offered by medical facilities compared to other population segments. Since older adults and persons with disabilities represent a large faction of the transit dependent population it is imperative that these facilities are made accessible through public transit services.

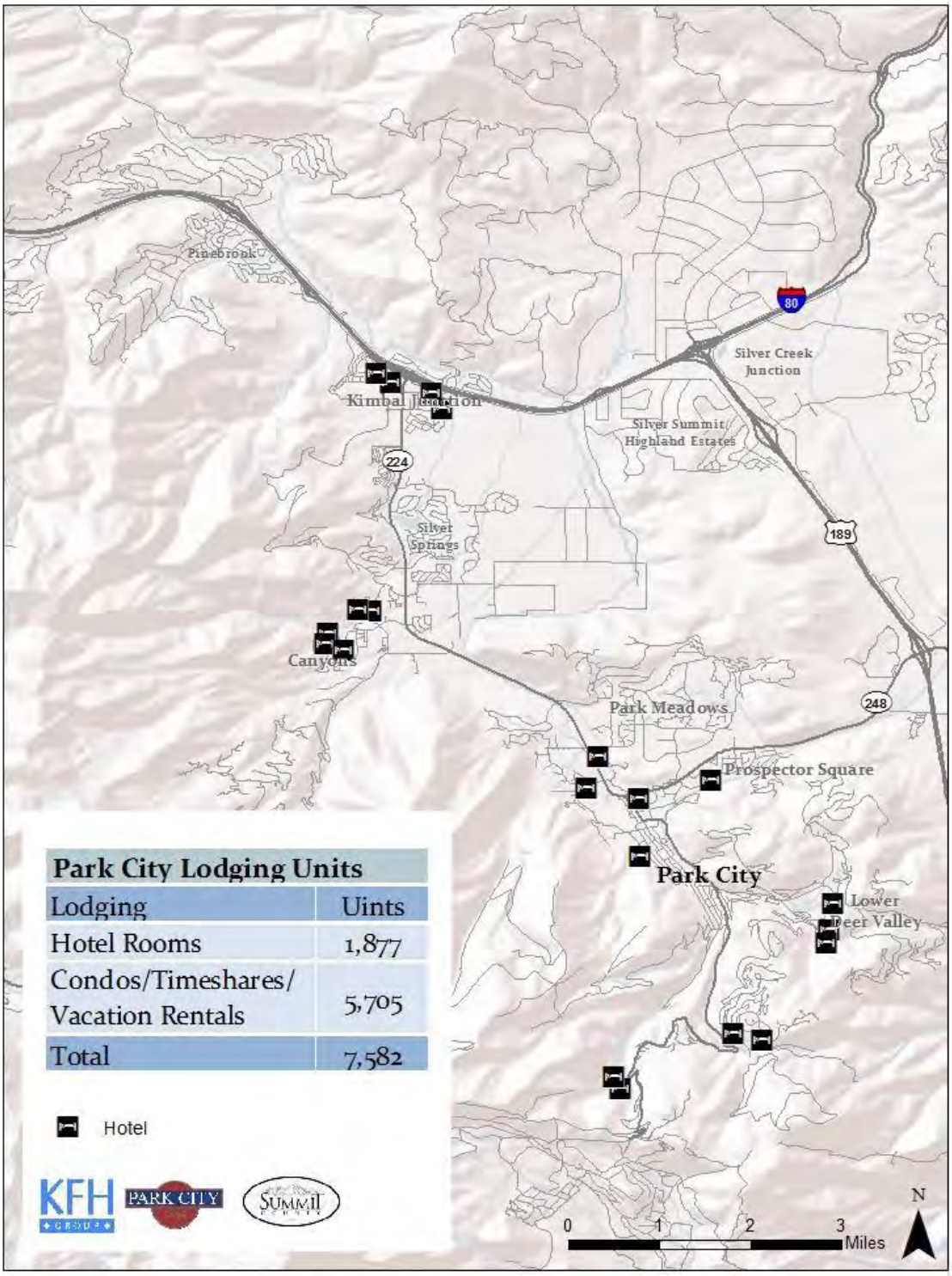
[1] University of Utah. David Eccles School of Business. Housing Market Assessment: Park City. September 2010

Figure 1-17: Service Area Major Employers



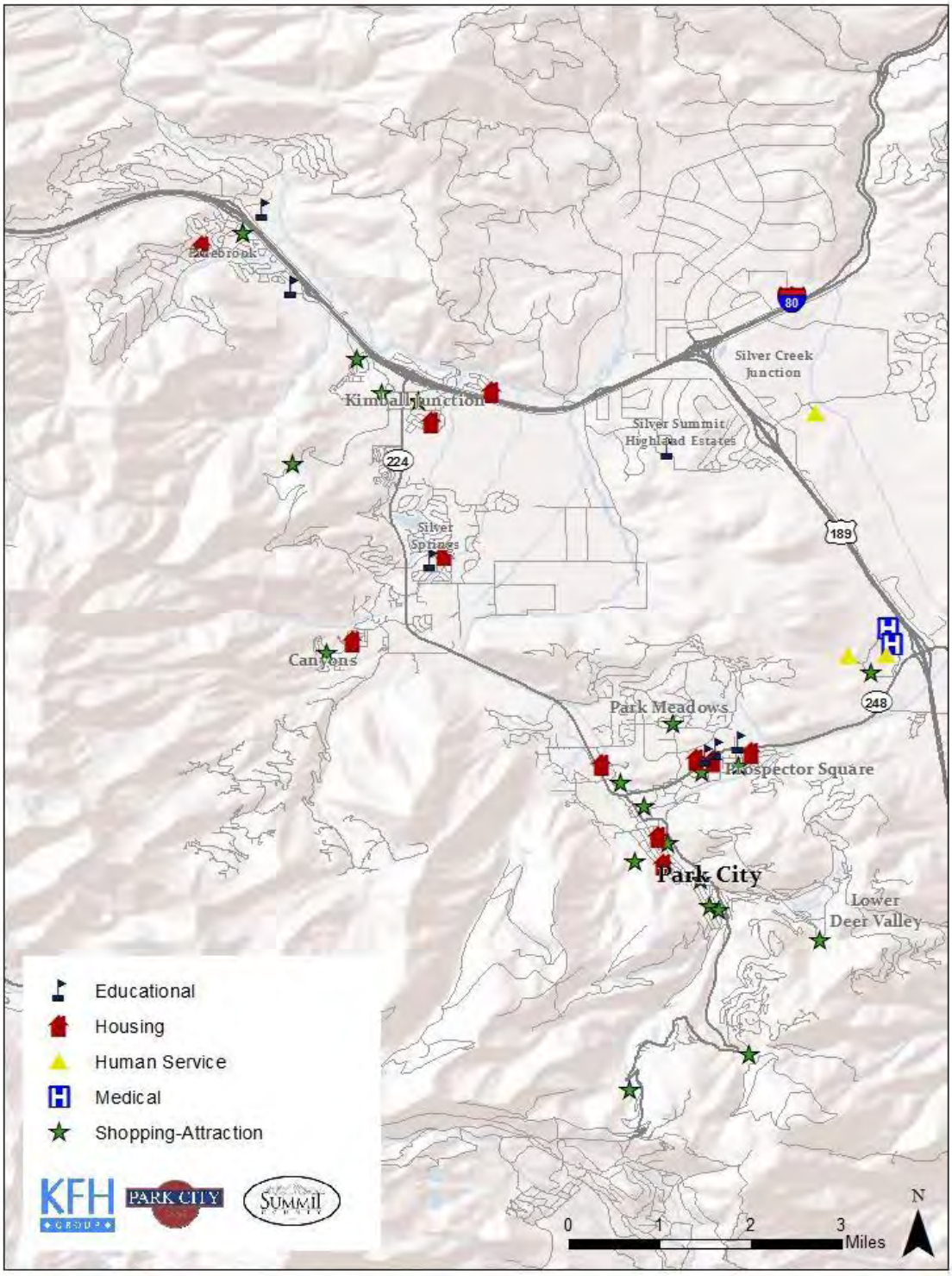
Source: Park City Chamber of Commerce. 2015 Park city and Summit County Economic Profile

Figure 1-18: Service Area Major Hotels and Resorts



Source: Park City Chamber of Commerce. 2015 Park city and Summit County Economic Profile

Figure 1-19: Service Area Local Trip Generators



Human Service Agencies

Human service agencies provide assistance and resources to residents seeking support in a spectrum of issues including, but not limited to, senior health care, childhood development, recreation and nutrition. The range of services offered by these agencies makes them a critical component to any community and in turn they become locations where public transportation will serve as a vital travel option. Major human service locations are in Silver Creek Junction and Quinn's Junction (See: Figure 1-19 for locations).

Educational Facilities

Many of the individuals that comprise the school age population are unable to legally operate their own personal vehicle; therefore, it may be assumed that this segment of the population is one that is reliant upon public transportation. Furthermore, the vast majority of the school age population is enrolled in educational facilities and many adults are associated with these institutions as a place of employment or advanced education. The biggest educational destination is the elementary, middle and high school located on Kearns Blvd. There are also educational facilities in Silver Springs, Silver Summit, Summit Park and south of Pinebrook (Figure 1-19).

Attractions and Shopping

Shopping centers are trip destinations in which residents may purchase essential items, such as groceries or general merchandise. These centers are an attractive destination for many residents because they may also serve as a place of employment.For the purposes of this study, a shopping destination is defined as a concentration of stores such as a mall or retail outlet, large retail establishments, and major supermarkets. It is important that the selected shopping destinations do not simply represent recreational shopping locations, but general merchandise and food outlets, as transit dependent persons are more likely to rely on transit services for essential needs.

Park City has many tourism based attractions from two ski resorts, Olympic training facilities, recreational areas and cultural areas. Included in this is the recreation center in Park Meadows and Kimball Junction. These locations are frequented by locals and tourists alike. Figure 1-20 depicts all of the trip generators along with the Park City Transit fixed route coverage area. The only trip generators that fall outside of ¾ of a mile from a fixed route are the medical facilities in Quinn's Junction which are served by a dial-a-ride service, the Olympic Training Center as well as the Summit County Justice Center in Silver Creek Junction.

The Implications of Future Development

As the region enjoys continued growth and development, certain growth dynamics may place additional strains on the transit infrastructure. Currently there are several areas of development that will impact future transit demands. New developments along the Highway 40 corridor will likely impact transit demand, with over 2,000 units to come on line in the next three years. New developments Canyons Village, Tech Park and Park City will place additional strain on existing services. Growth in Jordanelle, Bonanza Flats, Brighton Estates, Silver Creek and Heber will likely foster demand for new services. Figure 1-21 shows the approximate locations of these developments in the study area.

Figure 1-20: Service Area Local Trip Generators and Fixed Route Coverage

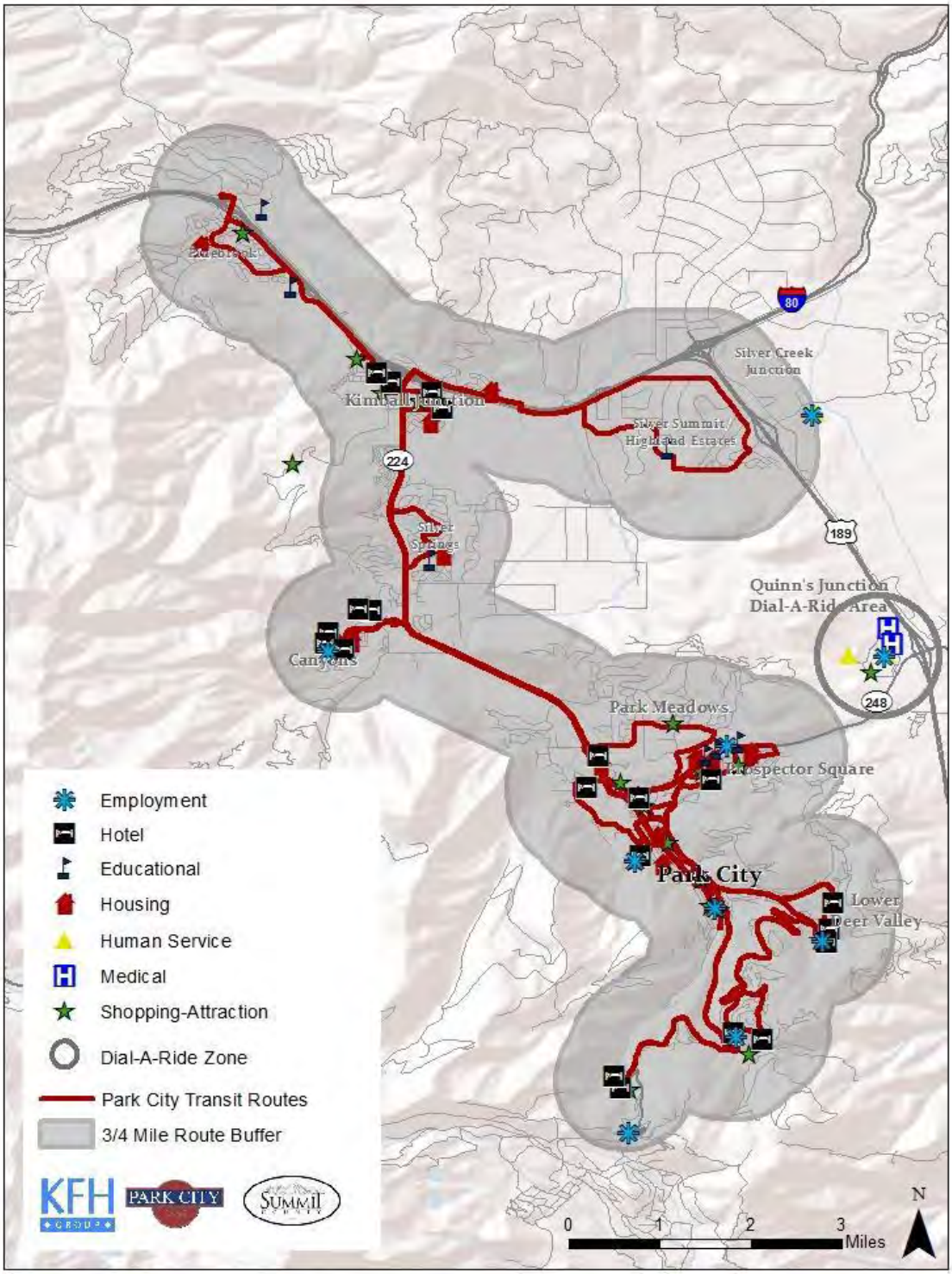
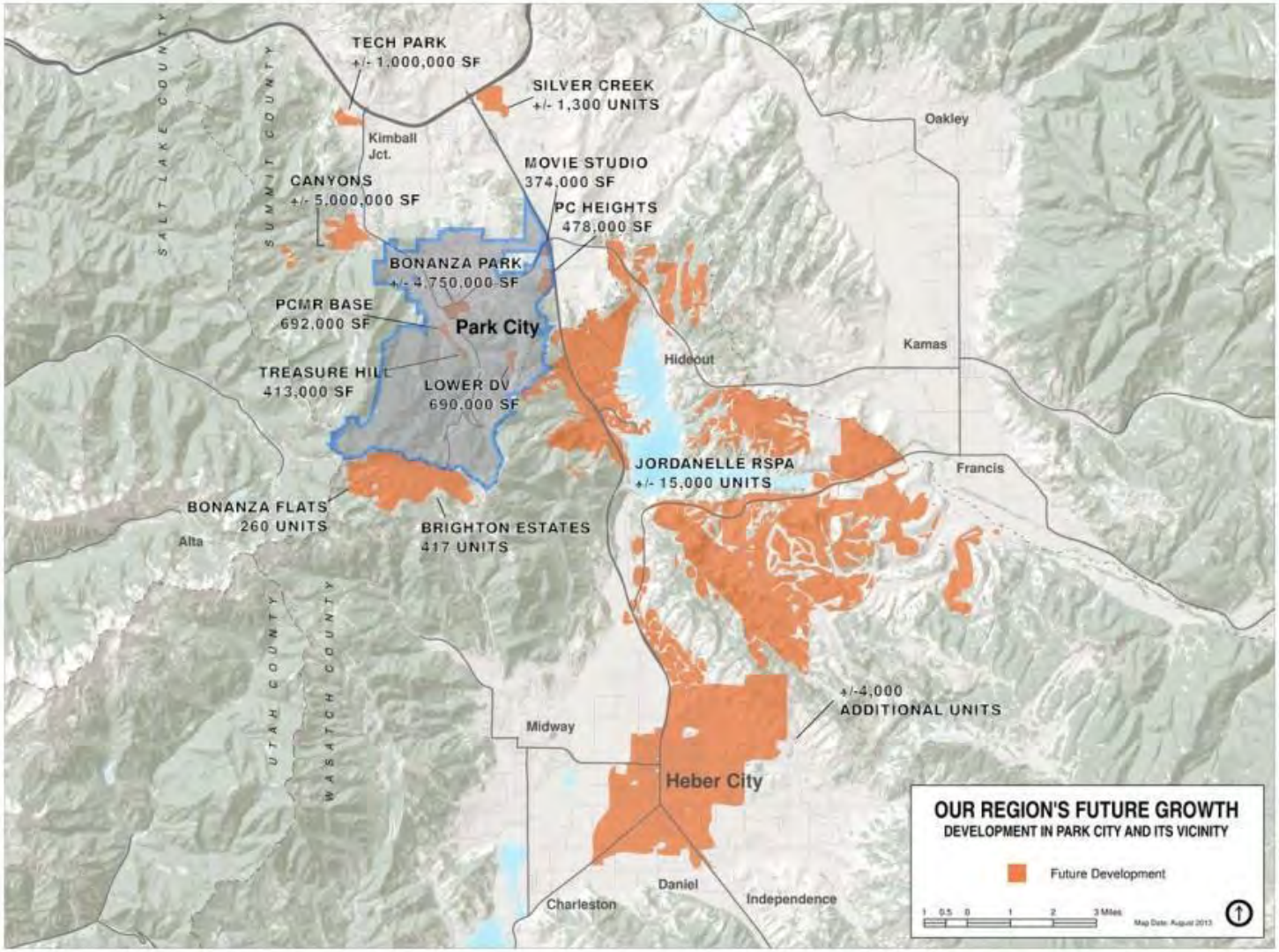


Figure 1-21: Study Area Development Growth



Source: Park City Municipal Corporation

4. TRAVEL PATTERNS

Park City has unique seasonal travel patterns due to the abundance of destinations and proximity to Salt Lake City. Many residents, workers and visitors travel in and out of the service area frequently. According to the recent Highway 224 Corridor Study, during the peak tourist seasons Highway 224 can be at capacity and I-80 can see significant traffic volumes between Park City and Salt Lake City. The Existing Conditions section of the 2015 Park City Transportation Demand Management Study reveal local travel patterns to major employment areas from the residential areas in Silver Springs, Kimball Junction, Silver Summit/Highland Estates and Park City can create a traffic burden on the major arterials in the area.

Regional Travel Patterns

Summit County is a major tourist destination and subsequently a major employment destination. Everyday thousands of workers from outside the study area come to work in Summit County. Table 1-5 shows where people live who work in Summit County. As shown, 60% of employees who work in Summit County live outside Summit County. This is a very significant percentage adding significant daily traffic. Of all out of county commuters coming into Summit County, 51% come from Salt Lake County, 33% from Wasatch County and 16% from other counties.

Table 1-5: Where People Live Who Work in Summit County

Summit County Employee Address	
Summit County	40%
Outside Summit County	60%
Salt Lake County	51%
Wasatch County	33%
Other County	16%
Total Employees	22,604

Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

Conversely, almost 30% of Summit County residents are employed outside of Summit County. Table 1-6 shows the employment locations of Summit County residents. Of the 29% of Park City residents that work outside of Summit County, the vast majority (83%) of them commute to Salt Lake County.

Table 1-6: Where Summit County Residents Work

Summit County Resident Employment Locations	
Summit County	71%
Outside Summit County	29%
Average Travel Time to Work	10-14 Minutes

Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

Local Travel Patterns

Local travel patterns are not mutually exclusive from regional travel. Many people come into Park City for the day or several days and make trips within the service area. There are only two corridors that provide year-round access into Park City, Highway 224 and Highway 248. During the peak ski season, Highway 224/Park Avenue can see significant congestion with roads at or above capacity. Highway 248 is similar but also sees significant school related congestion at certain times. Major intersections in the service area include Park Avenue and Deer Valley Drive; Park Avenue and Kearns Blvd.; Deer Valley Drive and Bonanza Drive; Highway 224 at the Canyons; and Highway 224 at Interstate 80. Other major corridors include Kearns Blvd. and Highway 189.

Park City is a popular destination for statewide, national, and international visitors and hosts several major events throughout the year. As a popular winter vacation destination, Park City's peak travel time is the holiday week between Christmas and New Year's, when many people take extended ski vacations. In addition, the Sundance Film Festival is held every year in January and Park City is the center of activity for this event.

According to the Park City Traffic and Transportation Master Plan, there is an average of 150,000 total daily person trips[2] made in Park City with the peak ski season seeing over 200,000 daily person trips. These trips include all modes and trip purposes. On average there are about 15,000 Vehicle Miles Traveled (VMT) daily in Park City, again with the peak ski season being much higher at 27,000 VMT. Vehicle hours of delay is a common measure of congestion since during congested conditions vehicle speeds are reduced and drive times are increased. Vehicle hours of delay is calculated by determining the difference between the estimated travel time under actual conditions and under uncongested conditions. An average day in Park City sees minimal vehicle hours of delay (less than 200), but in the peak ski season it can be close to 800 vehicle hours of delay, an increase of 693%. In other words, the peak season Park City travelers are collectively delayed close to 800 hours a day due to traffic congestion and obstructions.

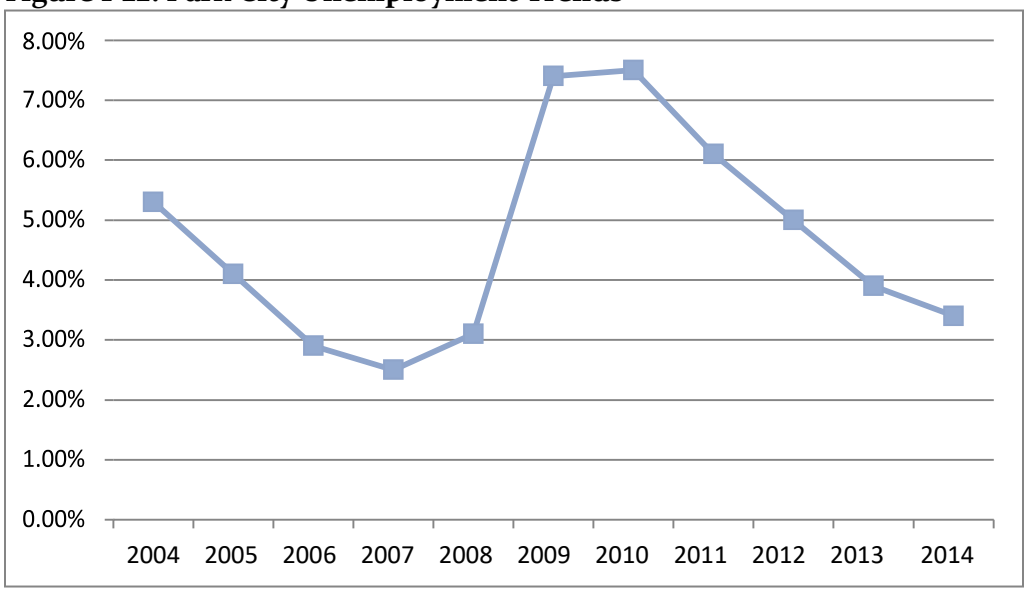
The Existing Conditions section of the 2015 Park City Transportation Demand Management Study detail vehicle volumes entering Park City on Highway 224 and Highway 248. According to the report, vehicle counts recorded a peak volume of 450 vehicles per hour in the summer and 2,000 vehicles per hour in the peak winter season. The summer peak volumes occurred around 5:00 pm. In the winter peak volumes were recorded at 8:00 am and 4:00 pm, coinciding closely with ski resort operations.

[2] Daily Person Trip is defined as any one-way trip, made for any trip purpose, by any mode.

5. FUTURE GROWTH TRENDS

Growth trends in Park City have been positive across market segments since 2010. Like many other places Park City was not immune to the 2008 economic downturn. Park City has shown resiliency and has rebounded well setting the stage for continued growth. Since the 2000 US Census the Park City population has grown from 7,371 to 7,962 or 8%. Employment growth has rebounded to pre-recession levels. Figure 1-22 shows the Park City unemployment rate over the last decade.

Figure 1-22: Park City Unemployment Trends



Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

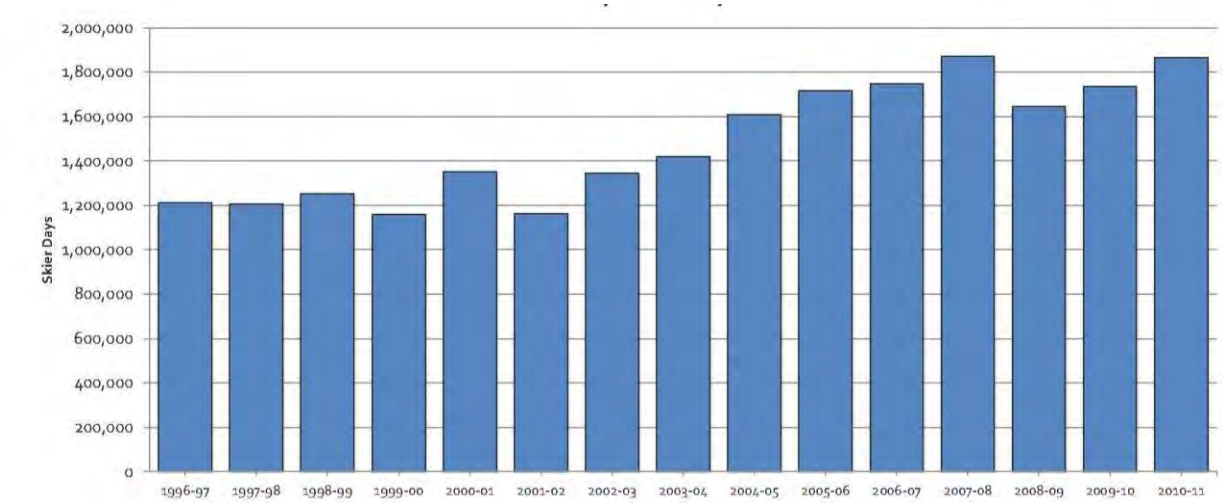
The Park City economy has remained robust and shows signs of continued growth into the future. Table 1-7 depicts the economic tourism profile of the service area. Over the past five years, direct tourism tax revenue has remained somewhat consistent; however total taxable sales have shown an increase of 29%. The prime driver of the tourism economy, the ski resorts, have seen skier days return to pre-recession levels. Figure 1-23 depicts the trends in Park City skier days.

Table 1-7: Park City Tourism Profile

Park City Tourism Profile					
	2009	2010	2011	2012	2013
Total Tourism Tax Revenue (millions)	$121	$118	$122	$108	$118
Lodging Occupancy Rates	33%	35%	36%	35%	35%
Gross Taxable Sales, Services, Purchases (Millions)	$533	$595	$676	$679	$686

Source: Park City Chamber of Commerce. 2015 Park City and Summit County Economic Profile

Figure 1-23: Annual Skier Days



Source: Park City General Plan

Park City is steadily growing both in population and economically. As this growth occurs, the demand for transit services will continue. Peak season traffic and parking availability is challenging residents and tourist alike. Park City Transit is situated well to expand and modify services to improve local and regional mobility, help foster economic development, and continue to provide high levels of service to visitors.

Appendix B
Technical Memorandum No. 2: Park City Transit Review of Existing Transit Services

Technical Memorandum 2
Park City Transit Review of Existing Transit Services

1. INTRODUCTION

In this technical memorandum, the study team examines the current transportation services available in Park City, specifically Park City Transit and performance over the past four years. This information will be used to assess the current services and serve as a benchmark for the future service. This technical memorandum focuses on Park City Transit and we will also look at the overall network of services in the region.

All transit systems should regularly seek a system review to determine if the transit system is operating:

- Efficiently – Doing things right: Is Park City Transit is operating efficiently compared to peers and more importantly to itself over time?

- Effectively – Doing the right things: Is Park City Transit serving the customers in need? Is the service appropriate?

This Introduction provides an overview and general description of services available. The second section is the Review of Existing Services with a peer review and a review of Park City Transit over time. It also includes detailed route profiles followed by the financial review and a performance assessment. The third section includes financial review followed by a summary of the existing services.

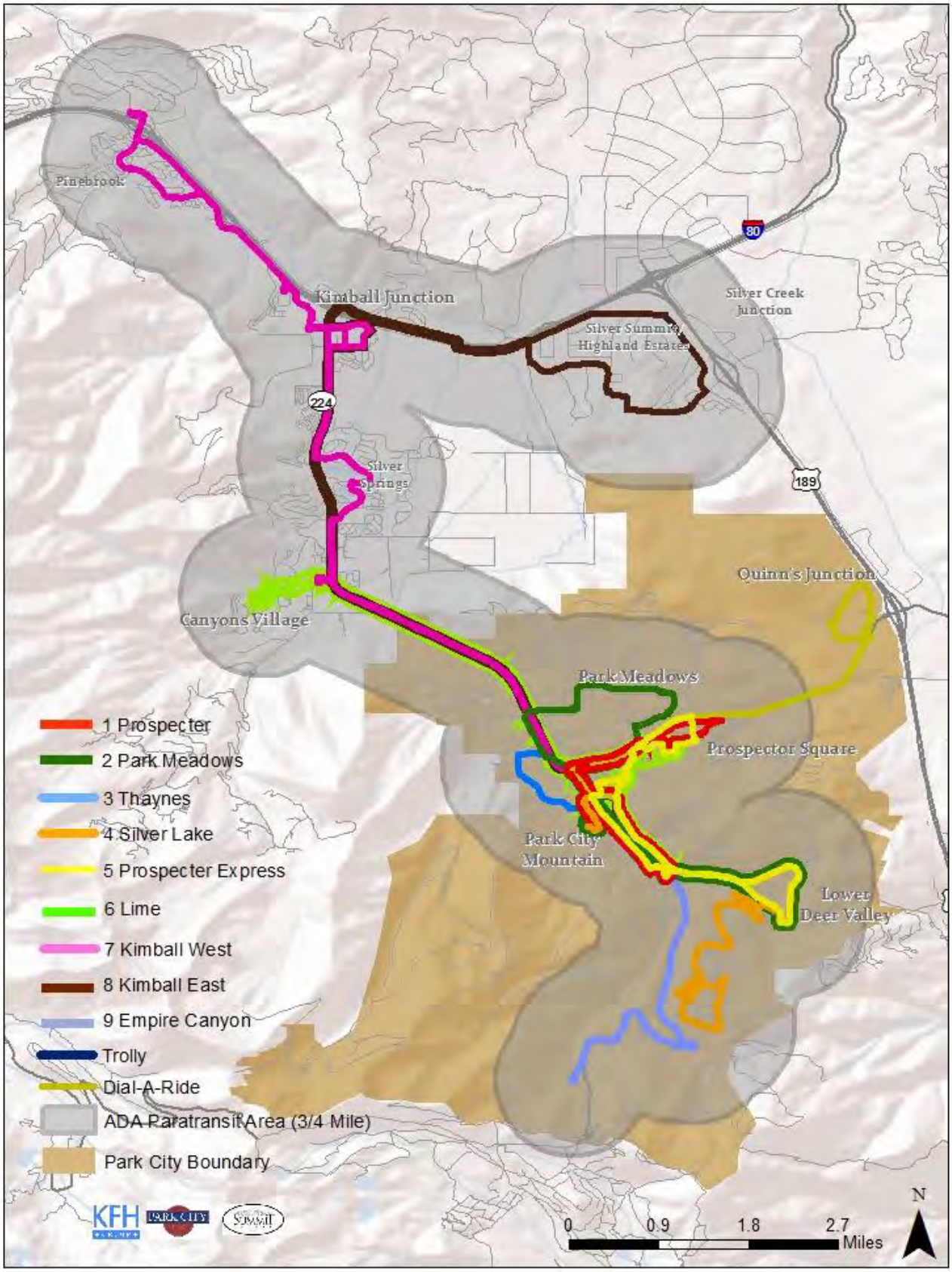
In addition to traditional data collection, the review included discussions with vehicle operators, supervisors and management; observation of services through riding all routes; and extensive outreach efforts.

In conjunction with the review of demographics, land uses, and travel patterns documented in Technical Memorandum No. 1, the information gathered will be used to identify opportunities for expanded service and develop short and long range options, alternatives, and strategies to improve existing services or to develop new routes where necessary.

General Overview – Park City Transit

Park City Transit offers a robust level of service for a community of its size. This is indicative of a locale that attracts many visitors throughout much of the year. Park City Transit operates fixed route and ADA paratransit within both Park City and parts of Summit County, including service wholly within Summit County as depicted in Figure 2-1. Park City Transit operates about 73,602

Figure 2-1: Park City Transit Service Area



hours and 1,096,171 miles of fixed route and special events service annually (using 2014 data). Approximately 63% of the annual service hours are operated within the Park City limits and 37% of the service hours are within the county.[1]

The service level shifts multiple times over the year to meet the specific needs of each season. Most notable is the winter season from early December to mid-April. Winter is the busiest season by far, putting a strain on the system as it is also the most difficult operating environment due to the cold temperatures, snow and ice. This combination of factors makes Park City a very difficult operating environment in the winter.

The service is primarily fixed route in nature including Americans with Disabilities Act (ADA) complementary paratransit. One route is hybrid "dial-a-ride" in nature. Another is commuter service to Salt Lake City operated through Utah Transit Authority (UTA) using over-the-road coaches.

The review of route by route service levels is detailed in Tables 2-1, 2-2 and 2-3. These tables detail the service levels and performance by season, demonstrating the wide differences in service. This is most notable in the winter service levels and ridership.

Route Structure

The service area is composed of two major and one minor corridor where the majority of service is operated. Far and away the most heavily travelled corridor is the north- south Kimball Junction to Old Town and Deer Valley corridor which includes visitors (both day trippers and those staying longer) and commuters typically coming from the Salt Lake City area. In the winter it is often quite congested.

The second major corridor is the Kearns Blvd. corridor (east – west) which has not yet reached its potential end point at Quinn's Junction. This route is travelled by residents of Heber City, Kamas and other points on U.S. 40/189. The third minor corridor is the I-80 corridor travelling parallel to I-80 between Jeremy Ranch/Pinebrook and Silver Summit/Highland Estates, also an east west corridor. This is depicted in Figure 2-2.

[1] Source: Park City Municipal Corporation Miles-Hours-Ridership by Route. FY 2014 Summary

Table 2-1: 2014 Winter Fixed Route Data and Performance

Winter Peak (December 12 - April 12)	Ridership (One Way Trips)	One Way Trips per Day	Service Hours	Service Miles	One Way Trips per Service Hour	Round Trip Miles	Peak Vehicles	Scheduled Running Times	Headways
1 Red - Prospector Square	145,356	1,191.44	4,113	50,685	35.34	9	2	7:25 am-11:45 pm	20 Minute
2 Green - Park Meadows	162,564	1,332.49	5,714	63,351	28.45	9	3	7:38 am-11:15 pm	20 Minute
3 Blue - Thaynes Canyon	143,961	1,180.01	3,861	48,797	37.29	8.7	2	7-28 am-11:48 pm	20 Minute
4 Orange - Silver Lake	85,174	698.15	2,460	32,296	34.62	11.6	2	6:15 am-6:15 pm	30 Minute
5 Yellow – Prospector Exp.	104,268	854.66	3,796	43,886	27.47	7.5	2	7:43 am-10:43 pm	20 Minute
6 Lime – Canyons	71,938	589.66	2,737	34,531	26.28	13.4	2	6:24 am-5:15 pm	30 Minute
7 Pink - Kimball West	196,049	1,606.96	6,118	100,361	32.04	25	3	5:40 am-10:40 pm	30 Minute
8 Brown - Kimball East	54,201	444.27	2,128	50,880	25.47	22.8	1	6:30 am-11:59 pm	60 Minute
9 Purple - Empire Express	35,148	288.10	2,013	33,178	17.46	7.5	1	6:28 am-10:28 pm	30 Minute
Main Street Trolley	26,613	218.14	1,586	15,335	16.78	2.1	1	10:00 am-11:00 pm	N/A
Park City Transit Total	1,025,272	8,403.87	34,526	473,300	29.70	-	19	-	-
UTA PC-SLC Connect *	24,847	205.35	1,455	24,156	17.08	66	3	3 am/pm round trips	N/A

Source: Park City Municipal Corporation 2014 Service Data

Table 2-2: 2014 Summer Fixed Route Data and Performance

Summer (June 5 - September 1)	Ridership (One Way Trips)	One Way Trips per Day	Service Hours	Service Miles	One Way Trips per Service Hour	Round Trip Route Length	Peak Vehicles	Scheduled Running Times	Headways
1 Red - Prospector Square	96,457	1,083.79	2,410	35,718	40.02	9	2	7:14 am-11:53 pm	20 Minute
2 Green - Park Meadows	66,778	750.31	3,327	43,655	20.07	9.1	2	7:13 am-11:51 pm	20 Minute
4 Orange - Silver Lake	13,466	151.30	712	8,409	18.91	7.8	1	10:00 am-6:00 pm	30 Minute
6 Lime – Canyons	13,520	151.91	838	15,931	16.13	13.1	1	7:32 am-5:05 pm	40 Minute
7 Pink - Kimball West	85,563	961.38	3,500	60,701	24.45	25	3	7:00 am-10:15 pm	30 Minute
8 Brown - Kimball East	31,673	355.88	1,357	17,396	23.34	22.8	1	7:05 am-10:00 pm	60 Minute
9 Purple - Empire Express	11,178	125.60	759	12,313	14.73	7.5	1	7:43 am-4:13 pm	30 Minute
Main Street Trolley	25,416	285.57	1,052	10,154	24.16	2.1	1	10:00 am-10:00 pm	N/A
Park City Transit Total	344,051	3,865.74	13,955	204,277	24.65	-	12	-	-
UTA PC-SLC Connect	5,788	89.05	672	11,748	8.61	66	2	3 am/pm one way runs	N/A

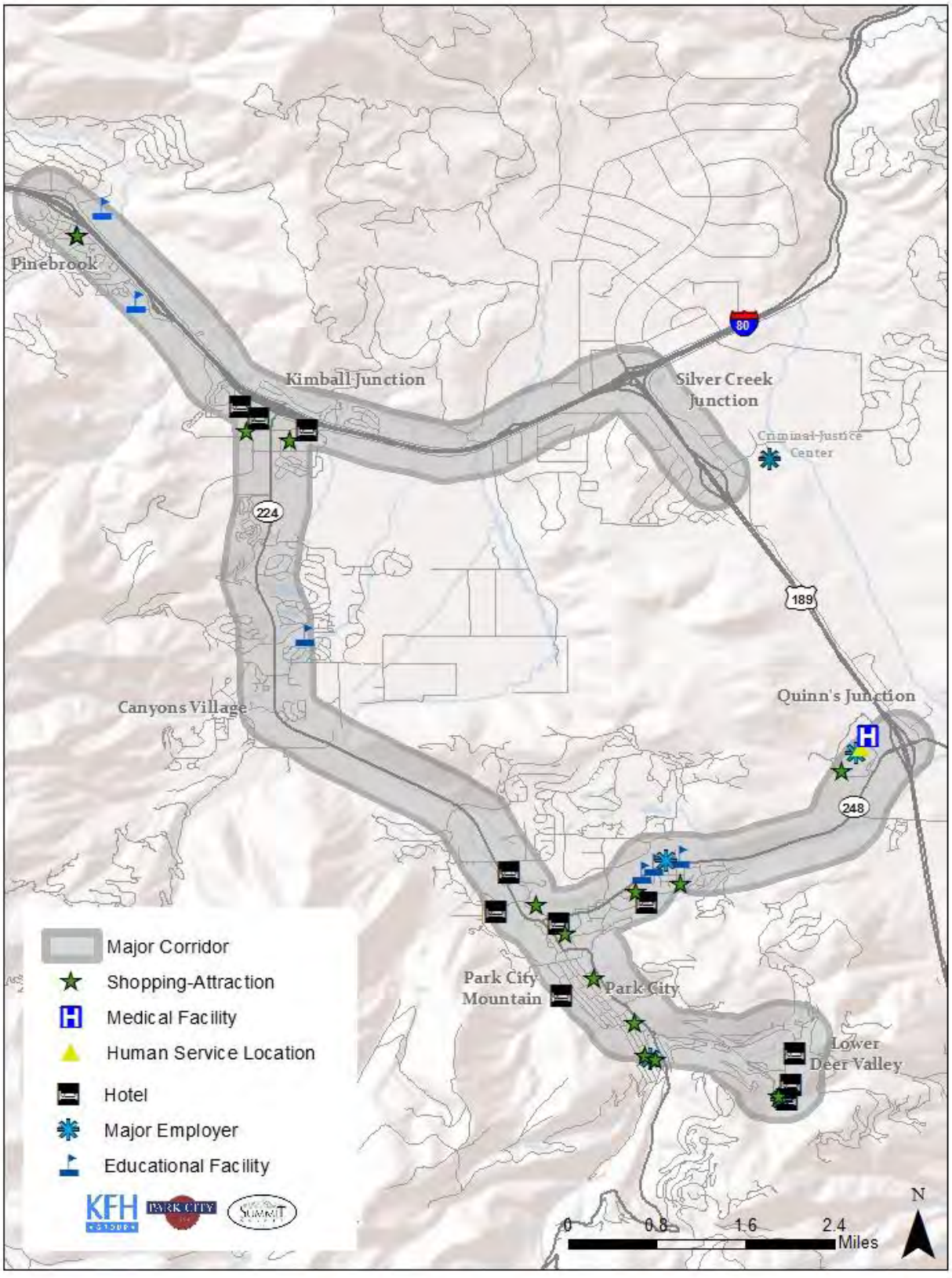
Source: Park City Municipal Corporation 2014 Service Data

Table 2-3: 2014 Shoulder Season Fixed Route Data and Performance

Shoulders (September 2 - December 11 and April 13 - June 4)	Ridership (One Way Trips)	One Way Trips per Day	Service Hours	Service Miles	One Way Trips per Service Hour	Round Trip Route Length	Peak Vehicles	Headways
1 Red - Prospector Square	94,756	615.30	3,682	59,172	25.73	9	2	20 Minute
2 Green - Park Meadows	65,600	425.97	5,758	72,322	11.39	9.1	2	20 Minute
4 Orange - Silver Lake	3,079	146.62	229	3,153	13.45	7.8	1	30 Minute
6 Lime – Canyons	14,116	91.66	3,991	29,939	3.54	13.1	1	40 Minute
7 Pink - Kimball West	96,243	624.95	6,240	105,442	15.42	25	3	30 Minute
8 Brown - Kimball East	36,147	234.72	2,321	55,037	15.57	22.8	1	60 Minute
9 Purple - Empire Express	1,362	64.86	231	3,640	5.90	7.5	1	30 Minute
Main Street Trolley	18,964	123.14	1,851	17,801	10.25	2.1	1	N/A
Park City Transit Total	330,267	2,144.59	24,303	346,506	13.59	-	12	-
UTA PC-SLC Connect	10,646	93.39	1,526	20,328	6.98	66	2	N/A

Source: Park City Municipal Corporation 2014 Service Data

Figure 2-2: Major Service Area Corridors

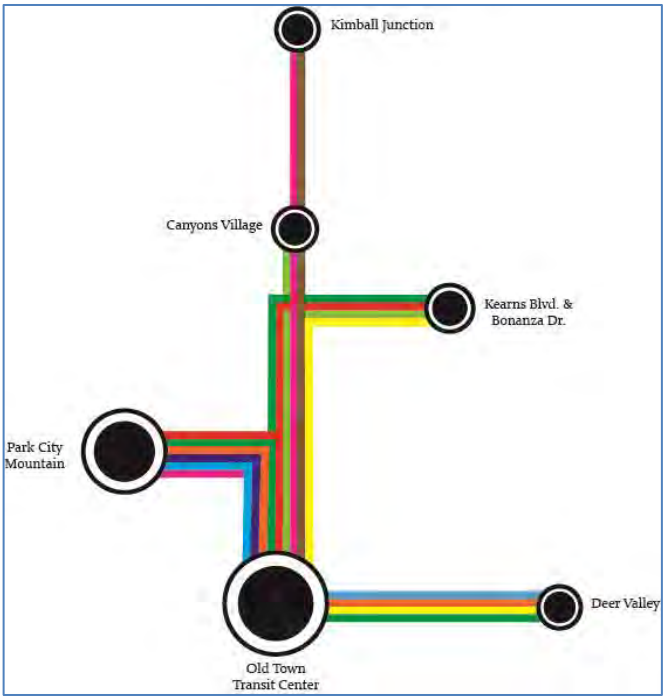


There is one basic route structure with notable route-by-route changes between seasons – winter, summer and shoulders. These seasonal changes include some headway changes during the peak and shoulder seasons; route modifications; and some route suspensions. These seasonal changes will be discussed in the route profiles. The summer routes are illustrated in Figure 2-3. The winter routes are depicted in Figure 2-4, demonstrating the coverage area differences.

Unique Service Design

Park City takes an unusual approach to service design. Unusual in that the system eschews timed transfers and instead operates multiple routes over the same roads often at the same time with different ending locations. Exhibit 2-1 is a conceptual illustration of the primary areas of duplication for Park City Transit. As shown, many routes serve similar corridors and locations. As was stated by some stakeholders, Park City Transit was purposely designed to reduce transfers. Timed transfers are standard for a system the size of Park City Transit. While the current approach may reduce transfers to a small degree it has significant negative consequences related to duplication of effort. This will be addressed in the service alternatives section of this memorandum.

Exhibit 2-1: Park City Transit Duplications - Winter



2. Review of Existing Service

Park City Transit is a mountain resort community with high volume ridership during the winter. There are only a handful of these types of systems making each one relatively unique. Some of the unique operating features of Park City Transit include:

- A service designed for minimal transfers between routes and modes
- Current operation on shoulders of Hwy 224 in winter season during specified hours
- True commitment to transit among the local governments, businesses, visitors and residents
- Major seasonal changes necessitated by population fluctuations
- Special events such as the Sundance Film Festival

Figure 2-3: Park City Transit Summer Routes

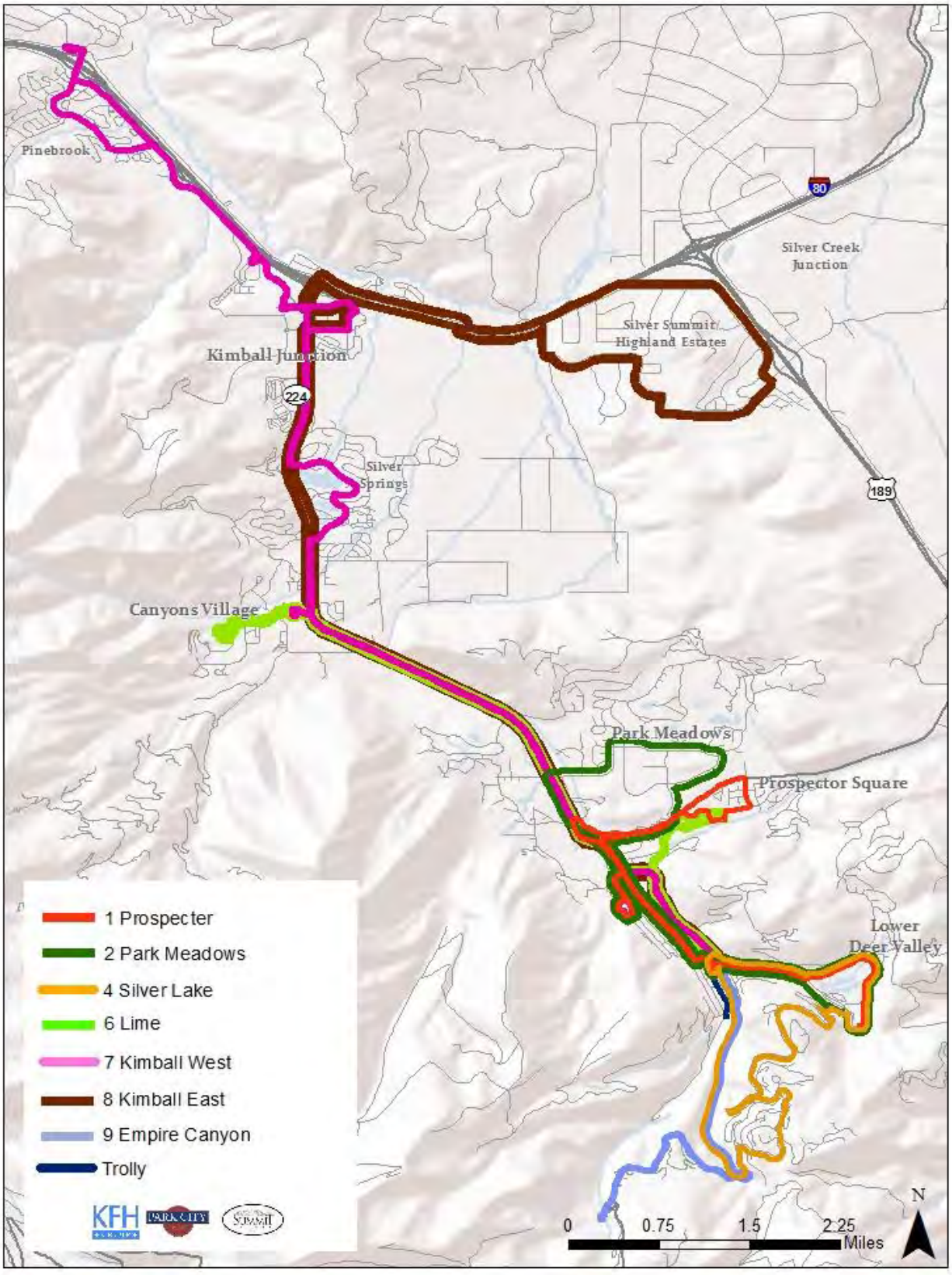
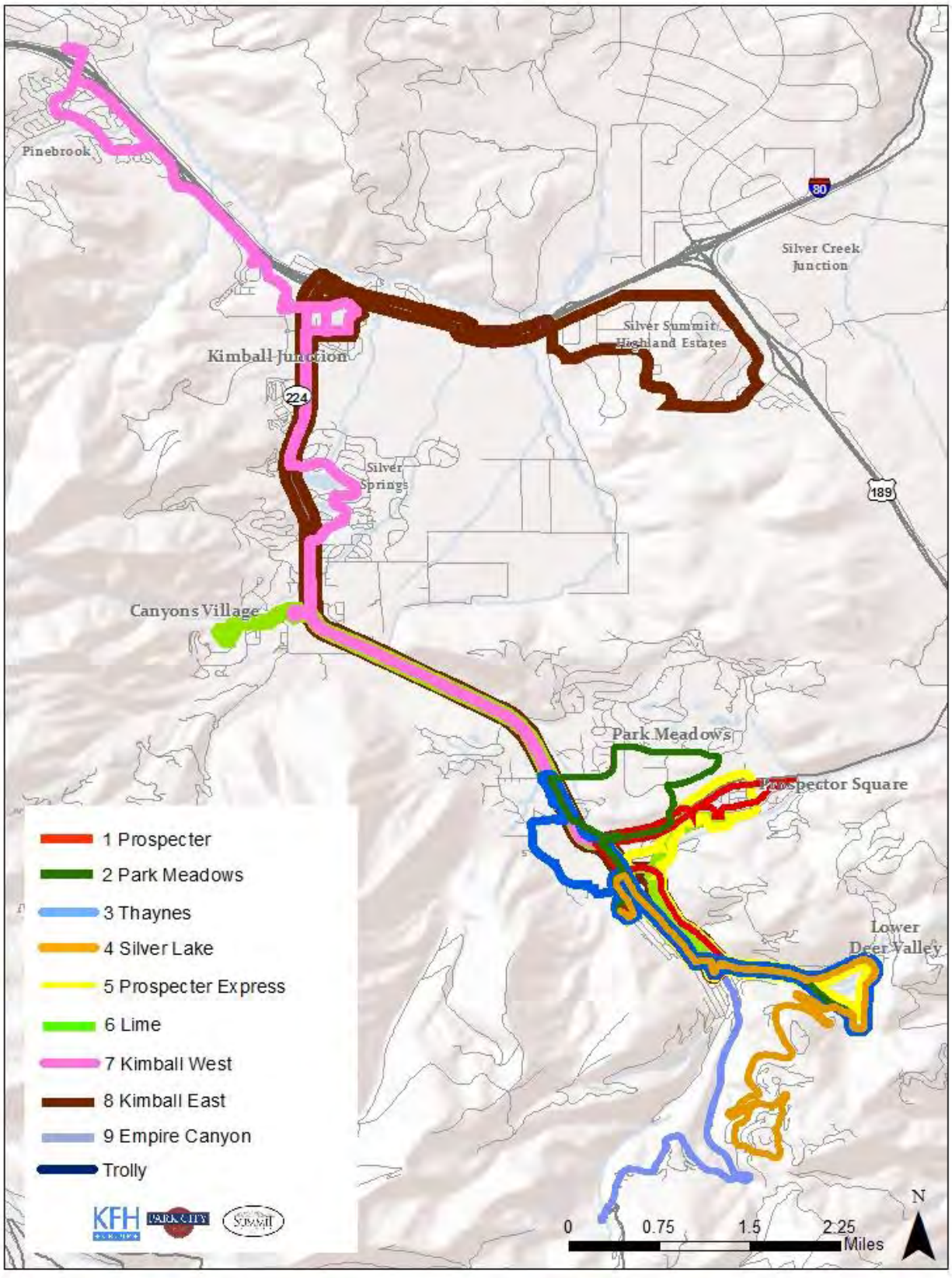


Figure 2-4: Park City Transit Winter Routes



System Performance

In this section, system performance will be assessed during each season. These numbers will serve as performance benchmarks. This data and performance measures will be evaluated and data driven recommendations for improvements to meet seasonal travel patterns will be developed in Technical Memorandum No. 3: Alternatives.

The review of existing services will include 10 sections. They are as follows:

A. Review of Park City Transit Overall Performance - The peer review will be used to determine if Park City Transit is operating within the norm for a system of its size and type. This is followed by a review of the service over time from 2011 to 2015.
B. Review of Seasonal Performance - Performance will be reviewed by season.
C. Route Profiles and Performance – Detailed analysis of each route.
D. Review of ADA Paratransit Services, Dial a Ride and Commuter Service
E. Meeting City and County Needs - How transit services integrates with city and county transportation, economic development (including special events) and affordable housing goals.
F. Organizational Structure – Review organizational structure to determine its adequacy.
G. Vehicle Review - Analysis of Park City Transit vehicle inventory determining the appropriateness of vehicle typologies for each particular route.
H. Facility Review – Brief overview of major operating infrastructure such as the transit centers, major stops, shoulder operation and park and ride facilities.
I. Private Transportation Providers – An overview of transportation available through resorts, hotels, taxis and other private providers
J. Review of Existing Planning Efforts – A number of transportation planning efforts are occurring at this time in the Park City area. This review will summarize each and discuss how they are interrelated.

A. Overall Performance

The review of overall performance is tied to two factors. The consultants look at peers to determine if Park City Transit is operating within "normal parameters." Once this is established (and in fact it is established in this review), the focus then becomes one of comparing Park City Transit to itself over time. The first requires a peer review while the second component is the review of historical performance over the past five years, examining overall ridership and performance to determine if the system is maintaining its stability and performance levels.

Peer Review

Park City Transit's performance measures and other characteristics were compared with those of other ski oriented mountain transit systems of similar size. The purpose of the peer review is not to compare Park City Transit's efficiency or effectiveness to a "peer", but rather to determine if Park City Transit is within the normal operating range compared to similar systems and if it is within the range of reasonableness.

There are no direct peers to Park City Transit as there are many variables that constitute why a transit system performs as it does. These include:

- Service area size and terrain – Small compact service areas will generate higher productivity, calculated as one way trips per vehicle service hour.
- Visitor seasonal attractions – Some communities generate higher summer visitor numbers
- Local population
- Visitor numbers – Each peer has significant overnight visitor numbers. Park City has many day trippers due to its close proximity to a major urban area.
- Local funding/commitment to transit – Government and private sector

Five peer systems in Colorado, California, Nevada and Idaho were selected which share characteristics with Park City Transit such as size and population of service area, total fleet size, total annual budget, and types of services operated. Table 2-4 describes the peer service area population and funding levels of these five peer systems. Like Park City, most rely heavily on local funds. The five peers used in this comparison are discussed below.

Table 2-4 2013 Peer Service Area Populations and Funding Levels

Area	Service Area Population	Revenue Sources				
		Federal	Local	Fare Box	Contract	Total
Summit County CO	28,649	$59,600	$9,506,401	$30,442	$581,463	$10,177,906
Town of Vail	5,311	$0	$4,200,000	$0	$0	$4,200,000
Roaring Fork Transportation Authority	58,470	$890,000	$10,877,348	$4,002,475	$7,705,536	$23,475,359
Tahoe Transportation District	50,289	$1,597,736	$2,600,090	$737,212	$0	$4,935,038
Mountain Rides (Sun Valley)	14,414	$598,012	$1,213,373	$356,875	$0	$2,168,260
Park City Transit	24,558	$1,462,300	$7,249,843	$36,243	$70,827	$8,819,213

Source: National Transit Database 2013 Rural Data Summary and Vail Public Works Department

Summit County, Colorado

Summit County Colorado is home to several major ski resorts including Copper Mountain, Keystone, Arapaho Basin and Breckenridge. The county includes the towns of Silverthorne, Dillon, and Frisco. The total population of Summit County is 28,649. There are two primary public transit service providers; Summit Stage and the Town of Breckenridge.

Summit Stage is operated by Summit County and connects the major destinations in the county. The system consists of regularly scheduled fixed routes connecting the towns of Frisco, Silverthorne, Dillion, Keystone, Arapaho Basin, Breckenridge, and Copper Mountain. The service is fare-free. Complementary ADA paratransit service is provided within ¾-mile of Summit Stage and Breckenridge Free Ride services. In FY 2013, Summit Stage provided 1,870,374 one-way trips

during 80,591 hours of service. Their operational expenditures were $8.6 million. Summit Stage is a 5311 recipient but is funded primarily through local support.[2]

Breckenridge operated seven routes that connect Breckenridge, Breckenridge ski resort, and various condo and neighborhood areas. In 2013 the Breckenridge Free-Ride bus provided 614,425 one-way trips during 30,798 hours of service. Their operational expenditures were $1.5 million and were funded through a mix of local and federal support.[3]

Combining both systems, Summit County performance was 22 one-way trips per service hour, $91 per service hour and $4 per one way trip. These performance measures are within range of Park City Transit's numbers.

Town of Vail

The Town of Vail was selected because Vail Ski Corporation recently purchased Canyons Ski Resort and Park City Mountain Resort creating the largest ski resort in America. Vail has a fare-free transit system that is used to connect ski base areas with a variety of condos, hotels and neighborhoods. Vail has very few year round residents, with a population just over 5,000. The transit service is oriented to serve tourist and employees once they reach the service area. Vail Transit receives no federal assistance and is funded 100% from local sources, including a 4% sales tax on lift tickets. In 2013, Vail Transit system provided 3.2 million one-way trips during 62,000 hours of service. Their operating expenditures were $4.2 million giving it the highest performance of all peers (52 one-way trips per hour).[4] This is due to the small service area size and short trips. It is not possible to generate this level of one-way trips in a system such as Park City that has many longer trips.

Roaring Fork Transportation Authority (RFTA)

The RFTA is a regional operator that offers service connecting the cities of Rifle, Glenwood Springs, Carbondale, Basalt, Snowmass and Aspen. It operates in Pitkin and Garfield County providing regional connections and local service in Aspen, Glenwood Springs and Carbondale. The RFTA is the first rural transit agency to construct and operate a Bus Rapid Transit (BRT) system. RFTA was a selected peer because they serve multiple ski resorts and have implemented a BRT service which is a future potential goal for Park City Transit. In 2013, RFTA provided 3.8 million one-way trips during 176,796 hours of service resulting in 22 one-way trips per hour. This is a regional system and productivity will be limited by service area size. RFTA expenditures for 2013 were over $23 million, the highest among all peers.[5] This is mostly due to the large service area and multiple cities that RFTA operates within.

Lake Tahoe

Lake Tahoe is a major vacation destination along the California and Nevada border. It is home to several major ski resorts including Heavenly, Squaw Valley, Homewood, Sugar Bowl, Diamond

[2] Source: National Transit Database 2013 Rural Data Summary
[3] Ibid
[4] Source: Town of Vail Public Works Department
[5] Source: National Transit Database 2013 Rural Data Summary

Peak, Boreal and others. In Nevada there are several casinos generating a significant amount of tourism. Many residents live in South Lake and Truckee and commute to the tourist locations for employment. There are two primary transit providers in Tahoe; Tahoe Transportation District and Tahoe Truckee Area Regional Transit.

Tahoe Transportation District operates regional transit service connecting South Lake and the areas to the east of Lake Tahoe.

Tahoe Truckee Area Regional Transit serves Truckee and connects the areas on the west side of the lake.

There is a high level of coordination between the two systems including the dissemination of information, cost sharing and operating as one regional system. In 2013, the two systems provided 819,593 one-way trips during 62,076 hours of service. The operating expenditures were $4.9 million. [6]

Mountain Rides (Sun Valley, Idaho)

Mountain Rides is a ski oriented service with many residents and employees living outside of the city center. Mountain Rides is the full-service public transportation provider for Blaine County Idaho, which includes the communities of Sun Valley, Ketchum, Hailey, Bellevue, and Carey. Local service throughout Sun Valley and Ketchum is fare free. Regional service connecting Hailey to Sun Valley is $3 and from Bellevue to Sun Valley is $4. Mountain Rides manages a vanpool service for communities outside of its service area. In 2013, Mountain Rides provided 483,892 one-way trips during 40,402 hours of service resulting in 12 one-way trips per service hour. The operating expenditures were $2.1 million.[7]

Table 2-5 depicts the National Transit Database data for all peer systems and Park City Transit for 2013. With the exception of Vail and its small service area, Park City Transit is a top performer amongst its peers with 26 one-way trips per service hour.

Peer Review Summary

The peer review clearly demonstrates that when it comes to the performance category – Productivity - one way trips per hour, Park City Transit is outstanding, exceeded only by Vail and it's very short trips. While cost per hour is higher than most, its cost per trip is among the lowest. Overall, Park City Transit performs well compared to peers and is comfortably within the range of peers.

[6] Source: National Transit Database 2013 Rural Data Summary
[7] Ibid

Table 2-5: Peer Review System Data

System	One-Way Trips	Service Hours	Service Miles	Fare	Operational Expenditures	One-Way Trips per Service Hour	Service MPH	Cost per Service Hour	Cost per One Way Trip
Summit County CO	2,484,799	111,389	1,579,828	-	$10,177,906	22	14	$91.37	$4.10
Summit Stage	1,870,374	80,591	1,335,000	Free	$8,643,722	23	17	$107.25	$4.62
Town of Breckenridge	614,425	30,798	244,828	Free	$1,534,184	20	8	$49.81	$2.50
Town of Vail	3,200,000	62,000	640,000	Free	$4,200,000	52	10	$67.74	$1.31
Roaring Fork Transportation Authority	3,868,195	176,796	3,293,374	Local Service - Free. Regional service $1 - $10	$23,475,359	22	19	$132.78	$6.07
Tahoe Transportation District	795,298	55,574	821,004	Free - $4 Depending on Route	$4,935,038	14	15	$88.80	$6.21
Mountain Rides (Sun Valley)	483,892	40,402	901,241	Local Service - Free. Regional service $4 - $6	$2,168,260	12	22	$53.67	$4.48
Park City Transit	1,928,939	73,688	1,099,824	Free	$8,819,213	26	15	$119.68	$4.57

Source: National Transit Database 2013 Rural Data Summary and Vail Public Works Department

Historical Perspective

Park City Transit has maintained relatively stable ridership over the past 5 years as depicted in Table 2-6. Ridership (fixed route not including special events) went from a high of 1,791,066 in 2013 to a low in 2012 of 1,725,412 with a total variance of 3.7 percent over 4 years. In essence, stable ridership. Productivity closely mirrored ridership as did costs.

Ridership to a large degree mirrors visitor numbers and gross receipts. To some extent ridership is correlated to the numbers of visitors in any given year which is dependent on many uncontrollable factors such as weather and the economy. Visitor nights were their highest in 2011 and lowest in 2012 correlating with the fluctuations in ridership.[8]

[8] Source: Park City Municipal Corporation and Park City and Summit County Tourism Profile

Table 2-6: Park City Transit, Past System Performance

Year		One-Way Trips	Service Hours	Service Miles	One-Way Trips Per Service Hour	Service MPH
2011	Spring	117,720	8,952	142,408	13.15	15.91
	Summer	258,580	12,809	202,811	20.19	15.83
	Fall	176,708	12,492	198,304	14.15	15.87
	Winter	1,229,215	36,977	509,831	33.24	13.79
	2011 Subtotal	1,782,223	71,229	1,053,354	25.02	14.79
	Sundance	94,118	813	11,111	115.77	13.67
	Event Tripper	92,592	1,138	24,410	81.36	21.45
Total		**1,968,933**	**73,180**	**1,088,875**	**26.91**	**14.88**
2012	Spring	115,400	8,263	130,411	13.97	15.78
	Summer	251,409	12,491	198,354	20.13	15.88
	Fall	184,113	13,982	220,684	13.17	15.78
	Winter	1,174,490	38,445	525,329	30.55	13.66
	2012 Subtotal	1,725,412	73,181	1,074,778	23.58	14.69
	Sundance	65,192	813	11,111	80.19	13.67
	Event Tripper	89,629	1,174	25,310	76.34	21.56
Total		**1,880,233**	**75,168**	**1,111,199**	**25.01**	**14.78**
Percent Change		**-4.50%**	**2.72%**	**2.05%**	**-7.03%**	**-0.65%**
2013	Spring	77,631	6,473	102,155	11.99	15.78
	Summer	400,962	14,454	229,894	27.74	15.91
	Fall	187,805	13,583	214,618	13.83	15.80
	Winter	1,124,668	37,197	514,354	30.24	13.83
	2013 Subtotal	1,791,066	71,707	1,061,021	30.24	14.80
	Sundance	74,462	813	11,111	91.59	13.67
	Event Tripper	64,131	1,169	27,702	54.86	23.70
Total		**1,929,659**	**73,689**	**1,099,834**	**26.19**	**14.93**
Percent Change		**2.63%**	**-1.97%**	**-1.02%**	**4.69%**	**0.96%**
2014	Spring	100,886	7,264	114,792	13.89	15.80
	Summer	322,787	14,062	220,692	22.95	15.69
	Fall	226,651	15,160	235,224	14.95	15.52
	Winter	1,075,178	35,134	486,650	30.60	13.85
	2014 Subtotal	1,725,502	71,620	1,057,358	24.09	14.76
	Sundance	67,658	813	11,111	83.22	13.67
	Event Tripper	3,900	1,169	27,702	3.34	23.70
Total		**1,797,060**	**73,602**	**1,096,171**	**24.42**	**14.89**
Percent Change		**-6.87%**	**-0.12%**	**-0.33%**	**-6.76%**	**-0.22%**

Source: Park City Municipal Corporation

B. Seasonal Performance

To understand Park City Transit's operation and operating environment, it is essential to discuss the seasonal changes and how that effects the operation of service. One of the unique and demanding aspects of Park City Transit service is operating in three different seasons – winter (mid-December to mid-April), summer (June to mid-September), and shoulder seasons (mid-April to June and mid-September to mid-December). The winter season has the highest ridership and is clearly the most demanding due to the high ridership and the winter weather combined with crowded streets some difficult terrain. Table 2-6 illustrates the seasonal differences. Most notable is that service for the winter season more than doubles. The winter season averages over 11,000 hours of service per month, while the summer and shoulder seasons average approximately 4,800 monthly service hours.

For the purposes of this review it is important to understand the issues revolving around the seasonal changes and operating challenges posed in this tourist environment. It should also be pointed out that few systems face these challenges. These challenges include:

- Major seasonal route changes due to shifts in ridership and needs. This affects staffing, marketing/brochures and the scheduling of maintenance. All vibrant, successful systems make seasonal adjustments, but Park City Transit must make major changes.

- Seasonal staffing changes make recruitment and retention of vehicle operators a major function of management.
    - Constant change in the number of vehicle operators required for service makes retention and sometimes just meeting daily the required numbers of vehicle operators to meet the daily "pull out" a very difficult challenge while avoiding the revolving door of inexperienced vehicle operators in the winter.
    - Vehicle operator housing had become a major issue as vehicle operators typically cannot afford to live in Park City, requiring very long commutes. In what can be termed an innovation, Park City Transit received Federal funding to build a dormitory consisting of small affordable apartments for vehicle operators.
    - Works with other tourist sites where the seasons are opposite that of Park City Transit.

- Winter poses other unique challenges.
    - Traffic becomes a challenge and the use of shoulder lanes from Kimball Junction is an excellent start toward a bus rapid transit (BRT) type service.
    - The sheer volume of riders throughout the winter is punctuated by special events, most notably the Sundance Festival where ridership sometimes doubles from the already high winter numbers. Productivity can jump to 100 persons per vehicle hour making conditions even more difficult for the vehicle operators.
    - Slower operating speeds in the winter. Snow and ice pose significant challenges, both for the operation of the vehicles and access to buses and bus stops by customers. Speeds average about 10 – 15 percent lower in the winter.
    - Experienced and well-trained vehicle operators are required. This makes the task of recruitment and retention more important than in most other operating

environments. For safe winter driving, there is no substitute for experienced vehicle operators.

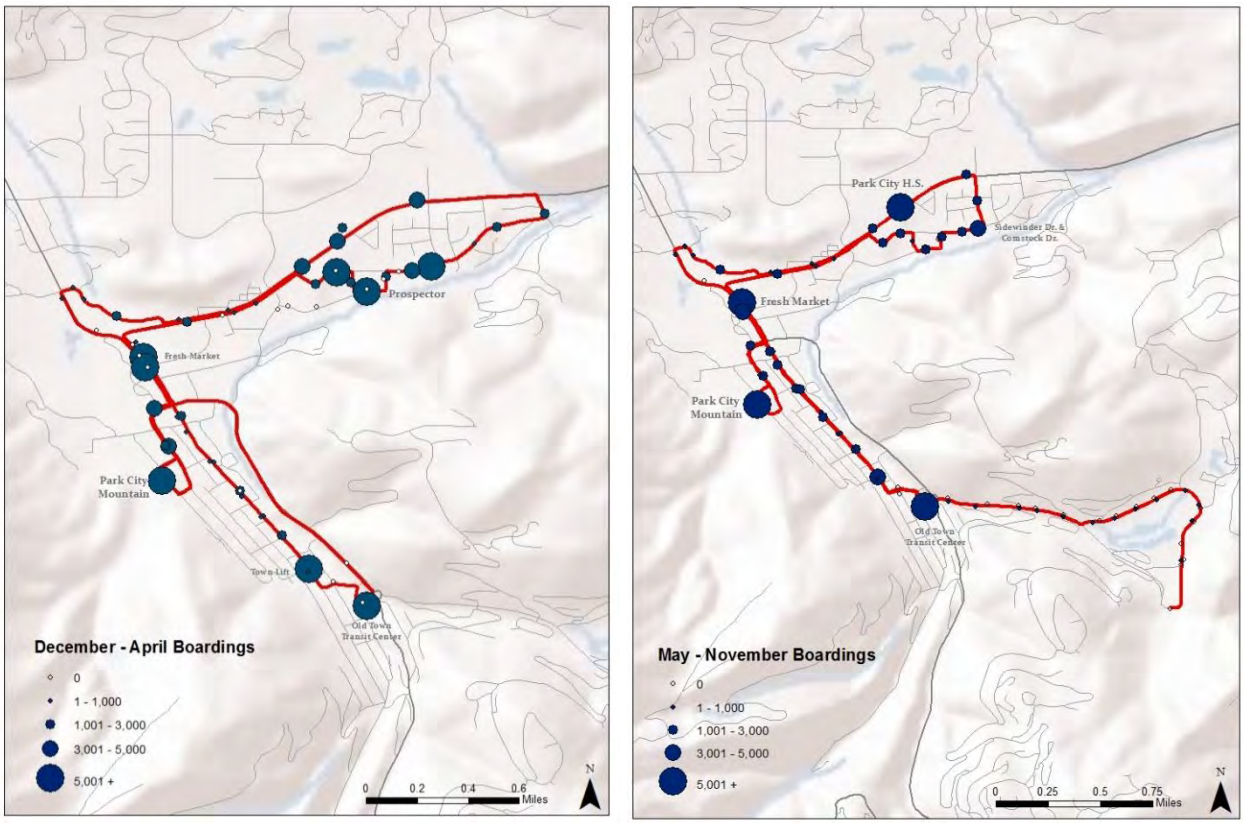
- Fluctuations based on the economy are typical for tourist areas and often the reverse of non-tourist based cities. Ridership typically increases in most locales during poor economic times, but in cities such as Park City a poor economy keeps visitors home and ridership is suppressed. These fluctuations are out of the hands of transit management.

C. Route Profiles

The route profiles are used to review each route individually. The profiles look at 2014 performance, issues related to the route, and duplication of routes. Seasonal changes are reviewed and key issues associated with routes are addressed. Each profile has activity by stop provided by Park City Transit's automated passenger counters that record each passenger boarding. Virtually each stop has an almost equal numbers of boardings and alightings. One can determine that boardings will include a similar number of alightings or stop activity. Seasonal activity at each stop will be used to assist in the review of routes and the development of alternatives.

Route 1- Red: Prospector Square

1: Prospector Express	Ridership	Service Hours	Trips per hour	Peak Vehicles	Peak Headways
Winter	145,356	4,113	35.3	2	20 Min
Summer	96,457	2,410	40.02	2	20 Min
Shoulders	94,756	3,682	25.73	2	20 Min
Total	**336,569**	**10,205**	**33.0**	**2**	**20 Min**



Source: Park City Municipal Corporation – 2014 Data

The Prospector Square Route is a local Park City route connecting Prospector Square, Park City Mountain, and the Old Town Transit Center. It is one of the highest ridership routes in the system with the highest annual productivity. The route on time performance is 87%. It is the only route that generates greater productivity in the summer rather than the winter due to the addition of the Yellow route during the winter months. The Yellow route was added due to winter capacity issues with the Red route.

Seasonal Changes

In the summertime Route 1 serves Deer Valley and is interlined with Route 2 Park Meadows. During the winter season the route extends two blocks east on Kearns Blvd and does not serve

Deer Valley. From the Old Town Transit Center the route uses Park Ave. northbound and Deer Valley Dr. southbound creating a loop. Productivity is highest in the summer due to the increased duplication of service in the winter season.

Major Stops - Origins and Destinations

Old Town Transit Center
Park City Mountain
Fresh Market
Deer Valley (summer only)
Park City High School
Treasure Mountain Junior High
Park City Marriott
The Prospector
The Market
Library

Major Transfer Points

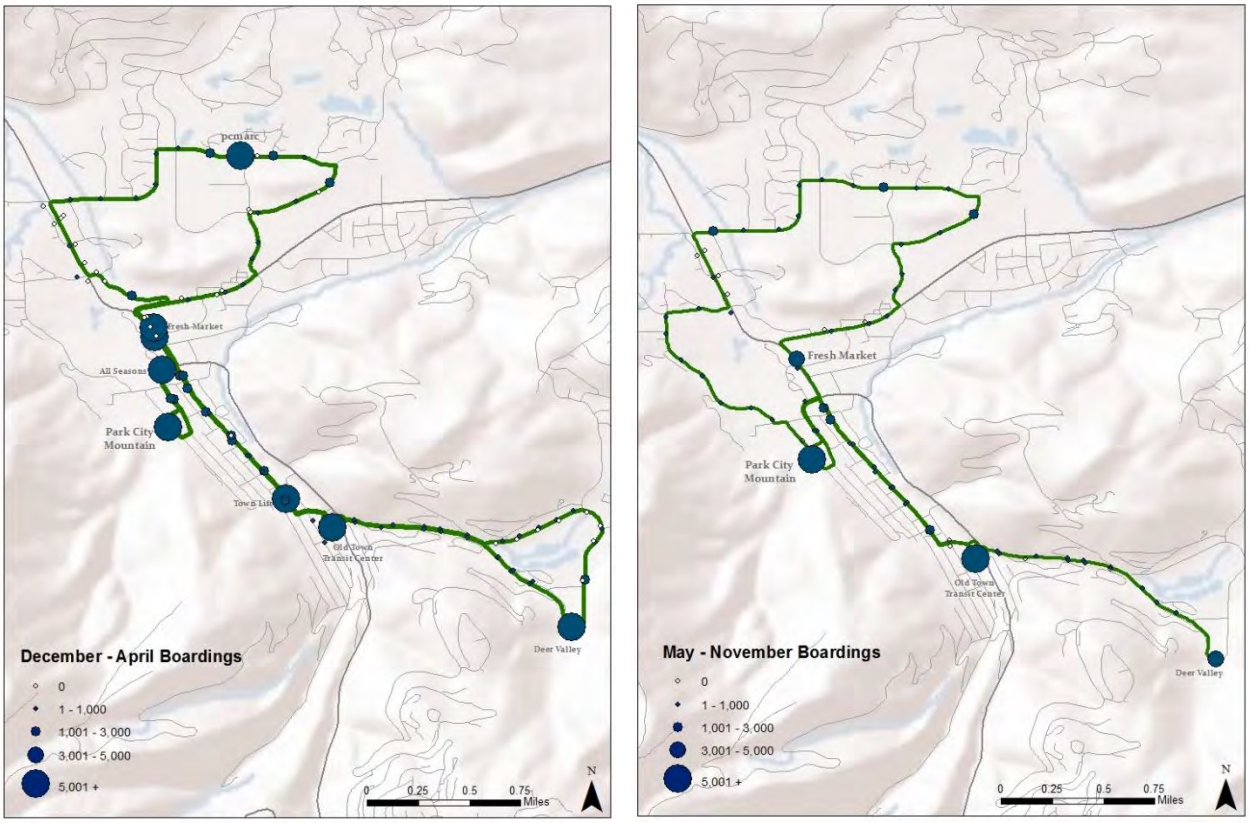
Old Town Transit Center
Park City Mountain
Fresh Market
Deer Valley (summer only)

Duplication and Other Observations

- Route 1 is one of six routes serving Park City Mountain, one of four routes serving the Kearns Blvd. corridor, and one of three routes serving Deer Valley in the summertime.
- During the winter, the loop on Park Ave. and Deer Valley Dr. inhibits the out-and-back nature of the route. Other than the Town Lift little ridership is generated on the Park Ave. portion of this loop.
- From both the Old Town Transit Center and Park City Mountain it can be difficult for riders to discern which direction the bus is going.
- In the summer, the interlined spur to Deer Valley is confusing because it prevents the route form making a complete round trip. Route 1 begins at the Old Town Transit Center but never completes the loop. The route terminates at Deer Valley and changes to Route 2 before returning to the Old Town Transit Center.
- The Deer Valley leg of the summer route generates very little ridership.
- During the winter, Route 1 has to make an unprotected left turn off of Wyatt Earp Way onto Kearns Blvd.

Route 2- Green: Park Meadows

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	162,564	5,714	28.5	3	20 Min	-
Summer	66,778	3,327	20.07	2	20 Min	-
Shoulders	65,600	5,758	11.39	2	20 Min	-
Total	**294,942**	**14,799**	**19.9**	**2**	**20 Min**	**92.00%**



Source: Park City Municipal Corporation – 2014 Data

The Park Meadows Route connects Park Meadows, the Park City Municipal Athletic & Recreation Center (PCMARC), Fresh Market, Park City Mountain, the Old Town Transit Center and Deer Valley. Ridership varies greatly from a high in the winter of 28.5 one-way trips per hour to 20 in the summer and 11 in the shoulder seasons. This route serves two low density neighborhoods.

Seasonal Changes

In the summertime, Route 2 is expanded to cover the Route 3 area (Route 3 does not operate in the summer) creating a large loop on the north end of the route. The route is interlined with Route 1 at Deer Valley during the summer season.

Major Stops - Origins and Destinations

Old Town Transit Center
Park City Mountain
Deer Valley
Fresh Market
PCMARC
Peaks Hotel
Post Office
Library

Major Transfer Points

Old Town Transit Center
Park City Mountain
Fresh Market
Deer Valley

Duplication and Other Observations

- Route 2 is one of six routes serving Park City Mountain, one of four routes serving the Kearns Blvd. corridor, and one of four routes serving Deer Valley.

- During the summer, the expanded loop (to cover Route 3's area) inhibits the out-and-back nature of the route. Because of this Fresh Market sees a significant drop in stop activity since the route is only serving this location in one direction. In the winter when Fresh Market is served in both directions, this is one of the most active stops on the route.

- From both the Old Town Transit Center and Park City Mountain stops it can be difficult for riders to discern which direction the bus is going.

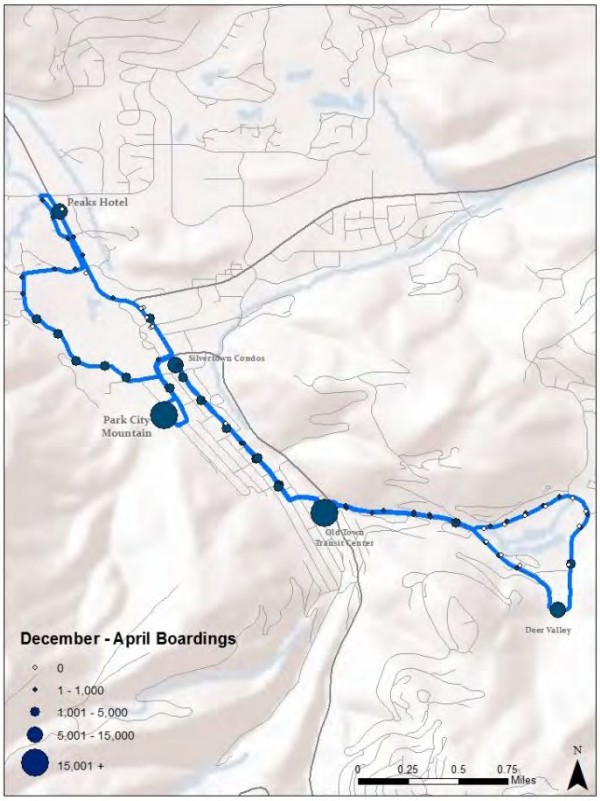
- In the summer, the interlined spur to Deer Valley is confusing because it prevents the route from making a complete round trip. Route 2 begins at Deer Valley but never returns. The route terminates at the Old Town Transit Center and changes to Route 1 before returning to Deer Valley. Since the two routes serve the same areas, the interlining does not serve the customers.

- During the summer, the portion of Route 2 along Three Kings Dr. (winter Route 3 area) generates very little ridership.

Route 3 - Blue: Thaynes Canyon

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	143,961	3,861	37.3	2	20 Min	73.60%

The Thaynes Canyon Route connects Deer Valley, the Old Town Transit Center, and the Peaks Hotel via Three Kings drive. This route only operates in the winter season. While it duplicates other routes it sees very high ridership.



Source: Park City Municipal Corporation – 2014 Data

Major Stops - Origins and Destinations

Old Town Transit Center
Park City Mountain
Deer Valley
Fresh Market
Peaks Hotel
Post Office
Library

Major Transfer Points

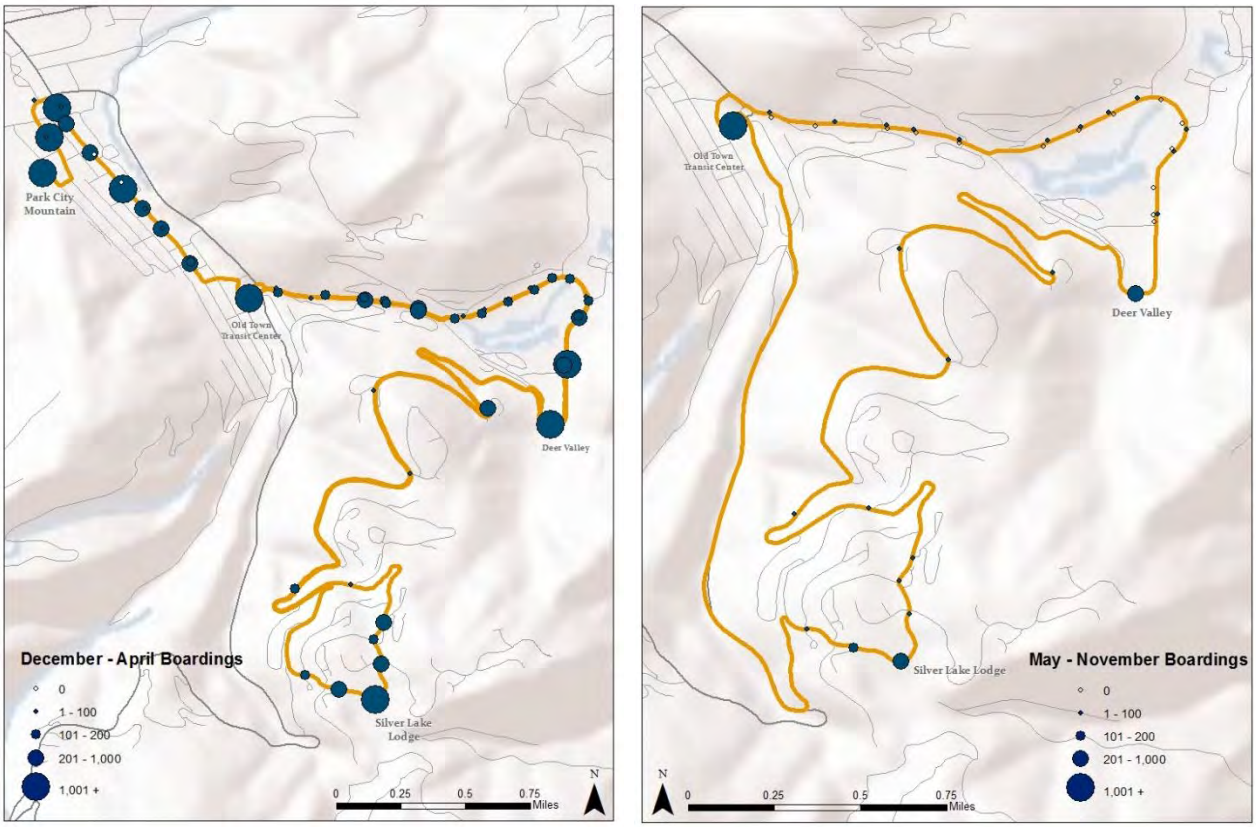
Old Town Transit Center
Park City Mountain
Fresh Market
Deer Valley

Duplication and Other Observations

- Route 3 is one of seven routes traveling on Park Ave. between the Old Town Transit Center and Fresh Market, and one of four routes serving Deer Valley.
- This is a very heavily travelled route.
- The section of the route that loops on Park Ave. and Three Kings Dr. inhibits the out-and-back nature of the route. Due to this configuration Fresh Market is only served going northbound. The Park Avenue section of this loop generates very little ridership.

Route 4- Orange: Silver Lake/Deer Valley

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	85,174	2,460	34.6	2	30 Min	-
Summer	13,466	712	18.91	1	30 Min	-
Shoulders	3,079	229	13.45	1	30 Min	-
Total	**101,719**	**3,401**	**29.9**	**2**	**30 Min**	**86.70%**



Source: Park City Municipal Corporation – 2014 Data

The Silver Lake/Deer Valley Route connects Sliver Lake Lodge with Lower Deer Valley and Old Town Transit Center. The route has very high productivity in the winter.

Seasonal Changes

In the summertime, Route 4 is a 30-minute loop route connecting Old Town Transit Center to Silver Lake Lodge via Lower Deer Valley. The route descends into town from Silver Lake Lodge on Marsac Ave. allowing for 30-minute headways to be achieved with one vehicle. During the winter, the route is extended to Park City Mountain and the loop on Marsac Ave. is eliminated. Seventy-

two percent of all service hours are operated in the winter season resulting in significantly higher ridership and productivity.

Major Stops - Origins and Destinations

Old Town Transit Center
Park City Mountain (winter only)
Lower Deer Valley
Silver Lake Lodge
Town Lift (winter only)
Library (winter only)

Major Transfer Points

Old Town Transit Center
Park City Mountain (winter only)
Lower Deer Valley

Duplication and Other Observations

- Route 4 is one of four routes serving Deer Valley and in the winter, one of six routes serving Park City Mountain.
- During the summer, the expanded loop may be prohibitive for riders trying to get from Silver Lake Lodge to Lower Deer Valley.
- This route has steep grades and winding roads. Hazardous winter conditions may impact this route more than others.

Route 5 - Yellow: Prospector Express

Prospector Express	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	**104,268**	**3,796**	**27.5**	**2**	**20 Min**	**86.90%**

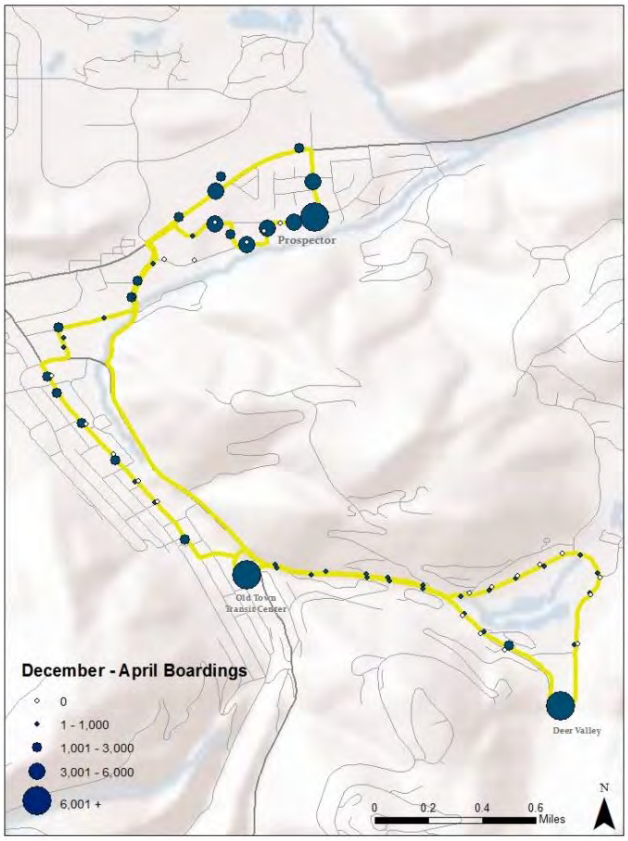
The Prospector Express connects Prospector Square to Deer Valley via the Old Town Transit Center. The route only operates in the winter season.

Major Stops - Origins and Destinations

Old Town Transit Center
Prospector Square
Lower Deer Valley
Park City Marriott
Park City High School
Library
Town Lift

Major Transfer Points

Old Town Transit Center
Lower Deer Valley



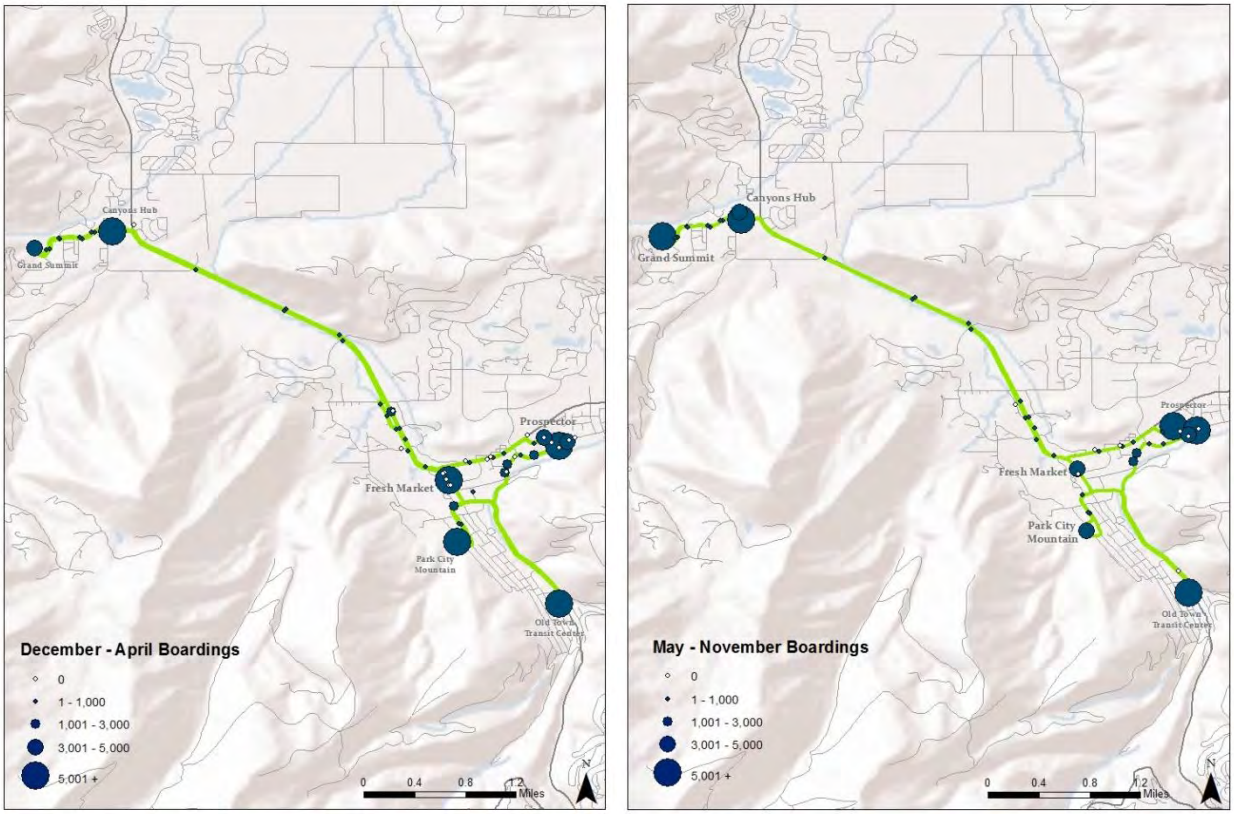
Source: Park City Municipal Corporation - 2014 Data

Duplication and Other Observations

- Route 2 is one of four routes serving the Kearns Blvd. corridor, and one of four routes serving Lower Deer Valley.
- The center loop of the route on Deer Valley Dr. and Park Ave. inhibits the linear nature of the route. Park Ave. is only served going southbound.
- The route is not an "Express" route. It is shorter than the routes it duplicates, but the stops are not limited and the service is not significantly faster.
- The Park Ave. section of this route does not generate as much activity as the major stops.

Route 6 Lime: The Canyons

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headway	% On Time
Winter	71,938	2,737	26.3	2	30 Min	-
Summer	13,520	838	16.13	1	40 Min	-
Shoulders	14,116	3,991	3.54	1	40 Min	-
Total	**99,574**	**7,566**	**13.2**	**2**	**30 Min**	**92.30%**



Source: Park City Municipal Corporation – 2014 Data

The Canyons Route connects Canyons Village, Canyons Hub, Fresh Market, Prospector, Park City Mountain, and Old Town Transit Center. 21.5 percent of the total service is operated in Summit County outside the Park City limits.[9] This route has very low ridership in the shoulder seasons.

[9] Source: Park City Municipal Corporation

Seasonal Changes

The structure of the route does not change from season to season. The route sees significantly higher ridership and productivity in winter and shoulder (winter start-up) seasons. It is the only route that goes into the Canyons Village area up the hill from the Canyons Hub.

Major Stops - Origins and Destinations

Old Town Transit Center
Park City Mountain (winter only)
The Canyons Hub
Grand Summit
Fresh Market
Prospector Square

Major Transfer Points

Old Town Transit Center
Park City Mountain
Canyons Hub

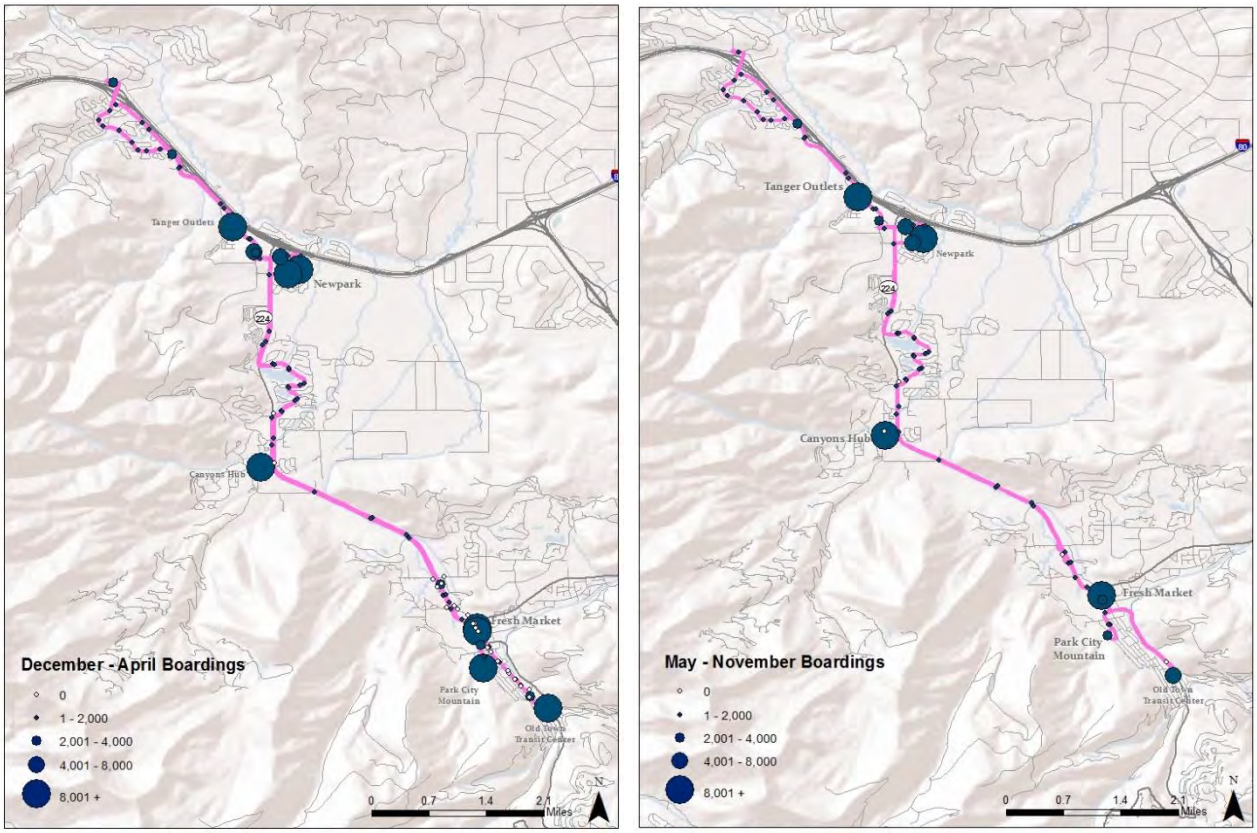
Duplication and Other Observations

- Route 6 is one of six routes serving Park City Mountain, one of four routes serving the Kearns Blvd. corridor, and one of three routes serving Canyons Hub.
-
- Based on the input received during the public involvement phase and concerns over the new peak to peak gondola connection, Park City Transit has implemented express peak service connecting Canyons Village and Park City Mountain, eliminating the Prospector Square portion of the route for these runs. They have extended the service late into the evenings.

- This is one of three routes that serve the Canyons in a duplicative manner.

Route 7- Pink: Kimball West

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	196,049	6,118	32.0	2	30 Min	-
Summer	85,563	3,500	24.45	2	30 Min	-
Shoulders	96,243	6,240	15.42	2	30 Min	-
Total	**377,855**	**15,858**	**23.8**	**2**	**30 Min**	**85.60%**



Source: Park City Municipal Corporation – 2014 Data

The Kimball West Route is the longest route in the Park City Transit system. It connects Jermey Ranch Park and Ride on the far north end of the service area to Kimball Junction, Canyons Hub, Fresh Market, Park City Mountain, and Old Town Transit Center. Seventy-nine and one-third percent of the service is operated in Summit County outside of Park City limits.

Seasonal Changes

The structure of the route does not change from season to season. The route sees higher ridership and productivity in the winter and shoulder (winter start-up) seasons. During the winter, Park

City Mountain is a stop with significant activity but in the summer season the stop generates very little ridership.

Major Stops - Origins and Destinations

Old Town Transit Center
Park City Mountain The Canyons Hub
Newpark
Fresh Market
Canyons Hub
Tanger Outlets
Jeremy Ranch Park and Ride
Silver Springs
Pinebrook

Major Transfer Points

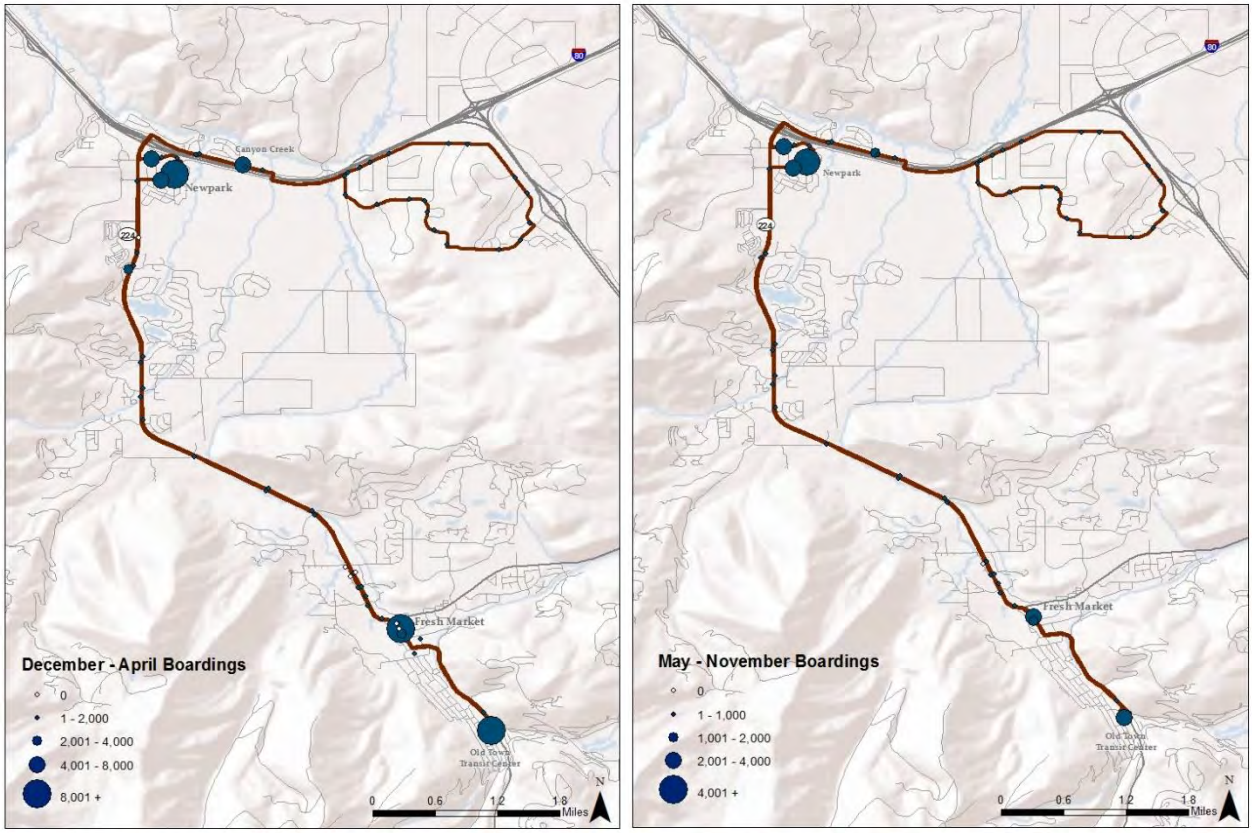
Old Town Transit Center
Park City Mountain
Canyons Hub
Fresh Market
Newpark

Duplication and Other Observations

- Route 7 is one of six routes serving Park City Mountain and one of two routes serving the Kimball Junction.
- The Route 7 and Route 8 are spaced nicely (15 minute intervals) northbound from Old Town Transit Center. Returning south from Kimball Junction, the routes depart at the same time and run together until Route 7 turns into Silver Springs. These routes duplicate each other for most of the 7 miles between Kimball Junction and Old Town Transfer Center.
- There is an unprotected left turn on the southbound portion of the route turning off Highway 224 into Silver Springs.

Route 8- Brown: Kimball East

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	54,201	2,128	25.5	1	60 Min	-
Summer	31,673	1,357	23.34	1	60 Min	-
Shoulders	36,147	2,321	15.57	1	60 Min	-
Total	**122,021**	**5,806**	**21.0**	**1**	**60 Min**	**77.70%**



Source: Park City Municipal Corporation – 2014 Data

The Kimball East Route connects Silver Summit/Highland Estates, Kimball Junction, Fresh Market, and Old Town Transit Center. Sixty-six and sevent-tenths percent of the service is operated in Summit County outside of the Park City limits and much of that duplicates Route 7.

Seasonal Changes

The structure of the route does not change from season to season. The route sees higher ridership and productivity in the winter and summer seasons. Fresh Market sees more activity in the winter season than in the summer.

Major Stops - Origins and Destinations

Old Town Transit Center
Canyon Creek
Newpark
Fresh Market
Canyons Hub
Silver Summit / Highland Estates

Major Transfer Points

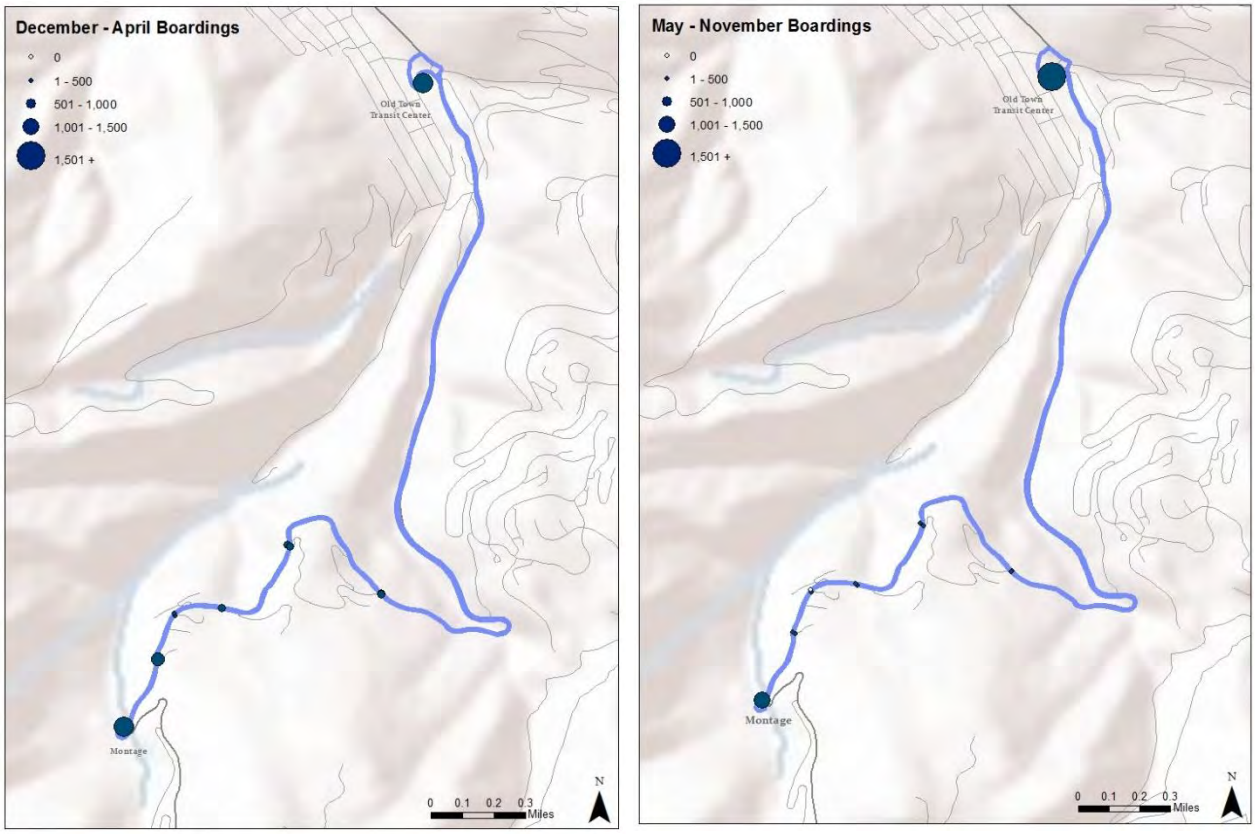
Old Town Transit Center
Fresh Market
Newpark

Duplication and Other Observations

- Route 8 is one of two routes serving the Kimball Junction.
- Route 7 and Route 8 are spaced properly (15 minute intervals) northbound from Old Town Transit Center. Returning south from Kimball Junction, the routes depart at the same time and run together until Route 7 turns into Silver Springs.
- Route 8 is listed as an "Express Route". It is marginally faster than Route 7 and serves every stop on its corridor.

Route 9- Purple: Empire Pass

Season	One-Way Trips	Service Hours	One-Way Trips per Service Hour	Peak Vehicles	Peak Headways	% On Time
Winter	35,148	2,013	17.5	1	30 Min	-
Summer	11,178	759	14.73	1	30 Min	-
Shoulders	1,362	231	5.90	1	30 Min	-
Total	**47,688**	**3,003**	**15.9**	**1**	**30 Min**	**88.30%**



Source: Park City Municipal Corporation – 2014 Data

The Empire Pass Route is one of the least utilized routes in the Park City Transit system. It connects Montage with Old Town Transit Center.

Seasonal Changes

The structure of the route does not change from season to season. The route sees higher ridership and productivity in the winter season.

Major Origins and Destinations

Old Town Transit Center
Montage

Major Transfer Points

Old Town Transit Center

Duplication and Other Observations

- During the summer, both Route 9 and Route 4 descend into Park City on Marsac Ave. While technically these routes are duplicating one another, there are no stops along this stretch of road.

- During the summer season mountain bikers use this route to get to the top of Empire Pass. On the day of observation there were six mountain bikes inside the bus and two on the rack outside.

Other Routes

Main Street Trolley

The Main Street Trolley is a local circulator flag stop service that travels the length of Main Street and connects to Old Town Transit Center. The service runs from 10:00 a.m. to 11:00 p.m. on approximately 15 minute headways. According to Park City Transit, the trolley provided 70,993 one-way trips in 2014. Its average annual productivity is 15.8 one-way trips per service hour, with highest productivity and ridership in the summer; 25 one way trips per hour, followed by winter at 17 trips per hour and the shoulders at 10 trips per hour.

Special Event Routes

Park City is home to many special events that attract visitors from around the world. Park City Transit provides increased levels of service during the major events in order to provide a high level experience to the visitors and offset traffic and parking issues. Table 2-7 depicts the recurring events. In 2014, special event service accounted for approximately 3% of all Park City Transit service hours and approximately 4% of all one-way trips.

Table 2-7: Park City Special Events

Event	Date
Winter	
Celebrity Skifest	December
Sundance Film Festival	January 21- January 31
Freestyle Ski World Cup	February 3, 2016
Summer	
Park Silly Sunday Market	June - September
Deer Valley Summer Concert Series	June - September
Independence Day Parade	July 4, 2016
Triple Crown Softball Western World Series	July
Kimball Arts Festival	July 12 - August 2
Tour of Utah	August 9, 2016
Park City Film Music Festival	August
Fall	
Miner's Day Parade	September 5, 2016
Park City Beethoven Festival	October
Halloween	October 31, 2016

Many of these events create significant demand for transit services and require extensive operations planning and preparation. Due to limited parking in the Old Town area of Park City many of the single day events and parades (Miner's Day and Independence Day) require event-goers to park in remote lots and use transit to access the event. The Kimball Arts Festival is a three day event in early August that has significant transit demand. For this event every bus in the transit system, including the spare vehicles, will be in operation to accommodate resident and tourist needs. The Tour of Utah brings several thousand race fans and bikers into the service area and is a monumental day for summer transit ridership. The Sundance Film Festival is a world renowned event requiring significant additional transit services in the area. Special events are extremely important to Park City Transit. They produce substantial demand and ridership for the system and require additional planning, operations and staffing during the major events.

D. Review of Dial-a-Ride, ADA Paratransit Services and Commuter Service

There are three other components to transit in Park City and Summit County. These include Quinn's Junction Dial-a-Ride service, the Salt Lake City commuter service and Park City Transit's ADA paratransit service. These are discussed in this section.

Dial-a-Ride (DAR)

Quinn's Junction DAR provides service to the growing Quinn's Junction area which includes a number of employment, and recreational destinations. It is where the service area's major hospital is located, a major employment and medical destination. Quinn's Junction DAR follows a fixed route that must be activated by a telephone call and scheduled through dispatch. The customer must also make their way to a bus stop as they would in fixed route. The service can be scheduled on the same day of travel. Table 2-8 details Quinn's Junction DAR over the past three years. Since 2013 the service performance has remained steady at approximately 1.6 one-way trips per hour. Figure 2-7 depicts Quinn's Junction DAR route.

Table 2-8: Quinn's Junction DAR Ridership and Performance

Quins Junction Dial-A-Ride	2013	2014	2015
One-Way Trips	7,416	7,834	7,465
One-Way Trips per Hour	1.6	1.7	1.6

Source: Park City Municipal Corporation – 2014 Data

Figure 2-6: Quinn's Junction DAR Route

ADA Complementary Paratransit

ADA paratransit operates within ¾ mile of fixed route service (depicted in Figure 2-1). Ridership is similar to comparable active lifestyle communities. Approximately 30 one-way trips are taken per weekday. Customers are typically local residents, with occasional visitors with disabilities that would qualify for ADA. Staff state that they do not turn down any valid requests.

Table 2-9: ADA Paratransit Performance

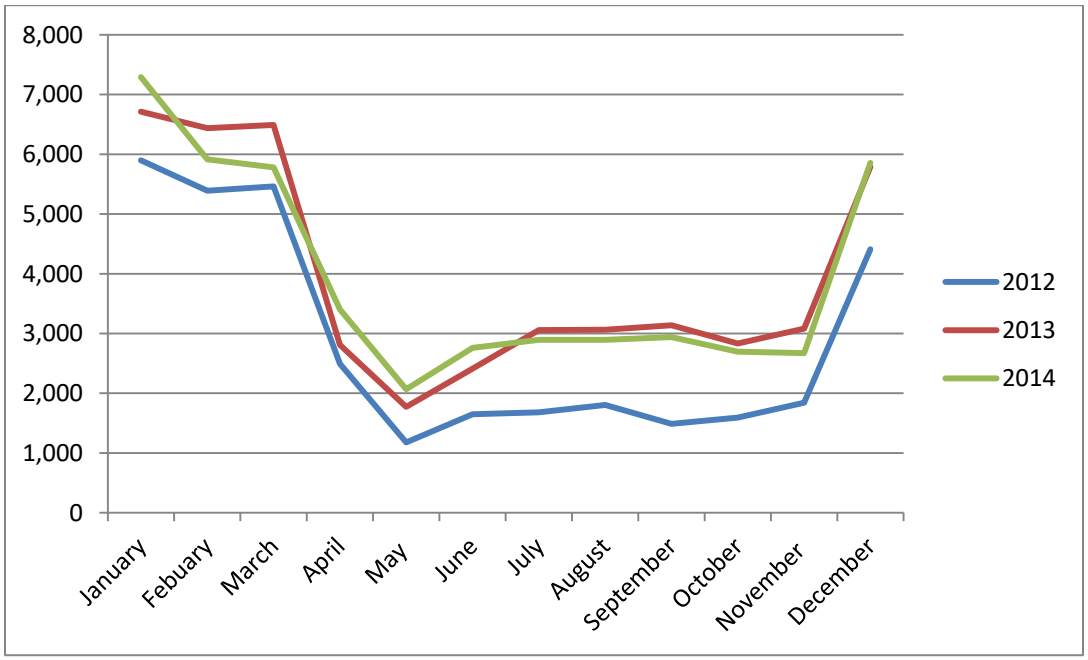
ADA Paratransit	2013	2014	2015
One-Way Trips	7,238	6,389	7,729
Service Hours	7,476	7,009	7,126
Service Miles	60,463	55,693	65,332
One-Way Trips per Hour	0.97	0.91	1.08
MPH	8.09	7.95	9.17

Source: Park City Municipal Corporation

Commuter Service

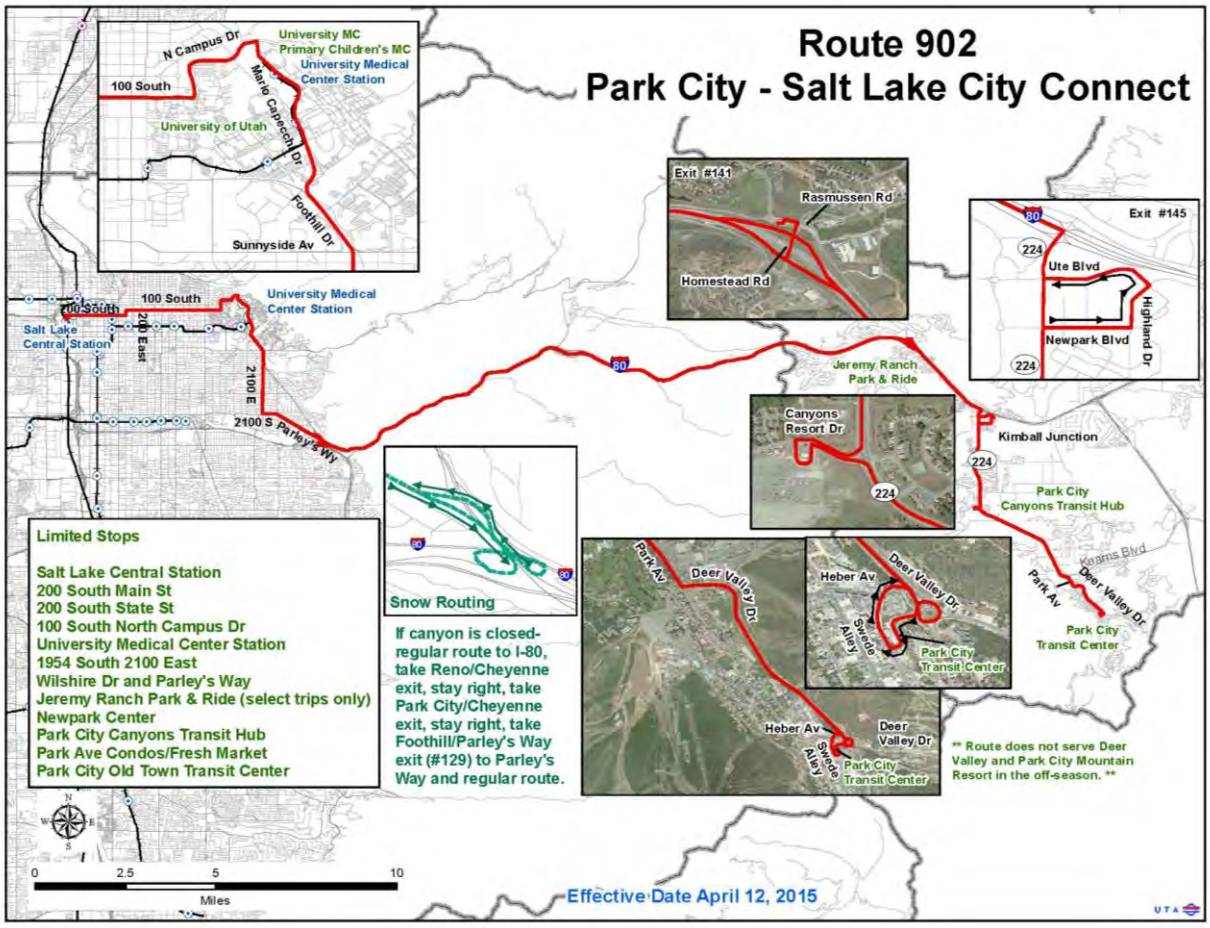
In conjunction with Park City Transit, Utah Transportation Authority (UTA) operates commuter service to and from Salt Lake City on weekdays. Ridership is highest during the winter season as employment needs increase in Park City. The service operates three a.m. and p.m. round trips and carries approximately 17 one-way trips per hour in the winter and 8 in the summer. Figure 2-9 depicts the monthly ridership trends and Figure 2-10 depicts the service and its route.

Figure 2-9: UTA SLC-PC Connect Ridership Trends



Source: Park City Municipal Corporation

Figure 2-10: UTA PC-SLC Connect Service



E. Meet City and County Needs

City and county needs are best expressed through a review of the most recent plans for Park City and Summit County defined in their general and transportation plans, the latter specifically focusing on the Snyderville Basin where the vast majority of the population resides and the most significant traffic issues occur during the winter.

City Needs

The city's broad goals[10] in its General Plan call for maintaining:

- The small town nature
- The natural setting
- A sense of community
- The historic character

[10] Park City General Plan, 2014

Clearly, transit in Park City has a significant role in maintaining the goals. A theme throughout the plan includes expanding public transit presence in order to reduce auto traffic, so vital to the city's goals.

Following are some examples that demonstrate the transit commitment in Goal 3. Park City will encourage alternative modes of transportation on a regional and local scale to maintain our small town character. The goal calls for:

"A major focus of transportation decisions is the end user. There are competing end-user interests in Park City between visitors and local residents. In order to effectuate a paradigm shift in preference of public transportation over the single-occupancy vehicle, the public transportation system must function to attract both the visitor and the local alike."

Goal 3- B: *Prioritize efficient public transportation over widening of roads to maintain the Small Town experience of narrow roads, modest traffic, and Complete Streets.*

Goal 3-C: *Public transportation routes should be designed to increase efficiency of passenger trips and capture increased ridership of visitors and locals.*

Expanded transit is critical to each of the other goals and nowhere is it more evident than where it serves to support affordable housing goals and as part of the solution to parking. Peak season parking lots will be essential to a successful BRT.

County Needs

The emphasis of this analysis is western Summit County, specifically Snyderville Basin and the 224 corridor, where the most severe traffic exists. Traffic on Highway 224 is mounting as a result of growth in the area and the large influx of day trippers and longer term visitors going through the Kimball Junction area

Snyderville Basin General Plan[11] calls for addressing regional trips through mass transit as well as developing mass transit along the 224 corridor. The Snyderville Basin Transportation Plan[12] calls for a variety of infrastructure and service improvements, and multimodal and express service (with infrastructure improvements) on Highway 224 with an emphasis on service at the Canyons.

Eastern Summit County Transportation Plan pays scant attention to transit for its predominantly rural jurisdictions. In fact, the plan states[13]:

"*The draft Short Range Transportation Plan by Park City and Summit County for the Snyderville Basin considered services outside the area to improve services within the Basin. This includes options to service Eastern Summit County as well as potential connections to Salt Lake and Heber.*

[11] Snyderville Basin General Plan, June, 2015
[12] Snyderville Basin Long Range Transportation Plan: Summary of Existing Conditions and Short Term Needs Identification, August 2014
[13] Eastern Summit County Transportation Master Plan, June 2013

In general, unless a service meets adopted transit service polices of 10 riders per hour, it is not recommended."

As a result of this high threshold (in essence a performance measure more suited to Park City or Salt Lake City than rural Summit County), the plan only recommended winter transit/commuter service to Kamas and no service to Coalville.

Summary

Park City and Summit County are committed to transit as part of the solution to maintaining the quality of life for residents and visitors. Peer review demonstrates that Park City Transit operates a high volume service. This combination of city and county will go a long way toward ensuring that the system continues to grow and evolve as the area grows and changes.

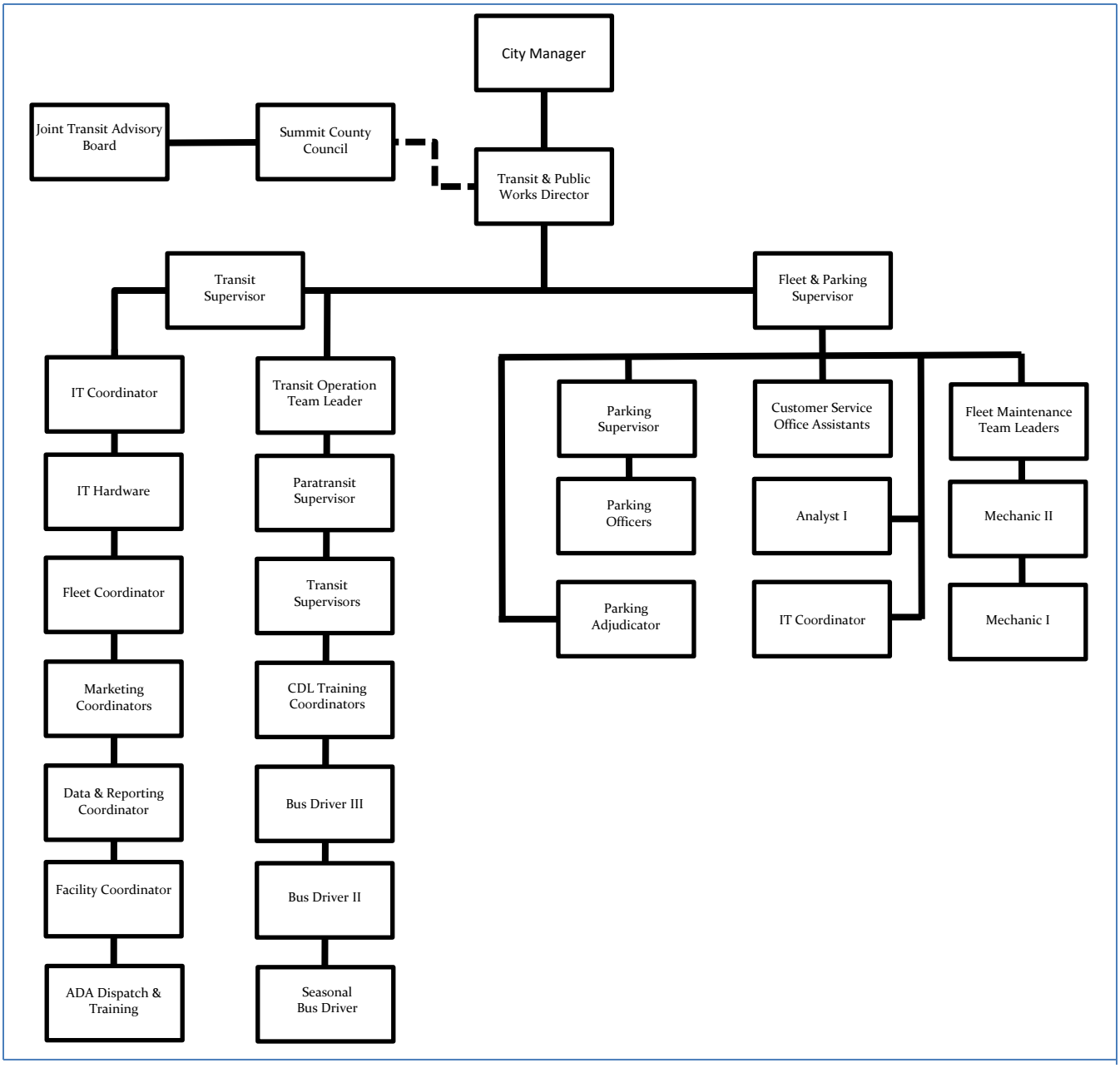
Park City Transit operates a high volume transit system for a community of its size and has made a difference in the parking and traffic issues that inevitably arise as visitor's numbers reach their peak in the winter season. As much as transit has helped, new practical service designs have been recommended in the plans discussed above. They include intercepting day tripper auto traffic at Interstate 80 with park and ride lots and some form of express service and exclusive right of way for transit to the major destinations. This would eliminate additional traffic, while gaining both priority and rapid transit service. Most important this fast comfortable service can attract new riders to the system.

F. Organizational Structure

Park City Transit is managed and directly operated by Park City staff and is supported by other city staff. The city's organizational structure is depicted in Figure 2-11. Park City has a contractual relationship to operate service within Summit County beyond the Park City municipal limits.

Park City Transit is recognized as a rural transit system by the Federal Transit Administration (FTA) (Section 5311 rural funding) and gets some funding from the Federal Government. What makes Park City Transit, and other systems like it, successful is the local government(s) commitment to transit through a dedicated funding stream. With a strong management staff, high ridership and a solid funding base, the organizational structure is strong. There does not appear to be an operational reason or a financial reason why the organization should change.

Figure 2-11: Park City Transit Organizational Structure



G. Vehicle Review

Park City Transit operates 30-foot heavy duty Gillig transit coaches, typically designed for 12 years of service or 400-500,000 miles, depending on the service requirements. These are the smallest heavy duty buses available, holding 32 seated passengers. Park City Transit, with it's, at times intense levels of service, operate these vehicles in a difficult environment of heavy passenger loads

and severe winter weather. As the vehicles get older, it puts a significant strain on the maintenance department, especially in the winter.

Normal winter peak vehicle requirements are 18 fixed route vehicles, but that does not include special services such as Sundance where almost all vehicles are placed in service. Non-winter peaks require 11 vehicles allowing for significant downtime for older vehicles and mitigating the need for replacements as the backup nature of many of these vehicles allows Park City Transit to stretch the life of some vehicles – to be determined on a case by case basis.

Table 2-10 is the current vehicle inventory which lists each vehicle in the fleet. There are six 2009 – 2010 low mileage, large cutaway vehicles used for ADA paratransit, dial-a-ride and fixed route services.

For the most part, the heavy duty Gillig transit coaches are used in fixed route service. There are 29 Gillig transit coaches in the fleet. Seven of these buses are 13 – 14 years old and another 4 have over 350,000 miles, and seven more have over 300,000 miles. Many of these 18 vehicles (62% of the heavy duty fleet) should be considered for replacement before the end of this five year planning cycle.

The vehicle replacement plan will be developed as part of the transit plan. The number of vehicles, their size and type will be dependent on the strategies and alternatives selected.

Table 2-10: Park City Transit Vehicle Inventory

Bus #	Model Year	Make	Body Type	Seating	Revenue / Non Rev.	W/C Equip.	Current Mileage	Funding	Local Share Paid By
601	2002	Jeep	Grand Chero.	5	Non - Revenue	No	134,897	5311	Park City
602	2009	Chev	Colorado	5	Non - Revenue	No	63,473	53111	Park City
603	2009	Chev	Equinox	5	Non - Revenue	No	50,676	5311	Park City
604	2009	Chev	Malibu	5	Non - Revenue	No	35,450	5311	Park City
510	2003	Ford	F-450 4X4	3	Non - Revenue	No	37,388	5311	Park City
620	2009	Glaval	Cutaway 4x4	24	Revenue	Yes	64,747	5311	Park City
621	2010	Glaval	Cutaway 4x4	24	Revenue	Yes	76,306	5311	Park City
625	2010	Glaval	Cutaway 4x4	24	Revenue	Yes	62,502	5311	Summit County
622	2010	Glaval	Cutaway 4x4	15	Revenue	Yes	85,263	5311	Park City
623	2010	Glaval	Cutaway 4x4	15	Revenue	Yes	85,670	5311	Park City
624	2010	Glaval	Cutaway 4x4	15	Revenue	Yes	92,946	5311	Summit County

Bus #	Model Year	Make	Body Type	Seating	Revenue / Non Rev.	W/C Equip.	Current Mileage	Funding	Local Share Paid By
648	2001	Gillig	Low-Floor	32	Revenue	Yes	114,350	5309	Park City
649	2001	Gillig	Low-Floor	32	Revenue	Yes	253,952	5309	Park City
650	2001	Gillig	Low-Floor	32	Revenue	Yes	236,025	5309	Park City
653	2002	Gillig	Low-Floor	32	Revenue	Yes	294,487	5311	Park City
654	2002	Gillig	Low-Floor	32	Revenue	Yes	309,878	5311	Park City
655	2002	Gillig	Low-Floor	32	Revenue	Yes	173,433	5311	Park City
656	2002	Gillig	Low-Floor	32	Revenue	Yes	172,086	5311	Park City
657	2004	Gillig	Low-Floor	32	Revenue	Yes	275,960	5311	Summit County
658	2004	Gillig	Low-Floor	32	Revenue	Yes	351,903	5311	Park City
659	2004	Gillig	Low-Floor	32	Revenue	Yes	336,643	5311	Summit County
660	2004	Gillig	Low-Floor	32	Revenue	Yes	234,287	5311	Park City
661	2004	CCC	Trolley	30	Revenue	Yes	77,240	5309	Park City
662	2005	Gillig	Low-Floor	32	Revenue	Yes	331,566	5309	Park City
663	2005	Gillig	Low-Floor	32	Revenue	Yes	405,727	5309	Park City
664	2005	Gillig	Low-Floor	32	Revenue	Yes	387,425	5309	Park City
665	2005	Gillig	Low-Floor	32	Revenue	Yes	396,791	5309	Park City
667	2006	Gillig	Low-Floor	32	Revenue	Yes	335,278	5309	Park City
668	2006	Gillig	Low-Floor	32	Revenue	Yes	324,560	5309	Park City
669	2006	Gillig	Low-Floor	32	Revenue	Yes	354,935	5309	Park City
670	2006	Gillig	Low-Floor	32	Revenue	Yes	343,250	5309	Park City
671	2006	Gillig	Low-Floor	32	Revenue	Yes	223,200	5309	Park City
672	2006	Gillig	Low-Floor	32	Revenue	Yes	335,000	5309	Park City
673	2006	Gillig	Low-Floor	32	Revenue	Yes	160,414	5309	Park City
674	2008	Gillig	Low-Floor	32	Revenue	Yes	227,066	5311	Park City
675	2008	Gillig	Low-Floor	32	Revenue	Yes	198,305	5311	Park City
676	2008	Gillig	Low-Floor	32	Revenue	Yes	214,365	5311	Park City
677	2008	Gillig	Low-Floor	32	Revenue	Yes	221,717	5311	Park City
678	2010	Gillig	Low-Floor	32	Revenue	Yes	181,599	5311	Park City
679	2010	Gillig	Low-Floor	32	Revenue	Yes	182,107	5311	Park City
680	2010	Gillig	Low-Floor	32	Revenue	Yes	146,008	5311	Summit County
681	2010	Gillig	Low-Floor	32	Revenue	Yes	154,512	5311	Park City

Source: Park City Municipal Corporation

H. Operating Facilities

The system has a number of facilities as well as some preparing to be built (Figure 2-12). These facilities revolve around:

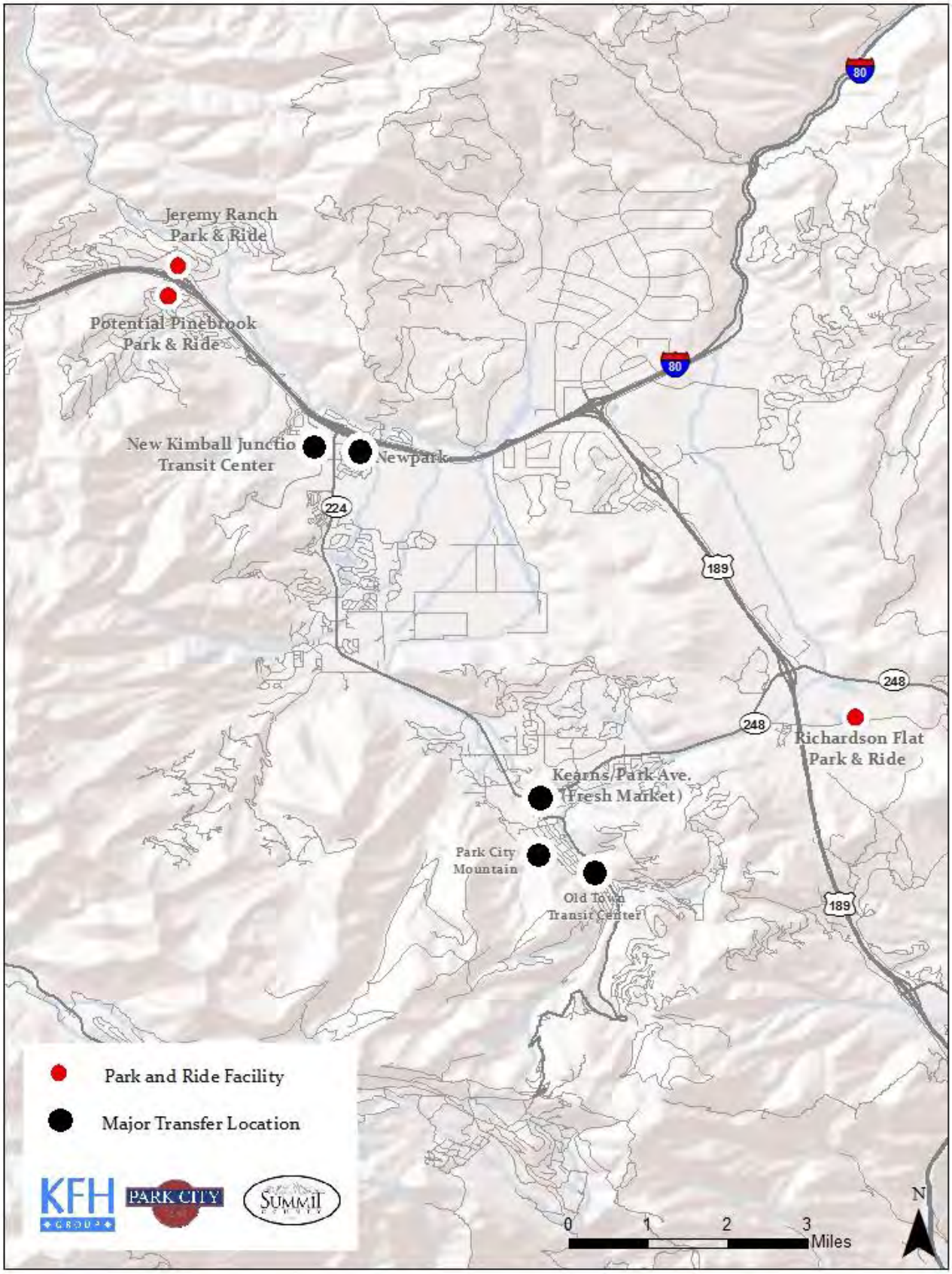
1. Transit/Transfer Facilities
    - Kimball Junction – Currently east of Highway 224 in the Newpark development, on the street. This will be moved to the west side of Hwy 224 southeast of the Walmart at a purpose built facility.
    - Kearns/Park Ave – An informal transfer point for people wanting to travel north from Kearns Blvd. This is an excellent location for a transfer center for service between the Kearns Blvd. and Park Avenue/Hwy 224 corridor.
    - Downtown Transit Center – A transit center that that currently has some transfers, and for many is a major stop. It is well designed to be a transfer center with the addition of a protected cross walk for passengers to cross the bus lanes to get from one side to the other.
    - Park City Mountain Resort – A major stop served seven routes. It is typically not used as a transfer stop.

2. Park and Ride Facilities – Park and Ride facilities will be critical to any future BRT type service. There is one facility to the north, a second proposed and a third, very limited facility proposed to the east. The Richardson Flats facility, already built, has very poor access from U.S. 40 from the east making it difficult to use unless an interchange is added. These facilities are depicted in Figure 2-12. At this time, the consultants are coordinating the study with Park City's parking study.

3. Shelters – There are 54 shelters throughout the system, most are of one type with varying sizes. Some shelters may not be completely accessible as they do not have room for a person using a wheelchair.

4. Operations Facility – Park City Transit has an operating complex centrally located in Park City. This includes the operations and management offices, maintenance and dormitories all located together. These facilities are satisfactory for the next 5 – 10 years.

Figure 2-12: Major Transfer and Park & Ride Facilities



I. Private Transportation Service

While the major focus of this effort is on public transit, below is a review of the existing private operators including taxis and other for-hire vehicles, and tourism related transportation associated with a hotel or resort.

Hotel Shuttles

All of the major resort hotels in the Park City Transit service area offer some form of shuttle service. These services are demand response and first come first serve. The shuttles travel within the Park City area and do not go to the Salt Lake City airport. As is typical of these types of hotels, they offer limited shuttle service on a one on one basis and therefor typically provide a low level of service.

Taxi and Car Services

Park City has a variety of taxi and for-hire car services. Some taxi services operate within the Park City Transit service area and some specialize in airport transportation. Taxi and car services include the following companies:

Snow Riders Taxi
Deep Powder Transportation
Powder Transport
FASTAXI
Viti Transportation
Park City Taxi Cab
C17 Transportation
Ski Taxi
R Taxi
Park City Ride
All Resort Express

Private Transportation Companies

Green Star Express is a private bus company operating scheduled service between Heber City and Park City. The service is commuter oriented with morning and midday runs from Heber City to Park City and three evening runs from Fresh Market in Park City to Heber City. The fare is $5 per trip. Green Star Express offers charter service to other Park City locations and Salt Lake City.

J. Review of Current Planning Efforts

As part of this planning process it is important to coordinate with other transportation related planning efforts in the area. The following is a review of other transit and transportation planning activities in Park City.

Park City Transportation Demand Management (TDM) Plan

The Park City TDM project is focused on reducing the vehicle miles traveled (VMT) in the area. The Park City Transportation Demand Management project is focused on reducing vehicle miles traveled (VMT) and related traffic impacts of Single Occupant Vehicles (SOV) during peak day and peak hours on SR-224 & SR-248. This reduction will be accomplished through a focused Transportation Demand Program that is targeted at those groups who show the highest propensity to make travel choices other than the Single Occupant Vehicle (SOV).

The project has recently finalized the existing conditions report with the following transit related findings.

- Between 2007 and 2014 annual ridership has decreased by a total of 10.3%, from 2,027,296 to 1,819,321 one-way passenger-trips. Over this period, 2014 experienced the lowest ridership to date.
- Busy times are 3 p.m. -7 p.m. in the winter, and 11 a.m. - 1 p.m. in the summer. Between 3 p.m. and 5 p.m. was the busiest boarding time.
- The Utah Transit Authority (UTA) began operating the PC – SLC Connect service in October 2011.
- There is no public transit service connecting Park City with many of the commuter residence locations, such as Heber and Kamas.
- According to FY 14-15 ridership by route, the city routes and Kimball Junction routes have the highest ridership.
- The 2011 onboard surveys suggest that nearly half of all respondents were Park City visitors.
- In the 2011 onboard surveys, several respondents identified the need for later transit service, and there were several requests for earlier transit service.

2015 Bonanza Park / Lower Park Avenue Transportation & Parking Study

Park City has embarked on a comprehensive study of the Bonanza Park and Lower Park Avenue neighborhoods.

The project goals and objectives are as follows:

- Develop land-use principles that are compatible with and support a broad range of short and long-range transportation improvements.
- Create a framework that establishes an implementation strategy supported by both private and public partners.
- Develop transportation solutions that reduce dependency on the private automobile, while improving travel by transit, bike and on foot.
- Implement the community's vision for a vibrant livable district, transit center, park-and-ride, and multimodal connections to and from Bonanza Park, Lower Park Avenue, Park City Mountain Resort, and Main Street.
- Support Park City's goals for a diverse economic base that includes both the tourist industry and local businesses.
- Identify the potential key opportunity sites to support transportation infrastructure.
- Understand community values and priorities, and use those values to shape project recommendations and outcomes.
- Ensure a collaborative community process through diverse outreach events and platforms for input.

The primary geographic focus of the study is Bonanza Park bordered by Kearns Boulevard, Park Avenue, Bonanza Drive, and Deer Valley Road) and the Lower Park Avenue districts. The project will analyze the city's larger transportation system and how proposed projects can facilitate improved travel to major destinations, especially Park City Mountain Resort and Main Street.

3. FINANCIAL REVIEW

The availability of operating budget data (Table 2-11) supplied by Park City staff is limited to the line items of:

- Personnel – includes Park City Transit staff
- Materials, Supplies and Services
- Interfund Transfer – This includes all of the services conducted by non-transit, city staff, including: human resources, accounting, finance, procurement and other services supplied by the city.

Park City operates with a significant annual surplus of funds (operating and capital) not shown in the expenses category. The city is following a policy of "paying for the operations of the system without the reliance of federal operating assistance." According to the City Capital Budget, Debt, and Grants Manager, this policy has assured the city that they could maintain a relatively equal level of service if federal assistance were to be reduced or discontinued.

According to staff this policy has allowed for the financial flexibility in the transit fund and has helped the fund save funding for future capital replacement needs or in essence a "rainy day" fund.

Table 2-11: FY 2013 – 2015 Park City Transit Operating Expenses

Expenses			
	2013	**2014**	**2015**
Personnel	$3,825,020	$4,029,019	$4,117,711
Materials, Supplies, Services	$792,586	$853,589	$1,133,507
Interfund Transfer	$2,425,000	$2,337,885	$2,552,082
Total	**$7,044,620**	**$7,222,508**	**$7,805,314**
Capital			
	2013	**2014**	**2015**
Expenditures	$1,369,897	$2,466,267	$615,740
Budgeted Amount	($2,505,262)	$3,415,777	$6,001,258

Table 2-12 indicates a diverse variety of funding sources including two taxes, funds from licenses and fees from the City and the County, Federal funds and other small line items. As stated earlier, the city maintains its rainy day fund. The diversity of funding, dedicated tax and rainy day fund gives Park City Transit a stable revenue stream, giving it flexibility to meet transit needs in Park City for the foreseeable future.

Table 2-12: FY 2013 – 2015 Park City Transit Revenue

Revenue	2013	2014	2015
Transit Sales Tax	$2,014,354	$2,100,451	$2,166,227
Resort Tax Transportation	$1,853,909	$1,918,682	$1,966,848
Business Licenses	$805,951	$811,606	$905,481
Night Rent License Fee	$145,526	$140,107	$134,533
Federal Assistance (Operating and Capital)	$1,200,950	$2,827,961	$1,630,990
Sale Of Assets	-	-	$3,420
Fare Revenue (Box Donations)	$36,243	$71,978	$31,078
Bus Advertising	$70,827	$55,910	$49,200
Regional Transit Revenue	$1,578,128	$1,479,268	$1,691,820
Donations	$65,988	$60,913	$60,912
Interest Earnings	$105,732	$80,657	$80,000
Other Miscellaneous	$23,202	$14,639	$4,225
Other Contributions -Real Estate Transfer Fee	$266,456	$391,814	$348,059
TOTAL	**$8,167,266**	**$9,953,987**	**$9,072,793**

Source: Park City Municipal Corporation

Table 2-13 details the operating costs and cost performance measures, which have remained stable over the past three years. Operating costs have increased due to corresponding increases in hours and miles. The bottom line cost per hour has gone up 5% in three years, a modest cost increase.

Table 2-13: Park City Transit Operating and Cost Performance Measures

	2013	2014	2015
Operating Costs	$7,044,620	$7,222,508	$7,805,314
Ridership	1,640,087	1,495,853	1,685,274
Service Hours	73,202	71,423	76,929
Service Miles	1,074,753	1,056,676	1,153,231
Cost Per One-Way Trip	$4.30	$4.83	$4.63
Cost Per Hour	$96.24	$101.12	$101.46
Cost Per Mile	$6.55	$6.84	$6.77

Source: Park City Municipal Corporation

4. SUMMARY OF EXISTING SERVICES

Park City Transit operates a vibrant system that adapts well to the constant change required of such a service. Highlights of the assessment include:

- **Park City Transit compares well to peers** – In the peer review, Park City Transit does well in terms of performance and costs, being securely within the peer's range of performance and in many cases performing better than peers.

- **Overall performance is stable** – Ridership is strongly related to the success of the winter season. Ridership has remained stable since the recovery from the Great Recession. The all-important productivity has remained high as well.

- **Unique service design** – Rather than the standard timed transfer approach, Park City Transit minimizes transfers by having many routes going on the same roads for significant periods.

- **Duplication of service** – Due to the desire to minimize transfers, there is considerable duplication of services throughout much of the service area. The unique service design has considerable duplication in the name of reducing transfers.

- **Flexible/diverse funding base** – Park City Transit has a strong and diverse funding base making the system as secure as possible. Funding comes from a variety of sources and like Park City Transit's peers; most funding comes from the local level.

- **Strong local commitment to transit** – Park City and Summit County have a clear commitment to transit. The desire of the community to retain its small town atmosphere and reduce auto traffic through transit and other tools is clear and focused.

- **Vehicles** – Park City Transit has a number of older buses that will need replacement within the next five years. Over one-half of the fleet may be eligible for replacement over the next five years.

- **Facilities** – Park City Transit has excellent facilities with a new transfer facility being built at Kimball Junction. There are few park and ride facilities at this time. Park and ride lots will be critical to the success of a Bus Rapid Transit (BRT) style service on Highway 224.

Appendix C
Technical Memorandum No. 3: Transit Demand Analysis

Technical Memorandum No. 3:
Transit Demand Analysis

INTRODUCTION

Transit demand is defined as the potential use of transit given a particular level of services. Demand is driven by the infrastructure, parking (at both ends of the trip), demand management policies and the national and state economies. For example (this is for illustrative purposes only), in the winter, demand estimates would be increased with adequate remote/intercept parking and BRT type service on Rt. 224, or additional parking constraints would also increase demand.

For the purposes of the identification of unmet needs and understanding demand this memorandum reviews demand in a status quo environment, with ridership dependent visitor nights. Demand for specific improvements such as bus lanes and parking limitations will be identified in the next Technical Memorandum when we present strategies. Following are the tasks that make up the demand estimates:

1. **Demographics and Land Uses** – This effort, critical to this demand analysis was completed as part of Technical Memorandum No. 1. It will be summarized as part of this analysis.
2. **Community Assessment of Transit Needs** – The second step in the demand analysis is the review of unmet transit needs. This effort utilizes the demographic and land use analysis coupled with the needs expressed in the outreach efforts.
3. **Potential Unmet Needs** – Based on the review of demographics and land uses, coupled with the community outreach efforts, unmet needs will include: areas, types of riders and time of day.
4. **Demand Potential** – In this section the consultants review the various market segments and demand estimates for each segment.

Under the current structure, ridership/productivity is excellent compared to peers. Based on the stress to the system (minimal back up vehicles) in the winter, the current winter season is close to capacity at this time.

1. DEMOGRAPHICS AND LAND USES - SUMMARY

This first section summarizes Technical Memorandum No. 1 which details the demographics and land uses in the study area.

Population Density and Transit Dependent Index

Population density is an important indicator for transit service. As a general rule, areas with over 1,000 people per square mile (or major trip destinations) can support fixed route transit service. Population density in the Park City area varies by season. Figure 3-1 shows the resident population density, which can also be considered the off-peak season density. The areas with over 1,000 people per square mile include Central Park City including Prospector Square and Park Meadows, Silver Springs, Silver Summit/Highland Estates, and Pinebrook. The areas with the highest concentration of people are along Kearns Blvd and in Silver Springs.

The peak overnight visitor per block group depiction (Figure 3-2) was calculated by allocating the peak visitors to block groups by the number of lodging units in each area. As a result we see the block groups in Kimball Junction, Deer Valley, Park City Mountain base area and the Canyons Village exceed the 1,000 people per square mile threshold. These tourism based block groups are geographically large relative to other block groups in the service area. While the shading of the full block group might lead one to believe that there is significant density throughout, this is not the case. For each of the overnight visitor based block groups shown, the overnight visitor populations are located in close proximity to the Highway 224 corridor.

Demographic Needs Summary

Within the service area, several patterns emerge from the demographic needs assessment. Areas that showed high concentration categories for population and transit dependence include:

- Kearns Blvd. corridor
- Pinebrook
- Silver Springs
- Kimball Junction
- Silver Summit/Highland Estates
- Park Meadows

For the most part these areas are well served at this time. In regards to tourist populations, the areas in Deer Valley, Park City Mountain base area and the Canyons Village have the highest amount of lodging and tourist visits. Park City Transit has developed a system that serves all of these geographic areas.

Park City has the most expensive housing in Summit County. As a result, many workers in Park City commute from other areas within the study area. The analysis of the study area shows that the highest concentration of people and transit dependent populations outside of Park City area include:

Figure 3-1: Park City Population Density

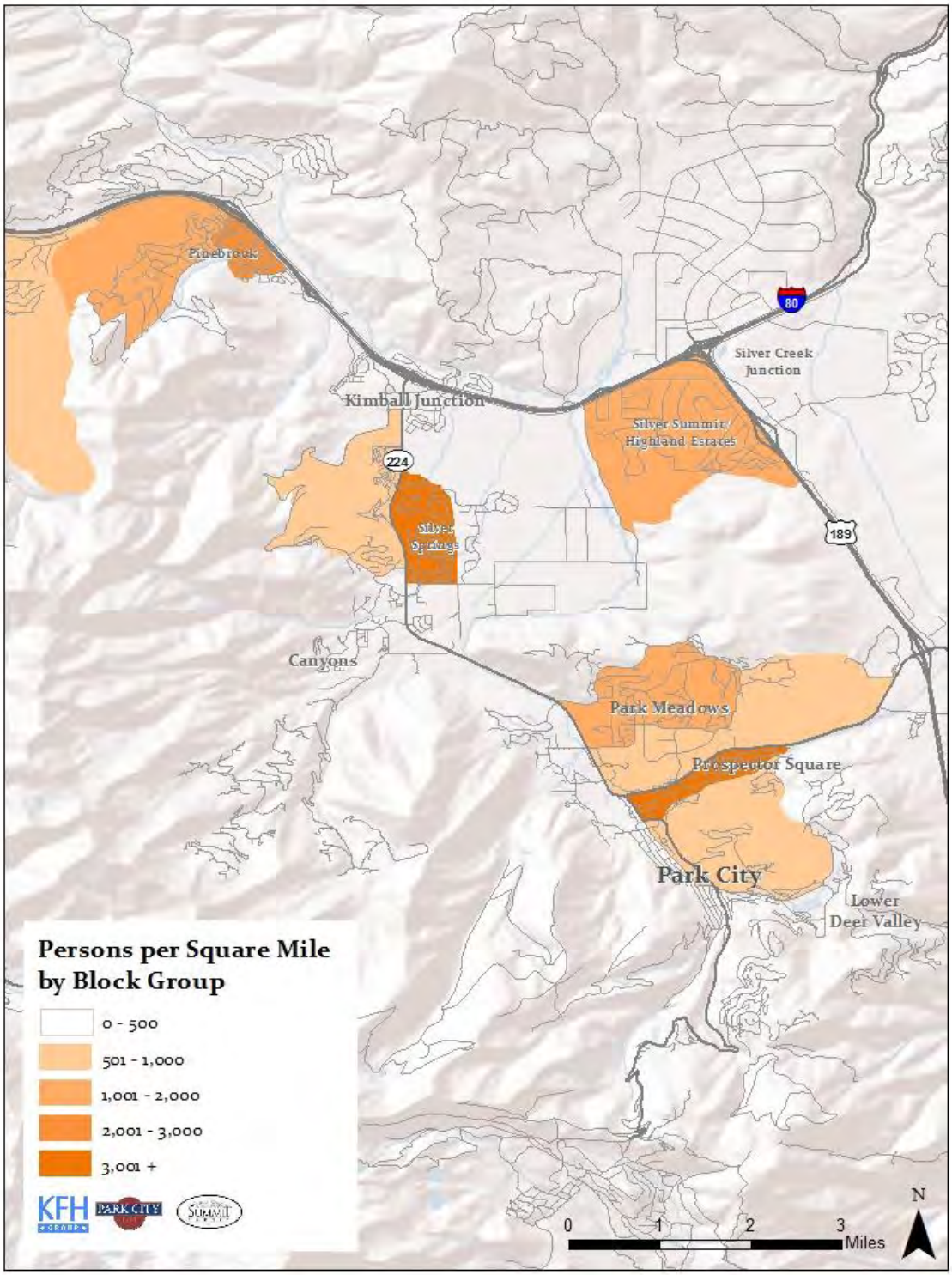
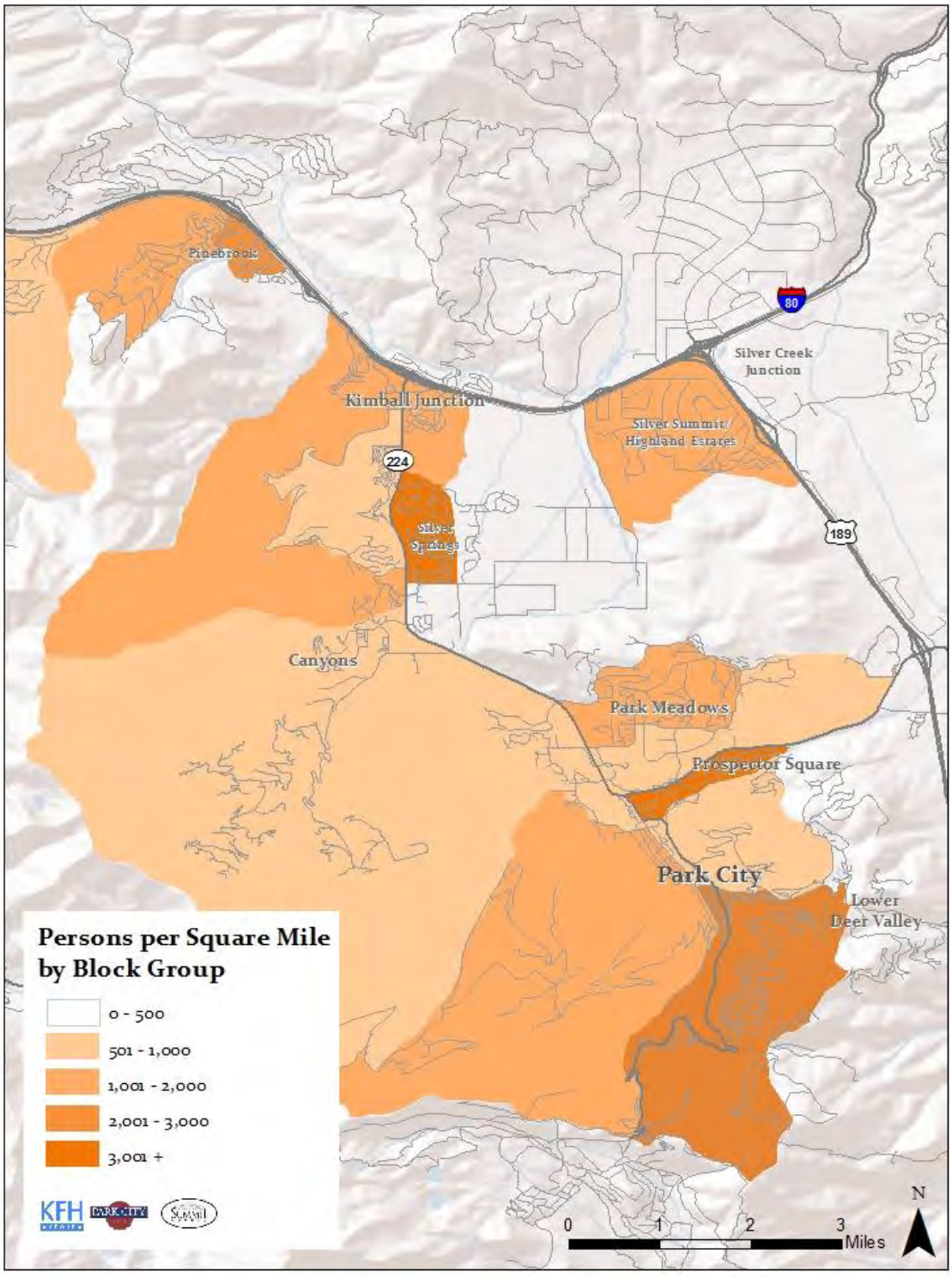


Figure 3-2: Park City Visitor and Local Population Density



- Heber City
- Coalville
- Kamas

Based on the demographic analysis Heber City, Coalville, and Kamas, all outside of the current Park City Transit service area, show a moderate to high need for public transportation service, although the actual numbers of people needing service will be low due to the relatively low population of the area. Subsequent technical memoranda will discuss alternatives and strategies for addressing these needs.

Land Use Summary

Land uses often determine the level of need for transit. While an area may have few residents and low densities, it may have shopping, hospitals, hotels or other locations that attract large numbers of residents and/or visitors.

Park City has many tourism based attractions from two ski resorts, Olympic training facilities, recreational areas and cultural areas. Included in this are the recreation centers in Park Meadows and Kimball Junction. These locations are frequented by residents and visitors alike. Figure 3-3 depicts all of the major trip generators along with the Park City Transit fixed route coverage area (up to ¾ mile from the fixed route). The only trip generators that fall outside of the ¾ mile corridor are the medical facilities in Quinn's Junction which are served by a dial-a-ride service, the Olympic Training Center as well as the Summit County Justice Center in Silver Creek Junction.

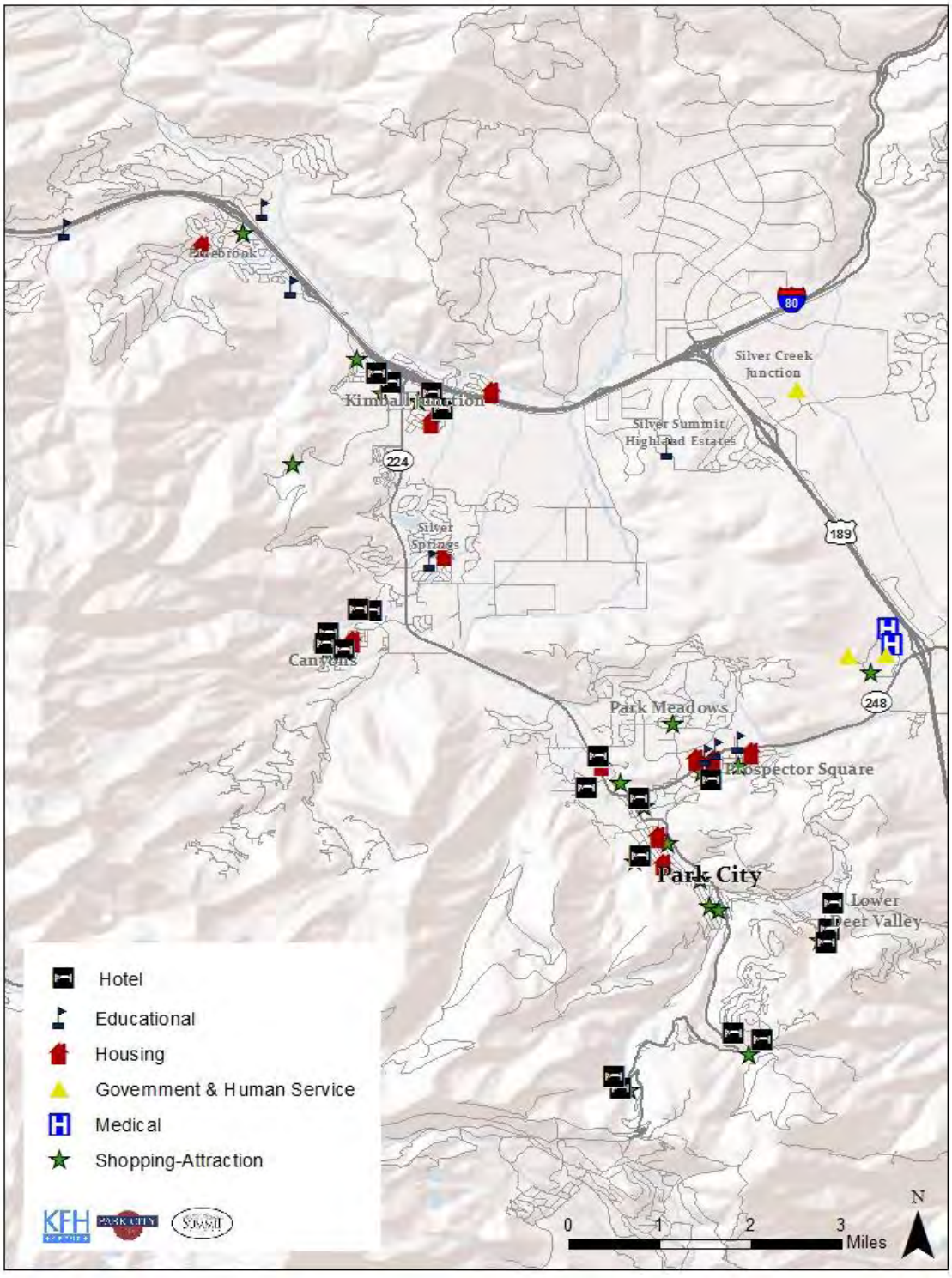
Overall Assessment Demographics and Land Uses

PCT with Summit County have done a good job in covering virtually all of the major origins and destinations within its service area. There is little need for expansion within the City, with the exception of the Hospital at the Quinn's Junction area. Communities on the edge of the current service area such as Jeremey Ranch and Silver Park are receiving little, if any service at this time. Further outside of the service area the communities in the Kamas Valley and Heber City which have moderate needs, but at a very low level of potential ridership.

2. Community Assessment of Transportation Needs

This section provides a summary of the unmet transportation needs, gaps in current transit services, and improvements to current services expressed by Park City and Summit County residents through four public listening sessions. These sessions were conducted each evening from 6:00-8:00 p.m. on October 20-22 and December 7, 2015. A summary of needs expressed by a stakeholder group that met on October 21, 2015 is also included. This group included

Figure 3-3: Park City Major Trip Generators



representatives from various resorts and other employers in the area. On-line comments are also taken into account.

The majority of each session was focused on obtaining input from participants on the transit needs and issues, and particularly improvements or changes that local stakeholders would like to see in regard to Park City Transit (PCT) services. During each session local residents expressed their appreciation for the PCT services and were complimentary of the drivers and operations staff. They also provided their suggestions and ideas for improving services. Participants unable to attend the meeting were encouraged to submit comments online through a link on the Park City Transit page, through the Park City Transit app, or via email. The listening sessions were held as follows:

- **Listening Session 1: Basin Recreation District Offices** October 20, 2015
- **Listening Session 2: Stakeholders – Park City Library** October 21, 2015
- **Listening Session 3: Park City Library** October 21, 2015
- **Listening Session 4: Summit County Field House** October 22, 2015
- **Listening Session 5: South Summit Middle School in Kamas** December 7th, 2015

Summary of Community Based Needs

Following is a summary of the key issues as expressed by participants of the outreach efforts. Full minutes and details from each meeting are in Appendix A to this document. The key issues revolved around:

- Where services or other improvements are needed,
- Who needs improved or expanded services,
- When expanded or improved services are needed,
- How these needs could best be met.
- Other needs

Where Needs Exist

The review of where needs exist as expressed in the community and stakeholder meetings are illustrated in two maps. Figure 3-4 shows the areas of need based on community input for Park City. The community identified areas of current and potential transportation needs in Silver Summit, Silver Creek Junction and Quinn's Junction. The desire to see expanded services serving Pinebrook and Jeremy Ranch, Kimball Junction, Deep Park Meadows, Upper Deer Valley and Empire Pass was also expressed. Park City Transit has tested expanded service in many of these areas with mixed results. Figure 3-5 depicts the same data at the study area scale. As shown there was input on expanded service in the Kamas Valley, the portion of Wasatch County between Quinn's Junction and Kamas, and Heber City.

Figure 3-4: Local Needs Identified by Participants in Outreach Effort

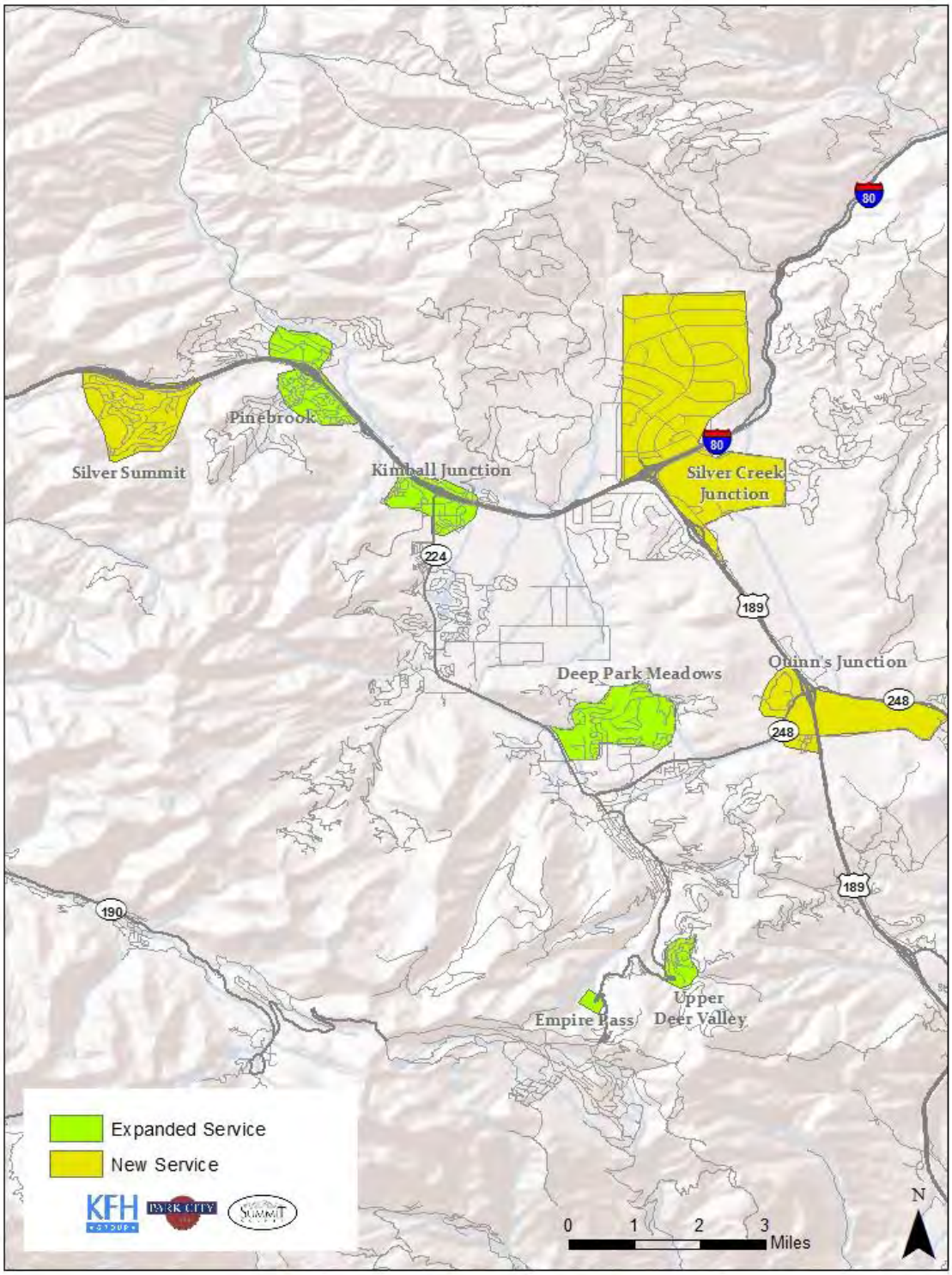
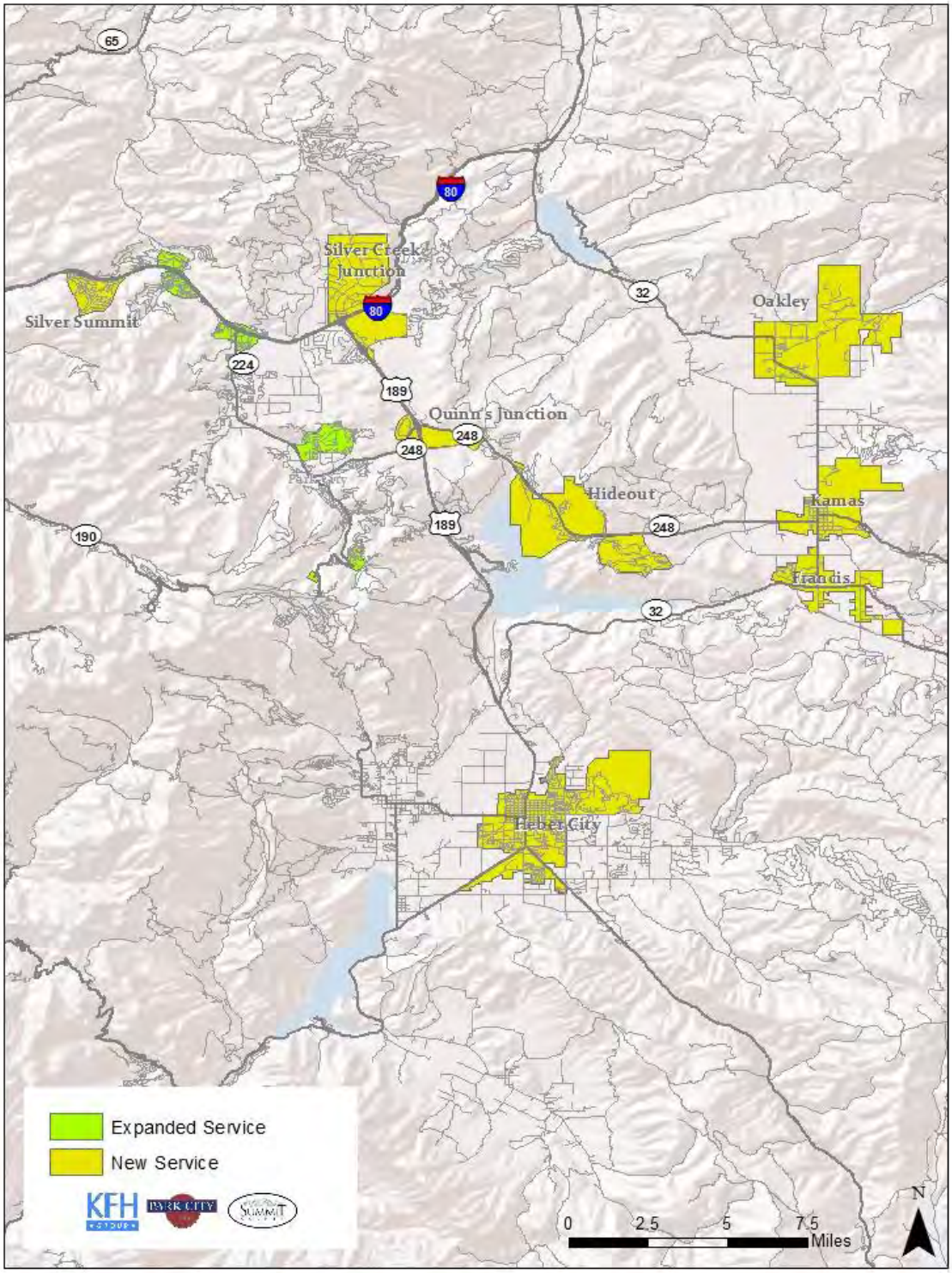


Figure 3-5: Regional Needs Identified by Participants in Outreach Effort



New in Park City:

- Fixed route service is needed to Quinn's Junction with the construction of 236 new homes, Park City Medical Center and the sports complex.
- Some participants expressed the desire to have service further into Park Meadows.

New in Summit County and Heber City

- Service is needed to Silver Creek Estates.
- Service is needed to Silver Creek Junction.
- Service is needed to Silver Summit.
- Service is needed to Summit Park
- Heber City service is needed.
- Need for a service extension to the Timberline and Summit Park Neighborhoods.
- Service for Sun Peak just north of Canyons was noted as a need.
- Service in the Willow Creek subdivision was identified as a need.
- Employment service in Kamas and the Kamas Valley including Oakley, Francis and Woodland.
- Service for the areas in Wasatch County between Kamas and Park City. These areas include Hideout, Todd Hollow, Keetley, Jordanelle, and Deer Mountain

Expanded Service – Summit County/Wasatch County

- Expanded park and ride capacity was requested in Kimball Junction to accommodate use of bus service from there to downtown Park City.
- Expanded service is needed to Pinebrook.
- Expanded service is needed to Jeremy Ranch.
- Later service to Silver Lake and Empire Pass for service workers
- Expanded service to Salt Lake City, especially a midday trip. Weekend service and service to the airport was also recommended.
- Expanded service in Spring Creek
- Service to Guardsman Pass during the recreation season was stated as a need.

Who

- Commuters – from Summit County communities surrounding Park City and Wasatch County particularly both Heber City and Salt Lake City
- There is need to ensure bike riders can continue to use the transit service.
- School aged children would benefit from services that allows them to reach recreational centers and extracurricular activities in the Kamas Valley.

When

Service Hours

- More frequent service is needed on the Brown Route, especially during special events. Participants noted that often the bus is full at these times unless someone boards at the early portion of the route.
- Extended service hours, both in the morning and evenings, are needed to accommodate early and late work shifts.
- There is a need for earlier service to Deer Valley.
- More frequent service is needed, especially during peak hours in the morning and afternoon.
- Participants noted that sometimes the bus arrives/departs a stop before the stated time on the PCT app.
- Safe late night shuttle service on Main Street for service workers

Seasonal Needs

- Some participants expressed the desire to see the Empire Pass and Silver Lake routes run beyond Labor Day.
- The seasonal changes are confusing to the riders. There was an expressed need for more consistency throughout the year.

How

- Reconfigure some of the service around Main Street and into the transit center.
- Intercept lots on the perimeter of Park City so that people can leave their cars there and ride into town.
- There is a need for more express routes as opposed to local service.
- Neighborhood feeders or dial a ride services are needed that connect with express routes.
- Residents expressed the desire to see bus more bus stops with benches and shelters.

Infrastructure Issues

- The Richardson Flat park and ride lot is not used. Participants noted that it would be great if it was a resort employee lot with non-stop service to the resorts.
- Information at bus stops should be in Spanish particularly the Bonanza/Prospector area.
- More trash cans are needed at bus stops. Sponsorship program to get more trash cans at stops should be explored.
- Bus stops should have more lighting or some way to signal drivers to stop in dark areas. A button with flashing bus stop signs was one idea mentioned.
- Residents expressed the desire to see more bus stops with benches and shelters.
- Improved signage for traffic to resorts and parking facilities is needed.

- Ski lockers can make using transit easier. While Deer Valley has them there are none at Park City Mountain,
- Bus Rapid Transit (BRT) lanes (morning and evening peak hours) could be an option in the center of Route 224, and 228.
- Improved signage for traffic to resorts and parking facilities is needed.

Routes

- A desire to see a reverse route into Park Meadows was expressed, as the current loop isn't convenient for some residents.
- Express park and ride service with direct links to the ski resorts is needed. Making stops along the way makes transit unattractive to many resort employees and skiers.
- Some participants want to see more park and ride lots throughout the service area that have express service to ski areas.
- A stronger partnership between PCT and private industry was noted as an opportunity to expand services.
- There needs to be better marketing of the fact that PCT services are fare free.
- Participants asked about the possibility of new racks that can accommodate more skis.

Other

- Additional bike racks on PCT buses are needed to accommodate more non-motorized transportation. Electric bikes should also be considered.
- Enhanced shelters – "Hospitality stops" – are needed.
- Any new development should include construction of a bus shelter.
- Long term planning should include consideration of Maglev technology.
- One participant asked how this plan will dovetail with plans in Wasatch County.
- There is a need for a pedestrian/biking bridge over I-80 so that people can use the park and ride on the north side of the highway and walk or bike to Kimball Junction instead of driving.
- Concerns were expressed regarding road construction and the impact on maintaining on-time bus services.
- More marketing is needed by resorts to ensure visitors are aware of the PCT services.

3. ASSESSMENT OF UNMET NEEDS

As discussed previously PCT has excellent coverage throughout the existing service area. The one exception is the area around Quinn's Junction. Additionally most of the more populated areas of the county are well covered as well. Most of the unmet needs were in the outer areas of the county – areas that are very difficult for fixed route to serve and will produce very low ridership under any scenario. These areas included:

- Silver Creek Estates.
- Silver Creek Junction.
- Silver Summit.
- Summit Park
- Heber City
- Kamas and the Kamas Valley including Oakley, Francis and Woodland.
- Areas in Wasatch County between Kamas and Park City. These areas include Hideout, Todd Hollow, Keetley, Jordanelle, and Deer Mountain

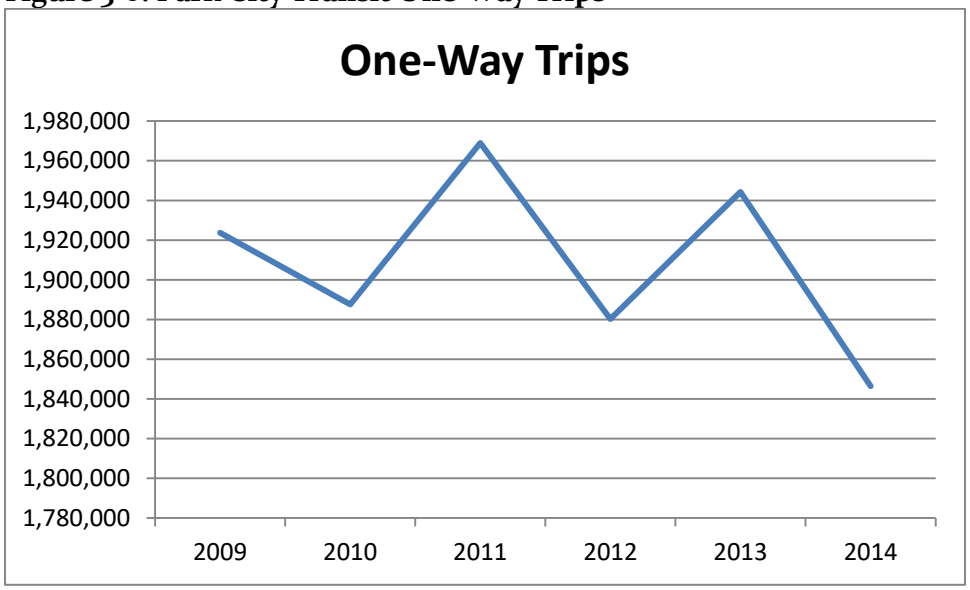
4. TRANSIT DEMAND ANALYSIS

This section assesses public transit demand by looking at existing transit usage and current transit mode split. Estimates of future transit demand are based on current transit demand and current transit service. Demand changes due to changes in service will be addressed in the alternatives memorandum.

Trend Analysis

Park City Transit offers a robust level of service for a community of its size. Park City Transit operates about 73,602 hours and 1,096,171 miles of fixed route and special events service annually (using 2014 data). Over 1.8 million one-way trips were completed in 2014. Figure 3-6 displays the transit ridership trends since 2009. 2009 is used as the baseline as 2008 saw an unusual decline in the economy in Park City and around the country. Ridership is down 4% from 2009 due to changes in the economy and reductions in service hours. Over the six year span of 2009 to 2014 the system a 6% difference between the high of 1,968,933 (2012) one-way trips to a low of 1,846,383 one-way trips (2014). During that time there was a 2% decrease in service hours.

Figure 3-6: Park City Transit One-Way Trips



Source: Park City Municipal Corporation

If no major service changes are made, based on stable conditions ridership may rise or fall about 5 percent annually depending on service adjustments and ridership will fluctuate accordingly as depicted in Table 3-1. As shown a five percent increase in ridership will result in an average of 5,270 trips per day or 1.92 million one way trips per year. This is consistent with year to year trends over the last six years.

Table 3-1 Potential Ridership Based on 5% changes from the Baseline

Season	Average One-Way Transit Trips Per Day	5 Percent Increase	5 Percent Decrease
Peak	12,130	12,735	11,525
2014 Average	5,020	5,270	4,770

Source: Park City Municipal Corporation

Transit Mode Split

Transit mode split is the percentage of all trips in a service area that are taken on transit. Table 3-2 details the current number of all trips made in Park City and the transit mode split. As shown on average the transit mode split is 3.34%. During the peak season it is 4.9%. Transit mode split will likely stay within three to 5 percent over the next five to seven years if no major service changes are made.

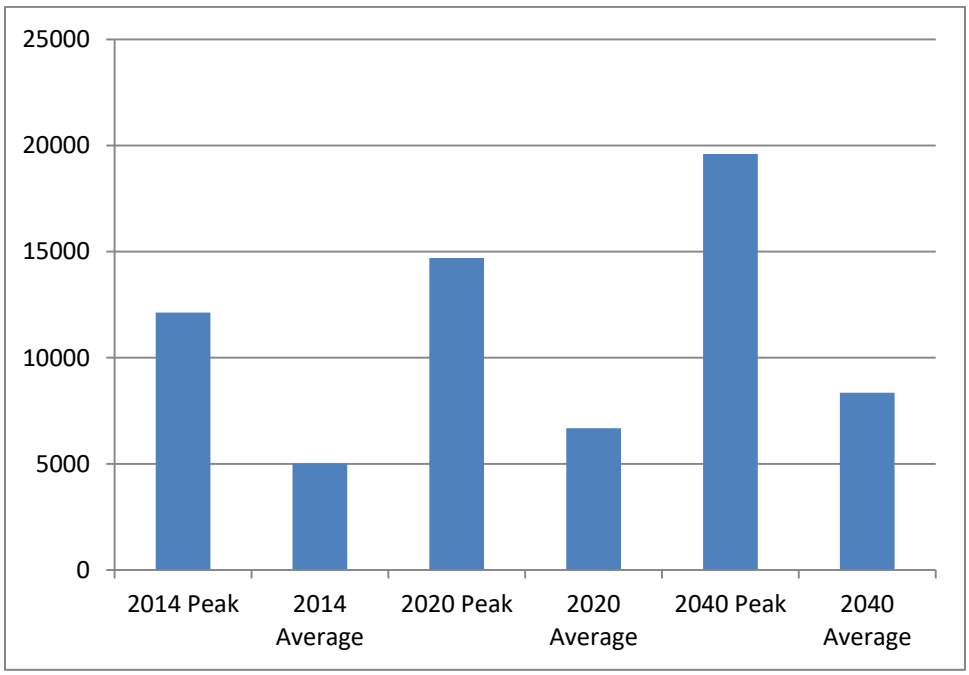
Assuming the transit mode split remains constant increases in one-way trips are depicted in Figure 3-7. Average one-way transit trips per day should increase 33.3% by 2020 or to a total of 2,438,200 one-way trips per year. This level of increase will impact transit service and operations and will require additional service and resources to accommodate. Due to the fact that during the peak portions of the season the transit system is currently pushed to peak vehicle capacity additional capital resources including up to an additional eight additional vehicles in the overall fleet will be needed to accommodate such growth.

Table 3-2: Transit Mode Split Projections

Season	Average Daily Person Trips	Average One-Way Transit Trips Per Day	Transit Mode Split
2014 Peak	200,000	12,130	4.90%
2014 Average	150,000	5,020	3.34%
2020 Peak	300,000	14,700	4.90%
2020 Average	200,000	6,680	3.34%
2040 Peak	400,000	19,600	4.90%
2040 Average	250,000	8,350	3.34%

Source: Average Daily Trip Data. Park City Traffic & Transportation Masterplan 2011; Park City Transportation Demand Management Existing Conditions, Peer Research, and Markets & Opportunities. PCT Ridership Data: Park City Municipal Corporation.

Figure 3-7: Park City Daily Ridership Projections Based on Transit Mode Split



Source: Average Daily Trip Data. Park City Traffic & Transportation Masterplan 2011; Park City Transportation Demand Management Existing Conditions, Peer Research, and Markets & Opportunities. PCT Ridership Data: Park City Municipal Corporation.

Overall Assessment of Transit Demand

To assess the overall transit demand we examine historical and current demand trends. Over the last six years ridership has not fluctuated up or down more than five percent from one year to another. Assuming that this trend holds true PCT can expect an average range of 4,770 daily one-way trips to 5,270 daily one way trips or between 1.74 million to 1.92 million one-way trips per year.

Based on a consistent transit mode split and total daily trip projections outlined on the Park City Traffic & Transportation Masterplan (Figure 3-7) average one-way transit trips per day should increase 33.3% by 2020 or to a total of 2,438,200 one-way trips per year.

Appendix D
Technical Memorandum No. 4: Development of Alternatives

Technical Memorandum No.4: Development of Alternatives

INTRODUCTION

This technical memorandum is a working document designed to initiate a collaborative approach among the stakeholders in order to select and prioritize the alternatives and strategies that will guide the development of public transit in Park City and Summit County over the next 7 years. This memorandum is based on the previous review of existing services, demographics, land uses and travel patterns as well as an assessment of overall need. This included meetings with stakeholders and the general public.

The alternatives focus on the major and minor decision points for determining the ultimate direction of the study. **These are not recommendations; rather they are potential strategies that can be employed to address an issue. Park City and Summit County management are to select and prioritize (by year) the alternatives to be included in the plan. Selections can include: alternatives, modified alternatives or other alternatives/strategies not included here.** The decisions made by Park City and Summit County as a result of this memorandum, discussion and outreach will guide the final plan.

The development of alternatives and options includes the following components:

1. **Review of Existing Structure** – In this section the system structure will be discussed and an alternative timed transfer approach will be considered.
2. **Route Modifications** – As with every transit system, there are growing needs and modification alternatives.
3. **Express Bus/BRT/Fixed Guideway Corridors** – Many voiced the need for improvements that can be implemented now to alleviate traffic along the S.R. 224 corridor. A number of options will be discussed. It is here that future (beyond the time horizon of this study) service considerations should be planned. Most important will be to address the growing needs along the S.R. 224 and 248 corridors. A number of options will be discussed.
4. **New Service** – Park City Transit provides excellent fixed route coverage in the Park City/Snyderville/Kimball Junction area. In fact, almost all areas that can sustain fixed route have that service available. Most new services will be beyond the current service area.
5. **Other Modifications and Recommendations** – Infrastructure, staffing, organizational and related issues will be discussed in this section.

1. Review of Existing Structure

Park City has an unusual service design in that the system eschews timed transfers and instead operates multiple routes over the same roads often at the same time with different ending locations. This unusual approach has a number of advantages over the traditional timed transfer structure for Park City's unique needs. As was stated by some stakeholders, Park City Transit was purposely designed to minimize transfers, especially for persons with skis and bicycles.

The current approach reduces transfers through multiple routes going to the same destinations as opposed to the more common timed transfer approach. At the same time, while there appears to be duplicative routes, they are in fact complementary in that they all have relatively high ridership, evidence of demand rather than duplication.

As stated above, Park City is an unusual situation based on the layout of the city and its unique winter needs with many riders carrying skis. The current route structure has a number of inherent advantages over the more traditional timed transfer.

Advantages

1. *Current structure has high ridership* – Maximizing ridership is always a goal. It is not believed that timed transfer would generate additional ridership other than the allusion of more trips due to additional transfer requirements yielding more boardings/trips (for example a person transferring to get to their destination would board two buses and have two trips each way);
2. *Structure is productive* – Even more important than total ridership, service productivity is an important measure and by that measure, Park City Transit's performance is excellent;
3. *Transfers are minimized* – this is important during high volume ski season. Many passengers carry skis, snow boards and other equipment/gear. Requiring more transfers would be an inconvenience and slow the service down as it takes longer to board and alight riders with skis or bicycles;
4. *Long history of this service design* – Most are accustomed to the current structure. Changes will bring confusion and possibly a short term reduction in ridership;
5. *Excellent coverage area* – Service area coverage is extensive with the current structure. Timed transfer would not change that.

Disadvantages

There are no specific disadvantages to the current structure that would give a timed transfer approach better coverage or greater ridership. Timed transfer can be less

confusing, with fewer routes, but transferring is considered a significant negative by customers.

Conclusions – Route Structure

The current route structure works well for Park City, it does not need significant change. There will always be a need to fine tune the system with continual improvements and minor adjustments. By continually adjusting service, this route structure should continue to be effective in meeting the needs in the service area. Improvements can include strategies such as having specific timed meets to make better connections/transfers when they are needed and routing modifications to improve connectivity. These will be discussed in service modifications.

2. SERVICE MODIFICATIONS – POTENTIAL CHANGES

As stated above all systems need to fine tune their service on a regular basis to meet ever changing needs. The key for these route modifications is to ensure flexibility to make change on a regular basis. Further, when making these changes, in most circumstances the changes should usually stay in place for at least six months, but preferably one year and be well marketed and promoted before success or failure can be determined.

The alternatives were based on the outreach with the public and stakeholders, transit planners and management, consultant observations, review of existing services and review of demographics and land uses.

When reviewing and selecting alternatives keep in mind that each alternative can have a variety of variations – hours can change, the routes are simply a guide and can be changed as well.

A. Replace Low Density Fixed Route with Call a Bus

Demand response call a bus service may have a place in the Park City area (*please note that the term "call a bus" is typically referred to as "dial a ride" across the country however that term is used in Park City for a different model and we use the term "call a bus" for that reason).* Call a bus service has a person calling or activating an app shortly before the trip and having the vehicle pick them up at the door or a nearby corner and take them somewhere in the call a bus zone. In most urban cases the focus is on connections to nearby fixed route or rail. Alternately commuters, students and others with regular transportation needs can generate a subscription trip where they only make contact with the dispatcher when they are canceling a trip.

There are two sets of call a bus service alternatives. This first set, discussed here, identifies fixed route segments with low ridership where transit can eliminate the fixed route portion and substitute a call a bus vehicle that may operate in a number of zones, spreading the cost. The second set of call a bus alternatives is for instituting call a bus in unserved areas and will be discussed under the new services section of this memorandum. Figure 4-1 depicts potential replacement call a bus zones.

Potential Changes

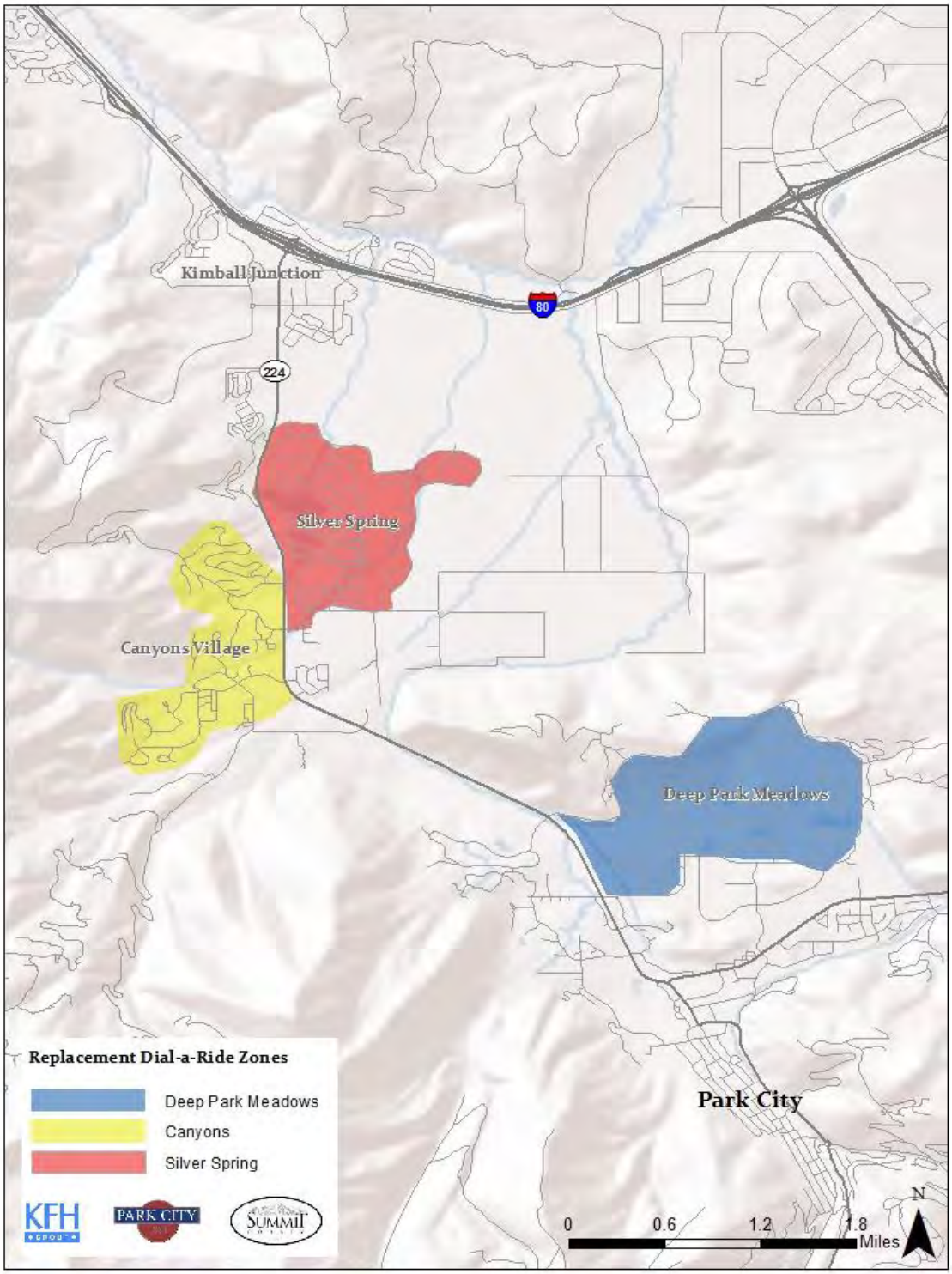
The focus here is on Silver Springs and Rt. 7: Kimball Junction West, Rt. 6: Canyons (shoulder seasons only) and Deep Park Meadows (it had service at one time). In most cases, one vehicle will be able to serve all three call a bus zones (shoulders) and during peak seasons with two zones, one vehicle will be able to meet most of the needs:

- Currently in Silver Springs ridership is light but Rt. 7: Pink – Kimball West spends five additional minutes going through the neighborhood. It also requires one unprotected left turn in the southbound direction that would be eliminated. This will also help Rt. 7 improve its on-time performance and possibly reduce or eliminate the use of tripper buses during peak periods. The call a bus service would serve one basic function – to get residents of these communities from their house to a fixed route bus stop.
- In Canyons, the usage of Rt. 6: Lime – Canyons, is very low during the shoulder seasons. During the shoulder seasons, a call a bus service can be put in place to get people from the resorts to the Canyons Transit Hub. The vehicle could be shared with Silver Springs and Deep Park Meadows. At the Hub passengers will be able to go anywhere Rt. 6 goes. The funds saved on Rt. 6 in the summer can be applied to that route during the winter to reduce its headway by adding a bus during peak hours.
- Deep Park Meadows received a number of requests for service. That area is not really appropriate for fixed route due to meandering roads, and very low population density. Previous attempts to serve it with fixed route failed.

Potential Costs and Ridership

Implementing call a bus in Canyons during the shoulders would result in a savings where instead of operating one fixed route vehicle for 9 hours a day, a call a bus vehicle can be shared, reducing costs during the shoulder by more than 50 percent.

Figure 4-1: Potential Dial-a-Ride Zones to Replace Low Density Fixed Routes



Rt. 7 may not see a reduction in costs as the service would still operate the same hours, but the need for a tripper bus may be reduced and the route will be able to attain a higher on-time performance while maintaining the current headways. Call a bus costs will be about $90 per hour and with 12 hours a day service the cost would be about $400,000 annually. Each of these zones would share vehicles and it is estimated that each would require ½ of a vehicle ($200,000). Any slack time can be used to support ADA paratransit.

Ridership will remain stable at Silver Springs and Canyons and should see 2 – 3 one way trips per hour in Deep Park Meadows.

Advantages and Disadvantages

- Advantages
  - Eliminates the need to operate a 35 foot bus in a low density neighborhood;
  - Continues to provide customer access to the system through an app, telephone call or standing order trip;
  - Allows fixed route to operate faster – outweighing some of the costs;
  - Silver Springs passengers can be transport to Canyons Transit Hub and access to express service. Park Meadow passengers can be taken to Kearns Blvd. and Park Ave.;
  - Innovative vehicle sharing with other areas and ADA paratransit can reduce costs. Paratransit technology can be applied to these services.
- Disadvantages
  - Often requires contact with the system (at least a telephone) to request a trip;
  - Requires a transfer, often seen as a negative;
  - May cost more with the addition of service.

B. Quinn's Junction Fixed Route

There were a number of comments regarding service to the Quinn's Junction area, specifically the Park City Medical Center and supporting medical facilities as well as the Park City Ice Arena and Sports Complex. It is a growing area that attracts both persons seeking medical care as well as commuters going to work at the medical facilities. The existing demand activated service requires an individual to call and request a ride and then walk to the bus stop. This service generates very low ridership.

Potential Changes

Potential routes include a shuttle style service between the Medical complex to the intersection of Park Avenue and Kearns Blvd. where riders can transfer to go north or

south (Figure 4-2). A timed transfer with Routes 6, 7 and/or 8 would be advantageous for riders. At about 7 miles per round trip, it may be possible to operate on ½ hour headways with one bus during most days and times. A second option would have the route operate to Park City Mountain and/or the Old Town Transit Center, expanding the headway (40 minutes) as well.

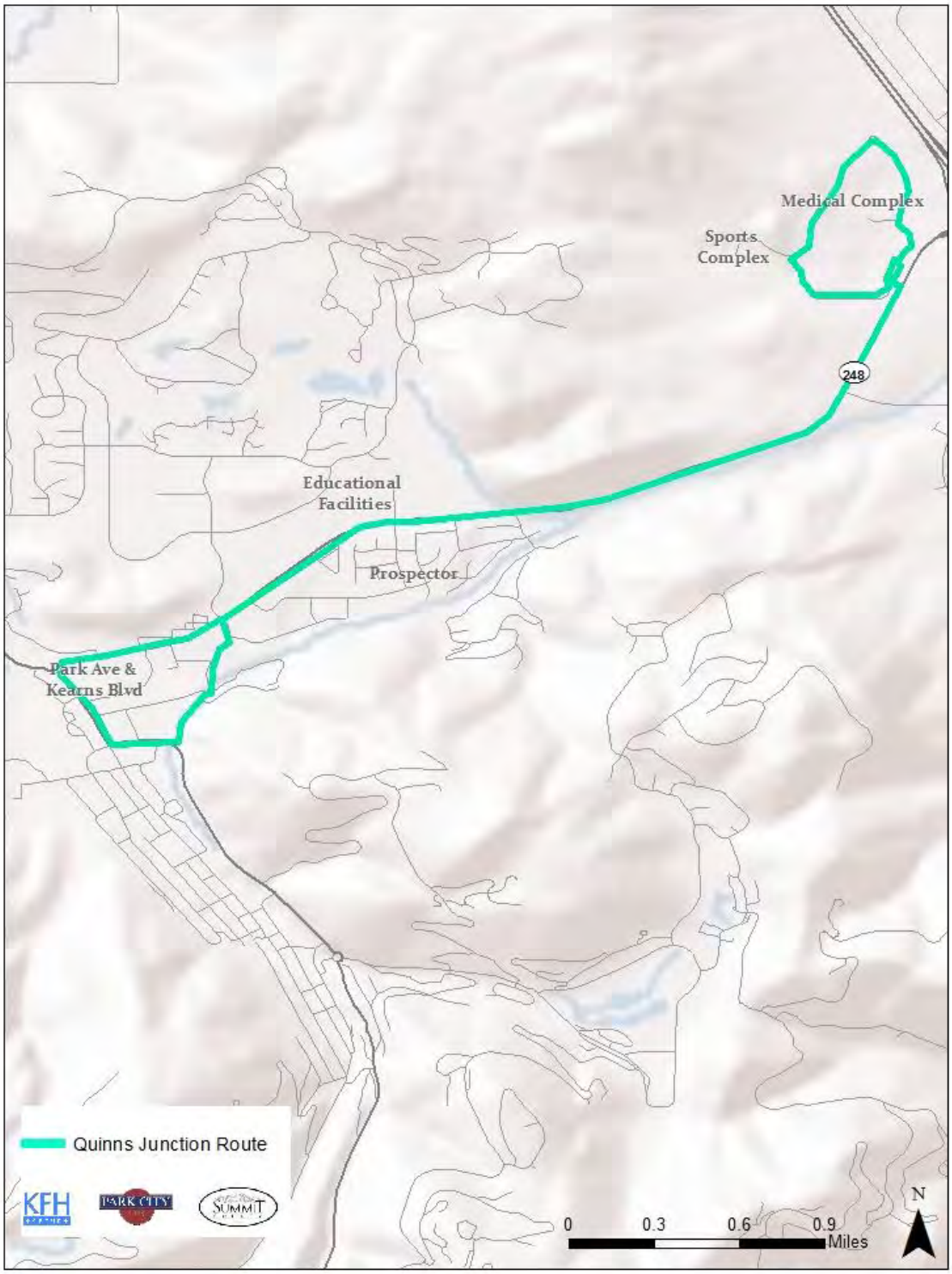
ADA paratransit coverage would have to expand to meet the need to the hospital and other facilities. Park City can develop protocols to maximize usage of fixed route and minimize ADA costs. Fixed route mobility training programs along with a strong certification program will ensure that all get service according to needs. This program is inexpensive to implement, if kept simple and pays for itself in less than one year.

Potential Cost and Ridership

The current Quinn's Junction service provides about 4,600 hours of service annually or about 12 hours per day and generates 1.6 one way trips per hour. Operating a new service at 12 hours a day while eliminating the existing service would result in no additional fixed route costs. 16 hours per day will require an additional 4 hours per day or 1,500 additional hours of service. Assuming a per hour cost of $101 the cost to expand the hours of service is $152,000 annually.

ADA service may see 5 – 10 one way trips per day, depending on the eligibility and training process. This may require additional ADA service costs during peak hours, however with the proper mobility training and eligibility certification processes some of the ADA riders may be able to use fixed route.

Figure 4-2: Potential Quinn's Junction Route



Advantages and Disadvantages

- Advantages
  - Will produce higher ridership to a critical destination;
  - Easier to use, does not require a telephone call;
  - Will allow for access to the Medical Complex for persons with disabilities and elderly persons that cannot use the bus;
  - Will eliminate a very low productivity/high per trip cost service;
  - If operating 12 hours per day, will not increase system costs.
- Disadvantages
  - Requires expanding ADA complementary paratransit zone and possibly additional costs;
  - Expansion of hours (optional) to 16 per day will increase costs.

C. Revise Route 1: Red - Prospector Square and Route 5: Yellow - Prospector Express

Route 5: Yellow - Prospector Express is a winter only route to supplement Rt. 1: Prospector Square. Its purpose is to provide a direct link between Prospector Square, Old Town and Lower Deer Valley. Unlike Rt. 1, it does not serve Park City Mountain. Routes 1 and 5 have a loop (Deer Valley Dr. and Park Ave.) that reduces their effectiveness.

Potential Changes

There are two potential changes that could occur on these routes. The first involves a routing change and the second, alternative suggests for operating in the summer.

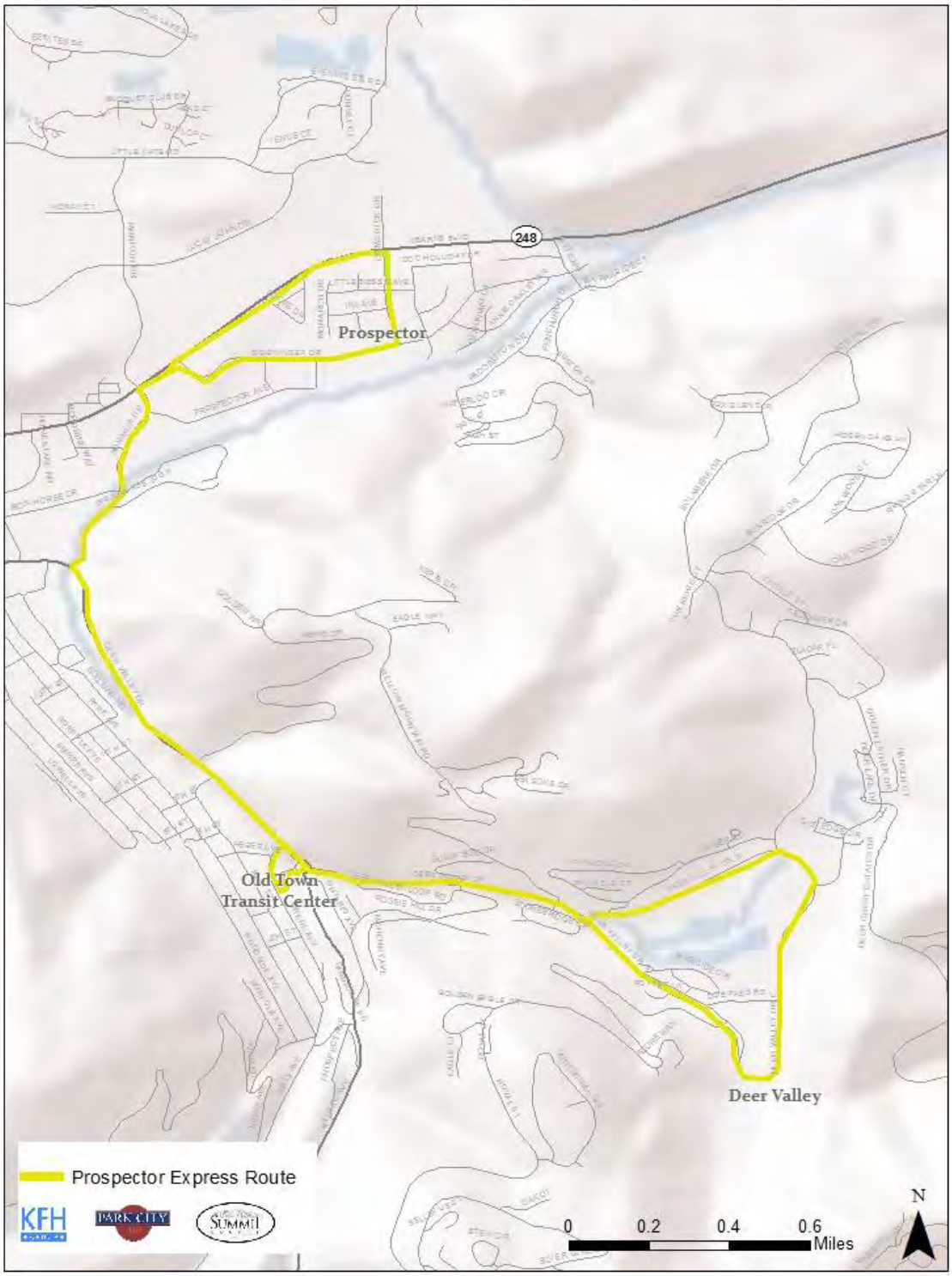
Route Revisions

This route change (Figure 4-3) eliminates the loop between Park Avenue and Deer Valley Dr. for both Routes 1 and 5. Due to this one way loop, passengers going from the library to Prospector Square must travel through Deer Valley or ride a different bus. Rt. 5 will use Deer Valley Dr. while Rt. 1 will use Park Avenue all year, as it does in the summer and shoulder seasons. This change will also improve consistency. Rt. 1 can be used to provide two-way service to destinations on Park Avenue previously served one way by Rt. 5.

Summer Service

Summer ridership on Rt. 1 is the highest in the system for any season, at over 40 one way trips per hour. As this continues to increase, thoughts should be given to operating Rt. 5 in the summer for the same reason it operates in the winter – to provide relief to Rt. 1.

Figure 4-3: Alternative Route 5: Yellow - Potential Prospector Express



Potential Cost and Ridership

The routing change will have no additional cost associated with it. Ridership should increase marginally through the enhanced service. Service quality however, should see an improvement in ride time.

Additional summer service using the same number of daily hours (16) and 20 minute headways would result in a monthly cost of $97,000 per month. Operating on 40 minute headways would result in about $50,000 per month costs. Ridership will come in part from the heavily traveled Rt.1 and new ridership can be generated through easier and faster access to Old Town and Deer Valley.

Advantages and Disadvantages

- Advantages
  - Provides express service between Deer Valley, Old Town and Prospector Square, three major destinations;
  - Provides direct out and back service, eliminating the loop ;
  - Rt. 1 and other routes can serve the needs on Park Avenue;
  - Summer service can provide relief to Rt. 1.

- Disadvantages
  - Change can be difficult
  - May need timing adjustments

D. Route 6: Lime - Canyons

This route has undergone a number of changes since the project started. Park City Transit has begun expanded service and express service on this route as a winter 2015-2016 pilot program. The pilot service operates late into the evenings and is an express service during peak hours suspending the Kearns Blvd. portion of the route during these times as other routes can provide the same coverage. For example, a timed meet with Rt. 1 or a new Quinn's route will give riders access across the system. The evening-night service has proven effective to this point.

The problem with this route however is the ridership during the shoulder seasons where productivity drops from 26 one way trips per hour in the winter and 16 trips per hour in the summer down to 3.5 one way trips per hour in the shoulder seasons. This is due in large part to few people at the Canyons in the shoulder season, duplication with other routes and the meandering nature of the route.

Potential Changes

Canyons has low utilization during the shoulder seasons. There are a few changes that could be made to improve performance in these seasons:

- Expand headways - An option can be to increase the headways by interlining with another route such as a new Quinn's Junction Route;
- Eliminating the fixed route during the shoulder seasons and provide call a bus service in conjunction with other call a bus zones. In this scenario a call a bus van would take people to the Canyons Transit Hub to connect to an express or local route. See previous alternative for details;
- Operate a service direct to Park City Mountain (PCM) and eliminate the Prospector section. This route could be timed to meet the Prospector Bus at Kearns Blvd. Results of a pilot project winter 2015 -2016 were impressive.

Potential Costs and Ridership

In these alternatives there would be a reduction in costs of about $90,000 or $18,000 per month as service would be reduced during the shoulder season. Interlining with another route would keep costs low for both routes. Sharing a call a bus vehicle will also reduce costs by about the same amount. Ridership, already low, would be maintained through the expanded headways or the call a bus service.

Advantages and Disadvantages

- Advantages
  - Reduces unproductive service;
  - Reduces costs;
  - Will not lose ridership;
  - Maintains a 1 hour headway during the slowest period;
  - If call a bus is selected it can share the vehicle with another zone to reduce costs;
- Disadvantages
  - Change can be difficult

E. Rt. 2: Green - Park Meadows

Park Meadows is a low density neighborhood of single family homes. The route also has a recreation center in it. Ridership is at its lowest point in the shoulder seasons (11 one way trips per hour).

Potential Changes

Consideration should be given to reducing the vehicles from two to one and increasing headways to 40 minutes in the shoulder season.

Advantages and Disadvantages

With this change, costs in the shoulder season will be reduced by half for a savings of $45,000 per month. There may be a minimal loss in ridership during the shoulder seasons.

F. Rt. 4: Orange - Silver Lake and Rt. 9: Purple - Empire Pass Shoulder Extension

There were requests for service during the shoulders seasons. There are about 4 months when these routes do not operate. Each route operates 8 hours per day during the summer. This change proposes to operate the service year round, including operating during the shoulder season at the same hours as summer service.

Potential Costs and Ridership

At the cost of $101 per vehicle hour, each route would cost $24,000 per month to operate the same hours as summer service. Ridership as with all routes during the shoulders would be light. Indications from the current service at the edges of the shoulder season indicate good ridership on Rt. 4 at over 13 one way trips per hour, while Empire Pass is seeing 6 one way trips per hour.

Advantages and Disadvantages

This service would introduce full shoulder season service, benefiting some, including mountain bicyclists. This is a low productivity route.

G. Park City – Salt Lake City

There are two issues related to the service provided through PC-SLC Connect. These include the following.

1. Expand PC-SLC Express

In this alternative, PC-SLC would add an earlier run in the winter and a mid-day run all year. There were a number of requests for earlier service during the outreach. Mid-day runs, while usually unproductive, do help the service generate additional ridership, just knowing they have a way home at mid-day. Under this alternative both 901 and 902 will have an earlier morning run. Mid-day service could either run separately or can serve both routes with one bus. The service would need to be well marketed and would be most effective if transit demand management techniques are in place related to parking and speed of the service.

Advantages and Disadvantages

- Advantages
  - Expands options for commuters
  - Should be able to generate additional ridership
  - Mid-day run will help Park City/Summit County residents travel to Salt Lake City for ½ day to conduct personal business, recreation and medical service.
- Disadvantages
  - Will be most effective if TDM measures are in place
  - Limited transit schedule at the very early hours

Potential Costs and Ridership

Ridership will see an increase due to the new time, but the mid-day service will see minimal service as commuters only need that occasionally. A mid-day round trip will attract some new riders from Park City and will attract all day riders simply knowing that the mid-day return is available if needed.

Current gross costs for the UTA service are about $142 per service hour operating over the road coaches. UTA charges the City and County the cost of the service minus fare revenue (in essence). Farebox return is about 33 percent based on 2015 data supplied by the City. This leaves the City and the County to pay the net costs of about $97 per hour. Each additional round trip will cost about $9,000 per month.

2. Provide Service to the Salt Lake City Airport

Effectively serving the Salt Lake City airport requires regular service throughout the day to Park City, something that would be difficult for transit to accomplish in a cost effective manner. Typically airport service of this distance is provided by the private sector. There are two scenarios that can be applied.

a. The first is to provide regular service in conjunction with PC-SLC Connect. Service should be at least every 2 hours to be effective. This would require one bus for between 8 and 10 hours daily (for example).

b. The second scenario is to partner with the private sector to operate service. Either as a route or similar to a super-shuttle. Apps and technology can be applied to request and pay for the trip. Perhaps a small subsidy or promotions with the contractor will initiate interest.

Under each scenario, marketing in conjunction with resorts, hotels and SLC airport, among others is essential. To make this financially feasible, fare would have to be in the $20 -25 range, with discounts for groups of 4 or more (for example). The advantage here is that this would be direct service to Park City, with no stops until Kimball Junction. The time would be well less than half the time of current services available or connecting to Rt. 901. There are a variety of partnerships that can be applied here to offset the costs.

Advantages and Disadvantages

- Advantages
  - Can reduce the number of cars in Park City;
  - Technology can be applied to reserve and pay for a trip;
  - Once in Park City, there is no need for a car;
  - The private sector can perform these tasks less expensively and with a $20 – 25 fare, can make a profit if properly marketed.
- Disadvantages
  - Needs are spread throughout the day, to be effective would require all day service.

Potential Costs and Ridership

The private sector approach would involve very little cost for marketing and promotion. Using a fixed route service would cost between $100 - $150 per hour for an annual cost of $365,000 – $550,000 assuming 10 hours per day of service. At a $20 average fare, 5 – 8 passenger trips would be required per hour for the service to pay for itself.

Ridership could reach 4 – 8 one way trips during the winter and possibly summer seasons (assuming there was space for skis).

H. Other Route Modifications

There are a number of other potential route modifications that are more general in scope. These include schedule adjustments, timed transfer and interlining. Suggestions are as follows:

Schedule Adjustments

As the service area grows and traffic increases, schedules start to lose their accuracy. There are a number of routes that run chronically late in the winter. Routes 1, 3, 4, 5, 7 and 8 all run well under 90 percent in the winter. Park City Transit should modify schedules on an annual basis to meet these new realistic running times.

Timed Transfer

Timed transfer is used in the transit industry when transfers are needed. Timed transfers are a result of a scheduling technique that has key routes meeting at specific locations to eliminate wait time for those transferring. Timed meets are recommended for the S.R. 224 corridor for Express/BRT with other key routes including a new Quinn's Junction route, Rt. 1 as well as the routes that travel south of Old Town.

Interlining

Interlining is used throughout the industry to reduce transfers by matching up origin based routes with destination based routes. For example, the bus comes into the transit center as Rt. A and leaves as Rt. B. It then comes back as Rt. B and when it gets to the transit center it becomes A again for a round trip. When set up properly the interlining route pairs would typically have the most transfers.

3. Express Bus, BRT and Fixed Guideway Services

For the purposes of the short range transit plan it is recommended that during the seven year horizon of the plan that a study be initiated to evaluate potential fixed guideway corridors for full scale BRT, rail, tramways, gondolas, or other mode.

Transportation Demand Management

Transportation demand management (TDM) techniques will be a necessity for a successful fixed guideway system. For each of these potential solutions to succeed a number of TDM conditions must first be met (in addition to financing). These conditions are as follows:

1. Very significant park and ride opportunities at Kimball Junction and the Jeremy Ranch/Pinebrook areas are an absolute necessity to capture commuters and day trip visitors. For express service from the east, Richardson Flat should be made accessible to vehicles north or south on U.S. 40 with slip ramps to Richardson Flat Rd. Without significant intercept parking opportunities, these fixed guideway services will not be able to generate originating ridership;
2. Constrained parking at the major resorts/employment sites and Old Town for: employees (required to park remotely and take a shuttle) and day trip visitors (recommended and marketed);
3. Fast moving service with few stops and little to no meandering at destinations. Service should be significantly faster than a car, which is difficult for the short distances involved:
    a. Very frequent service – at least every 15-20 minutes;
    b. Infrastructure – Real BRT or other fixed guideway solutions will need its own lanes/right of way, adequate signage, stations and signalization, for BRT, pull outs for local bus stops allowing BRT buses and perhaps vanpools to bypass local stops;
    c. Some form of traffic signal control for BRT.
    d. Vehicles – The existing 35 foot buses are adequate, but ultimately larger buses with very wide doors (for rapid boarding and alighting) alternative fuels may be desired;
4. Operating during all commuting hours – most services should start at about the same time. Many persons during the outreach stated they had to be at work by 7 – 7:30 a.m.
5. Very strong marketing campaign to let visitors know they can get around town without a car.

In essence, at this time it is easier for most employees and day trip visitors to drive a car into Park City and park it than to park remotely and take a bus. Without resolution of the parking issue ridership will never be able to support BRT or fixed guideway solutions. For the short term, decision makers should focus on a step by step process:

- Express bus with minimal infrastructure improvements – will not have a major impact on ridership without parking and marketing conditions met;
- Building on express bus and converting it to a BRT hybrid service as parking is resolved;
- Initiating a multi-modal planning process to determine if conditions can be met in the future to implement a fixed guideway solution and second, to determine the ultimate feasibility of various modes.

Limited Stop Service and Bus Rapid Transit

At this time, the S.R. 224 corridor from Old Town to Kimball Junction/Pinebrook is the only practical limited stop service (express bus) option due to the level of usage, shoulder lanes, usable parking and overall greater need.

For the near term future, express bus on S.R. 248 will be problematic for a number of reasons. First, is park and ride - Richardson Flat has a park and ride lot however at this time access to this facility from U.S. 40 in either direction is 2.3 miles from the interchange and one unprotected left turn at the intersection of S.R. 248 and Richardson Flat Rd (Figure 4-4).

Slip ramps from U.S. 40 (in both directions) to Richardson Flat Rd. are essential to developing the Richardson Flat Park and Ride Facility. This backtracking would be unacceptable to most drivers as it requires considerable delay. Without the slip ramps, the facility has limited usability unless major employers require their employees to park remotely and shuttle into employment sites. If employees were required to park remotely by employers (other than van and carpoolers), a targeted route with limited runs to Richardson Flat (peak a.m. and p.m. and a mid-day run) could be instituted.

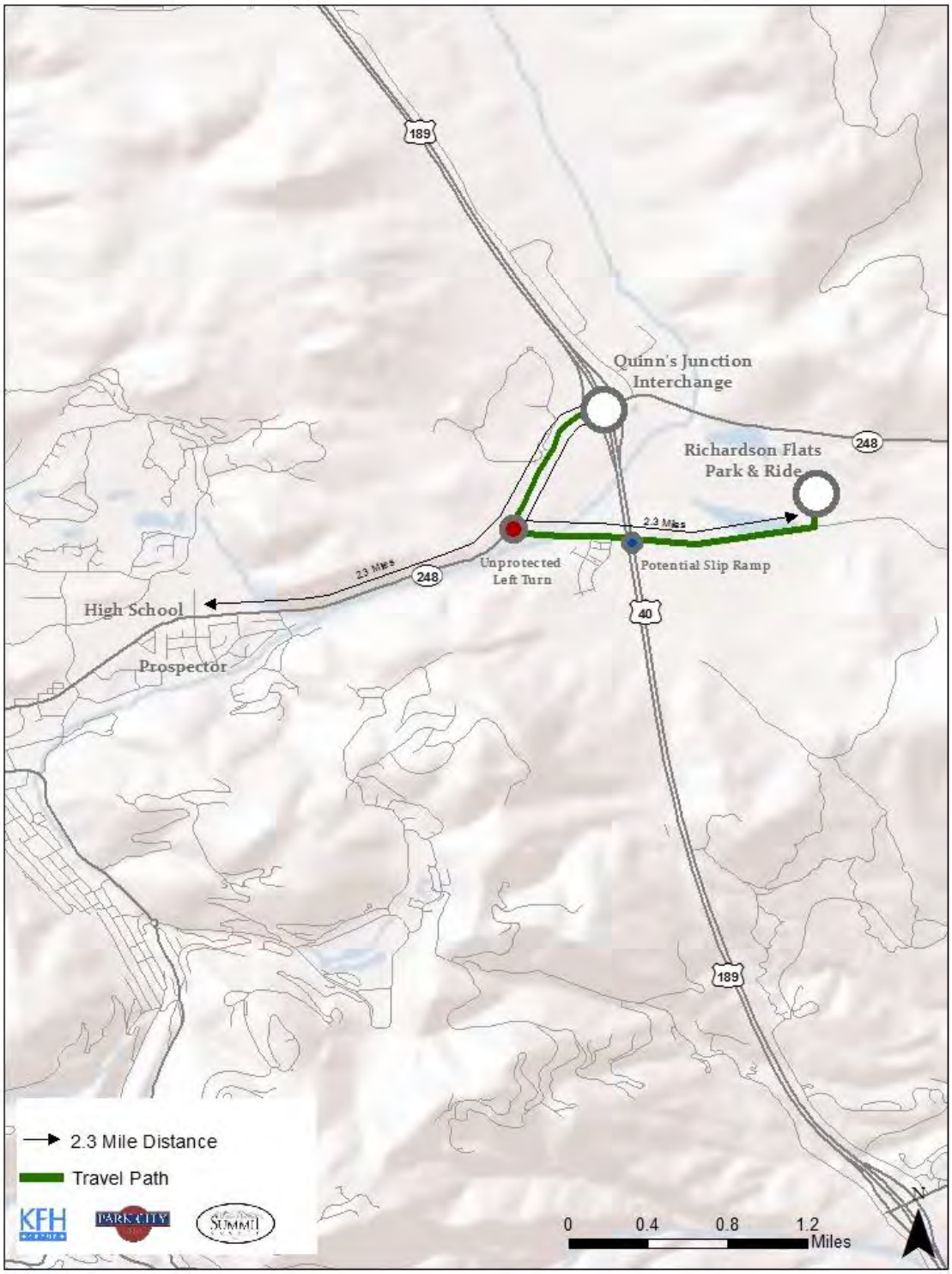
Future efforts to enhance access on S.R. 248 with high occupancy vehicle lane and develop slip ramps on U.S. 40 at Richardson Flat Rd. combined with restrictions on parking in Park City may yield opportunities. For the short term however there is little Richardson Flat can offer.

Express Bus and BRT: A Step by Step Process

Express/BRT and other fixed guideway solutions can be implemented in steps. The first step would be an express bus service on S.R. 224, taking advantage of the shoulder lane availability for the northern segment of the corridor. Express service can be implemented within the planning horizon.

There are opportunities to start with a modest express service and a full detailed long range corridor analysis. As funding for infrastructure becomes available, the next steps toward full BRT or other fixed guideway mode can be implemented based on the future corridor analysis.

Figure 4-4: Richardson Flat Travel Pathway



Current Service

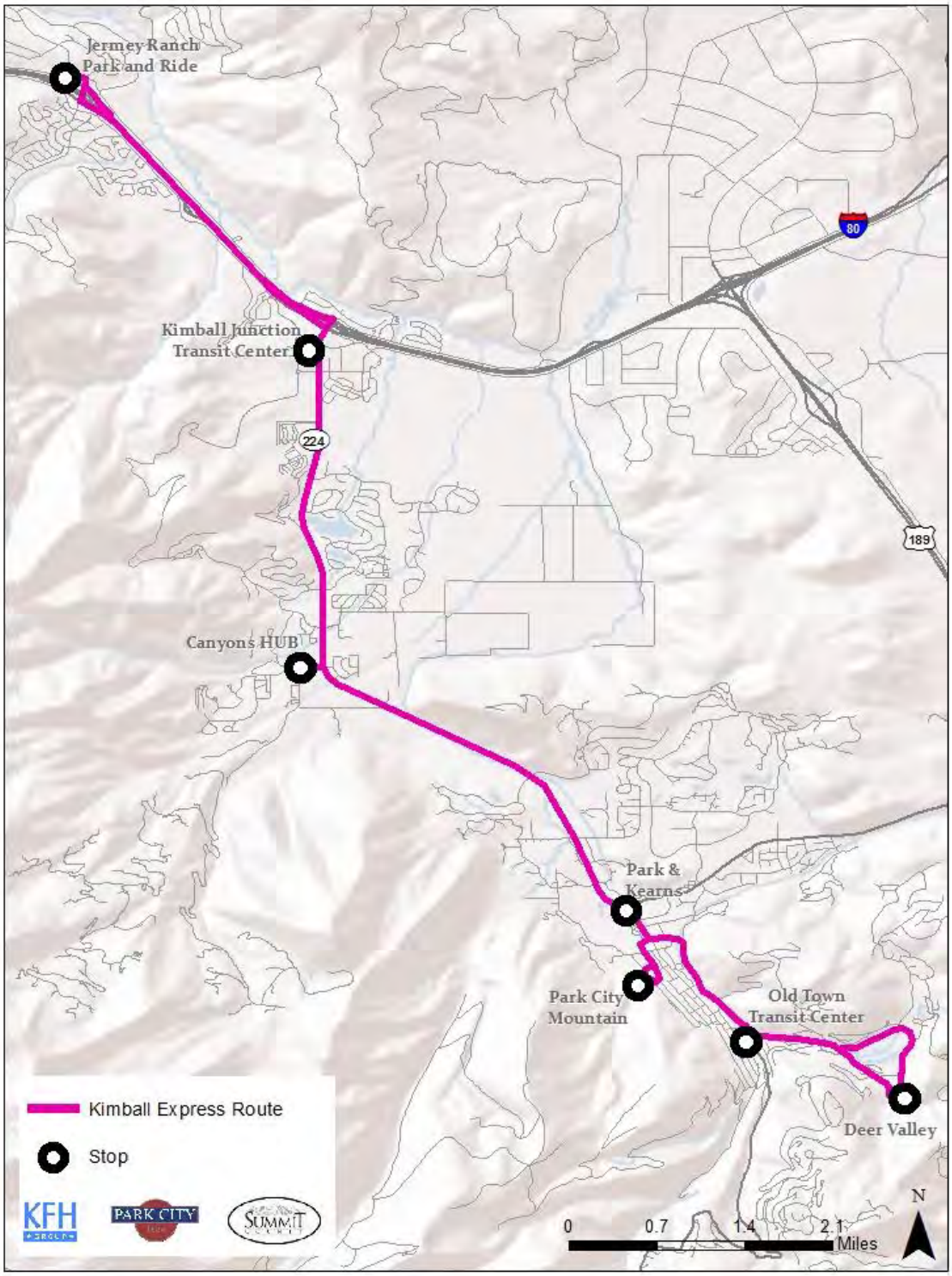
Currently Rt. 8 operates as a direct service from Kimball Junction to Old Town on an hourly basis. It is direct in that unlike Rt. 7 (one half hour headways) it does not meander into Silver Spring. These two routes when combined offer three buses per hour between Kimball Junction and Canyons and 2 additional buses per hour from Canyons to the Kearns Blvd. area for a total of five buses per hour from Canyons Transit Hub to the Kearns/Park area in the winter.

Potential Changes

There are a variety of route changes that should take place to make this service successful.

- First Rt. 7 should serve as the express route because it serves Jeremey Ranch. (Figure 4-5);
- This would be a true express with limited stops and it would serve as a prelude to a BRT or other fixed guideway solution;
- Headways for Rt. 7 should be 10 - 15 minutes in the winter and 20 – 30 minutes during the other seasons. Late service can operate on reduced headways. Also to consider 10 minute headways during peaks and 15 – 20 minute headways other times.
- Service should begin early at about 6 – 6:30 am;
- Rt. 8 should provide the local service on one half hour headways during the winter and hour headways in the other seasons;
- The express bus should have a minimal number of stops: Jeremey Ranch Park and Ride, Kimball Junction Transfer Center, Canyons Transit Hub, Kearns Blvd, Park City Mountain, Old Town Transit Center and Deer Valley. This should reduce one way travel time five to seven minutes off season and possibly more during the winter. Allowing some form of signal preemption and using the shoulders to the greatest extent possible will increase the savings even more;
- There should be timed meets with Kearns Blvd buses, a Kimball shuttle (if selected, see new service) and the routes south of Old Town;
- The two routes together will provide six runs per hour during the winter and four runs per hour during the other seasons;
- Potential to re-brand this service as this by itself has been shown to boost ridership.

Figure 4-5: Route 7: Pink - Kimball East Express Route Proposal



Potential Costs and Ridership

Routes 7 and 8 alone account for about 30 percent of the entire Park City Transit fixed route system vehicle hours and costs. Currently the two routes that operate in this corridor operate 21,660 vehicle hours at a cost of approximately $2,187,660.

The potential changes include operating all hours will virtually double service levels and will raise costs for these two routes to over $4 million. Moving headways to 20 minutes will reduce costs to about $3,000,000. Limiting 15 minute headways to peak hours can reduce costs $200,000 - $500,000 or more as well. Consider a variety of service levels and costs for this service, but to achieve any significant increases in ridership, headways should be 10 to 15 minutes.

Current ridership on Routes 7 and 8 combined are 500,000 annual trips at a very good 23 one way trips per hour on an annual basis. Adding frequency and reducing travel time will generate additional ridership, but surprisingly just rebranding the service can increase ridership by up to 20 percent based on service elasticities.

Service elasticities are the best way to estimate changes in ridership. Based on research conducted for TCRP[1] service changes can have significant impact ridership. Assuming that key TDM conditions are met, frequency of buses can result in a service elasticity of .5. That is, for every 10 percent (for example) increase in frequency will result in a 5 percent increase in ridership. Therefore taking frequencies from 3 runs per hour to 8 runs per hour (Express service every 10 minutes plus 2 local buses), increases frequency by 166%, which can result in a ridership increase of 83 percent – going from 500,000 one way trips to 915,000 one way trips. Additional ridership can be gained through branding (up to 20 percent) and transportation demand management approaches can accelerate ridership even higher. Once the alternatives are selected, demand estimates will be detailed for the specifications selected.

Future Fixed Guideway Services - Planning

As this planning effort is a short range plan, longer term efforts such as major investments in fixed guideway solutions (including gondolas and aerial tramways) will require a number of years to put in place if justified. In most cases these modes would require major parking infrastructure for potential passengers before the system could start. Planning the service, securing justification, gaining access to the land, approvals (environmental) and funding and then building the infrastructure along with ensuring all of the minimum transit demand management conditions are met will take many years. The first step in this effort is to conduct a full scale corridor study (For S.R. 224 or both 224 and 248) to determine the need and most appropriate service for the future (a 20 year

[1] Fixed-Route Transit Ridership Forecasting and Service Planning Methods - A Synthesis of Transit Practice, TCRP Synthesis 66, Dan Boyle & Associates

horizon). Infrastructure improvements would have to be well documented and a cost would need to be affixed to this effort. It will be important to have an accurate and up to date plan in place in the event funding for this service becomes available in the future. Therefore it is recommended that the County and City move forward to conduct a full study of potential fixed guideway solutions.

Gondolas and Tramways

Gondolas and Tramways have both been used for transit purposes in America. Tramways use fewer large capacity carrier cabins and travel at higher speeds. Gondolas use smaller capacity carrier cabins with higher frequency and lower speeds.

Aerial Tramways

Tram cars can be built to carry between 20 and 200 persons at speeds of up to 28 MPH (Figure 4-6). Depending on the size of the car, line speed, and line length, transport capacities vary between 500 and 2,000 persons per hour.[2] Example of tramways in the U.S includes the Sandia Peak Tramway (tourists, skiers and mountain bikes) in Albuquerque, NM, the Roosevelt Island Aerial Tram (commuters) in NYC and the Portland Tram (operated by a University Hospital for commuters) in Portland, OR. Depending on length, hours of operation and configuration operating costs for Tramways are $1 million to $4 million per year.[3]

Figure 4-6: Tramway Examples

Gondolas

Gondolas are the system of choice for feeder services in ski areas, tourism resorts, and the urban environment (Figure 4-7). Different from a tramway, the gondola cabin attaches to a single cable[4]. It is capable of traveling at up to 14 mph. Carrier capacity varies from four to fifteen persons, and system capacity can be as much as 3,600 persons per hour.

[2] Doppelmayr/Garaventa. Website: Ropeways Page. 2016. < http://www.doppelmayr.com/products>
[3] Reconnecting America: Hercules Ariel Tram/Mobility Study & Report. 2007. Cost estimates based on an average of Roosevelt Tramway in NYC, Portland Area Tram, and a proposed system in Camden NJ.
[4] Dwyer, Charles. Aerial Tramways, Ski Lifts, and Tows: Description and Terminology. US Forest Service

Gondolas have a standard of two stops; however three have been employed in places such as Whistler Ski Resort in Canada[5]. Depending on seasonal usage, length and number of terminals, gondolas can cost $1 million to $6 million per year to operate[6].

Figure 4-7: Gondola Examples



Summary – Trams and Gondolas

During the outreach process some participants identified gondolas as a potential service type for the Park City Transit service area. Locations discussed were serving the ski resorts from town, connecting Kimball Junction to the Olympic Park and crossing 224 at Kimball Junction.

The resort service will require planning and a public/private partnership between the ski areas and Park City or Summit County depending on where the service is located. Gondolas require significant pedestrian activity at terminal locations and access to parking at one end of the service. These facilities would also require space at or adjacent to the Kimball Junction Transit facility as the two must have a direct connection. Table 4-1 shows a comparison of tramways and gondolas.

Table 4-1 Aerial Tram/Gondola Comparison

Type	Top Speed (MPH)	Carrier Capacity	One-Way Trips Per Hour	Average Construction Cost Per Mile	Average Operating Costs Per Year
Tramway	28	20 – 200	500 - 2,000	$65 mil	$3 mil
Gondola	14	4 - 15	Up to 3,600	$18 mil	$3.5 mil

Source: Reconnecting America: Hercules Ariel Tram/Mobility Study & Report. 2007

[5] Ibid
[6] Ibid

4. NEW SERVICES

The current service area is well served by Park City Transit. Virtually all areas that can sustain fixed route have service (Quinn's Junction is served by a demand activated route), therefore the majority of new services are focused on the County. The alternatives include the following.

A. Continuation of Pilot Services

Park City Transit and the County implemented new winter pilot service recently. These included:

- Revised Rt. 6 service after 3 p.m. express to Old Town and expanded hours until midnight
- Extend Route 7 and 8 until 11 p.m.

Results of Pilot Projects

Rt. 6: Lime - Canyons

For the 2015 -16 winter season the route changed after 3 p.m. and instead of going east on Kearns the vehicle traveled directly to Park City Mountain and Old Town. When comparing ridership from 2014-15 to 2015-16, it is similar up until 3 p.m. The new direct service over the comparable 3 hour period (3 – 6 p.m.) ridership went up 90 percent. From 6 p.m. to midnight, ridership remained relatively high averaging almost 25 one way trips per vehicle hour and by 11 p.m. ridership still remained relatively high at 9 trips per vehicle hour. Average for the 6 p.m. to midnight service was 15 one way trips per hour.

This approach should be continued based on the ridership this past winter.

Route 7: Pink – Kimball West and Route 8: Brown – Kimball East

These two routes were extended past 9 p.m. this winter and saw reasonable ridership. Rt. 7 service extended past 10 p.m. to 1 a.m. and saw ridership average 14 trips per vehicle hour (2 vehicles). Rt. 8 saw similar numbers for its one bus at 11 trips per hour.

Both routes deserve consideration for continuing this change next winter.

B. Kimball Junction Shuttle

The Kimball Junction shuttle would serve both sides of Kimball Junction, East and West as well as the Tanger Outlet Mall, all in the County. Figure 4-8 depicts a possible routing

for this service. The route would connect Tanger Outlet Mall on the west side with the Walmart area and then Kimball Junction East (Redstone and Newpark). This route could operate starting at 7 a.m. and ending at 7 p.m. (for example) and its purpose would be to allow people to go to multiple destinations while leaving their car parked at the first destination. It would also serve to connect the two sides of Kimball Junction. This bus would have timed meets with Routes 7 and 8.

Potential Costs and Ridership

Potential routing would be about 3 – 3.5 miles per round trip, allowing for 15 minute headways. One bus operating 12 hours per day (assuming Park City Transit costs at $101 per hour) will cost $442,000 annually.

Ridership will consist of mostly shoppers and perhaps some employees as well. If the service is properly marketed and promoted by Park City Transit, the county and the local businesses, the service could generate a solid 20 - 30 one way trips per hour.

C. Service to Justice Center

The Justice Center is currently not served by fixed route, as the nearest route stops 0.9 miles from the Justice Center, making it a bit far to be accessed. Close to the Justice Center are a Home Depot and a other businesses. Serving these locations can benefit employees in the area, shoppers as well as those needing to go to the Justice Center. If it is desired to serve this area there are three approaches that can be considered:

1. Extension to Rt. 8: Brown – Kimball East – This extension would add about 2 miles and 10 minutes to the schedule and may require an additional bus during the winter to ensure the service can maintain headways of 30 minutes. This would also expand the ADA zone, but very light ridership is anticipated (Figure 4-9);
2. Flex Route Extension to Rt. 8 – In this option, passengers desiring to go to the Justice Center or nearby locations on Silver Creek Drive can call 30 minutes before the trip to request the flex service. The disadvantage to this is that Rt. 8 becomes a major corridor route and must have a dependable schedule;
3. Using a call a bus vehicle that would be shared with other communities – The call a bus would take passengers to Rt. 8. See Section D below for a detailed discussion of call a bus in the Silver Creek area.

Figure 4-8: Kimball Junction Shuttle Route Proposal

Potential Costs and Ridership

Potential costs and ridership are as follows:

1. Extension to Rt. 8 may require an additional bus as the route operates late at this time; combined with this extension it would equal about ½ the need for the additional vehicle. At 8 hours per day the cost for this extension would be almost $300,000. ADA service may require additional service especially during peak hours;
2. Flex Route would cost about the same as Alternative No. 1 above;
3. Sharing a call a bus vehicle with other zones would allow this vehicle to be shared between multiple zones and ADA paratransit. It is estimated that about 4 hours per day of call a bus service would cost about $150,000.

Under each scenario ridership may increase 10 - 20 one way trips per day at a cost of $36 per trip.

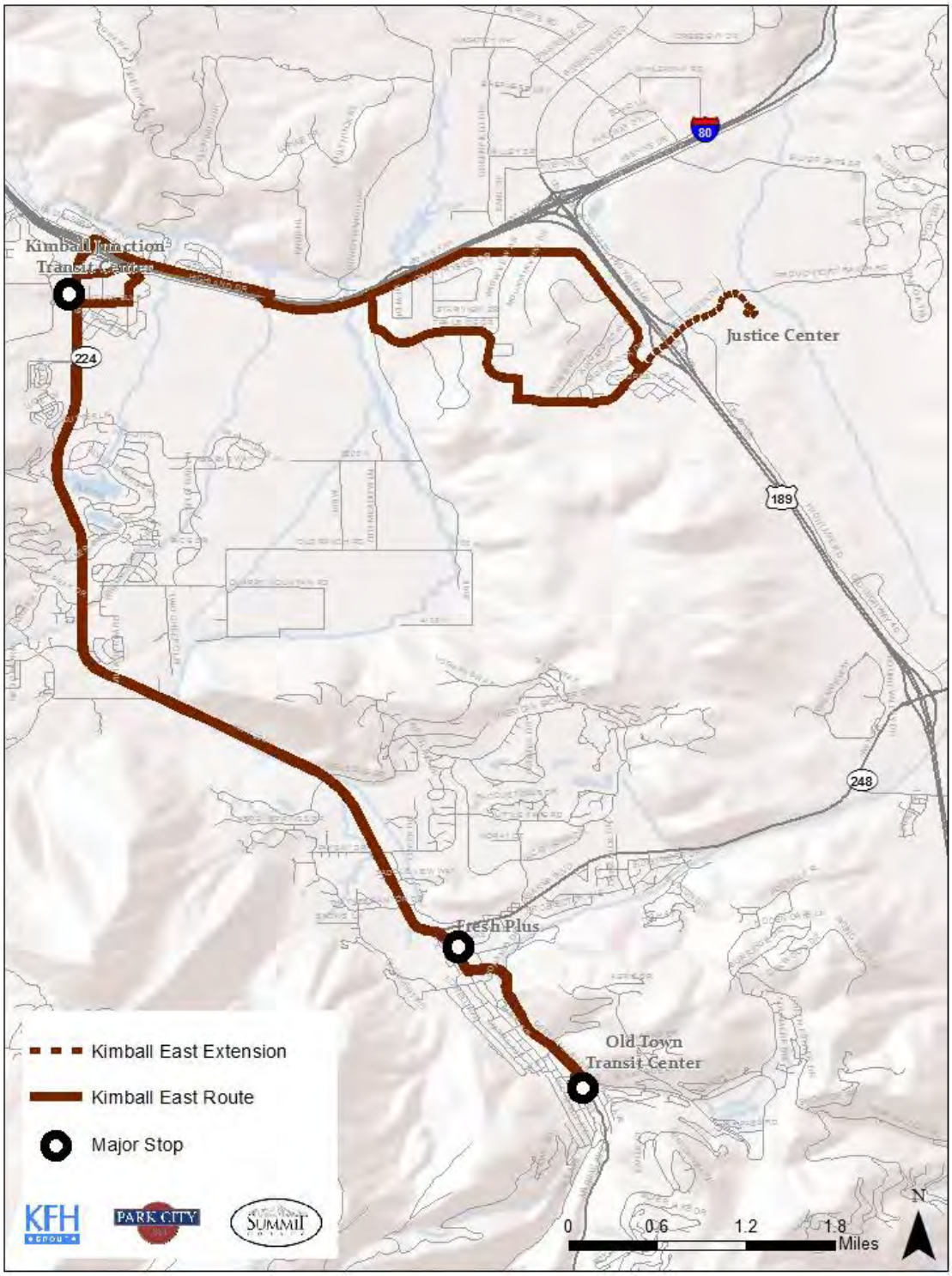
D. Service to Summit Park

The Summit Park area consists of a very low density community build along roads that are very difficult for buses to traverse. The consultants recommend that any fixed route service proposed remain on Kilby Rd. - Aspen Dr. Only smaller vehicles will be able to access the side roads. This service would connect the area from Summit Park to the Kimball Transit facility. All services are designed to serve peak hour and mid-day service. There are a number of ways to serve this area:

1. Call a bus service Summit Park to Rt. 7 – Under this scenario call a bus service will be available during designated hours. Call a bus would take people to the Kimball Junction transfer center.
2. Extend Rt. 7 during commute hours and mid-day to stop at Kilby Rd. /Aspen Dr. ADA service would not be required. This would require an additional bus during the hours required. Two morning and evening runs and a mid-day for about 3 hours a day.
3. Extend a new Kimball Junction shuttle during commute hours same as number 2 above.

This type of service for local residents would operate all year.

Figure 4-9: Route 8: Brown - Kimball East Extension



Potential Costs and Ridership

The three approaches will be available for different hours and will result in different costs. Using annualized costs,

For the call a bus option cost will be calculated based on five hours a day - two hours in the morning and evening and one mid-day hour (during the rest of the day this vehicle will provide either other call a bus service or ADA service). The cost for this service will be $164,000 annually. Extension of an existing route will require about 3 hours a day of new service. The annual cost for this would be $110,000.

Ridership will be low as the community is small. Estimates of 4 – 8 one way trips daily will result in approximately 3,000 one way trips.

E. Call a Bus Zones

As discussed in Section 2.A there are a number of communities within the Park City area that should not be served by fixed route due to the very low density resulting in very low ridership, lack of through streets and difficulty for buses to maneuver. An alternative to fixed route is a call a bus service where smaller buses or minivans are used and service is limited to the designated community and the nearest fixed route stop.

This service can be dispatched using an app, traditional transit technology or through a driver and cell phone. The service can be operated by Park City Transit, or contracted to a local taxi/limousine service or an Uber/Lyft type service as long as they can meet the FTA drug and alcohol and criminal background checks for drivers.

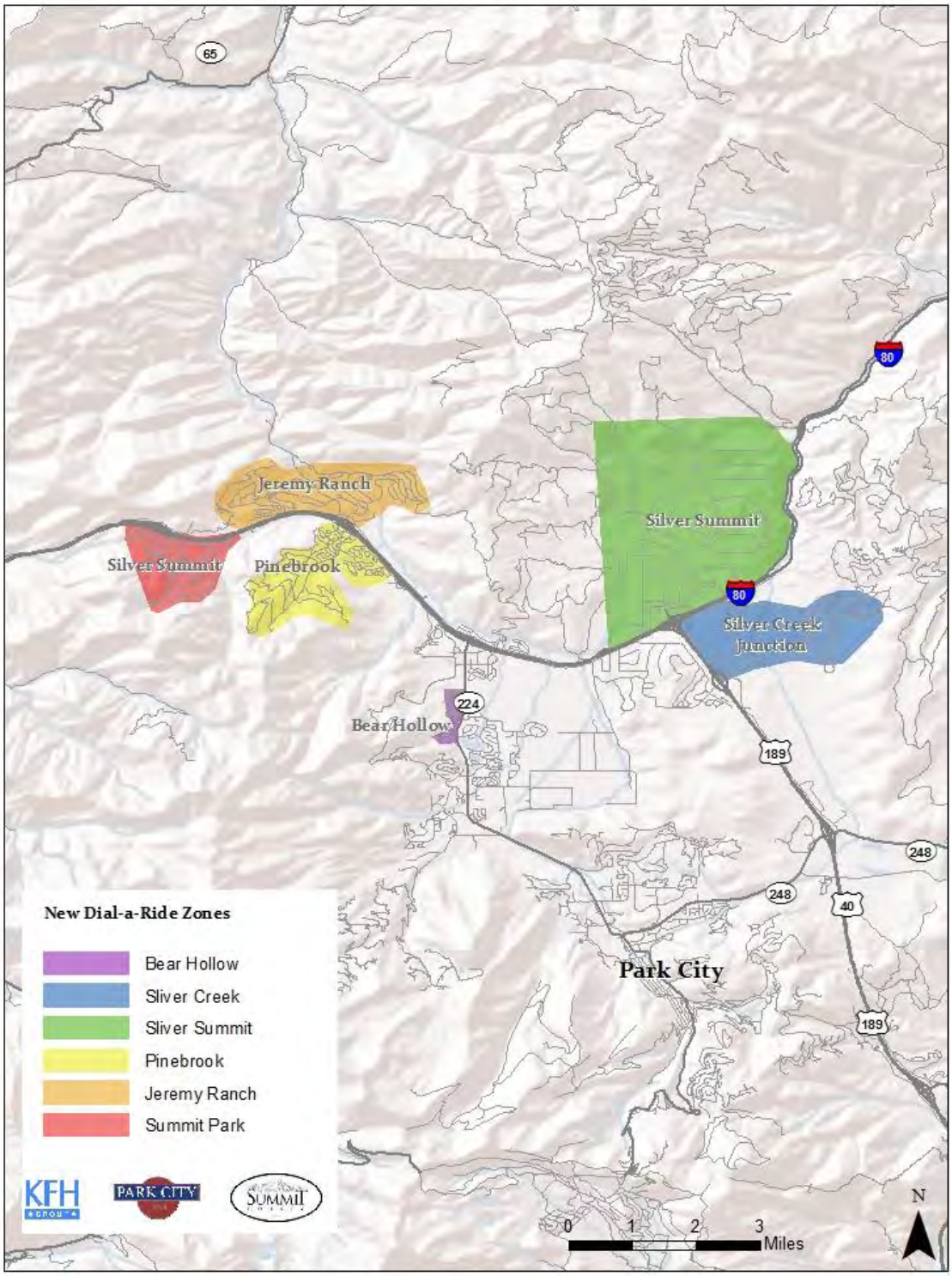
There are a number of opportunities to implement a call a bus service. In addition to the Silver Springs and Summit Park area discussed previously, call a bus is discussed for a number of potential call a bus zones. These areas are depicted in Figure 4-10.

Silver Spring – Bear Hollow – Sun Peak Area

The communities surrounding S.R. 224 between Canyons and Kimball Junction would best be served by call a bus type services. Each of these communities is close to a transit stop or all could be taken to Canyons Transit Hub to access the entire system, including express routes.[7] One vehicle could typically manage this service between these communities during peak hours in the winter. In other seasons it may be possible to share this vehicle with ADA service.

[7] Dallas Area Rapid Transit Authority – operates call a bus zones that restrict destinations in the morning and evening to focus on call a bus to a light rail station.

Figure 4-10: Potential Call a Bus Zones



Silver Creek – Silver Summit

These communities are also impossible to serve using fixed route services. Together they could support a vehicle during peak hours. This area also includes the Justice Center and service to that may occur throughout the day (unless one of the other Justice Center alternatives is selected).

Potential Costs and Ridership

These call a bus services will cost approximately $90 per hour. Assuming 12 hours per day of service, each vehicle would cost $262,000 to operate on an annual basis. Considering that each vehicle can serve two zones, the cost per zone as outlined above would cost $131,000 annually. Ridership by definition would be light, with up to 6 one way trips per hour.

F. Canyons Circulator

The Canyons Village is a tourism based area with access to Park City Mountain (Canyons Village Base Area), several hotels, condominiums, and shopping. Currently Route 6 serves the area primarily connecting visitors and employees to Park City.

A circulator can serve two purposes: first and foremost to connect condo residents to the ski basin at Canyons. Second this service could provide service to Canyons Transit Hub for access to the entire service area. This service somewhat competes with Rt. 6 as well as the Cabriolet and the Waldorf Gondola, both designed to transport people to the ski basin. The designs below attempt to complement rather than compete with these services. This circulator can also function as a call a bus (See Section 4.E where the call a bus option is detailed).

This service would be most effective during the winter.

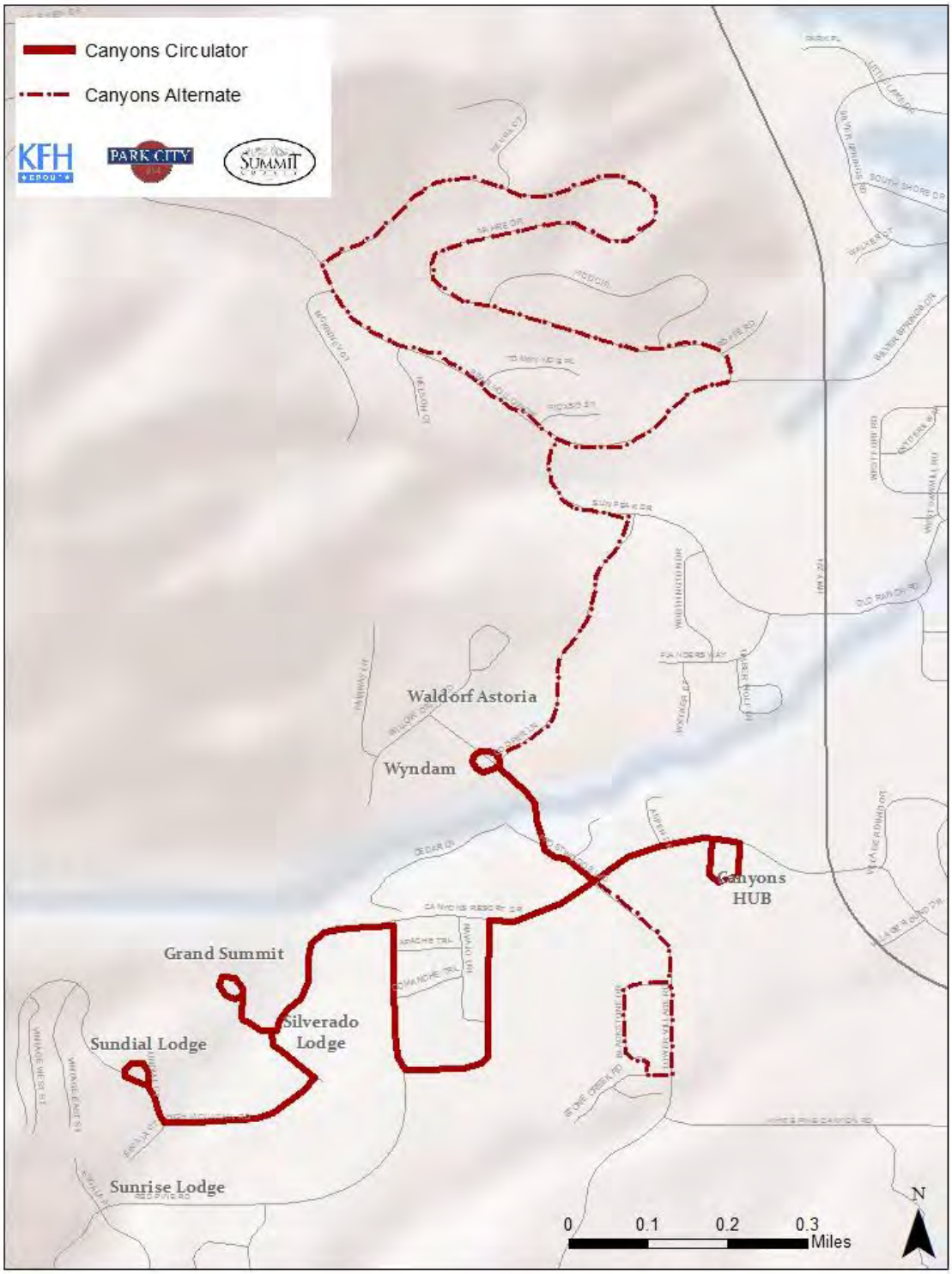
Potential Changes

In addition to the call a bus option discussed in Section 4.E above, here are two potential circulator routes that can serve the area and meet these key needs

Canyons Circulator Route

The primary circulator route shown in Figure 4-11, connects the Canyons Hub to the hotels, condos and ski resort primarily along Canyons Resort Dr. Timed transfers at the Canyons HUB with Route 7 would be advantageous allowing Canyons Village visitors'

Figure 4-11: Canyons Circulator



transit access to Kimball Junction and Park City (at other times from when route 6 serves

the area). The route is 3.2 miles in length, round trip, and could run on 15 minute headways.

Canyons Alternate Circulator

Also shown in Figure 4-11, is an alternate route serving the Canyons Village and the neighborhood along Bear Hollow Rd. This route is an option that would alternate with the Canyons Circulator. The route is 3.8 miles round trip and would run on 30 minute headways when combined with the other Canyons route. Due to narrow and meandering roads and significant elevation change the larger low-floor buses may not be suitable for this route. A cutaway chassis may be better configured for this service area.

Potential Cost and Ridership

The Canyons Circulator to a significant extent will be duplicating the areas served by Route 6 in the Canyons area. The route also duplicates the Cabriolet and the Waldorf Gondola. As a result ridership will be less than it would if it were the only route serving the area. The routes will give options for condominium residents to access the ski base area and the Canyons Hub. Overall, due to the size of the service area and duplication of services it is not expected that these routes would be comparable to the more productive routes in the Park City Transit system.

The Canyons Circulator options would be served by one bus operating twelve hours per day in the winter and summer seasons. At twelve hours per day in both seasons the service would average around 2,600 hours per year. At $101 operating cost per hour, the Canyons Circulator would cost around $260,000 per year.

Ridership would be relatively low mostly serving condos off of Canyons Resort Drive. It is estimated that this service could generate 5 – 10 one way trips per hour or 60 – 120 riders per day in the winter, less in the summer.

Advantages and Disadvantages

- Advantages
  - Provides additional access to the ski base and Canyons Hub
  - Provides greater mobility options to condo residents
  - The Canyons alternate route serves new previously unserved areas
- Disadvantages
  - Duplicates to some extent route 6, Cabriolet, and Waldorf Gondola

G. Rural and Out of Region Service

As called for in the RFP, Kamas, Francis, Hideout and other communities in the S.R. 248 corridor were examined to determine what type of service may be practical for the Kamas area. Heber City was reviewed as well; however a new privately operated service to Park City has been initiated and should be encouraged and provided marketing supported by the City and County.

Service to Kamas and Heber City Areas

The Kamas area (including surrounding communities) has about 6,000 residents and was shown to have a relatively low level of need. However with communities around Deer Mountain and surrounding apartment complexes, there is potential for a fixed route service. The most probable service would be commuter service with vanpools or a commuter fixed route bus. This service would operate on weekdays.

In an unconstrained service area typically 1- 2 percent of travelers would use this type of service. So if 500 persons were commuting during a peak hour from Kamas on S.R. 248, there may be 10 – 20 riders willing to take transit during commute hours. While the potential ridership conclusions of this study mirrored recent county planning studies, this study team believes there are ways to potentially serve these areas in a cost effective, yet limited fashion:

1. Vanpools – Kamas and the communities along Rt. 248, Heber City, Coalville and other similar communities could support a modest vanpool program. Vans or minivans can be used. Vanpools should receive preferential parking and access to the express bus lane (where feasible). Vanpools can serve as the foundation for more service in the future if growth occurs;
2. Commuter Bus – This fixed route service would start in the Kamas area and operate via Richardson Flat (once it is practical) into Old Town Transit Center with north transfer options at Kearns and Park. A route could be developed for Heber City as well. This service would have one a.m. and one p.m. run designed for commuters.
3. Nurture New Heber City to Park City service – There is currently a private for profit operator in this corridor. The choice becomes:
    a. Nurture the existing service through low cost promotional and marketing services;
    b. Compete with this operator;
    c. Wait and see if the service is successful then decide.

Potential Costs and Ridership

Cost for the vanpool program would be negligible as the monthly fares should pay for the costs. Operating a cutaway bus with one morning and one evening peak run including deadheading to and from Kamas and a Heber City – Park City service would each require 3 hours daily for one morning and one evening run with an annual cost of $75,000 and would provide less than 10 - 20 one way trips daily from each community. To provide all day service (12 hours per day) would cost about $300,000. And would generate up to 50 one way trips daily. In the future this will be a better option if parking is constrained and buses receive preferential HOV treatment on S.R. 248.

Using a 15 passenger van would slightly reduce costs, but in fact, while the capital cost of a van is about ½ or less of a cutaway, the cost to Park City Transit is much less due to grants and over a 5 year life will cost out to about $2,000 a year extra for a cutaway. Operating costs of a van are also just slightly different that a diesel cutaway bus[8]. Operating costs are only about 10 percent higher for a cutaway ($300 – $400 per year).

Advantages and Disadvantages

- Advantages/Disadvantages of each
  - While the cutaway costs slightly more to procure and operate:
    - It lasts longer;
    - Is more flexible as it can be used for a variety of purposes beyond 3 hours per day;
    - Much more comfortable to enter and ride in;
    - Allows for fleet standardization.
  - Vans are less expensive

5. Other Potential Changes

Organizational Issues

The current organizational structure between the City and the County functions well and in the past was able to generate the local revenue needed to make Park City Transit a successful transit system. Service needs are expanding and the demands on transit require changes and additional service.

There does not appear to be any advantages to shifting to a different operating structure at this time. Changes to the organizational structure and to control often bring changes to funding commitments. It is recommended that the basic organizational infrastructure

[8] *Analyzing the Costs of Operating Small Transit Vehicles, Transit Research Board, TCRP Report No. 61, KFH Group, Inc., 2000*

remain in place for the foreseeable future. Expansion needs related to staff, facilities and technology are discussed below.

Park City – Salt Lake City Service

Currently the service is operated by UTA and paid for by Park City and Summit County. While Park City Transit indicates no problems with the service, consideration should be given to different management and operations arrangements. Potential options include:

- Maintaining current arrangements
  - High quality service with highest standards
  - Requires little oversight
  - May be slightly higher cost than private sector
- Contract to a private provider
  - Requiring high quality service and vehicles equal to UTA will result in modest cost reductions
  - Will require regular monitoring and oversight (more than currently) by the City or County
- Operate directly by Park City Transit
  - For comparable service quality there will be a comparable price
  - Will require additional management at Park City Transit. If using over the road coaches, will require a maintenance department expertise in over the road coaches.
  - Will require the procurement of vehicles which may take over one year.

These are the issues related to operation of the service. Costs for the same quality and level of service will under any scenario be close to current. The consultant suggests the following: If you like the current management and operations arrangement don't make major changes, refine where necessary. If it's not working as hoped or is perceived as expensive, then change.

Financial Issues

The current financial arrangements provide adequate operational and capital funding for the present. Future needs will have to be addressed however. There are other potential funding arrangements that can be applied. These will be discussed in detail in the financial plan to follow.

First, Park City Transit and the county continue to be aggressively seeking grant opportunities that come available from the FTA. There are currently two discretionary programs with funding available through April 2016:

- Section 5339 (b) Grants for Buses and Bus Facilities (Bus) Program and (c) Low and no emissions program for the purchase of lo/no buses and related equipment and facilities
- Tiger Grants - This is for capital funding for innovative projects, multi-jurisdictional services are emphasized. Buses can be purchased as well as shelters, benches and other capital.

Private Sponsorships

Consideration should be given to developing private sector sponsorships to generate additional local revenue for the transit system. Sponsors can be large or small companies with a variety of advertising benefits for a range of sponsorship levels.

Transit has a long history of providing advertising on and in buses for additional revenue. Many systems have engaged in advertising over the years, but a sponsorship program is more than simply advertising. Instead of the usual selling of just one form of advertising, Park City Transit should sell sponsorship packages. Since sponsorship and advertising funds are an important source of local funding, this program can help expand the service.

Bicycles

These issues revolve around the best approach serving bicycles on transit. Concerns over the safety issue related to unsecured bicycles on board the bus is real and important. At the same time many mountain bike enthusiasts rely on Park City Transit to transport them to the top of the mountain they choose to ride down.

Policies will revolve around the following issues:

- Does transit have a role in transporting mountain bikers?
- If so, what is the safest way to do so and are there limits?
    - Number of on-board bikes – at what level are they an impediment?
    - Use of on-board securement devices – These are discussed below;
    - Expand the size of outside the bus bike securement;
- Installation of bicycle lockers at major facilities and transfer points to allow bicyclists to leave their bike safely;
- What is the role of Park City Transit, the City and County in integrating the use of shared bicycles with transit? Many other cities are planning these services together. Excellent examples include Santa Fe, NM and Austin, TX

Bicycle On - Board Storage

During the summer, bicycle storage can be an issue on the Empire Pass and Deer Valley routes. Many bicyclists use transit to access bike trails at the higher elevations on these routes. Currently the buses have space for two bikes on the front of the bus. Additional bikes are held on board by passengers and are not secured. Most transit systems do not allow bikes on buses due to the safety hazard of a potential projectile.

There are interior bike racks that can be added to the transit vehicles to increase bike storage, but these racks take place of some seating. If selected, Park City Transit can designate certain smaller vehicles to be set up with larger racks, while other buses can be set up with smaller securement areas. These buses can be used on the designated routes. Figure 4-12 shows some available bike storage options including the current Park City Transit bike storage equipment.

Figure 4-12: Bike Storage Examples

Shared Bicycles

Bicycle usage greatly expands the reach of transit. As discussed above the issue of bicycles on board is complex and while the mountain biker's needs may not change, shared bicycles give other customers additional mobility options and can reduce the number of bikes transported. This can be implemented in conjunction with the use of bike storage units where the passenger can leave their bike at the origin and use a shared bike at the destination.

The City and County should work together to develop private sector interest (for profit or non-profit) to set up, fund and manage a program. Bicycle sharing stations can be set up at major stops such as PCM, Prospector Sq., Kimball Junction, Kearns/Park, Old Town Transit Center and other select locations to expand transit's reach.

Transit Vehicles

Future needs will consist of replacement buses and expansion vehicles based on future decisions. There are a variety of different vehicle types and selection will be dependent on the type of service. Different transit conditions require different transit vehicles. Service area characteristics may require smaller more nimble vehicles or larger vehicles

with more capacity. The potential vehicle needs are discussed in the following narrative. All of these vehicles should be accessible and should have a 20 percent spare ratio.

Fuel typologies have various benefits and come with costs. Compressed natural gas and electric vehicles require significant facility investment, can require additional spare vehicles. Bicycle storage is also an important consideration in a community like Park City. All fixed route public transit vehicles must be wheelchair accessible.

Bus Typologies

Paratransit Vehicles

These vehicles (Figure 4-13) – converted minivans with ramps or SUV sized purpose built vehicles with ramps such as the MV-1 are very frequently used in ADA service and light duty call a bus service. Taxi companies typically use the minivans and MV-1 has gained popularity as well. These vehicles cost $50,000 to $110,000 for basic accessible models.

Figure 4-13: MV-1 and Paratransit Minivan

Cutaway – Small Bus

Cut-away chassis are smaller than buses and usually have a high floor (Figure 4-14). These vehicles customarily have a seating capacity of between 8 and 30 seats and their size can vary significantly between 15 and 30 feet long. These vehicles have a 5 – 7 year life as a front line vehicle, less if used in heavy duty service.

They are used in a wide variety of applications. Park City Transit uses these vehicles for the Dial-A-Ride and ADA paratransit service as well as lightly traveled fixed routes. Smaller cutaways can operate in call a bus or ADA service as is the case with Park City Transit. Larger cutaway buses can be used on routes popular to mountain bikers with bicycle storage capability and on lightly used feeder routes. All must have lifts or low floor with ramp. These vehicles range from $125,000 to $175,000 in cost depending on size and configuration.

Figure 4-14: Cutaway Bus

Low Floor Bus

Park City Transit uses heavy duty low floor buses for its regular fixed route service (Figure 4-15). These buses are generally 35 – 40 feet in length and are designed to last 12 years in heavy duty service (of which Park City Transit would qualify). The low floor and wide door allow for quick and effect boarding and alighting, particularly for a fare free service. These vehicles seat 30 to 40 with additional room for standing. This vehicle typology is useful for busy systems needing large capacity vehicles to meet demand. It is anticipated that Park City Transit will continue to use these buses for the fixed route service. These buses can range from $500,000 to $650,000 per vehicle. [9]

Figure 4-15: Low Floor Bus

Articulated / High Capacity Bus

Articulated and/or high capacity buses would be used in the service area for future bus rapid transit (Figure 4-16). Articulated buses which can travel through most of Park City are typically 60 feet long and bend in the middle. These vehicles are used throughout the world in regular service and in BRT type service. Their capacity is over 120 passengers depending on the configuration. These buses could be used in the future if the Transportation demand management conditions are met in the future.

[9] 2013 Tri-county District of Oregon Contract with Gillig LLC. For the Purchase of 40' Diesel Buses

A true BRT system generally has specialized design, services and infrastructure to improve system quality and remove the typical causes of delay. BRT aims to combine the capacity and speed of light rail or metro with the flexibility, lower cost and simplicity of a bus system. These purpose built vehicles can be 80 feet long and can carry up to 200 passengers. Their capacity makes them useful in true BRT mode with separated roadway from traffic. Their size can limit their ability to travel on regular roads with mixed traffic. Large capacity BRT or articulated buses can costs between $750,000 and $1.6 million.[10]

Figure 4-16: Large Capacity Bus

Summary - Vehicles

Consideration of vehicle size and type (heavy duty coach or cutaway) is a straightforward set of alternatives. Each has their place as heavy duty coaches are a necessity on most fixed routes. Lighter duty cutaways can best be used on feeder routes and call a bus service.

Alternative Fuel Types

There are now a variety of fuel and battery choices for transit vehicles. Decisions on the type of fuel chosen are based on a number of factors that decision makers should consider:

- Environmental Policy – There is no question that alternative fuels and batteries can make a difference in the local environment. Decisions are often made on this basis alone.

- Operational – There are a number of operational issues (and costs) associated with alternative fuels, including but not limited to:
    - Infrastructure – Fueling facilities, maintenance equipment for example

[10] TCRP Report 118: Bus Rapid Transit Practitioner's Guide

  - Expertise – Maintenance staff with specialties in electric and hybrid technologies would need to be hired.
  - Availability of specialty repair vendors

- Financial – Vehicle and on-going costs vary and are a major consideration to the type of vehicle used.

Biodiesel

Transit fleets including Park City Transit have been able to successfully use biodiesel. Biodiesel is a renewable, clean-burning diesel replacement made from a diverse mix of feedstocks including recycled cooking oil, soybean oil, and animal fats. Just like petroleum diesel, biodiesel operates in combustion-ignition engines. Essentially no engine modifications are required, and biodiesel maintains the payload capacity and range of diesel. Generally the transit fuel is a mixture of diesel and bio diesel. This is necessary for areas with colder climates as biodiesel can be difficult to use in colder climates. Biodiesel buses cost the same as regular diesel buses from the manufacturer. [11]

Compressed Natural Gas (CNG)

CNG can be used in place of other fossil fuels. CNG combustion produces fewer undesirable gases. It is safer than other fuels in the event of a spill, because natural gas is lighter than air and disperses quickly when released. The cost and placement of fuel facilities is the major barrier to adoption of CNG as a fuel. It is also why municipal government, public transportation vehicles were the most visible early adopters of it, as they can more quickly amortize the money invested in the new (and usually cheaper) fuel. If a fueling facility is available to Park City Transit this is a viable alternative. Santa Fe is an example of an all CNG fleet. A typical forty foot low-floor CNG vehicle will cost between $500,000 and $750,000. [12] A facility upgrade will be required and Park City Transit estimates $1.5 million to be compliant.

Electric-Hybrid

A heavy duty hybrid electric bus combines a conventional diesel internal combustion engine propulsion system with an electric propulsion system. Bus batteries store energy and recharge when the bus decelerates. When demand for power exceeds battery capacity, the diesel engine provides extra energy. Hybrid buses have lower emissions than other propulsion types. This technology can be combined with biodiesel for increased environmental benefits. A typical hybrid forty foot low-floor vehicle will cost

[11] 2013 Tri-county District of Oregon Contract with Gillig LLC. For the Purchase of 40' Diesel Buses
[12] 2013 Tri-county District of Oregon Contract with Gillig LLC. For the Purchase of Compressed Natural Gas Buses

between $500,000 and $700,000.[13] This technology would also require a major investment in infrastructure.

Hybrid city buses are best suited to stop-and-go routes where average speed is 8 miles per hour. In situations where buses travel longer distances at higher speeds, the hybrid system is less useful because the lithium ion battery harvests power from when the vehicle brakes and when the bus is coasting. These types of buses are used in regular service across the country.

Electric Battery

Electric battery technology has been improving over the last few years to the point where heavy duty fully electric buses are viable transit vehicles under certain conditions. As charging times decrease and battery ranges increase these vehicles are becoming more attractive. The fuel and preventative maintenance cost are much lower on these vehicles but the initial costs are often greater depending on vehicle size and battery configuration. Denver is an excellent example of the use of this technology. Electric battery bus prices vary greatly depending on the size and battery configuration. Buses can range from $400,000 to $2 million.[14]

Staffing

Park City Transit is in need of a personnel upgrade in the areas of: personnel recruitment/training, marketing and administrative functions. Without this upgrade, management will be hard pressed to keep up with growth and the future challenges of transit in Park City. This is particularly important for recruitment/retention and training which is very challenging in this environment. In addition, with an emphasis on marketing for new services, professional staff will be a significant benefit.

As indicated in the previous technical memorandum, some tasks are currently assigned to bus operators on a part time basis. It would be more appropriate to use skilled, professional staff. Since most of the work is being paid for now, the incremental costs to going to professional staff will not be excessive.

Facilities

Infrastructure will need to be maintained and improved upon over the next seven years:

[13] 2013 Tri-county District of Oregon Contract with Gillig LLC. For the Purchase of Hybrid Buses
[14] Rang of costs for E-Bus and Proterra electric battery buses. http://ebus.com/ and http://www.proterra.com/

1. Kimball Junction Transit Center – This has yet to be built, but planning for routes must start after selection of services (Kimball Shuttle and call a bus services may have to be considered).
2. Bus stops – Stops should be examined for pedestrian access, safety and security with considerations for stop improvements/enhancements. Park City Transit and the County may desire to conduct a full bus stop assessment to review and prioritize: accessibility, pathways, shelters, benches, lighting and other improvements;
3. Major Transfer Pedestrian Pathway Planning – PCM and Old Town facilities allow pedestrians to walk across active busways, often walking directly in front of buses. These facilities should have upgrades to pedestrian access/safety;
4. Kearns/Park stop improvements and upgrade to pedestrian access. This is a major transfer point that at times can become crowded. This intersection will continue to be relied on for rapid transfers. Efforts should be made to improve pedestrian access to and from the transfer points. Please note that if plans are brought forth to change the intersection, transit must be represented to ensure a significant transfer facility is included;
5. Canyon Transit Hub – Improvements may be needed to this Hub.
6. Park and Ride – One of the keys to success in the corridors is unconstrained remote/intercept parking for commuters and day visitors. While Jeremy Ranch Park and Ride is the main lot in the north, it is typically about ½ full during weekdays (about 60 spaces total). With focused marketing and express bus service, this lot should fill up quickly requiring rapid construction of additional parking facilities in the Pinebrook and the Kimball Junction areas. The Richardson Flat facility could be used in the S.R. 248 corridor after slip ramps are installed (not within the timeframe of this project).
7. Maintenance/Fueling - Changes will need to occur if alternatives to diesel/bio diesel buses are to be implemented. Fueling and new maintenance equipment needs will have to be considered.

Technology – Customer Focus

There are many aspects of technology in transit. Bus technology discussed previously is just a part of it. In the past few years there has been an explosion of technology related to the customer. Park City Transit is using technology with a customer focus. Bus information signage is available at key stops and should be expanded. Consideration should be given to which key stops should have this technology. Park City Transit also has an app that can be used to determine which bus should be taken and when it will arrive. The passenger counters can also help in planning.

Additional Technologies

There are a variety of potential technology applications that can be employed by Park City Transit with various levels of utility. These should be considered either now or in the future.

- Call a bus service has at times adapted technology in a number of ways. First is the simple use of cell phones. In some call a bus services such as in Dallas and Tidewater, the passenger requests a trip by calling the driver directly 30 minutes before the trip. Some call a bus services utilize paratransit technology while there are also innovative opportunities to use a telephone app to initiate a ride. Technology for controlling paratransit vehicles, whether in zoned call a bus or ADA service (or combined) can allow for customer rapid booking of trips, the most effective routing and scheduling and automated call in functions.

- Traffic Signal Preemption - allows the transit vehicle and driver to hold an upcoming light green until the bus passes. This tool is now commonly used in transit, especially in express service or BRT type service.

- Wi-Fi – Common on board transit vehicles is Wi-Fi for riders. This added convenience may be able to attract some young riders and will be a significant convenience for many.