



July 15, 2009

An aerial photograph of a valley. A light-colored, winding road curves through the green hillsides. In the foreground, there are several buildings, including a large one with a green roof and a parking lot. The background shows more hills and a town in the distance.

# Snyderville Basin Transportation Master Plan





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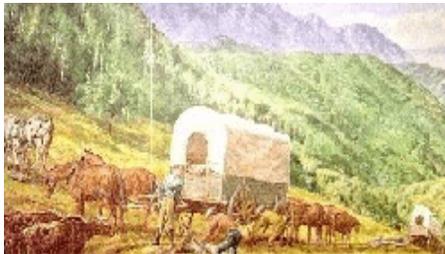
# 1. Introduction

In 2004, Summit County retained Fehr & Peers to create a transportation master plan for the SR-224 to I-80 corridor of the Snyderville Basin. Supplemental land use analysis and traffic modeling have been conducted for a total basin analysis. Figure 1-1 includes the study area for the master planning purposes. This Snyderville Basin Transportation Master Plan (Plan) has been developed from available traffic studies, general plans, proposed developments, planned improvements, transit studies, and other applicable documents necessary for a comprehensive understanding of the transportation issues facing the Snyderville Basin. The County has considered various plan elements, including existing traffic conditions, future traffic conditions, recommended transportation goals, principles and actions, proposed facility improvements, capital improvement programs, and impact fee recommendations. This Plan should be reviewed and adopted by ordinance to update Summit County Ordinance 650, the Western Snyderville Basin Transportation / Transit Plan.

## 1.1. Background

Summit County encompasses 1,849 square miles in north-central Utah. The study area, primarily the Snyderville Basin, is the west most portion of the County. The area is well known for its skiing, and is home to resorts such as Park City Mountain Resort, Deer Valley, and The Canyons.

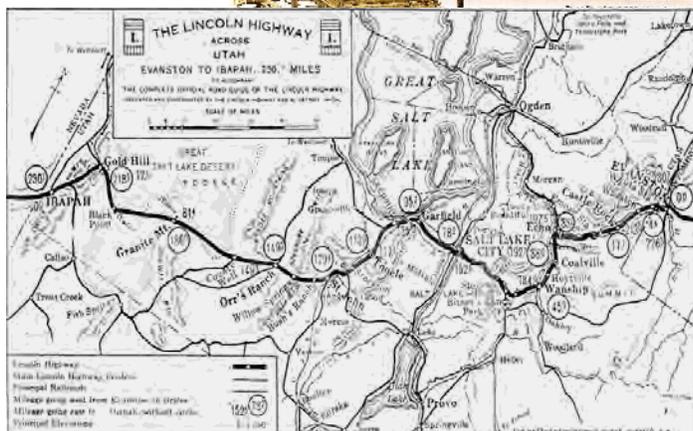
Summit County was used by Native Americans and wildlife as sanctuary and travel. The first sustained transportation began with the westward migration. Originally used by trappers and explorers, horse/ox/foot power transportation through Echo Canyon toward Henefer and East Canyon is well documented as being used by 80,000 persons in the early and mid 1800's. These



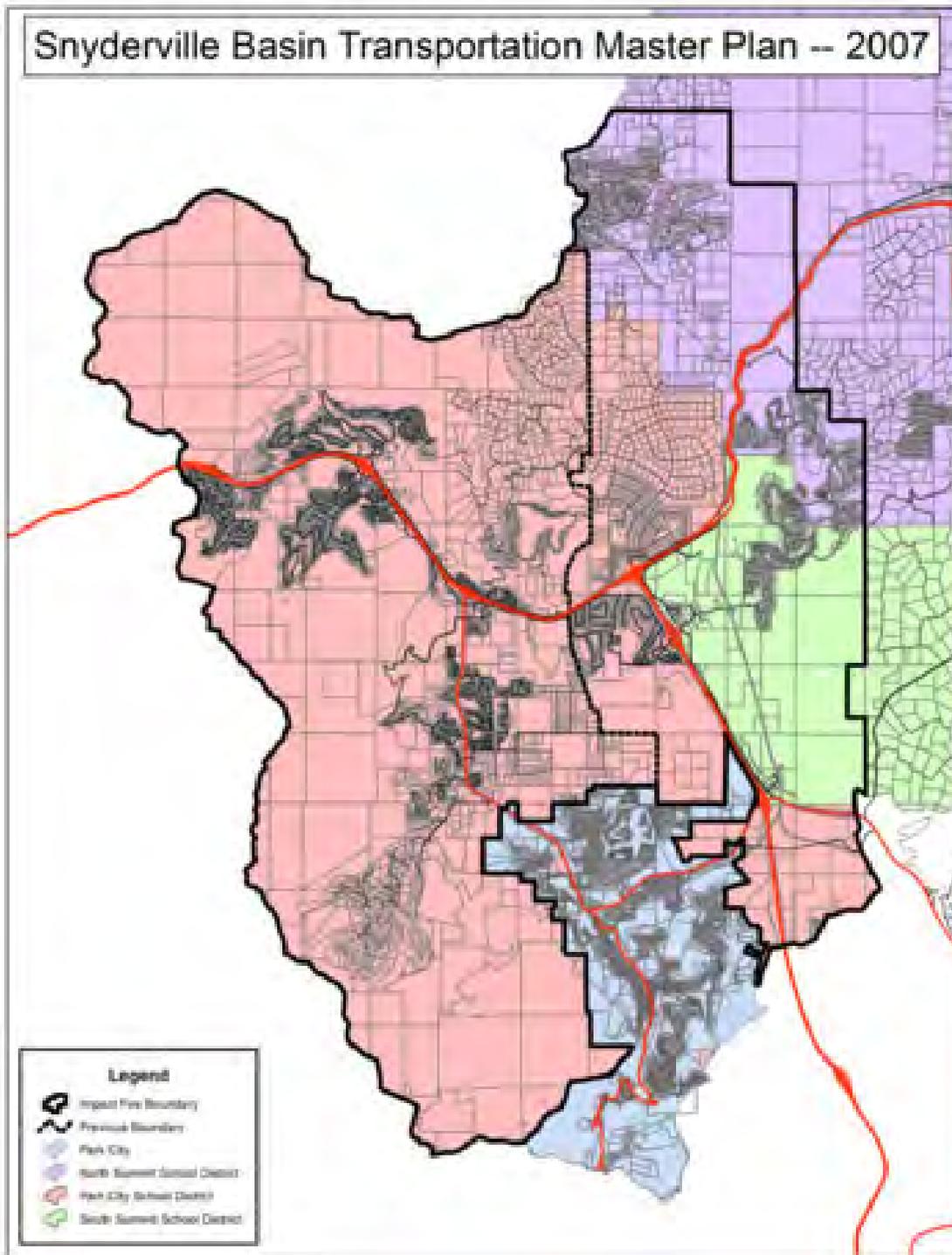
include the California Trail (Hastings cut off), the Mormon Trail and the Pony Express route. A significant change occurred when the preferred transportation route shifted (1867) from Henefer toward Coalville and along what is presently the I-80 route into the Salt Lake Valley. Transportation evolved over time from horse to mechanical. Rail travel, further encouraged by mining, became the preferred long distance / material



transportation form. Individual mobility remained by the horse and wagon. With the development of the automobile, Summit County became a by-way for changing wagon routes to auto routes. Many incremental changes occurred including: Parley's Canyon shifting from community to government maintenance, the Lincoln Highway, re-routing US-40 away from Park City, and so forth.



**Figure 1-1: Study Area**





In the mid 1960's, interstate construction changed the individual mobility substantially, as Salt Lake Valley goods, services and employment became available with a travel time of less than one hour. With the decline in mining, rail transportation and its prevalence was reduced to the major east to west coast connectors from Wyoming to Morgan County. The preparation and occurrence of the 2002 Olympics in the Snyderville Basin/Park City areas was a major event with international exposure and national resources to accommodate the transportation needs. Associated with this time period was the introduction of two key emerging transportation options: trails and transit. In 1995, Summit County established the Snyderville Basin Special Recreation District which provides non-motorized transportation in the form of trails and pathways. Park City, having already established a transit (bus) service, has contracted successfully with Summit County to extend those services to a limited area within the County since the 2002 Olympics.

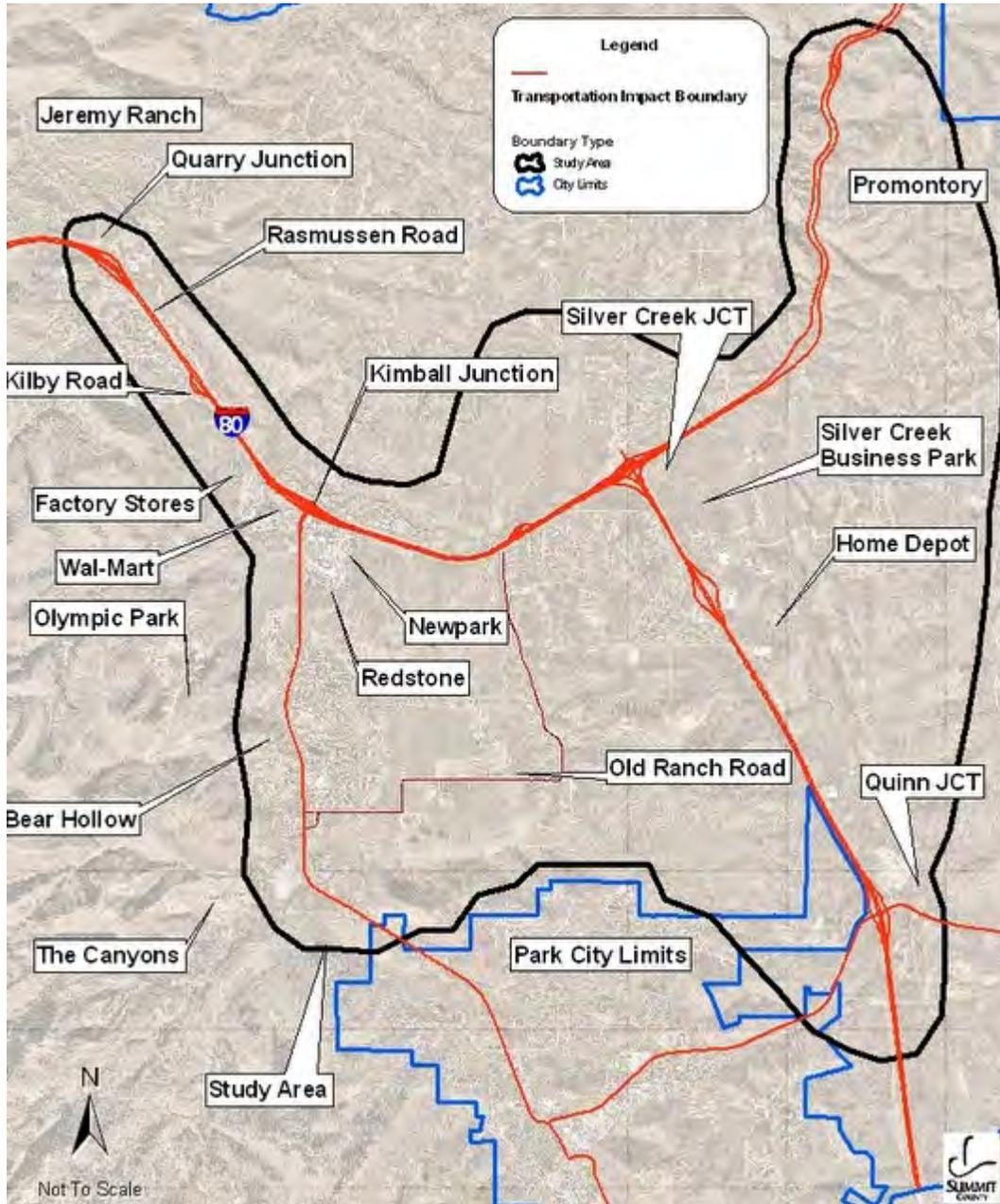
While the 2002 Olympics created a climactic transportation event, daily congestion and transportation use has continued to increase at a demanding pace. All indications point toward a continued increase in transportation demand for the foreseeable future. The most immediate concerns and impacts are within the Snyderville Basin, but these may quickly extend to other areas of the County. Available traffic data, careful monitoring and calculated judgments are important to ensure the quality of life and visions as set forth in this and other Summit County documents.

Western Summit County is a rapidly evolving and intensifying district with a mix of residential, commercial and major recreational uses. The region's transportation system has been shaped by a series of decisions to accommodate new growth, prepare for the 2002 Winter Olympics, protect critical open spaces, and maintain a high quality of life for residents. Despite many efforts, transportation planning and infrastructure improvements have not kept pace with recent land use changes. As a result, the area faces an inter-related set of transportation challenges in managing a complex road system (Subject Road Network, Figure 1-2) consisting of local and state roadways. These challenges include:

- The lack of a defined hierarchy of local, collector and arterial roads to both collect and disperse the area traffic in an efficient manner
- A higher than expected traffic accident rate on the street system
- Limitations of funding for both needed infrastructure improvements and for the expansion of alternative modes such as transit and non-motorized travel
- The lack of a comprehensive data base for accidents and traffic volumes for area roads
- The lack of greater coordination of special events to manage traffic flows to minimize disruption to the road network.

Corrections of many of these challenges are in progress as a result of the original transportation master plan (TMP). The original Western Snyderville Basin Transportation/transit plan did not extended into the whole of the Snyderville Basin. This Plan is to provide complete infrastructure review at a master planning level. Individual improvements will require site specific design and review.

**Figure 1-2: Subject Road Network**



**1.2. Purpose and objectives:**

The purpose of the Plan is to identify existing transportation issues and propose solutions, in a manner that meets the travel requirements of existing and future residents and visitors. The solutions should also be compatible with the mountain, resort, and rural characteristics identified in the Snyderville Basin General Plan, 2004 (SBGP). The Transportation Element of the SBGP identifies the creation of a TMP including the following goals, abridged in the four areas of: regional mobility, roadway network, multimodal, and neighborhoods.



### *Regional Mobility*

- Achieve maximum mobility for minimal cost, by using existing transportation resources as efficiently as possible before investing in new infrastructure
- Consider all capacity-increasing and trip reduction measures on area roads as the first response to increasing traffic before widening them or making major improvements
- Recognize the regional nature of traffic and work to achieve the highest levels of cooperation among key actors including the Utah Department of Transportation (UDOT), Park City Municipal Corporation, and the Park City Chamber Bureau.
- Require new development to fully mitigate their own traffic impacts and provide regional improvements that will maintain appropriate traffic service standards as development occurs, including alternative modes of transportation
- Maximize the use of alternative modes of travel through expansion of the public transit system, formation of a private transportation management association and use of non-motorized modes to reduce expected traffic congestion, maintain a strong economy and high quality of life and improve the efficiency of the regional transportation system
- Plan the implementation of needed road improvements prior to the regular occurrence of unacceptable levels of service, so that regional mobility and the area's quality of life can be maintained

### *Roadway Network*

- Establish and maintain an annually updated database of traffic counts for the area County roads, which will be used to monitor and manage traffic conditions. Provide the County Council with an annual report of traffic conditions and the effect of traffic reduction programs such as transit, other alternative modes, special event traffic management, and on-going trip reduction programs
- Minimize access along State Routes 224, and 248; including placement of medians in 224 and 248 to aid traffic movement and improve safety
- Create the most appropriate design solution for each major intersection
- Determine appropriate signal locations and access points on State Route 224 and 248; the SBGP specifies these locations as Ute Boulevard, Newpark Boulevard, Ranch Place/Cove, Silver Springs, The Canyons / Village Round and Old Ranch Road / Sun Peak
- Set appropriate traffic level of service standards that reduce recurrent congestion, minimizes the traffic impact of special events and slows the growth of traffic from development, event promotion and natural growth
- Install median along SR-224 from White Pine Canyon Road to Kimball's junction as justified
- Encourage appropriate connectivity of the road network and all modes of transportation

### *Multimodal*

- Intensify transit connections internally and between the Snyderville Basin Town Center, The Canyons resort, designated Village Centers, Park City Mountain Resort, Main Street and consider regional connections such as the Wasatch Front, and major employment centers
- Implement traffic control measures such as limited-use portions of roads, bicycle programs, rideshare programs, flexible work hours, and carpools or vanpools
- Include mode share goals with transit and non motorized transportation
- Develop necessary transit infrastructure to support planned expansion of the transit service



### *Neighborhoods / Town centers*

- Establish neighborhood streets as centers of social interaction, and allow for non-motorized travel along roads
- Protect residents from noise, heavy congestion and air pollution
- Promote walk ability in and between neighborhood and town centers

These objectives have been integrated, where applicable, into this Plan.

The limited additional area inclusive of the Eastern Summit County planning area, should aid in maintaining the rural, small town character to the extent this plan extends into it. No specific transportation guidelines are provided in the Eastern Summit County General plan. The two affected areas are Promontory and Tollgate Canyon. Both areas exhibit characteristics similar to the Snyderville Basin. Should the Eastern County chose to adopt specific guidelines, this plan can be altered to consider them.

## **1.2.1 Principles Summary**

This TMP has been guided by a series of principles in an effort to better integrate the provision of needed infrastructure or transportation programs with on-going development in the region. The following paragraphs summarize those principles:

- Approval of new development will be contingent on its demonstrated ability to fully mitigate and meet established traffic level of service standards at each phase of its build-out regionally and locally
- Projects will be prioritized based on regional need and available funding
- An essential tenet of the plan is to make the most efficient use of the existing road network before building or expanding roads, unless the deficit is apparent
- Transportation demand management programs must be aggressively implemented: employers will be asked to reduce employee and visitor trips in order to manage existing traffic congestion, and resorts will be asked to evaluate means of reducing the impact of visitor vehicle trips
- The plan will require a considerable level of cooperation and support from the County, Park City, UDOT, and stakeholders to emphasize the regional nature of transportation problems
- Because the design and development of new road projects requires extended periods of time, the process to construct new facilities will need to be initiated by early indicators of failure. These indicators are established level of service (LOS) thresholds for roadways or intersection functioning which would allow enough time for design and construction prior to failure to meet LOS standards
- Road volumes vary seasonally as a result of a strong winter resort economy. Level of service standards that recognize the strong seasonal impact of visitor traffic will be established. Roads and intersections will be mitigated to meet an 100<sup>th</sup> annual highest traffic condition and monitored during the peak condition
- The County will conduct an annual traffic monitoring and reporting program to provide data for all significant area county roads. This will interface with on-going state data collection effort for I-80, US-40, SR-224 and SR-248. The full data package will be included in an annual report to the County Council and made available to stakeholders
- Summit County and UDOT will be involved in on-going traffic management and implementation programs. Recent examples of this effort include adoption of a Cooperative Corridor Agreements for SR-224 and SR-248, agreement for installation of new traffic signals, installation of an adaptive signal program for the corridor, and



agreements to accelerate the installation of safety medians for SR-224. Near-term projects will include new medians, reducing speed limits, and intersection approach improvements.

- Summit County will lead in implementing this TMP, but expects the on-going cooperation and financial assistance where appropriate of the State of Utah, Park City, and stakeholders in implementing elements of this plan

### **1.3. Review and Approval Process**

This TMP is both a policy document and an action plan. Its review and adoption will reflect the comprehensive and regional nature of this long range planning effort. As a result, the plan has been presented for comment to the following agencies/entities:

- Park City Municipal Corporation
- Park City Chamber of Commerce
- Summit County Council of Governments
- Business Associations and Individuals
- Region 2 UDOT staff
- Snyderville Basin Recreation District
- Snyderville Basin and Eastern County Planning Commission
- Major landowners
- Homeowners groups
- General public

This plan will be supplemented by county ordinances a capital improvement program and other implementation programs and measures. As with any master plan, periodic review and update of the plan is recommended to ensure compatibility with existing conditions for transportation enhancement. The facilities recommended in this plan should be implemented through the capital facilities program under a separate cover.

After adoption by the County Council, the key capital facilities elements of the plan will be presented to UDOT to be included in the Statewide Transportation Improvement Plan (STIP). The plan will then be reviewed annually and reported to the County Council to evaluate the degree of progress towards achievement of the plan's goals, policies and actions. Implementation of the plan will be evident by the execution of the capital facilities program (CFP) and the traffic impact fee program.

### **1.4. Plan Summary**

The details of the Plan are borne out in the subsequent chapters. This section summarizes the key objectives and elements of these chapters.

The Snyderville Basin is at the hub of Summit County. At the junction of major area roads (I-80, US-40, SR-248 and SR-224), the area serves as a commercial hub for the County as well as an entrances for Park City. The Park City region is transitioning from a seasonal resort to a year-round community with the conversion of secondary to primary homes, expansion of resorts, proliferation and intensification of special events, and the continual expansion of existing residential and commercial development and new development plans. All of these activities bring more and constant traffic into the area. The availability of open land in the study area is an indication of the potential for significant development and traffic intensification over the study period.



Chapter 2 provides the existing conditions in the Snyderville Basin and its neighborhoods. Elements of this chapter include the study area boundaries, level of service, and approximate 100<sup>th</sup> highest hourly traffic at intersections and on area roads. The area has environmental constraints that limit potential transportation solutions and an expanding population in a winter resort community setting. Though area roads generally operate at acceptable levels of service currently, congestion experienced during peak winter times and major special events are indicators of the type of potential congestion the transportation network will experience on a daily basis under future conditions. This chapter also provides roadway classifications and access management standards for consideration.

Chapter 3 evaluates the future impact of increased population and travel on the Snyderville Basin transportation network. Traffic growth projections in the Plan were based on a detailed evaluation of the remaining development potential of undeveloped parcels within the area. If the most recent population projections from the Governor's Office for Summit County were used to forecast future traffic, projected volumes would have been substantially larger. Population projections from the Governor's office predict that the full time population of the Basin and Park City would grow from an estimated 26,000 residents today to approximately 64,000 residents by 2030. This chapter reviews the alternatives evaluated and the evaluation methodologies utilized to develop the recommended phased improvement plan to accommodate and mitigate this increased traffic. An important element of this effort will include the emphasis on and development of multimodal transportation. Multimodal elements include transit, trails, bicycle, pedestrian and other non-standard transportation modes.

Chapter 4 contains County-initiated goals, principles, and actions to enact the preferred alternative. It provides recommended access management measures for implementation upon adoption of the plan by the County Council. The policies include a monitoring program to assess the level of service and progress of the proposed plan.

These recommended improvements provide a basis for the Capital Facilities Plan (CFP). The CFP provides funding recommendations and a basis for impact fee calculations. Final project designs, funding and implementation will be required during project development as approved by the County Council. Projects will be coordinated with other capital projects as provided in the County's Capital Improvement Plan.



## 2. Existing Conditions

Documentation of the existing transportation conditions is on-going with Community Development statistical information, traffic counts and so forth. This document allows the evaluation of the existing transportation system, and the development of this TMP which addresses the County's current and future needs in the area. Traffic counts have been done for several years in all key areas of the County. In order to understand the existing conditions, the following data was collected: key roadway and intersection traffic volumes, socio-economic conditions, land use and zoning, accident rates, signal inventory, roadway classifications, public transit routes, and bicycle/pedestrian/equestrian trails. This data formed the basis for analyzing the existing transportation system as well as providing the foundation from which to project future conditions.

Part of what separates the transportation planning efforts from a standard master plan is the seasonal variation of traffic volumes. As a resort economy, the Snyderville Basin experiences a strong increase in average daily traffic volumes during the winter ski season. According to *Traffic on Utah Highways* published by UDOT, during the winter months (December – March) in 2006, SR-224 transported an average of 36,579 vehicles per day. The road's non-winter average daily volume was only 29,629 vehicles. Typically, daily winter travel volumes averaged about 19% higher than the rest of the year. The winter seasonal peak creates both problems and opportunities. Resort economies depend on large numbers of visitors, which generate high traffic volumes. Correspondingly, congestion and delay are more pronounced during these winter peak periods.

### 2.1. Land Use

Traffic volumes and patterns are directly related to land use and development density. In order to develop an accurate assessment of future traffic conditions in the study area, an examination of existing land use is essential (see the Appendix A for more information on existing land uses). This includes identifying and quantifying the locations and amounts of the various land uses throughout the Basin, such as commercial, retail, residential, industrial, public facilities, open spaces, parks, golf courses, schools, and offices. Existing land uses are tracked by Summit County and applied to the road network.

#### 2.1.1. Snyderville Basin Planning Neighborhoods

The SBGP identifies several neighborhood planning areas in the study area, including: Summit, Kimball Junction, Rasmussen/Bitner, Sun Peak/Silver Springs, North Mountain and West Mountain. These areas incorporate a wide variety of land uses, which are described in the paragraphs below.

##### *Summit Planning Neighborhood*

This area includes the residential development surrounding the Jeremy Ranch interchange on I-80, in the northwest corner of the Basin. The Pinebrook subdivision sits south of the interchange, and the Jeremy Ranch subdivision is located north of the interchange. Ecker Hill Middle School is located southeast of Pinebrook Boulevard, and Jeremy Ranch Elementary School is northeast of the interchange.

##### *Rasmussen/Bitner Planning Neighborhood*



Rasmussen and Bitner Roads parallel the north side of I-80, both east and west of the Kimball Junction interchange. The Blackhawk multifamily units and the Canyon Creek condominiums are located just northeast of the interchange, as is the Spring Creek subdivision.

#### *North Mountain Planning Neighborhood*

North Mountain is located north of the Rasmussen/Bitner Planning Neighborhood, encompassing the remainder of the development in the north end of the Basin. This area is primarily high-end residential development set against the hillside. North Mountain Planning Neighborhood contains some sensitive lands and open space, including several trail networks. North Mountain includes the Glenwild, Silver Creek, Stagecoach, and Red Hawk subdivisions.

#### *Kimball Junction Planning Neighborhood*

Kimball Junction has a significant amount of commercial development south of the I-80 interchange. This includes the Tanger Factory Stores at Park City, west of the interchange along Landmark Drive; Wal-Mart; a variety of convenience stores, gas stations, and fast food outlets; and the Redstone and New Park mixed-use developments, which include office, retail, restaurants, residential, and a cinema.

#### *Sun Peak/Silver Springs Planning Neighborhood*

This area is located just north of The Canyons resort, and is primarily residential with small pockets of commercial development. The Sun Peak subdivision is situated on the west side of SR-224, and on the east side of SR-224 is the Silver Springs development.

#### *West Mountain Planning Neighborhood*

The West Mountain Planning Neighborhood includes The Canyons resort and the Utah Olympic Park. The Canyons has undergone massive renovation and expansion in the last decade, and encompasses 3,500 acres, 17 lifts, and 155 total trails, in addition to hotels, retails, restaurants, and a day spa. The Utah Olympic Park was home to the skeleton, luge, bobsled, and ski jump competitions during the 2002 Winter Olympics. The park offers year-round access to the facilities for the general public.

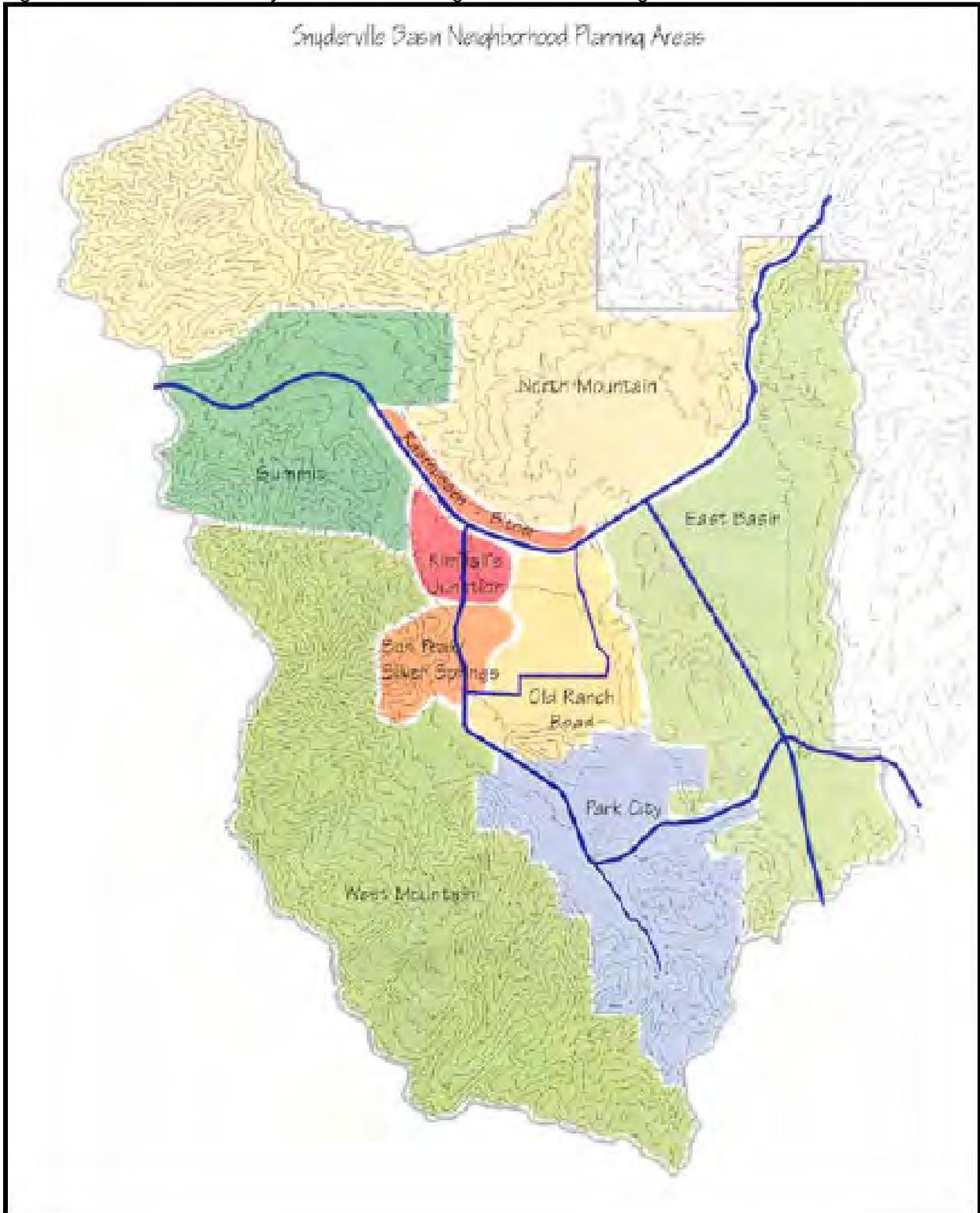
#### *Old Ranch Road Planning Neighborhood*

The Old Ranch Road Planning Neighborhood is dominated by open space, including the Swaner Nature Preserve. A small amount of rural residential development is located along Old Ranch Road. This planning neighborhood also includes a small portion of the Highland Estates subdivision, east of Old Ranch Road and south of I-80.

#### *Eastern Basin Planning Neighborhood*

The Eastern Basin Planning Neighborhood contains some industrial area along the US-40 frontage road. The SR-248 road is partly annexed into Park City for a community and health care complex. One elementary school exists in the Highlands Estates area. A portion of and to entry the Promontory Ranch Club – Master planned community (Promontory) is in the study area. This is a diverse area with additional commercial and three entrances.

Figure 2-1 illustrates the Snyderville Basin Neighborhood Planning Areas.





### **2.1.2. Eastern Summit County Planning area**

As illustrated in Figure 1-1 the study area extends to areas included in the Eastern Summit County Planning area. This area also is inclusive of the portions of the North and South Summit Fire and School Districts. Generally the existing entitlements are in Promontory and Tollgate Canyon access via exit 152 of I-80 and the Browns Canyon entrance of Promontory. Browns Canyon road is effectively beyond the study limits as the transportation pattern does not exhibit the same strong PM peak hour and it is also accessed with Wasatch County.

## **2.2. Environmental Constraints**

The Basin is surrounded by mountainous terrain, while the valley within the Basin has several hydrologic features. The mountains encompassing the valley have considerable areas of steep slopes (over 30% slope), as approximated in Figure 2-2, Environmental Constraints. These steep slopes are excellent for ski resorts, but they make roadway and utility construction very challenging. The Summit County Development Code prohibits development on slopes greater than 30%, and strictly regulates any development taking place on areas between 15-30% slopes.

Hydrologic features in the Basin include the East Canyon Creek, Silver Creek, Kimball Creek, and wetlands. East Canyon Creek parallels the north side of I-80 from Jeremy Ranch into the Silver Creek subdivision. Kimball Creek parallels Old Ranch Road and joins with East Canyon Creek on the north side of I-80 near the underpass. Silver Creek departs US-40 / SR 248 and flows parallel to I-80 to the study limits. Wetlands have been identified east of SR-224 and east side of US-40 inside the study area boundaries.

Other environmental constraints in this area include conservation easements: Hi-Ute Ranch is located just west of the Powderwood Condominiums and south of I-80. The Swaner Nature Preserve is located east of SR-224 and south of I-80. Park City Municipal and Basin Open Space Advisory Committee (BOSAC) hold several key pieces in the Silver Creek drainage area. Conservation easements on these properties will preserve them in perpetuity, reducing the threat of development on the Basin's considerable areas of open space. Summit County has been a leader in local open space conservation efforts and additional land will be set aside as permanent open space in the Basin in the future. This plan should add to open space preservation considerations.

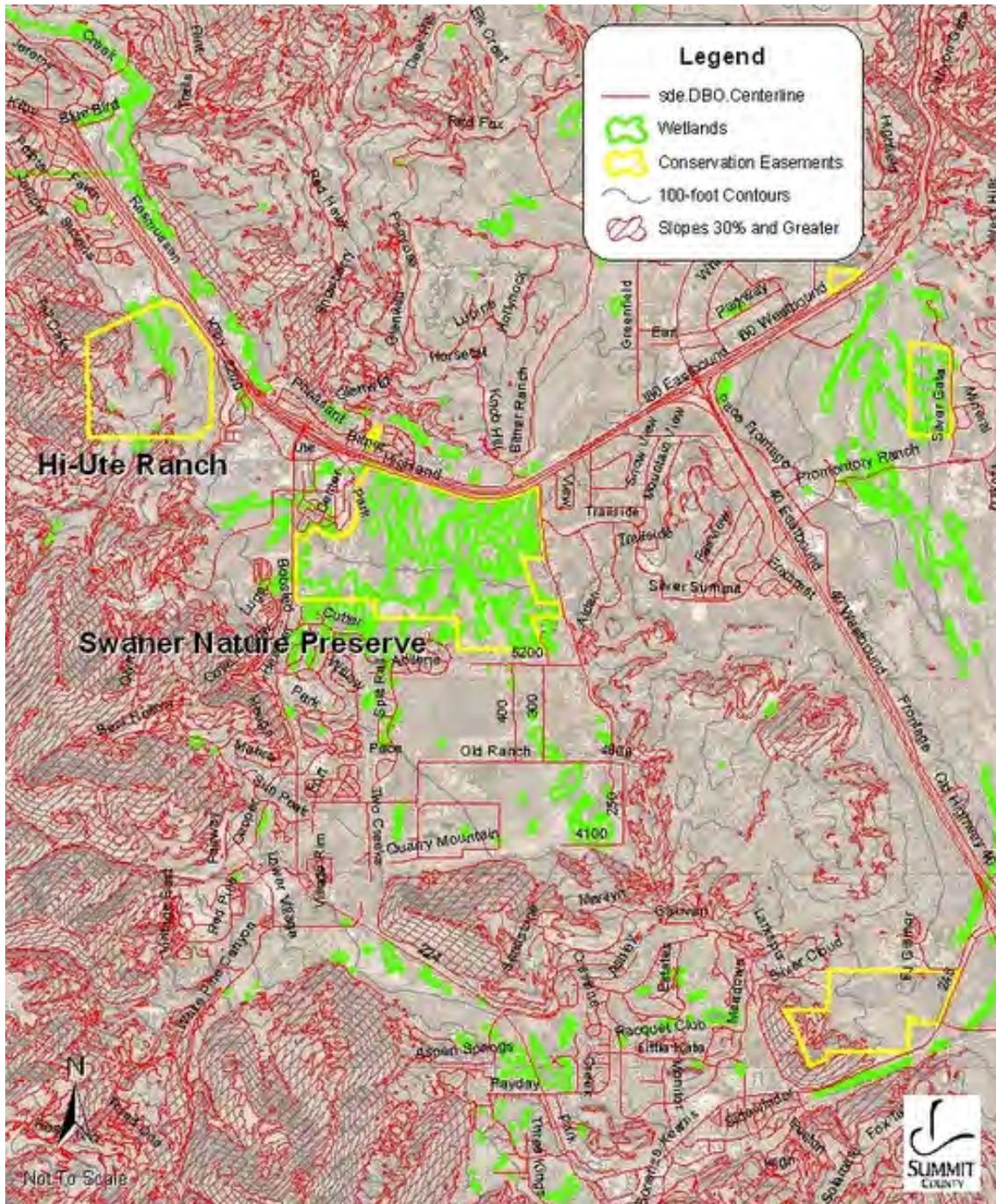
Additional open space has been acquired from what has historically been PRI and a substantial development request. A significant traffic impact remains, but several hundred acres of open space has been designated. Key locations for essential traffic circulation have been retained.

## **2.3. Socioeconomic Conditions**

A detailed analysis of socioeconomic data is beyond the scope of this TMP. However, recent growth trends in the Snyderville Basin can be briefly addressed. In the 1980's, Summit County began to experience an increase in population growth. This was due in part to its proximity to the Wasatch Front: the mountain community lifestyle appealed to Salt Lake residents, who began relocating to Park City and its environs. Many new developments were built outside city limits to accommodate demand in the Snyderville Basin. Table 2.1 forecasts the expected population growth in Summit, Wasatch and Salt Lake Counties over the next 25 years. These population

projections were not the basis used for developing the future traffic forecasts identified in this study. If those projections had been used, much higher traffic forecasts than those developed would have resulted. The traffic forecasts used in this plan were derived by the actual study of expected future Basin land use conditions along with a growth factor for Park City development. Actual Park City Land use data will be used as it is modeled in County wide transportation modeling.

**Figure 2-2: Environmental Constraints**





	Population			Annual Growth		
	1980	2005	2030	1980 – 2005	2005 – 2030	1980 - 2030
<b>Summit</b>	10,198	36,417	85,660	5.22%	3.48%	4.35%
<b>Salt Lake</b>	619,066	970,748	1,381,519	1.82%	1.42%	1.62%
<b>Wasatch</b>	8,523	20,138	46,193	3.50%	3.38%	3.44%
	Households			Annual Growth		
	1980	2005	2030	1980 – 2005	2005 – 2030	1980 - 2030
<b>Summit</b>	3,381	12,948	33,620	5.52%	3.89%	4.70%
<b>Salt Lake</b>	201,742	329,497	493,628	1.98%	1.63%	1.80%
<b>Wasatch</b>	2,595	6,343	15,429	3.64%	3.62%	3.63%
	Employment			Annual Growth		
	1980	2005	2030	1980 – 2005	2005 – 2030	1980 - 2030
<b>Summit</b>	5,528	26,558	45,318	6.48%	2.16%	4.30%
<b>Salt Lake</b>	331,155	696,595	1,002,915	3.02%	1.47%	2.24%
<b>Wasatch</b>	3,151	8,612	15,640	4.10%	2.42%	3.26%

Source: Utah Governor's Office of Planning and Budget

**Table 2-1: Population Growth in Selected Counties**

According to the 2000 Census, the most populated areas in Summit County are Park City (7,371 residents), Summit Park (includes Summit Park, Pinebrook, Jeremy Ranch, Powderwood - 6,597), and the Snyderville Basin (5,457). This indicates that growth outside city limits has largely occurred in the Snyderville Basin itself or in the areas near it; at the same time, the major transportation infrastructure in that region has not changed to accommodate the additional growth.

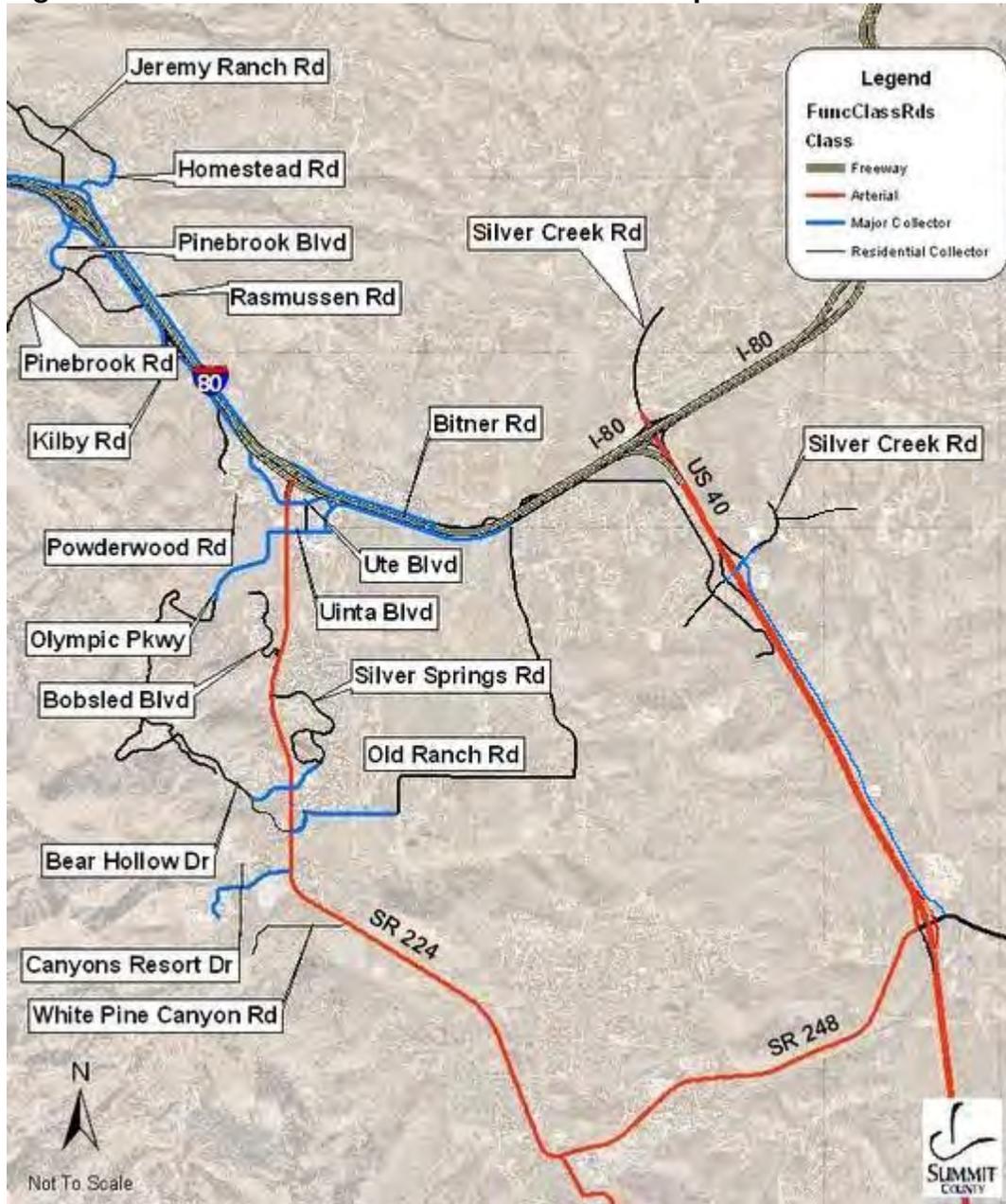
The Governor's Office of Planning and Budget projected a substantial increase in the County's 2030 population based on increased migration from the Wasatch Front to Summit County. This large-scale demographic trend indicates that growth pressures on Summit County are returning to the intense levels experienced during the 1990's.

## **2.4. Roadway System**

### **2.4.1. Roadway Classification**

Transportation planners strive for a balance between encouraging regional connectivity and limiting a road's impact on the local quality of life. To achieve this balance, the region must accommodate transportation corridors and maintain traffic flow while simultaneously minimizing its effect on neighborhood streets. Defining a hierarchy of streets helps organize regional movements and separate them from local traffic. This hierarchy of streets is called the Functional Classification of Streets, shown in Figure 2-3.

**Figure 2-3: Functional Classification of Streets Map**



There are five basic roadway classifications in Summit County: freeways, arterial streets, major collector streets, residential collector streets, and local streets (see Chapter 3 for a discussion of future roadway classifications).

### *Freeways*

Freeways are a form of arterial roads (generally under federal or state jurisdiction) with full access control. They connect regions and typically carry the largest traffic volumes, at high speeds and with high levels of service. Access is strictly limited to interchanges, which are carefully located and designed for maximum safety. Interchanges are generally spaced per federal guidelines.



Freeways have a typical right-of-way of more than 100 feet, with speeds of 55 mph or higher. Examples of freeways within western Summit County include both I-80 and US-40.

### *Arterial Streets*

Arterial streets distribute traffic from the freeway system to smaller geographic areas. Arterials are intended to serve mobility rather than access, and carry volumes of 15,000 – 60,000 vehicles per day (depending on the facility). Such roads may carry local bus routes, connect major collector streets, and provide intra-community connectivity, but they do not access identifiable neighborhoods. Arterials are typically spaced one mile apart, with speeds of 45 - 55 mph and right-of-way widths of 100' or more. The only arterials within the Basin are State Routes 224 and 248, which are owned and maintained by UDOT.

### *Major Collector Streets*

Collector streets provide land access service and high volume traffic circulation within the community, and link to the arterial system. The collector street system may also carry bus routes. Major collectors are spaced up to one-half mile apart, have right-of-way widths of around 80', and can typically carry 5,000 – 24,000 vehicles per day. Allowable speeds on major collector streets should be between 30 - 45 mph. Landmark Drive, Kilby Road, Rasmussen Road, Highland Drive, Ute Boulevard, Silver Summit Parkway, Silver Creek Road, US-40 Frontage, and Olympic Park Drive are examples of major collector streets.

### *Residential Collector Streets*

Residential collector streets collect traffic from residential areas and channel it to major collectors. They typically have road right-of-ways of 60' or more, may have some limitations on access points and may not allow parking on the road. Speeds are generally limited to 25 - 35 mph with careful consideration of the context of the area. Like major collectors, the optimal residential collector spacing is one-half mile or less. Examples of residential collector streets include Pinebrook Boulevard, Silver Creek Drive, Promontory Ranch Road and Powderwood Drive.

### *Local Streets*

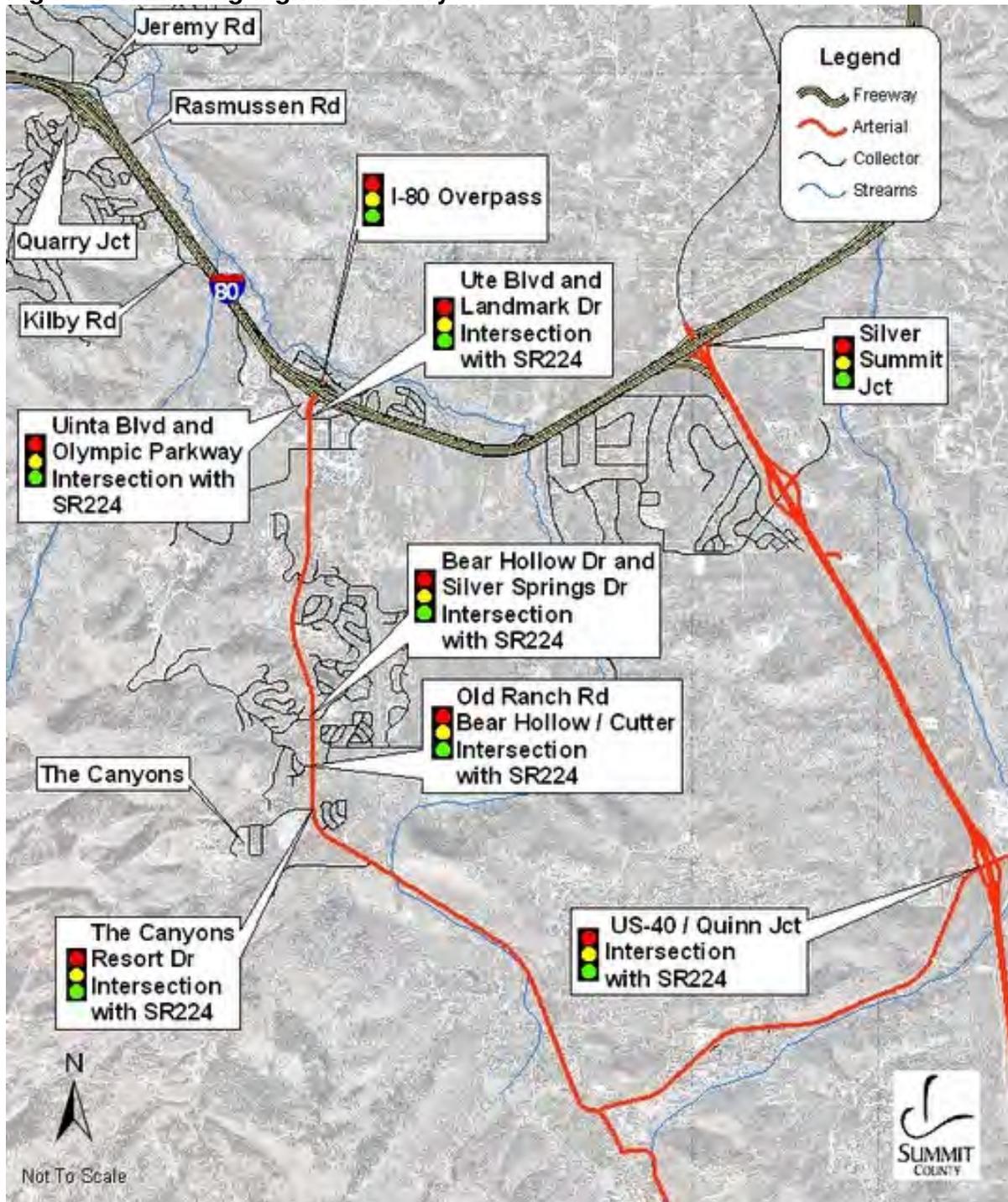
Local streets provide direct access to adjacent residential properties, connect to the higher order road system, and offer the lowest level of mobility. Service to through-traffic movement usually is deliberately discouraged. Local streets have a typical right-of-way of up to 60', a 25 mph speed limit, and are spaced as frequently as necessary and safe. In some instances, local streets are privately owned and maintained. Local streets are the only roadway facilities considered for traffic calming measures; refer to the Summit County traffic calming program for more information.

## **2.4.2. Signal Inventory**

Roadway capacities are generally controlled by the intersection capacities along the route. There are currently eight signalized intersections in the study area. Existing signalized intersections are located at the following accesses within the study area, shown in Figure 2-4, Existing Signal Inventory:

- SR-224 at I-80 SPUI
- SR-224 at Landmark Drive/Ute Boulevard

**Figure 2-4: Existing Signal Inventory**



- SR-224 at Olympic Park Drive/Newpark Way
- SR-224 at Cutter lane
- SR-224 at Old Ranch and Sun Peak
- SR-224 at Bear Hollow Drive/Silver Springs Drive
- SR-224 at Canyons Resort Drive/Village Round
- SR-248 at ramps of US-40



Chapter 3, Future Conditions, includes a discussion of future signal locations, and the Appendix B contains a copy of the UDOT Corridor Preservation Agreements for SR-224 and SR-248.

## 2.5. Public Transit

In 2003, the Park City Council and the Summit County Commission adopted a Short Range Transit Plan to prepare for an expansion of regional transit. The plan examined service demand, and proposed transit services for a seven-year period. Progress on implementation of the plan has been dramatic and swift: by mid-2005, most of the plan's service expansion service goals had been achieved. A 2007 version of the Short Range Transit is near complete and expected prior to this plan incorporation. Draft concepts are to be included here.

In 2006, The County portion of the transit system provided 487,000 passenger trips. This is approximately 4.4% of all passenger trips on the road network.

### 2.5.1. Bus Routes

Since May 2002, Summit County has contracted with Park City Transit to provide for year-round bus service from Park City to the Snyderville Basin. In the first two years of operation, the County funded and Canyons a seasonal shuttle service to The Canyons Resort on 20-minute headways during the ski season (mid-November to mid-April), and hourly service from Park City to Kimball Junction. Currently the Canyons Resort funds their own shuttle service. In July 2004, based on new revenue from a quarter-cent transit sales tax, Kimball service frequency increased to half-hour headways, and hourly service was added on two routes to the Pinebrook and Silver Springs neighborhoods and a Kimball express service was added. In 2006, these routes carried over 480,000 riders. See Figures 2-5 and 2-6 for map of the existing bus routes winter summer respectively.

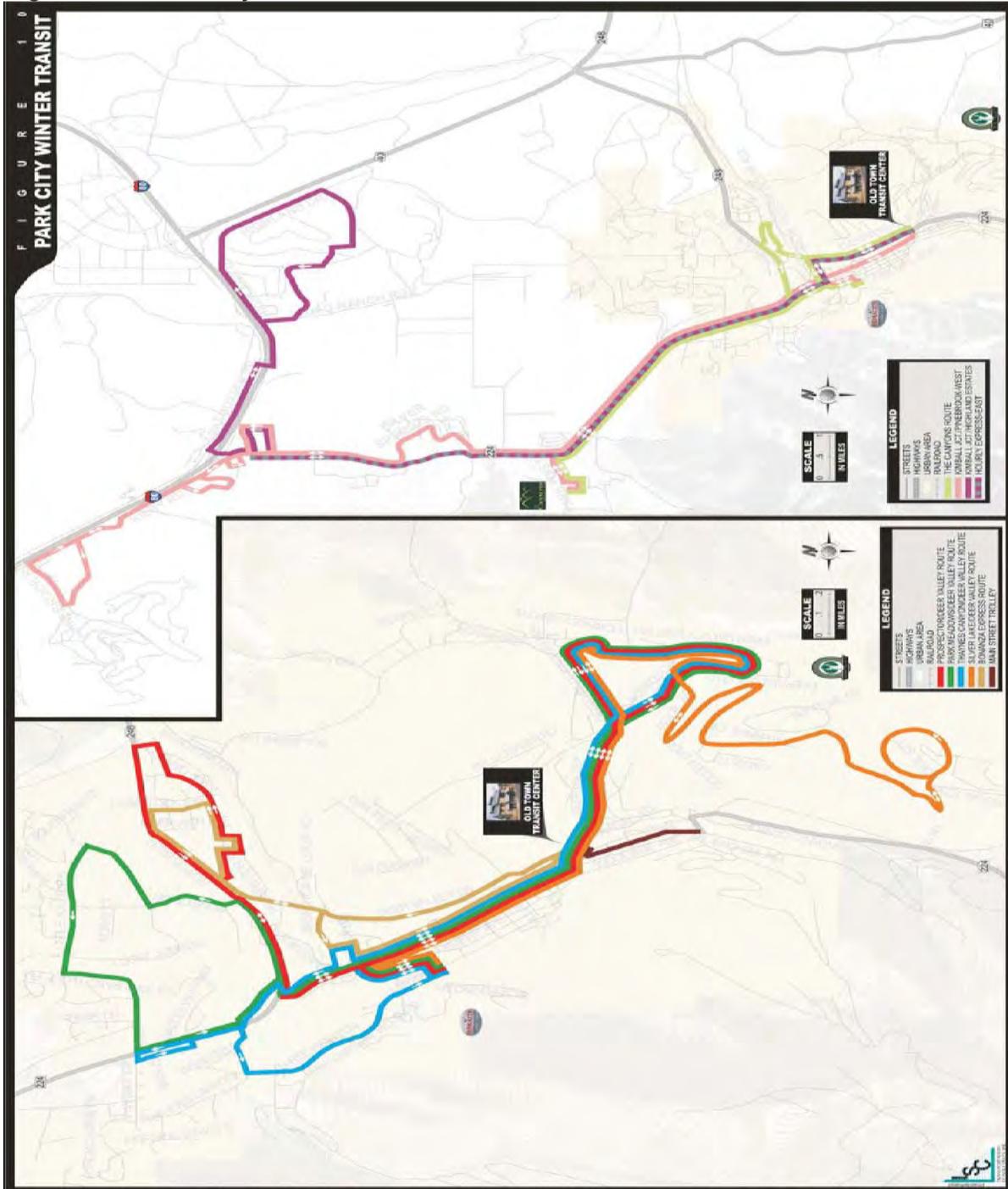
A key indicator of a transit system's effectiveness is the number of passengers carried per service hour. According to the transit plan, the Kimball Junction route should have 20 passengers per service hour with one-hour service, and the neighborhood routes should have 10 passengers per service hour. In 2006, the system was performing well and was generally meeting these standards, as indicated in Table 2-2.

Route	Performance Standard	Winter Performance	Year-Round Performance
	(people/hour)	(people/hour)	(people/hour)
Kimball Junction	20	33	18.9
West Route	10	27.8	17.6
East Route	10	11	8.0

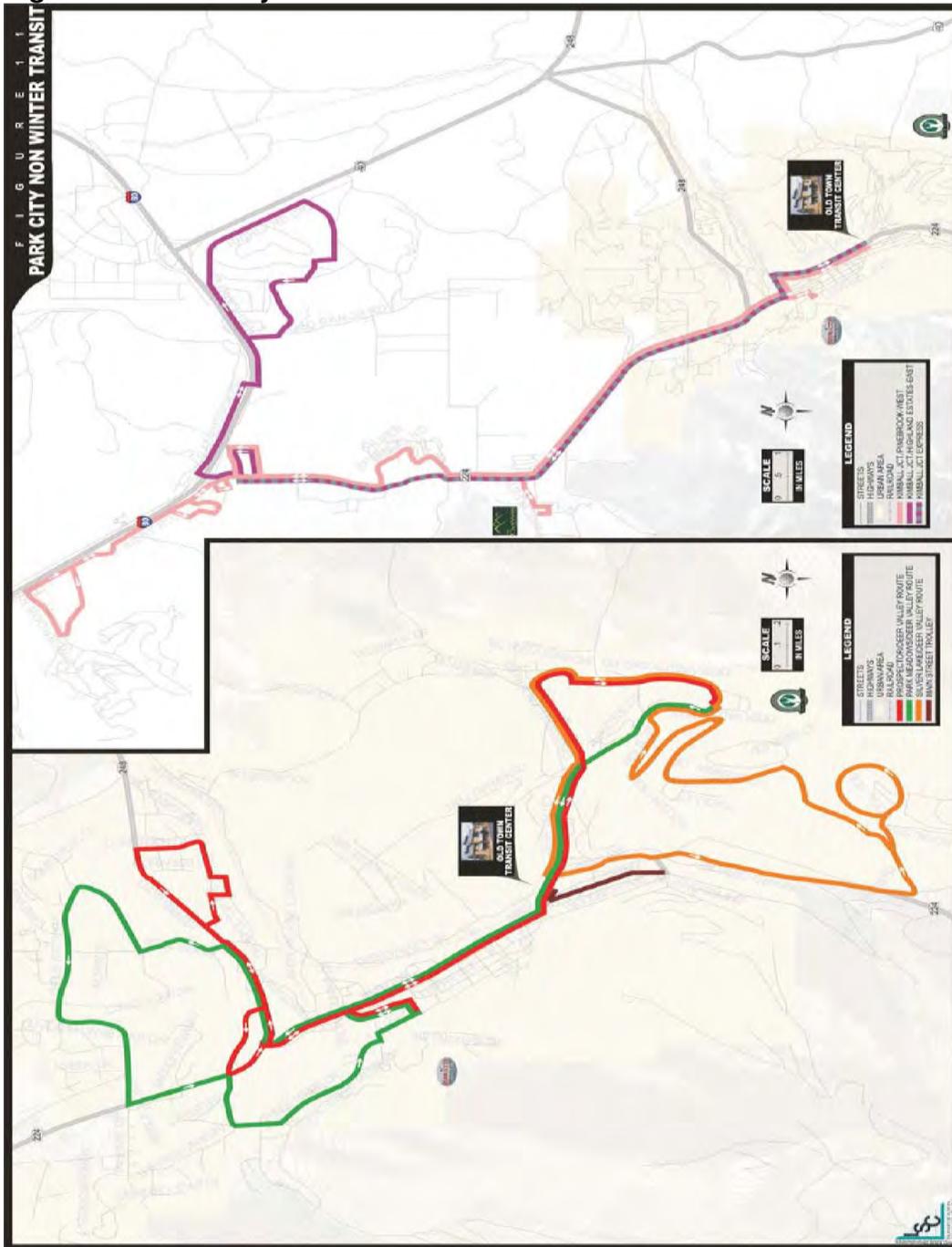
**Table 2-2: Transit Route Performance**

While the existing system is considered a success, other elements (such as park-and-ride lots, and transit hubs connecting travel modes) could be added to the system to encourage increased ridership. See Section 3.6 of this Plan for a discussion of future public transit options and the respective Short Range Transit Plan.

**Figure 2-5: Park City Transit Winter Routes**



**Figure 2-6: Park City Transit Non-Winter Routes**

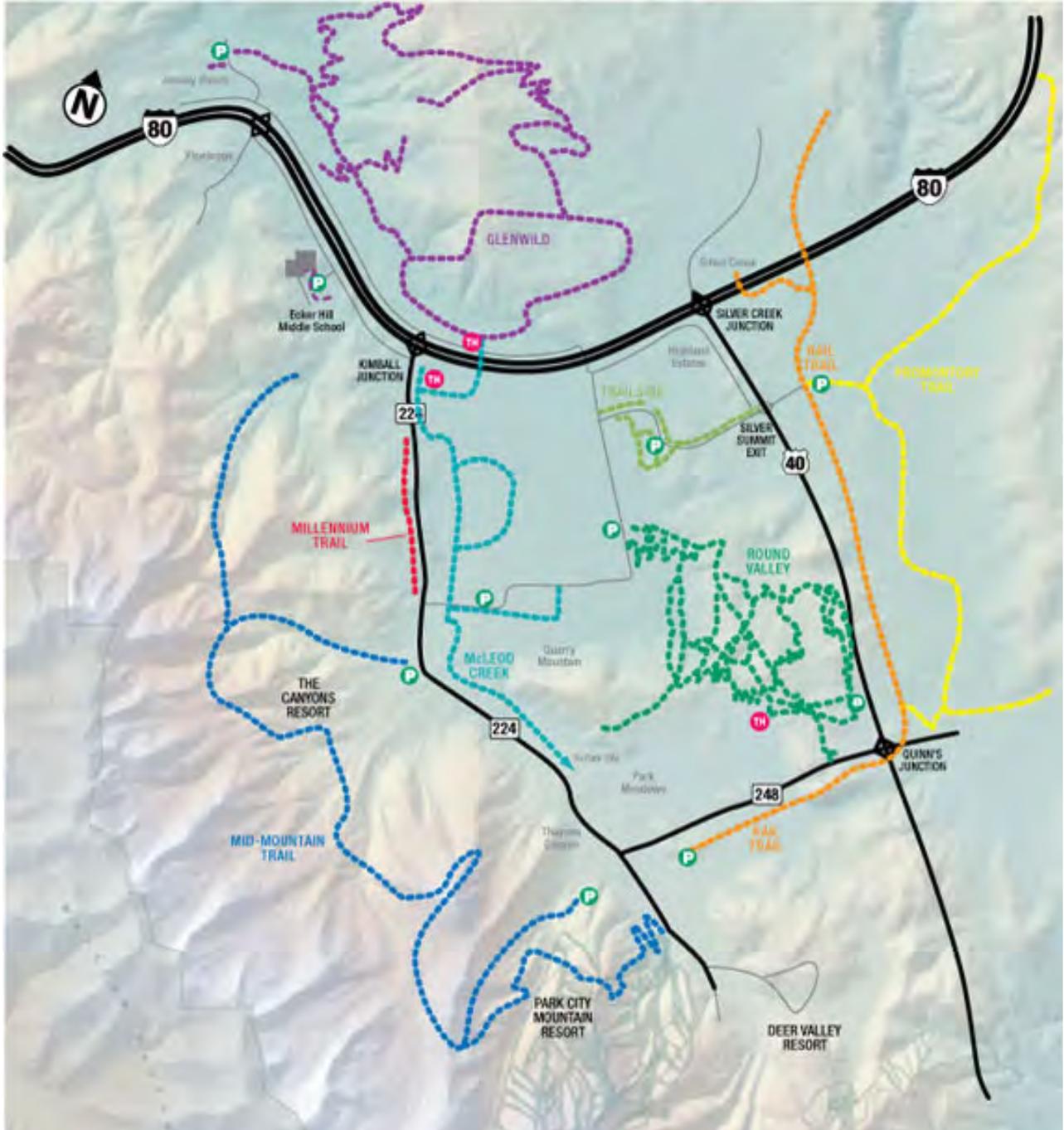


## 2.6. Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are an important element of the transportation system. The Snyderville Basin Recreation District is responsible for oversight and maintenance of the Basin’s trail networks. A wide range of bicycle and pedestrian facilities exists in the study area, from neighborhood sidewalks to strenuous hiking and biking trails. The facility categories can generally be described as sidewalks, paved or soft-surface trails, and hiking or mountain biking

trails. A number of private trails also exist within some major projects. Promontory is most illustrative with trail inter connectivity primarily between various private facilities. Mountain Trails Foundation is in charge of the rail trail running from Park City to Echo. Key public facilities are shown in Figure 2-7.

**Figure 2-7: Existing Bicycle and Pedestrian Facilities**





### **2.6.1. Sidewalks**

Individual subdivisions and commercial developments are typically equipped with sidewalk infrastructure. The Summit County Development Code does not require sidewalks in rural or low density areas (1 unit/2.5 acres to 1 unit/5 or more acres, respectively). However, the Code does require sidewalks on commercial and residential streets in its Village, Town and Resort Centers, but not on arterials, collectors, or other road levels in those areas. Other means of pedestrian transportation, such as asphalt paths should be considered where sidewalks are not required.

Approximately 7 miles of non-continuous sidewalk has been constructed over the years. These walks are not continuous and planned for regional circulation. Close attention should be given to the Snyderville Basin Recreation District's Trails Master Plan to ensure future pedestrian connectivity. In Neighborhoods sidewalks will be required where children can walk to a school or bus stop.

Maintenance policies are non-existent. The County will soon consider adopting a position on winter sidewalk maintenance. Increasing winter pedestrian use has accelerated the interest in year-round access, including snow removal, trail grooming, and safe routes to school. Summit County will conduct a pedestrian access and design plan for the Kimball's Junction area in 2008. Initial findings of the 'Connectivity Study 2008: Kimball Junction Business District / Town Center' studied non-vehicular modes of transportation in the subject area. The project list in preliminary form summarizes needed non-vehicular improvements needed to promote the Goals of the County.

### **2.6.2. Paved or Soft-Surface Neighborhood Trails**

Paved or soft-surface trails in the Basin include the Millennium Trail, East 224 Connector Trail, Pinebrook / Gorgoza Connector Trail, Willow Creek Trail, McLeod Creek Trail, and Split Rail Lane, Trail Side, Round Valley, Promontory and the Rail trail.

- The Millennium Trail parallels SR-224's west side from Bear Hollow Village to the Sun Peak neighborhood as a paved asphalt trail.
- The East 224 Connector Trail runs from Recreational Field House facility around the back side of Newpark and Redstone, parallels SR-224 into Ranch Place and on into the Willow Creek trails. From there, the East 224 Trail connects into McLeod Creek Trail which connects users to Park City. There is a pedestrian underpass just northeast of the recreation facility that carries users from the East 224 Trail under I-80 to the Glenwild Trails located on the north side of I-80. The East 224 Connector Trail is a combination of both asphalt and compacted road base.
- The Pinebrook / Gorgoza Connector Trail links Gorgoza Park along Kilby Road to a point roughly 1/4-mile east of the Jeremy Ranch interchange as a paved asphalt trail.
- The Canyon Corners completing I-80 overpass connection and factory store connection is scheduled for completion in 2007.
- The Willow Creek trails serves to connect the East 224 Connector Trail to McLeod Creek Trail, as well as to provide additional recreation for those in the Old Ranch neighborhood area is also scheduled for completion in 2007.
- The trails are predominantly soft surface, but there is a paved trail that parallels Split Rail Lane, a paved loop around Willow Creek Park, and a paved trail along Old Ranch Road from Willow Creek Park west, to Highway 224. Other trails are located in front of the Summit County library and the Factory Stores, west of the Factory Stores and behind the Crestview Condominiums.



- The Rail trail is an abandoned historic railway line running from north Summit County to Park City. Converted by the state, this soft surface trail provides regional connectivity and groomed winter recreational opportunity.
- Promontory trail is a public access soft surface trail providing in community inter connectivity.
- Three trail crossings exist that connecting access through I-80 including, the underpass northeast of the recreation facility, and the overpass located west of the SR-224 interchange and underpass by the SDWRD access road.
- The newest additions include a trail paralleling Kilby road from the factory store area to the Ecker Hill middle school.

### **2.6.3 Hiking and Biking Trails**

The Wasatch Front and Back are well known for their mountain trails, and the Snyderville Basin is no exception to this rule. Hiking and biking trails in this study area include:

- The Glenwild Loop, on the north side of I-80 at Kimball Junction;
- Pinebrook, which traverses around the back of the Pinebrook subdivision;
- Mid-Mountain Trail, on which hikers and bikers can travel between Pinebrook and the Deer Valley Resort; and 24-7 and Moose Hollow, both of which can be accessed through Jeremy Ranch.
- Round Valley Trail accessing between SR-248 and Old Ranch road
- Moose Hollow and Woods of Parleys Lane access to the Rocky Mountain Trail system.

There are other critical links within the Snyderville Basin that have been approved as part of developments that have yet to be constructed per the Trails Master Plan. Interconnections with Park City pedestrian circulations are also important as trails become a year round amenity and transportation element.

## **2.7. Special Events**

In addition to the almost daily event in the Park City and Snyderville Basin area, several significant multi-day events occur annually within the region, requiring off-site parking at park and ride lots. These events typically attract up to an additional 45,000 visitors to venues lacking sufficient on-site parking to accommodate them. These recurring events include:

Recurring special events which typically impact the transit program include the following events, listed by season.

### **Winter:**

- Sundance Film Festival; a ten-day festival in January attended by 45,000 people daily from around the world.
- Utah Winterfest, 10 days in February. Events include: sled dog race finals, live music, fireworks, moonlight snowshoeing and cross country ski tours, and the annual celebration of the anniversary of the Opening Ceremonies of the 2002 Olympic Winter Games.

### **Summer:**

- Park City and SLC International Music Festival (23rd year)
- Deer Valley Music Festival, mid-July through mid-August
- Park City Arts Festival, early August
- Triple Crown Women's Fast Pitch Softball; 3 weeks in July

### **Fall:**

- Autumn Classics Music Festival (3rd year)



• Park City Literary Festival (3rd year), last week of September In addition to these annual events, others are continually added and provided throughout the year, including world-class ski and snowboard competitions, cultural events, and other athletic events.

Historically, Park City has been able to utilize a network of public and private parking facilities to accommodate increased demand during special events. However, a formal agreement regarding the use of these facilities as overflow parking does not exist. See Section 3.6.3 of this Plan for a discussion of future park-and-ride facilities. Real time peak event way finding by variable message signage would also aid peak conditions.

## **2.8. Roadway Jurisdiction**

The street system in the Snyderville Basin is a mix of state, county, and privately owned and operated roads. This mixture presents challenges in coordinating roadway maintenance and improvement programs between the jurisdictions. However, a first step to complete a coordinated effort is to identify the different agencies and which roads they control, as shown in Figure 2-8.

In 2005, Summit County and the Utah Department of Transportation entered into a Cooperative Corridor Preservation Agreement establishing access management standards, and identifying signalized and non-signalized intersections and proposed improvements within the 224 corridor. In 2006 a process was started to identify access locations along SR-248 in conjunction with Park City.

At the periphery of the study area, regional traffic has an effect. The most direct effect is Wasatch County. Other regional effects include Salt Lake County and the remainder of Summit County. This Plan has little direct effect on these regional Jurisdictions but encourages cooperation of the entities.

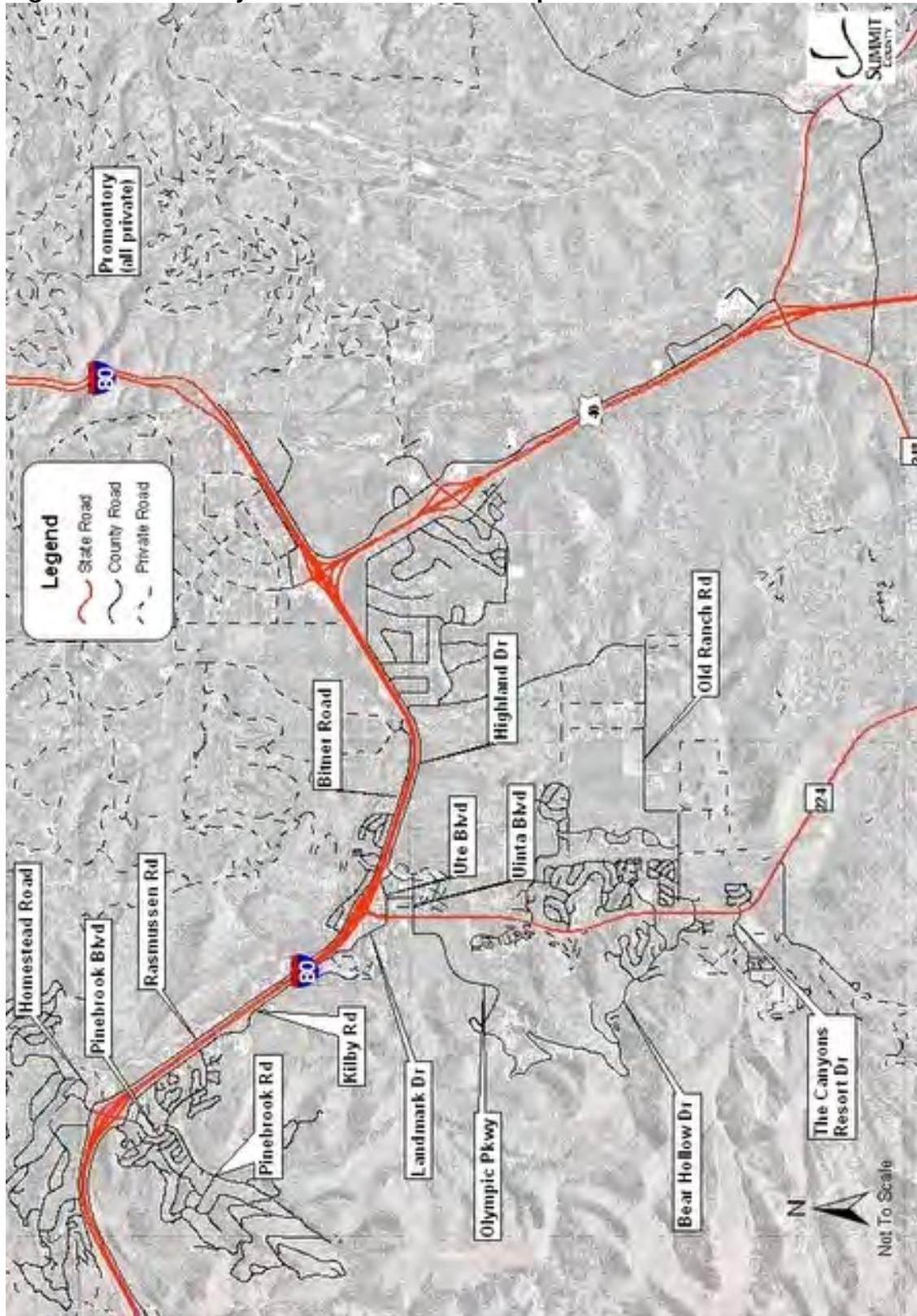
## **2.9. Level of Service Traffic Conditions**

A key component in any transportation planning study is to understand the influence and ramifications of level of service (LOS) policy. Decision makers need to recognize how LOS is derived so that they can apply it appropriately or recommend alternative approaches that are more inclusive of different user groups. This section provides a discussion of LOS, including a basic definition and its role in transportation planning and traffic engineering. Following the background information is a brief discussion of Summit County's LOS policy, and an evaluation of the current policy.

### **2.9.1. Background**

LOS is a term used by traffic engineers to qualitatively describe traffic operating conditions. The term is defined in the Highway Capacity Manual (HCM), Transportation Research Board, 2000. The 2000 version of the HCM is the sixth publication of this reference document,

**Figure 2-9: Roadway Jurisdictional Ownership**





which was first published in 1950. Each new release typically reflects the latest research and how it improves the understanding of traffic flow characteristics.

The 2000 HCM contains procedures and methodology for calculating LOS for different transportation facilities and travel modes. Chapter 15 of the HCM discusses the LOS for urban streets, which is based on the average through-vehicle travel speed for the segment or the entire street. Similar to a report card, LOS varies from LOS “A” to “F” with “A” representing the best driving conditions and “F” the worst, with “E” representing the capacity threshold. Table 2-3 provides descriptions of the six LOS categories.

Each LOS is based on quantitative performance measures and defines a range of operating conditions. For example, LOS C for a signalized intersection is based on control delay (e.g., delay caused by the traffic signal) per vehicle ranging from 20 to 35 seconds. Various performance measures are used depending on the type of transportation facility or travel mode. For roadway facilities, the performance measures used to determine LOS are typically based on the speed, volume, or density of vehicles during a peak hour. The 2000 HCM LOS procedures calculate these measures for peak hour conditions based on the highest 15-minute flow rate of vehicles during the peak hour to capture the effect that fluctuations in traffic demand during the hour may have on operations.

<b>Level of Service Description</b>			
<b>LOS</b>	<b>Description</b>	<b>Average Delay (seconds/vehicle)</b>	
		<b>Signalized</b>	<b>Unsignalized</b>
A	Extremely favorable progression and a very low level of control delay. Individual users are virtually unaffected by others in the traffic stream.	$0 \leq 10$	$0 \leq 10$
B	Good progression and a low level of control delay. The presence of other users in the traffic stream becomes noticeable.	$> 10 \text{ and } \leq 20$	$>10 \text{ and } \leq 15$
C	Fair progression and a moderate level of control delay. The operation of individual users becomes somewhat affected by interactions with others in the traffic stream.	$>20 \text{ and } \leq 35$	$>15 \text{ and } \leq 25$
D	Marginal progression with relatively high levels of control delay. Operating conditions are noticeably more constrained.	$> 35 \text{ and } \leq 55$	$>25 \text{ and } \leq 35$
E	Poor progression with unacceptably high levels of control delay. Operating conditions are at or near capacity.	$> 55 \text{ and } \leq 80$	$>35 \text{ and } \leq 50$
F	Unacceptable progression with forced or breakdown operating conditions.	$> 80$	$> 50$

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

**Table 2-3: Level of Service Descriptions**

LOS is typically used by transportation planners and traffic engineers to identify problems and evaluate improvement alternatives for roadways and intersections. These applications are commonly found in transportation impact studies for new development projects and in engineering studies of transportation improvement projects. For both types of studies, LOS thresholds are set that establish the desired operating conditions. In an impact study, the focus is



on ensuring that approval of the new development does not cause operating conditions to be worse than the desired LOS. For engineering or design studies, the focus is on identifying the size and extent of the improvement to achieve the desired LOS.

### **2.9.2. Existing LOS Policy**

The Snyderville Basin Development Code (Section 4.10, Transportation Infrastructure and Access Design) describes the following LOS standards.

#### *Level of Service Standards*

1. No development application may be approved which causes a reduction in the level of service for any road below the adopted level of service as set forth in the Code and General Plan, as such may be amended from time to time.
2. The operational character that shall be maintained for roadways and intersections in the Snyderville Basin shall be a Level of Service C for County roads and intersections and a Level of Service D for State roads. Level of service is as defined by the Transportation Research Board, Highway Capacity Manual (Special Report 209, 1985).
3. The applicant shall make an offer of dedication of any rights-of-way which are within but will not serve a development, and which are necessary to effectively link the proposed development with future major roads or future developments or to prevent the “land locking” of adjoining properties or to provide the best possible long-term circulation pattern prior to approval of a final subdivision plat or final site plan.
4. The dedication of the wider rights-of-way necessary to facilitate road improvements called for in the County’s transportation plan in response to a request from the County Council, is required.

### **2.9.3. Existing LOS Policy Evaluation**

Although the Development Code refers to specific LOS thresholds, it does not contain critical information related to the following LOS application and calculation issues:

- Methodology for calculating LOS
- Determination of the season, day of week, and time of day for applying the LOS threshold
- Exceptions that are allowed to the LOS threshold due to tradeoffs associated with economic, social, or environmental impacts
- Other modes

This LOS policy evaluation focuses on the mentioned application and calculation issues, and demonstrates how LOS can be used effectively. These issues can be addressed by taking a formal position or adopting a preferred approach on each issue. Before taking an action, the range of options or positions should be understood.

#### *Methodology*

LOS policies should identify the methodology for calculating LOS. To ensure use of the latest professional methodology, the policy should specify use of the latest HCM. If any other methodology adequately represents the unique conditions of the geographic area, facility type or mode, it should be spelled out in the policy. For example, the 2000 HCM calculates LOS for two-way stop controlled intersections by individual movements and not the overall intersection. By only considering individual movements, the 2000 HCM is more stringent than previous HCM methodologies and requires agencies to adopt a position on how to address conditions where an individual movement at an unsignalized intersection fails to meet the adopted LOS threshold. For example, a number of existing unsignalized intersections in the Snyderville Basin might have at



least one individual turning movement at LOS F during peak hour conditions. Another methodology might have obscured this information.

If the latest HCM is specified in an LOS policy, it is also important to note that traditional analysis tools may not be appropriate for calculating LOS. Pages 2-3, 7-6, 7-7, and 9-1 of the 2000 HCM describe basic conditions for applying the HCM methods. In some cases, these methods will not provide accurate results when impediments to traffic flow exist (e.g., queuing) due to peak hour demand exceeding intersection capacity. In these circumstances, traffic simulation models or other special analysis techniques are necessary.

#### *Season, Day of Week, and Time of Day*

Peak traffic volumes during the year in most urban areas occur when school is in session and roadway conditions are not constrained by weather. The Snyderville Basin experiences high peaks during the winter months. As a result, the LOS policy should specify use of worst case conditions for LOS calculations. Likewise, the policy should identify the day of week and time of day. Most communities design their roadway systems for the 30<sup>th</sup> highest hour of traffic demand, which typically corresponds to the PM peak hour (e.g., 5:00 to 6:00 PM) on a Tuesday, Wednesday, or Thursday. Depending on the type and location of study, other seasons, days of the week, and times of day may need to be considered in a transportation impact study or engineering study to adjust to the equivalent of 100<sup>th</sup> highest system hour. The LOS policy should reflect this potential and identify who is responsible for making this determination.

#### *LOS Exceptions*

Maintaining an LOS threshold may not always be desirable given the inherent tradeoffs between the constructions of roadway improvements to provide for a desired LOS and the potential monetary cost as well as the impacts those improvements may have on social conditions or the physical environment. In some cases, the cost to provide a desired LOS may be too high for a community or development to support or accept. In other cases, the roadway improvement to provide acceptable driving conditions may cause adverse impacts to the physical environment. This could include habitat disruption or destruction, increased air pollution, increased noise, increased runoff, and induced growth. Since LOS is essentially a measure of driver comfort and convenience, a community may desire to maintain balance between providing convenient roadway travel for residents and visitors with the need to minimize impacts on the physical environment.

#### *Other Modes*

LOS policies should consider relationships among all modes using the transportation system. This is particularly important for the roadway system because buses, bicycles and pedestrians are all roadway users, but they may not be fully recognized in traffic operations analysis and the calculation of LOS. For example, existing roadway pavement widths that are maximized for automobile use may result in elimination of bus pullouts and bike lanes, and maximize crossing times for pedestrians. In addition, the HCM methodologies for calculating intersection LOS are based solely on vehicle delay. These methodologies do not consider the delay that pedestrians incur while trying to cross a street nor do they provide decision makers with information about the quality of operations for modes other than automobiles. The existing Summit County LOS policies and thresholds do not differentiate between modes nor do they capture how the transportation system operates considering all the modes.

Establishing thresholds is only one step in developing a complete LOS policy that addresses all the important issues, including calculation and application of LOS. Summit County's LOS policy should guide and direct transportation studies. Summit County would also benefit from alternative forms of roadway evaluation that account for multi-modal forms of transportation and different



user groups (e.g., if parking were limited at a commercial establishment, alternative modes of transportation would likely need to be used and evaluated for arrival/departure of customers).

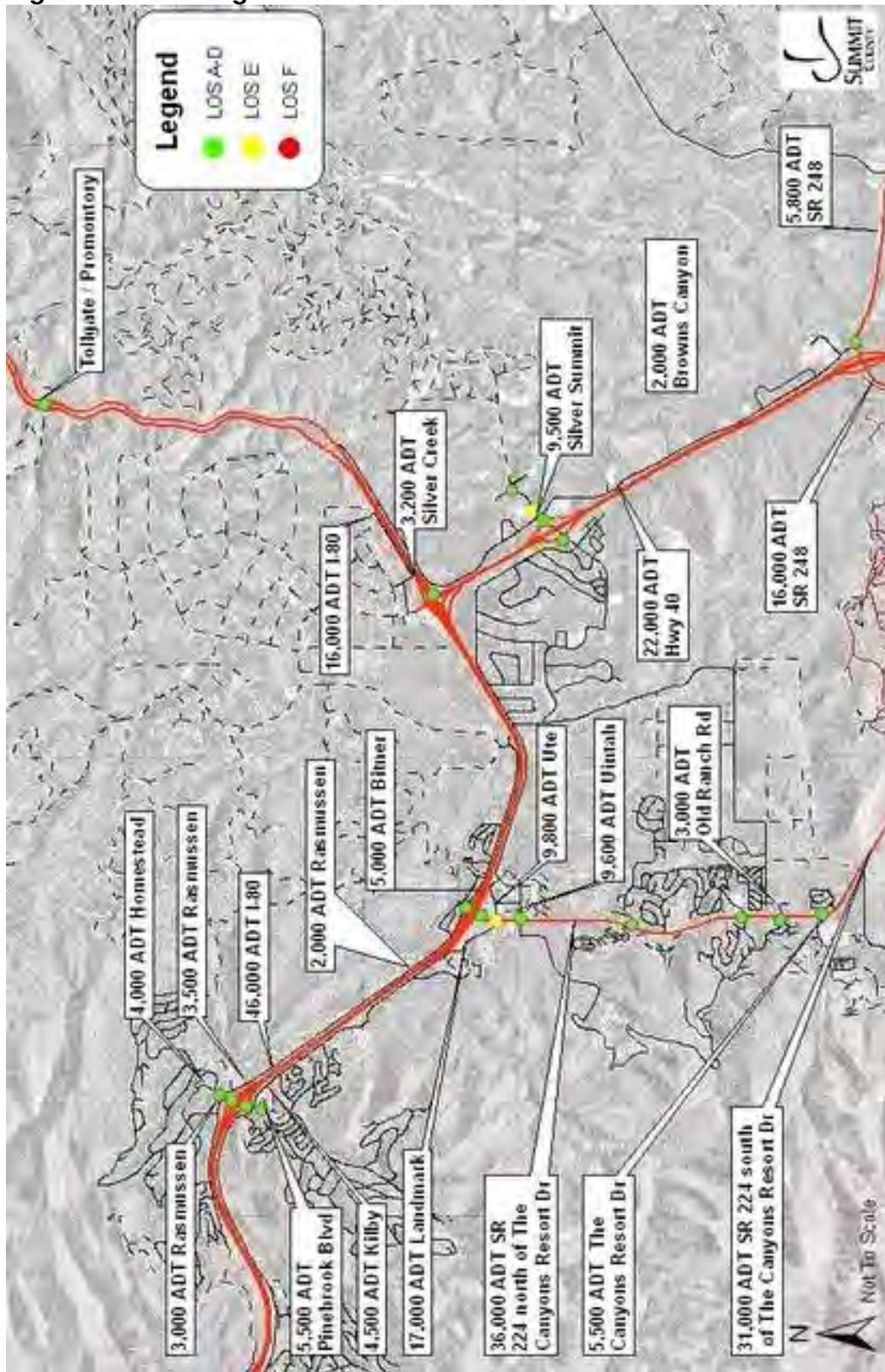
#### **2.9.4. Existing Traffic Volumes**

Weekday morning and evening, and weekend peak period traffic data were collected at the intersection of Landmark Drive/SR-224 to compare traffic patterns for the study area. Weekend peak periods were of special interest because the recreational and retail nature of this area generates high levels of traffic during the weekend. However, analysis indicates that the weekday evening (PM) peak period generates the highest number of traffic volumes. Summit County has also collected traffic data system wide for several years and obtained State route counting to verify the PM peak period as the critical time period. This information is then used to evaluate traffic operations in the study area.

#### **2.9.5. Existing Traffic LOS Results**

Using the PM peak hour traffic volumes, average daily traffic volumes (ADT) were approximated for the major roads and compared with historical ADT volumes collected by UDOT from their publication Traffic on Utah Highways. LOS for major roadways in the study area was based on the existing roadway cross-section and daily traffic volumes. Two methodologies were applied to establish roadway LOS: the Florida Department of Transportation (FDOT) LOS, which was based on the application of traffic volume thresholds for various cross-section scenarios; and the 2000 HCM. These methodologies provide a planning level measure of traffic operations for the major roadways of the Snyderville Basin. Figure 2-9 shows the existing traffic volumes and accompanying LOS. As the figure indicates, Kimball Junction experiences high levels of delay during the PM peak period. The intersection of Landmark Drive/SR-224 operates at an overall LOS E and the eastbound left and northbound thru movements fail during the PM peak period. All other intersections within the study area operate at acceptable levels of service during the critical PM peak period.

**Figure 2-9: Existing Traffic Volumes and LOS**





### 2.9.6. Existing Crash Data

UDOT Traffic & Safety and Summit County generated a three-year crash history for the major state roadways in the 224 corridor and other areas of the County. Crashes were summarized for the three-year period from 2000 to 2002. The crash history indicates a higher occurrence of crashes than would be expected for SR-224. The highest number of crashes occurs at the Landmark Drive intersection and at the mile long section of roadway located south of Village Round Drive / Canyons resort drive. The effectiveness of new medians is to be evaluated.

At the SR-224/Landmark Drive intersection, a majority of the crashes involved left-turning motorists and/or rear end collisions. These crashes may result from the high level of congestion at this intersection. Improvements to the intersection which reduce congestion can also reduce crash frequency. Roughly half the crashes for the section of SR-224 south of Village Round Drive involved rear end collisions, and approximately one quarter involved left-turning motorists. The remaining quarter of the accidents were single vehicle collisions, many of them with wildlife.

### 2.9.7. Existing Access Management Standards

Access management strategies are intended to provide and manage access to properties along roadways, while simultaneously maintaining traffic flow and optimizing safety, capacity, and speed. Thus promote health, safety and so forth of the citizens and system users. There are four basic methods of access management, as described below.

1. Limit the number of conflict points that a vehicle may experience in its travel. This is especially important at intersections and driveways where vehicle, pedestrian, and bicycle paths cross, merge, and diverge.
2. Separate conflict points that can not be eliminated. Provide adequate spacing between conflict points; this will give motorists, pedestrians, and cyclists adequate time to react to the conflict points.
3. Remove turning vehicles from through travel lanes. Provide turning lanes and restrict turning movements. This allows turning and merging traffic to adjust travel speeds appropriately, minimizing impact on through travel movements.
4. Provide adequate internal circulation and storage within private properties, which will improve operations on the adjacent roadway.

The following tables identify the UDOT access management categories currently adopted through Administrative Rule R930-6: *Accommodation of Utilities and the Control and Protection of State Highway Rights of Way*. Every UDOT controlled facility within Utah has been classified.

The state highway access management standards for each of the roadway categories identified in Table 2-4 are outlined in Table 2-5.

<b>UDOT Access Management Categories</b>		
<i>Category Assignment</i>		<i>Level-of-Importance</i>
1	I	Freeway/Interstate
2	S-R	System Priority Rural



3	S-U	System Priority Urban
4	R-R	Regional Rural
5	R-PU	Regional Priority Urban
6	R-U	Regional Urban
7	C-R	Community Rural
8	C-U	Community Urban
9	O	Other
*Source: Administrative Rule R930-6 Table 7.3-1		

**Table 2-4: UDOT Access Management Categories**

<b>Table 2-5*</b>							
<b>UDOT Access Management Standard Spacing</b>							
Category		Minimum Signal Spacing (feet)	Minimum Street Spacing (feet)	Minimum Access Spacing (feet)	Minimum Interchange to Crossroad Access Spacing (feet)		
					To 1 <sup>st</sup> R-in R-out A	To 1 <sup>st</sup> Intersection B	From last R-in R-out C
1	I	Interstate/Freeway Standards Apply					
2	S-R	5,280	1,000	1,000	1,320	1,320	1,320
3	S-U	2,640	No Unsignalized Access Permitted		1,320	1,320	1,320
4	R-R	2,640	660	500	660	1,320	500
5	R-PU	2,640	660	350	660	1,320	500
6	R-U	1,320	350	200	500	1,320	500
7	C-R	1,320	300	150	Not Applicable		
8	C-U	1,320	300	150			
9	O	1,320	300	150			
*Source: Administrative Rule R930-6 Table 7.4-1							

**Table 2-5: UDOT Access Management Standard Spacing**

Under the current UDOT Access Management Standards US-40 and I-80 are Interstate/Freeway with complete access control. SR-224 and SR-248 are designated as a Regional Rural (R-R Class 4) roadway. However, due to the rapid development surrounding SR-224 and SR-248, these roadways function more as a Regional Urban roadway (Class 6). Consequently, Summit County has entered into the corridor preservation agreement (provided in the Appendix B) to plan and preserve the access and mobility of the SR-224 corridor. All County roads would be, by UDOT comparison, community streets though local definitions are provided here after.

Generally, Summit County does not have access management measures. Based on the UDOT criteria, the recommended access management standards for Summit County are set forth in Chapter 4.



### 3. Future Conditions

Projecting future traffic conditions is a function of estimating future land use and the related socio-economic conditions for an area. Typically, when a master plan is completed for a defined geographical boundary, as is the case for the study area, an evaluation of a larger socio-economic area is completed since travel is not restricted to municipal boundaries.

Future land use data generated for incorporation into this transportation plan see Appendix A. The information is fundamental to estimating all future projections and impacts identification as well as fees. In future updates of the Plan, projections should be reviewed and related projects and fees adjusted.

Significant expansion of transit service is difficult to achieve due to social preferences for individual mobility. However, transit is a major component of future community mobility, and its role will increase in importance based on unmet needs and community vision. Future transit networks should emphasize:

- provision of an effective alternative mode of transportation
- opportunities to reduce trips at special events, thereby minimizing impacts on road networks
- public-private partnerships to manage trip generation

#### **3.1. Land Use and Socio-economic Conditions**

In the urban areas along the Wasatch Front, a travel demand model is used to project the future travel demand based on the transportation network and socio-economic data. A travel demand model is maintained by the Wasatch Front Regional Council (WFRC) for the Wasatch Front area from Ogden to the south Salt Lake County boundary with Utah County. The Mountainland Association of Governments (MAG) maintains the model for their urbanized areas within Utah County and the rural planning organization (RPO) within Wasatch County. Presently (2007) Summit County is not included in the regional travel demand model. Based on discussion with UDOT and the COG, a localized model should provide for Summit County needs based on the unique conditions associated with a resort based traffic patterns.

The Governor's Office of Planning and Budget (GOPB) maintains existing socioeconomic data and provides projections of future land use for Summit County, including the Snyderville Basin. Table 2-1 shows the 1980 and 2005 socioeconomic data for Summit County. As the Snyderville Basin grows, the amount and diversity of housing, employment, shopping and other amenities within the County will increase. This is reflected in the GOPB planning forecasts for the year 2030.

Summit County has created a comprehensive list of current entitlements and expected future developments within the study area. These are used to project the future travel demand. Future land use information provided by Summit County included the amount of additional land development expected by the year 2030. Therefore, references in this report to future land use include only the additional land development expected before year 2030; if other development projects arise that are not among the anticipated developments, their impacts may not be accounted for in this TMP.



### **3.1.1. Snyderville Basin Planning Neighborhoods**

Within Summit County, the Snyderville Basin has been subdivided into various planning neighborhoods (see Figure 2-1 for an illustration). Future land use assumptions were based on anticipated development of the study area excluding environmental limitations, such as the conservation easements and other conditions discussed in the Existing Conditions section. The following paragraphs describe the proposed future land uses, including residential and commercial developments, for the different planning neighborhoods. Additional details are included in the Appendix A. Some of the major expansions are as follows:

#### *Summit Planning Neighborhood*

- The Quarry Junction development is planned south of the Jeremy Ranch/I-80 interchange and will include 410,000 square feet of mixed use entitlements. Some will be retail and commercial uses, and large percent residential units.
- The Woods of Parley's Lane, Canyon Pointe, and Jeremy Cove developments are located north of I-80 Parley's Summit to Jeremy Ranch and will include 166 residential units.

#### *Rasmussen/Bitner Planning Neighborhood*

- The Summit Center development plans include 106,000 square feet of retail and office land uses. Some of this development is replacement of existing buildings.
- The Winkler Property development plans include 66,000 square feet of retail land use.
- The Toll Creek plans include 41,000 square feet of retail land use.
- Land use densities for the Dahle, PRI, and Red Barn Properties were estimated based on limited commercial densities provided by Community Development staff. A total of 21,000 square feet of potential retail was assumed for these properties.

#### *North Mountain Planning Neighborhood*

- The Glenwild, Stagecoach Estates, Ridge at Red Hawk, Preserve, and Goshawk residential developments, located north of the Kimball Junction interchange, will include 252 additional residential units.

#### *Kimball Junction Planning Neighborhood*

- The Summit Research Park development is located west of SR-224 and south of Landmark Drive near the Kimball Junction interchange. Plans include: 1,150,000 SF of Research Park and 165 units of work-force housing with 323 acres of open space by the Boyer Company, historically the PRI parcel.
- The Redstone and NewPark developments are located east of SR-224 and immediately south of I-80. Land use and corresponding trip generation were obtained from traffic forecasts previously performed for this area and compared to existing traffic conditions.
- The Canyons Corner development is under construction located west of SR-224 between I-80 and Landmark Drive. It will include 61,000 square feet of retail/restaurant/hotel.

#### *Sun Peak/Silver Springs Planning Neighborhood*

- The Summit Ranch development is located west of SR-224 and north of The Canyons Resort; plans include 140-unit hotel.
- The Bear Hollow development is located west of SR-224 and near the boundary of the Kimball Junction planning neighborhood. Its plans include 300 residential units and 110-unit hotel. A significant portion of this project has already been completed. The Bear



Hollow development is located near the boundary of the Kimball Junction Planning Neighborhood. Though some of the residential land uses could have been assigned to the Sun Peak/Silver Springs Planning Neighborhood, the evaluation and analysis assigned them to the Old Ranch Road Planning Neighborhood.

#### *West Mountain Planning Neighborhood*

- The Canyons Resort development is an expansion of the residential and commercial support for the existing Canyons Resort. The future land use for this development is projected to include 708 residential units, 3,008 hotel units, and 115,000 square feet of office space.
- The Colony is a single-family residential development located west of SR-224 and south of The Canyons Resort. A portion of this development has already been constructed and is projected to include an additional 245 residential units.
- Multiple property developments along White Pine Canyon Road are estimated to include an additional 47 residential units and 93,000 square feet of hotel land use.

#### *Old Ranch Road Planning Neighborhood*

- The Creekside Ranch development will be served by a new leg of the SR-224/White Pine Canyon Road intersection and is planned to include 29 residential units and 200,000 square feet of hotel land use.
- Multiple properties served by Old Ranch Road were estimated to include an additional 126 residential units.

#### *East Basin*

- The single largest contributor is Promontory Ranch a master planned community. This golf community has an entitlement of 1942 units, a school site, and other facilities. Primary access is via Silver Summit/US-40 interchange with an additional access from I-80/Tollgate. Future access is provided via Browns Canyon. These additional accesses are part of the Eastern Summit County planning areas.
- Silver Creek Commerce area contains commercial subdivision lots. Summit County also anticipates some expansion of the Justice Center.
- Silver Creek village center is an active application for a development southeast of Silver Creek Junction. Currently accessed via the North Pace frontage road, this project is a significant commercial and residential use.
- Several existing subdivision are considered in various stages of development including: Silver Summit, Silver Creek, etc.
- In the Quinn's Junction area, commercial and light industrial are considered including Park City Business Center, existing parcels on Atkinson, etc.

### **3.1.2. Eastern Summit County**

A portion of the study extends into Eastern Summit County. These areas are mostly affiliated with existing projects of Tollgate (over 600 lots) but exhibits traffic patterns are consistent with the remainder of the Snyderville Basin. These areas are generally Tollgate Canyon and the remainder of the Promontory project.

## **3.2. Future Travel Demand Forecast Methodology**

Future travel demand and associated traffic conditions are functions of projected land use and socioeconomic conditions. Future travel demand is typically estimated using a computerized travel demand model. Summit County is in the process of generating a model that should



operate for the foreseeable future. For the purposes of this report, original, forecasts of future traffic conditions for the western basin were performed by Feer and Pheers transportation consultants. The remainder of the study area and including the western portion were verified based on a QRSII and excel land use simplified model to provide data and analysis for the Summit County COG, planning, general engineering and public works applications.

The four-step transportation modeling processes include:

- Trip Generation
- Trip Distribution
- Modal Split
- Trip Assignment

The four-step forecasting approach was applied to project the additional volumes of evening (PM) peak hour traffic that will be generated by the study area development and growth. As discussed earlier in this plan, the evening peak hour was identified to be the critical time period for evaluating traffic conditions. The evening peak hour traffic volumes were also used to approximate future daily traffic volume conditions. A brief discussion of the land use variables and the four-step modeling process used to develop future year evening peak hour traffic volumes is provided to help define the major steps used.

### **3.2.1. Future Land Use**

Traffic forecasts for the area were based on land use and density changes expected by the year 2030. The traffic increase was based on the land use information provided by Community Development staff and multiple iterations and reviews by Public Works staff. Future land use conditions for the area were based on the following:

- Development projects currently approved by the County
- Development projects currently seeking County approval
- Environmental limitations on development (conservation easements)
- Current zoning standards

The resulting land use profiles used to forecast future traffic conditions are included in the Appendix A. Park City has provided data on existing land-use trends to better approximate and coordinate efforts between the two jurisdictions. While intensification of uses and growth trends of Park City are beyond this plan, some consideration has been provided as some capital facilities are shared and will likely continue for the foreseeable future.

### **3.2.2. Trip Generation**

Future vehicle trips were calculated for the evening peak period based on the increases in land use expected by the year 2030 and the peak hour trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation, 7<sup>th</sup> Edition*, 2003. Where available, future trip generation rates reported by traffic impact studies of independent development projects were used. Trip generation rates for all other land uses were calculated as part of this plan.

Trip generation data was collected at several single family and townhouse residential developments within the study area. This local data verified that the national rates, published by ITE, are consistent with the existing trip generation rates of the study area, even with the resort characteristics.



### 3.2.3. Trip Distribution

Trip generation rates include trips both produced and attracted by each corresponding land use. As such, any future trip with an origin or destination (distributions) within the study area is accounted for by the trip generation rates of the corresponding land use.

Trip generation productions and attractions were matched to appropriate sub-area gates (zones) located within the study area and external gates located on the boundaries of the study area. Sub-area gates account for trip origins and destinations located within the study area, while external gates account for trip origins and destinations located outside the study area.

Trip generation productions and attractions were distributed using “gravity model” principles. The “gravity model” principle suggests that areas with many trip attractions create a strong “gravity pull” to trip productions, which is decreased as the attractions are farther away from the trip productions.

### 3.2.4. Modal Split

Travel demand models typically forecast the number of person trips that can be assigned to various modes of transportation including automobiles, public transit, bicycling, walking, and others. The ITE trip generation rates applied to the future development of the Snyderville Basin represents vehicle trips only. As such, traffic forecast for the Plan assigned all future trips estimated in the trip generation step of the forecasting process to be automobile trips.

This modal split assumption provides a simplified and conservative estimate of future traffic conditions (vehicle volumes) expected to be generated by the basin. However, this assumption is not sensitive to transportation policy changes that may encourage alternative modes of transportation. For example, if significant transit facilities are constructed the actual automobile trip generation for the study area will likely be lower than forecasted. The latest census data (2000) shows how people within Summit County choose to travel (see Table 3-1).

<b>Summit County Residents Mode of Transportation<sup>1</sup></b>	
Drive Alone	74.4%
Carpooled	12.4%
Public Transportation	1.2%
Other Modes <sup>2</sup>	4.6%
Worked at Home	7.4%
Total	100%
<sup>1</sup> 2000 Census – Journey to Work	
<sup>2</sup> Motorcycle, Bicycle, Walked, Other Means	

**Table 3-1: 2000 Census Data**

The data presented in the table was collected by survey in 2000. However, Park City Transit’s system began operating in the area in 2002, and data indicates that transit ridership has increased dramatically since 2000. County estimates indicate that up to 5% of trips are taken on the transit system during winter peak periods and about 2-4% of the trips during the remainder of the year. These estimates are based on the expansion of transit service since the 2002 Winter Olympics.



### **3.2.5. Trip Assignment**

Vehicle trips are assigned to specific routes that connect their origin and destination. The motorist's choice of routes will be impacted by the capacity of access points, intersections, and roadways. However, routes for future trips generated within the study area are assigned to specific roadways regardless of the capacity constraints, which do not include specific "equilibrium" or dynamic adjustments (adjustments that account for capacity restraints). Some consideration is based on observed counts.

The traffic assignment software TRAFFIX was used to manage the trip generation, distribution, and assignment assumptions during the first iteration of this transportation plan. Summit County will be using QRSII in future analysis with a local model to further analyze provide more detailed site specific review with an annual model calibration.

### **3.3. Future 2030 Traffic Volumes**

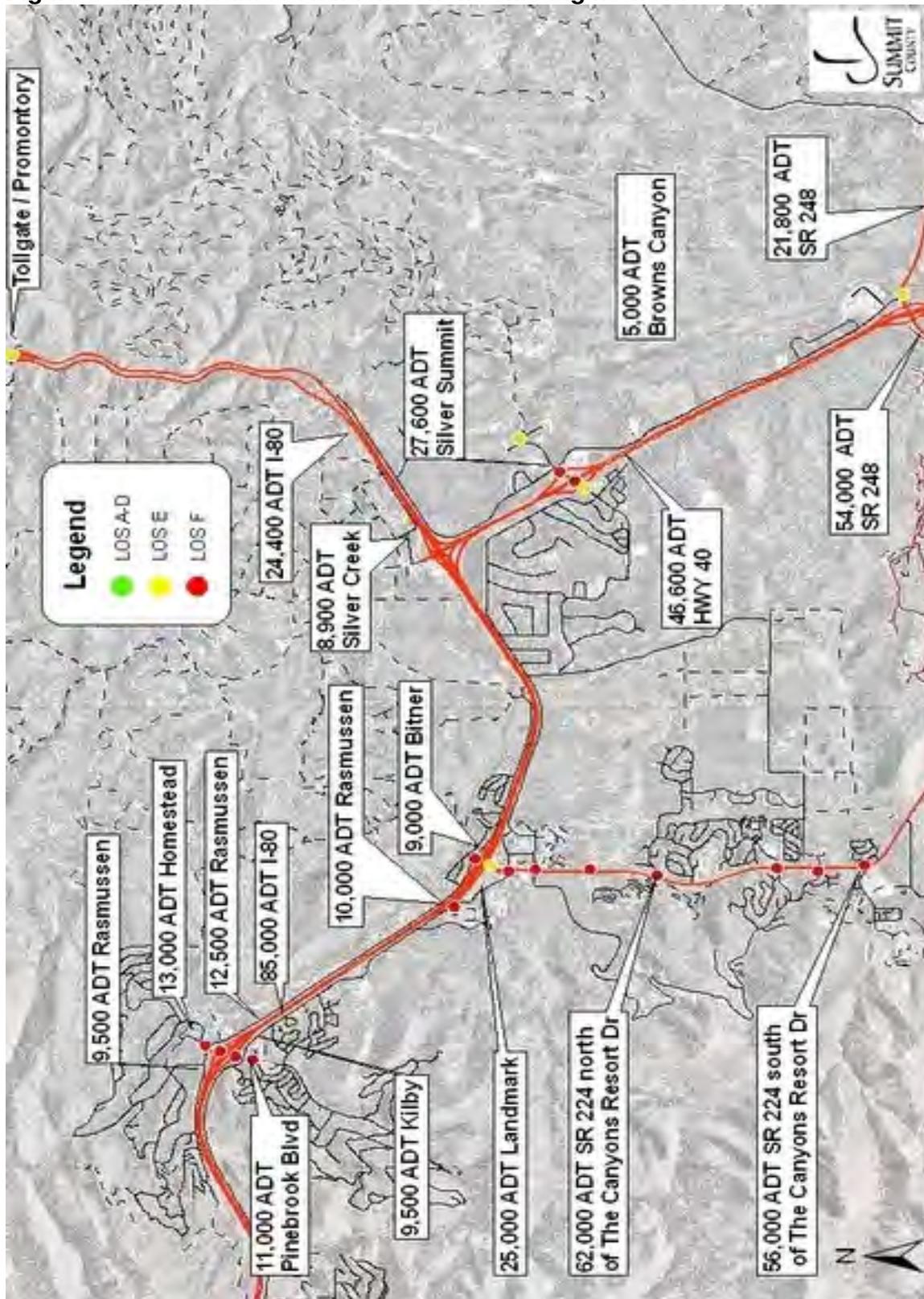
Future traffic volumes for I-80 were calculated using existing daily traffic volume and historical trends. Future traffic conditions on all other major roadways within the study area were based on PM peak hour traffic volumes, which were converted into daily traffic volumes based on a PM peak hour to daily traffic volume ratio of 10% or provided by Summit County traffic counts.

The trip generation values estimated using the Four-Step Modeling Process includes only new trips generated by the increase in land use of the area. These values were added to existing traffic volumes combined with growth of major roadways to produce the total number of trips expected for the future planning year 2030. Figure 3-1 shows the resulting projected 2030 average daily traffic volumes.

Projected traffic growth for SR-224 will primarily serve western basin and Park City. Projected growth along SR-248 will also service Park City, the US-40 corridor and the region. The study area is bounded by mountains. I-80 and US-40 provide additional circulation within the study area but are primarily inter regional circulators. As such, all traffic using SR-224 and SR-248 are assumed to serve only traffic with an origin or destination (even an intermediate stop destination) located within the study area or Park City.

Future trips related to the study area are accounted for based on expected land use changes and the Four-Step Modeling Process. A significant portion of traffic growth related to the Park City area was also accounted for by growth of the study area. For example, as commercial land uses develop in the study area, some Park City residents may choose to travel to the Basin rather than Salt Lake County for retail or commercial needs. Conversely, workers employed in the Park City area may choose to move from Salt Lake or Wasatch Counties to the Snyderville Basin.

Figure 3-1: 2030 Traffic conditions on the existing network





## Park City Growth

Changes in traffic patterns for I-80 and US-40 will depend on local, regional, and interstate growth. Growth not directly related to the Basin will have significant impacts on the conditions of the section of I-80 and US-40 located within the study area. A corridor analysis for I-80 is beyond the scope of this plan but UDOT has recently studied the long range needs of the area finding only a need to widen from Kimball's Junction to Silver Creek Junction to three lanes each way.

The traffic growth projections for Park City are based on straight line growth, from recent historical perspective both on SR-224 and SR-248. A detailed development analysis of the Park City area was beyond the scope of this study but may be feasible once a County-wide model is produced. Though this traditional growth trend is a viable means of estimating future traffic, the continually changing nature of the area may impact growth, in either direction. Some of these impacts are discussed in the following paragraphs.

Park City and some areas of the western Summit County are maturing. Less-intense uses are being replaced by more-intense uses. Employment is growing at 4% annually. This is true in commercial areas such as the Prospector / North of Main neighborhood, at the ski resorts, and the new parking/plaza area in Swede Alley. There is more in commuting as housing costs rise in Park City. Additionally, the conversion of secondary homes to primary homes will generate more traffic per unit over time. The proliferation and intensification of special events may also increase peak traffic congestion. In addition to general and traditional growth trends, traffic from new, planned developments may affect near term traffic growth. Large scale projects such as the new Intermountain Health Care (IHC) hospital, ice rink, downtown plaza and the "Sweeney" project will add substantially to the area's traffic. Overall, there will be many new sites in both the County and the City that will generate new traffic.

### **3.3.1. Future 2030 No Build LOS**

The future traffic volumes forecast for the year 2030 were evaluated on the existing transportation network. Figure 3-1 illustrates the future traffic conditions if no action is taken to improve the existing transportation network. The figure shows that SR-224 and its signalized intersections will have LOS F conditions in 2030 from Bear Hollow to the I-80 interchange. This failing condition will even extend south and east of the project limits, under future No-Build conditions. The figure also indicates that the Jeremy Ranch interchange will experience failing conditions under 2030 no-build conditions. The intersections with Pinebrook Boulevard will experience failing conditions. Also under No-Build conditions, Kilby Road and Rasmussen / Bitner Road will experience LOS E and worse conditions. US-40 frontage / Silver Summit Dr. would be at an LOS F.

### **3.3.2. Future Roadway System**

Currently there are many significant study area improvements in the works by UDOT in concert with Summit County, and these improvements will be discussed first. Other improvements are needed to accommodate a desired level of service. These will be discussed following current planned improvements. Since this plan is a planning-level study, design details are not included here. Sufficient information is provided to illustrate the needs to a planning level of understanding. Absolute details of design will follow with each project phase.

## **UDOT Recent and Upcoming Improvements**



UDOT worked with Summit County to fund studies and allocate funding for the improvements listed below, which were included in the consideration of future traffic impacts. Additional traffic enhancements are required with these improvements.

### **Recent Improvements**

- UDOT completed a speed survey along SR-224 evaluating posted speed limits, and as a result of this study, speed limits were adjusted.
- A traffic signal at the SR-224/Cutter Lane intersection was installed.
- A controlled left turn phase was installed at the SR-224/Silver Springs Boulevard intersection.
- The left-turn pocket for southbound SR-224 to Ute Boulevard was extended easing congestion at the I-80/SR-224 SPUI.
- SR-224/SR-248 Traffic Signal Upgrade: Installation of an adaptive signal control system for signals along SR-224/SR-248 is planned to coordinate the traffic signals and maximize traffic flow. This system will respond to traffic demands in real time by eliminating unused time from the minor street movements, creating a more efficient traffic system.
- SR-224/SR-248 Corridor Preservation Agreements: UDOT and Summit County have cooperatively prepared a corridor preservation agreement identifying the future traffic signals and proper access management requirements for the corridors. Identifying the future signalized intersections and the access management requirements will facilitate a controlled corridor producing a safer roadway environment through the restriction of potential intersection conflict points. Following adoption of the agreement, several intersections along SR-224 could be re-evaluated for installation of new traffic signals (i.e., Cutter Lane and White Pine Canyon Road) and SR-248 (dump road and IHC).
- SR-224/Old Ranch Road & Sun Peak Drive: Installation of a new signal at a realigned SR-224/Old Ranch Road and Sun Peak Drive intersection.
- SR-224/Canyons Resort Drive and Village Round: These two SR-224 intersecting roads were realigned to an appropriate intersection configuration and provide additional capacity.
- Quinn's Junction – US 40 ramp signalization: UDOT warranted and signalized ramps.
- SR-224 Medians: In 2007, UDOT spent approximately \$500,000 in safety funds for medians. Constructed between White Pine Canyon Road and Silver Springs Drive. Medians on SR-224 will enhance the safety of the corridor by eliminating many potential conflict points and full access intersections.

### **Upcoming Improvements**

- I – 80 three lanes each way Kimball's to Silver Creek: Construction scheduled for 2007, the associated environmental document indicated a sufficiency consistent with this plan.
- Quinn's Junction park and ride: Constructed in favor of Park City Mountain Resort for Park City, this 6.98 acre facility has 750 total parking. This will provide regional benefit



- Jeremy Ranch Park and Ride – constructed Fall 2007 – to assist Summit County residents who commute to the Salt Lake Valley.

### **3.4. Development of Alternatives**

Summit County evaluated 32 improvement alternatives along SR-224 and at the Jeremy Ranch interchange. These alternatives were developed in working sessions with members of Summit County's staff, and representatives from UDOT and Park City. The alternatives were reduced based on the initial screening process. The constraints (shown in Figure 2-2) included existing topography, open space, conservation easements, and locations of known planned development. The remaining alternatives were evaluated based on their feasibility, potential impacts, and cost effectiveness. These alternatives were then further subdivided into recommended phases.

Additional needed improvements have planned for the eastern basin as well as refinement of the improvements generated above. Eastern expansion of the plan is less developed space and a fewer needed improvements. An open public forum was chosen to include all major stake holders and provide opportunity for input. Concepts were generated from this forum and refined by staff.

Additional sources are reports and recommendations associated with system improvements including:

- UDOT recommendations
- Jeremy Ranch Intersection Alternatives reports
- Short Range Transit Plan
- Additional Traffic Impact Studies: including Promontory, IHC, etc.

From the evaluation of these alternatives, the revised and expanded preferred alternative was developed, refined and further analyzed. The preferred alternative complies with the principles, identified in Chapter 1, to maximize use of the existing infrastructure prior to undertaking expensive roadway enhancements and expansion. In addition to the traditional roadway improvements, the preferred alternative fully embraces the dual strategy of roadways and multimodal components of the solution, with transit being the largest component of the multimodal piece.

#### **3.4.1. Preferred Alternative**

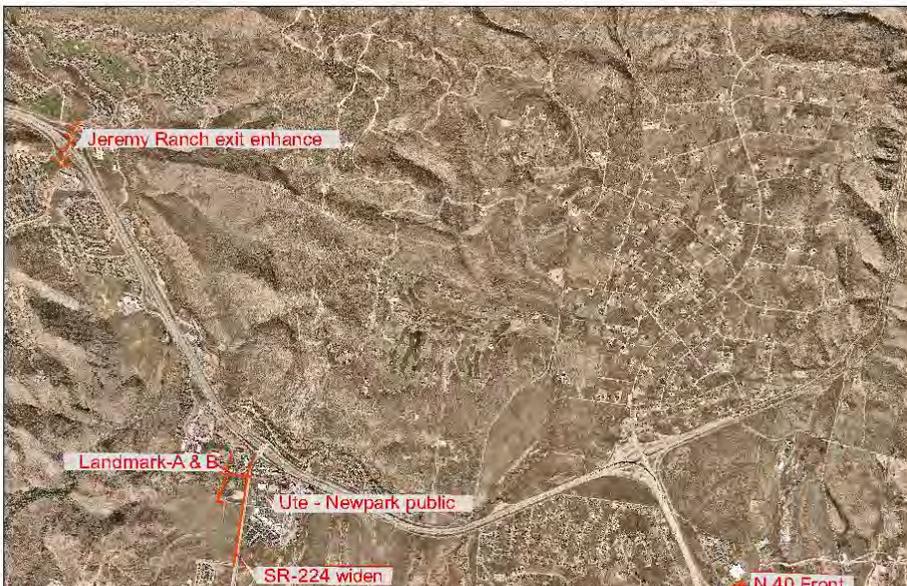
The following paragraphs describe the preferred road alternative and the associated phases for implementation. The recommended Phase I improvements focus on a transit first policy since it is clear that transit service can be expanded much more quickly than new roads can be programmed and built. Transit improvements are to be programmed as an update to the joint City-County Short Range Transit Plan for the period of 2007-2013.

##### **Phase I**

The recommended Phase I improvements focus on the Kimball Junction area and should be accomplished by 2012.

- Improve the current inadequate facility at the Park City Public Works facility (estimated total local cost \$8,672,228)
- Landmark Drive (Schedule A) is proposed to be realigned to provide congestion relief and provide a direct connection in the future to Olympic Park Drive. Currently in the environmental and design process, a roundabout is the preferred alternative providing additional stacking and capacity. (cost estimated \$5,229,774 completed)

- A transit hub is proposed in the short range transit plan in the Kimball's area. The short range transit plan provides for a 9 to 11 buses and 2 or 3 van services. Several locations are identified but the federal funding would necessitate proper alternatives selection process. General location of this facility is identified with the Summit Research Park. (cost estimated \$2,854,681)
- Acquisition, design and construction of a 5 acre park and ride lot within the Kimball's Junction area to serve both daily commuters and regional visitors. This would work in tandem with the new park-n-ride in the Quinn's area. Other minor park-n-rides are expected in the 224 area such as at Jeremy Ranch exit, Canyons area, and so forth. General location of this facility is identified with the Summit Research Park (cost estimated \$4,073,159)
- Design and development of 20 new bus shelters with the region to serve riders (cost estimated \$165,880-300,000)
- Canyon Transit Hub: Travel time versus headway are limited between Kimball's Junction and the Park City Transit hub. An intermediate transit site is in process but permanence will be needed as the Canyons will need exceptional transit access to meet their system requirements. (cost estimated \$513,942)



**Figure 3-2:  
 Recommended  
 Phase I  
 Improvements**

- Jeremy Ranch exit: Intersection improvements at Jeremy Ranch and Pinebrook Blvd warrant





signalization currently. Based on intersection analysis, a series of four roundabouts is the preferred solution. (cost estimated \$2,446,799 including 1-80 ramps)

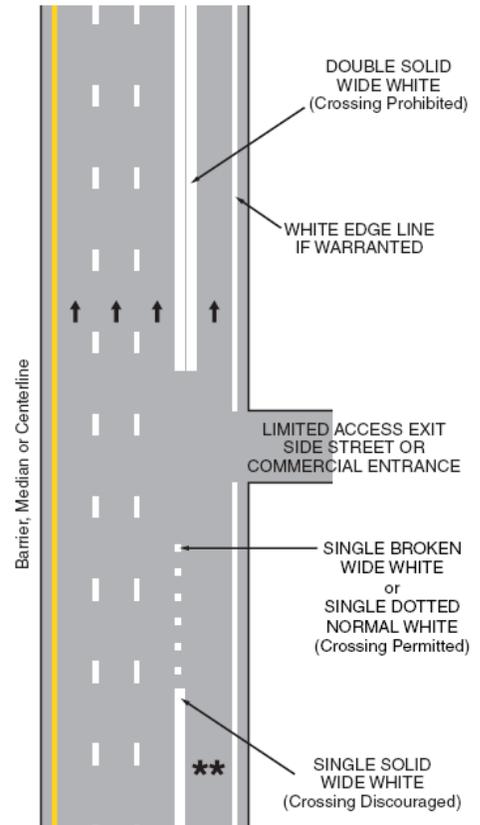
- Canyons Resort Drive is a major collector which is anticipated to connect to White Pine Canyon via a roundabout. This transportation element is on a County right-of-way and will be key to system performance in transit and vehicle distribution. (cost estimated \$386,463)
- Installation of GIS/AVL technologies on transit buses to provide rider information on next bus service (cost estimated \$687,000)
- Near Home Depot, the existing US-40 frontage road intersects Silver Creek Drive roughly 300 feet from interstate ramps. A series of roundabouts is recommended in the Horrock Silver Creek Drive Roundabout Feasibility report 7/22/2008 (cost estimate \$1,600,000)
- Landmark Drive (Schedule B). The current Landmark Drive intersection with SR-224 would be deemphasized with some minor geometric changes and the creation of a major intersection on SR-224 at Newpark Boulevard. These proposed changes would have several effects. First, the changes would reduce SR-224's congestion point at Landmark Drive, thereby increasing the distance between the major intersection on SR-224 and the I-80 interchange. Second, widening SR-224 would add capacity, either as the preferential lane discussed below or as a general purpose lane. Finally, the improvements would further define a route through the Kimball Junction retail areas both east/west of SR-224. (cost estimated \$2,315,696)

**Phase II**

Phase II improvements (as indicated in Figure 3-3) build on the Phase I improvements to achieve the goals stated in this TMP.

SR-224 should be widened to six lanes from I-80 to Olympic Park. In accord with successful transit promotion there is a desire to stripe the outside lane of the widened SR-224 as a "preferential lane," with use limited to transit and/or high occupancy vehicles (HOV). Evaluation conducted for the purpose of this Plan indicated that, by 2010 without widening, SR-224 will operate at LOS E/F. Adding the outside preferential lane may increase transit share and HOVs on SR-224. However, these numbers may not increase sufficiently to prevent an unacceptable LOS in the general purpose lanes. UDOT may then be faced with conversion of the preferential lane to a general purpose lane, in order to achieve acceptable LOS on the roadway. As a consideration the right turn lane may be the preferential lane. Two free right turn lanes will be added to the I-80 southbound off-ramp to SR-224. UDOT is currently seeking congestion relief funds to effectuate the project. (Cost estimated \$5,071,371)

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**Figure 3-3: Recommended Phase II Improvements**



- Powderwood Drive, which services the Powderwood and Crestview Condominiums and provides secondary access to the Tanger Factory Stores, should be extended into the



proposed Summit Research Park, as shown in Figure 3-2. This extension would provide Factory Store patrons and Kilby Road traffic with an alternative connection to SR-224, in addition to the Landmark Drive route. It would also tie into a potential future interchange on I-80, which is discussed in the Phase III improvements paragraph. This is a project mitigation of the subject site and is partially a system improvement. (cost estimated \$2,620,230)

- Bittner Road to Silver Creek Road: Several alternative are illustrated: from a frontage road to Wasatch Way. A future road should connect the two areas such that local traffic is not required to enter the interstate system. This connection provides better community circulation and improved response time for emergency services. Currently the access routing is: Bittner, to Highland Drive, to Silver Summit Parkway, to US-40, to Silver Creek Road. Most of this way is residential in nature. The planed route would provide access in less then ½ the distance as well as alternative circulation. The route is illustrated in the SBGP and a complete alternatives analysis needs to be preformed to determine the optimum location. (cost estimate \$2,780,362)
- Relocation of Eastside US-40 frontage road Atkinson to SR-248. The intersection is located to close to the US-40 ramps. Constrained by the wetland and rail trail, the intersection can only be moved over a less then ideal distance. However, as capacity of the US-40 / SR-248 exit is reached providing the additional separation is needed. (cost estimate \$2,609,529)
- As the existing North Pace frontage road intersects Silver Creek Drive roughly 300 feet from interstate ramps. Further, existing businesses exist on both sides of the street. Silver Creek Drive should extend back to the North Pace frontage road north of existing businesses providing much less emphasis on the subject intersection and better access to the Silver Creek Village as proposed. (cost estimate \$3,974,520)
- SR-224 should be widened to six lanes from Olympic Park to Canyons Resort Drive and possibly further south. As discussed in the previous section, the County intends to stripe the outside lane as a preferential lane. However, this may not sufficiently improve traffic conditions on SR-224 and in the future the preferential lane may eventually need to be converted to a third general purpose lane in each direction. (cost estimated \$5,995,898)
- An existing privately owned drive between Ute and Newpark Boulevards has been upgraded and repaved as part of the remodeled old K-Mart site. This roadway provides a critical internal connection for commercial traffic between the Redstone and Kimball Plaza properties on the east side of SR-224. This connection should be dedicated as publicly held County road, but improvements of the road would be needed. The North / Ute Blvd intersection needs to be redesigned based on increased traffic flow, possible elongated roundabout (cost estimated \$271,639)
- Rasmussen Road should be widened to SR-224 from the Jeremy Ranch interchange to the Kimball Junction interchange. Intersection improvements at Jeremy Ranch and Pinebrook Blvd are now under a separate line item in Phase 1. (cost estimated \$2,529,740)
- Kilby Road should be widened from Pinebrook Boulevard to the intersection at the Factory Stores entrance. Included in the project would be a look at each intersection. Of first concern, the current Factory Store Outlet roundabout experiences peak traffic conditions of 1,020 entering vehicles with 447 circulatory vehicles (2004 counts). This roundabout is a mixture of a one and two lane roundabout. The existing volumes at the factory stores are at the maximum capacity threshold for a single-lane roundabout. A double-lane roundabout would have to be constructed to accommodate traffic growth. Future traffic volumes at this



intersection are projected to grow to 1,830 entering vehicles with 854 circulatory vehicles. If traffic volumes grow above these projected volumes, the roundabout may not be able to adequately accommodate these volumes. A signalized intersection at the Factory Store entrance may result in LOS B (12.2 seconds delay). Therefore, improvements include updating or replacement of this roundabout. The FHWA Publication No. RD-00-067, Roundabouts: An Informational Guide, provides the standard guidelines used for planning analysis of roundabouts (cost estimated \$2,650,044)

The effects of the Phase II improvements will be increased capacity along I-80's frontage roads; better movement off I-80 and onto SR-224 toward Park City; and reduced congestion along SR-224. Additional effects would increase capacity of US-40 in reduced congestion of local traffic not required to use the limited access system.

### **Phase III**

The Phase III improvements involve significant construction, but could have the greatest potential impact on the area. The recommended Phase III improvements are shown in Figure 3-4.

- Landmark Drive (Schedule C) widen from Schedule A to the Factory stores. Connection to the intersection. (cost estimated \$2,093,653)
- The existing intersection of SR-224 and Landmark Drive would be closed, and Landmark Drive would instead pass over SR-224. Alternative solutions will continue to be studied to provide access and circulation in the Kimball junction area while preserving the traffic flow from I-80 onto SR-224. (cost estimated \$18,547,944)
- Right-of-way for a new freeway interchange and frontage roads at the existing view area (High-Ute Ranch) should be preserved. The proposed interchange would provide travelers with the option to bypass Kimball Junction completely. These travelers would instead access Powderwood Drive for access to the PRI project. The proposed interchange would provide travelers with the option to bypass Kimball Junction completely. These travelers would instead access Powderwood Drive for access to the PRI project. The project is in two parts:

**Figure 3-4: Recommended Phase III Improvements**





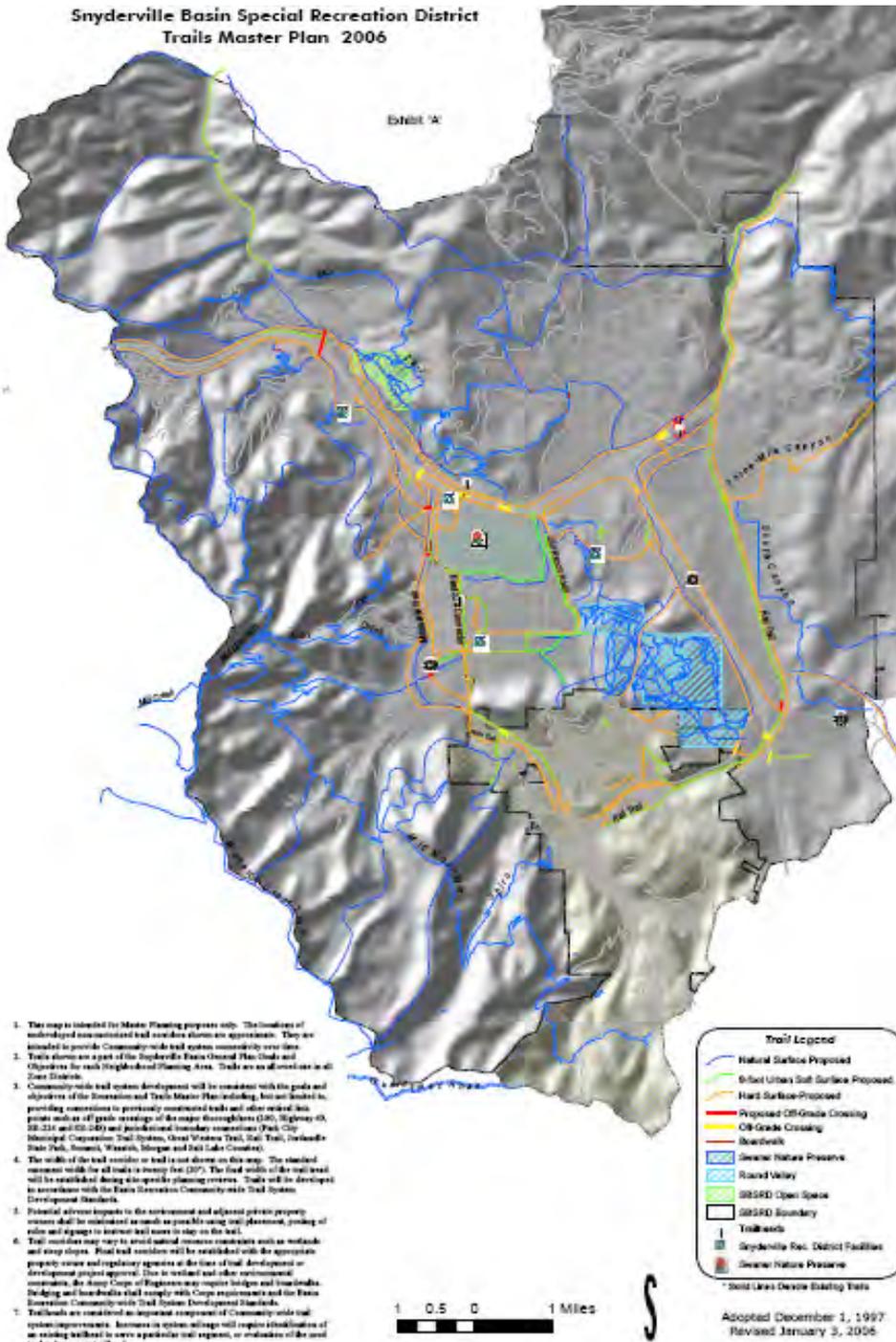
- County roadway realignment to provide for the interchange. This portion is assumed largely at County expense (cost estimated \$12,812,380)
- Actual interchange construction (cost estimated \$24,900,198)
  
- Landmark Drive (Schedule D) which was extended to Newpark Boulevard in Phase II, will be extended to Bear Hollow. A primary driver for the project need will be Research Park parcel product type and configuration. Regardless, long range planning should provide for a two lane minimum road section to Cub Hollow, providing for a local road network to reduce SR-224 impact. (cost estimated: \$5,371,738)
  
- Quinns Junction—conversion of existing interchange to a SPUI (Single Point Urban Interchange) Additional capacity would be provided in intersection flow and separation from frontage roads. (cost estimate \$4,803,738)
  
- Silver Summit exit over US-40 will need to widen to accommodate additional traffic. As a new structure (approx. 2001), total replacement is not probable. (cost estimate \$9,858,297)
  
- Construction of the Westside frontage road Quinn's to Highland Drive. Construction of the frontage road on the west side of US-40 will be system important but likely a project cost. Placed in the phase III as an estimate only, this would complete the local circulation capacity as initiated in the previous phase. (cost estimate \$5,191,368)

### **Multimodal Recommendations**

In conjunction with the improvements called for in Phase I – III, several multimodal improvements are recommended to improve mobility in the study area. These improvements should be implemented as opportunity and funding arise and may be funded via the other organizations such as the Snyderville Basin Recreation District or the private sector.

- Additional buses will be required for continued use and utility of the Transit System. However the transit operations center will need to be expanded or relocated prior to addition capacity addition.
  
- The grade separation of Landmark Drive over SR-224 will allow pedestrians to use the overpass to cross SR-224 – accommodated with Landmark grade separated intersection. Constructed with phase III for efficiency of fund use (cost inclusive of the Landmark grade separation).
  
- A pedestrian underpass will be built under SR-224 south of Newpark Boulevard, providing a safer crossing option for pedestrians in that area (cost estimated \$1,000,000 partly funded by the adjoining developments)
  
- Future trail connections from area neighborhoods to Kimball Junction should be completed as per the Snyderville Basin Recreation Trails Master Plan as illustrated in Figure 3-5 or [www.basinrecreation.org](http://www.basinrecreation.org) for more detailed illustration. Also provided are important regional trail connectivity (Cost are determined and administered by the recreation district.)

**Figure 3-5: Basin Recreation Trails Master Plan**



- Internal circulation should be provided within the Kimball junction business district to reduce conflict points. These efforts would ideally be complied in Kimball Junction Connectivity study to provide progress toward comprehensive circulation in the town center.
- A pedestrian underpass is proposed under SR-224 at Silver Springs and Bear Hollow (cost estimate \$1,500,000)
  - Pedestrian connection from the end of the trail system at Silver Summit Parkway – across US-40 the Rail Trail is needed
- Connection from the Park City trail system to McCloud Creek / Old Rand is currently in process providing a continuous connectivity

conduct a pedestrian study and prepare a design plan in the Kimball's Junction commercial area in 2008.

These multimodal recommendations are shown in Figure 3-6.

**Figure 3-6: Recommended Multimodal Improvements and Park and Ride Locations**



Though the preceding lists details some of the multimodal recommended improvements, it should not be seen as comprehensive. Additional discussion is provided on public transit in Section 3.6. Transit options range from traditional wheeled streetcar systems, to non-traditional opportunities including gondolas and elevated people mover systems. The multimodal opportunities for the study area should continually be evaluated and discussed with focus on coordinating with existing transit system routes and schedules, potential expansions and funding sources and cost sharing opportunities for these enhancements.



### **3.5. Future 2030 Intersection Enhancement**

An important issue is an estimate of future traffic signal requirements and intersection capacity improvements that are anticipated to meet the existing and future traffic demands. Using the results of the future traffic projections, several intersections were identified where the future traffic volumes will exceed the current intersection capacity and where traffic signals will be warranted or other capacity enhancing improvements will be required in the future; see the UDOT corridor preservation agreement, included in Appendix B.

Traffic signals should only be installed when and where they are warranted. Evaluation is based on the Manual on Uniform Traffic Control Devices (MUTCD) handbook produced by the *Federal Highway Administration*. The following intersections will meet one or more of the traffic signal warrants identified in the MUTCD within the next 25 years. The location of each of these potential signalized intersections is shown in Figure 3-7. An intersection justification report should be provided in accord with FHWA Publication No. RD-00-067 prior to any County signalization.

- Landmark Drive/Factory Outlet Stores entrance (Signal or enhanced roundabout - County)
- Extension of Landmark Drive at Olympic Park Drive (County)
- SR-224/Cub Hollow (Signal - UDOT)
- SR-224/White Pine Canyon Road (Signal - UDOT)
- Pinebrook Boulevard/Kilby Road (roundabout - County)
- I-80 Ramps at Jeremy Ranch exit (roundabout - UDOT)
- Homestead Road/Rasmussen Road (roundabout - County)
- US 40 Ramps at Silver Summit (Roundabouts - UDOT)
- Silver Creek Drive and US-40 Frontage Road (Roundabouts meets signal currently – County)
- Ramps Silver Creek exit / US-40 (Roundabouts - UDOT)
- Promontory Ranch Road and Silver Creek Drive (County)

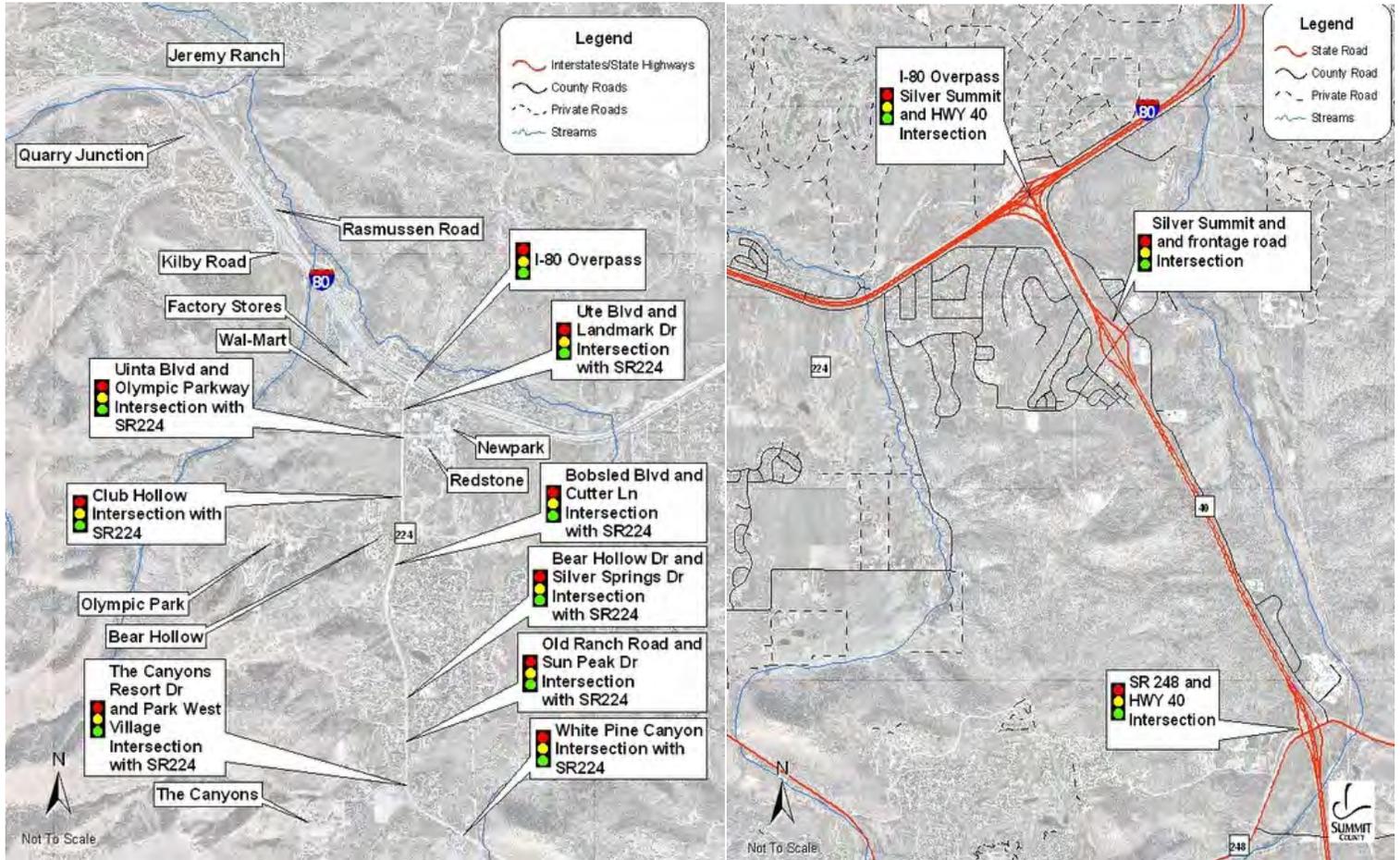
As the traffic volumes increase within the study area, each of these intersections will become more congested. Interim improvements may be required before the ultimate intersection build out is necessary. These improvements could include one or more of the following upgrades to enhance the operational characteristics of the intersection.

- Intersection control upgrades (one or two way stop to four way stop, etc.)
- Intersection realignment
- Development of left or right turn pockets
- Development of acceleration/deceleration lanes

As with other intersections, signalized locations can be enhanced incrementally. General options are:

- Traffic signal upgrades (protected/permitted phasing to protect only phasing, etc.)
- Lengthening of turn pockets
- Restriction of access locations/movements

**Figure 3-7: Future 2030 Intersection Enhancement Inventory**



Many of the improvements will require additional right-of-way, beyond the master planned roadway widths, to accommodate the intersection widening due to the addition of turn lanes. Some of this interim/build out improvements will be development driven and therefore funded by development, on a proportionate share cost basis, or constructed and dedicated as a portion of impact fee assessment.

### **3.6. Future Public Transit Conditions**

This Plan contains a goal to achieve a 5% transit mode share for all trips in the study area. The Short Range Transit created by LSC furthers this goal. This will commit the County to a significant expansion in transit programs and services over the next few years to meet this goal. Transit policies for the area are outlined in the Goals, Principles, and Actions of this TMP (see Section 4.3.1).

#### **3.6.1. Future Public Transit Routes**

It is anticipated that a short-term expansion program will keep pace with expected increases in traffic that may include the funding and provision of the following service enhancements. Details



of the concepts are provided in the Short Range Transit Plan together with alternatives and complete analysis of each.

- Quinn's Junction – Silver Summit service extending to the Summit County Justice Center
- Expanded Neighborhood Service (East and West) to Pine Brook, Jeremy and Highlands
- 20-Minute Winter Kimball/Neighborhood Service
- 15-Minute Commercial Shuttle (Circulator Redstone, Newpark, to Outlet Mall)
- Salt Lake City service – \$3 each way
- Regional commuter service to Kamas

The key is to first reduce congestion, and second reduction in area parking demand.

### **3.6.2. Public Transit Funding**

In order to fund the current (2007) transit services, the County relies on three main local sources of revenue in addition to the Federal Transit Operating Funds. Local funding systems are:

- ¼-cent transit sales tax (\$1,432,000)
- A special service district assessment to businesses (\$330,000/year)
- General fund contributions of about \$50,000 per year

The County accepts developer dedications and in-kind contributions to add and improve transit amenities, such as benches, shelters, and bus turnouts. The system continues to receive improvements some of which complementary of developer contributions, road improvements and trail projects.

A major expansion of the County transit system will require new and enhanced financial resources. Several potential funding sources are available to enact these improvements:

- The funding from the recently adopted ¼% transit sales tax is expected to maintain an annual growth rate of 6%. This would provide an average additional funding of about \$100,000/year over the next five years.
- A reevaluation of the share of transit costs that is born by the business community should be conducted. Businesses now pay about 1/3 of the cost to operate the Kimball shuttle. A more equitable allocation may provide an additional \$50 - \$80,000 a year from this source.
- Reevaluation of the Transient Room Tax (TRT) allocation should also be conducted. In 2004, the County lodging facilities generated over \$600,000 in TRT. A portion of this County-generated tax could be used to support the transit routes that serve the visitors, such as the Kimball route.
- Recent State Legislation allows for the expansion of the 0.25% sales tax to 0.30% by motion of the County Commission.

### **3.6.3. Potential Transit Hub Locations**



General location of this facility is identified with the Summit Research Park. A transit hub would provide opportunity for transition between bus service types (commuter bus between the Salt Lake International Airport, TRAX, and the Park City transit service). Sites with high potential for this potential transit hub would include locations adjacent to commercial development (where many transit patrons could walk, shop and dine), close proximity to major routes for quick regional bus access, the main arterial route into Park City, and a location in a core centered area. Potential transit hub locations will have to be evaluated in an environmental analysis to determine the appropriate location with the least environmental impacts.

In the Short Range Transit Plan, six sites are identified for the Kimball's Junction area. See the SRTTP for additional detail.

The canyons will be a major transit destination. An internal circulator will be needed with connection to all other areas within the resort and rapid access to area and regional transit. A temporary area has been identified, but as the Canyons is developed, a permanent site will need to be programmed

### 3.6.4. Park and Ride Lots

Potential park and ride lots should also be included with either of the transit hub locations to facilitate the change in travel mode before entering Park City through Kimball Junction. These potential park and ride lot locations would be adjacent to the potential transit hub locations for the Kimball's and Quinn's Junction areas. If one of the potential transit hub sites is actually used for the hub, the other could also be developed as a park and ride lot with a major transit stop.

Three types of park and ride lots are estimated with respective size and scale to provide trip reduction needs and service.

Type:	Approximate size	Approximate capacity
1. Major	4.5 ac	490 cars
2. Commercial	1.0 ac	110 cars
3. Residential	0.5 ac	55 cars

An ideal location would facilitate capturing vehicles entering the area by making the transition from vehicles to transit easy and convenient. All of the park and ride lots would need to be designed to work harmoniously within the context of the area place. Figure 3-5 shows some potential park and ride lot locations.

Several ski resorts host winter and summer events, for which they currently have adequate parking inventories to accommodate the demand. That may change in the future due to two converging trends:

- Intensification of uses at these resorts will demand more parking,
- Convert existing parking lots to new uses reduces the supply, and
- Attendance will increase at popular events such as Sundance and the Arts Festival

Several factors complicate efforts to estimate future parking needs for special events. These factors include:

- Knowing what major events might be hosted in the next five to ten years
- Finding, securing, financing and improving remote parking that may only need to be used intensively for perhaps 10-20 days per year



- Providing adequate security and maintenance for lots once they are established

Park City's adopted strategy is to use several parking lots, which are secured for special events through a master festival license. This puts the burden of meeting remote parking requirements onto event sponsors. While this approach is adequate now, the region will soon need more permanent solutions.

### **3.7. Future Bicycle Path, Trails and Pedestrian Conditions**

Historically trails and paths in the Basin have been primarily designed and used for recreational purposes. However, the plans for the Snyderville Basin Recreation District show that a number of transportation trails and paths are planned to interconnect the residential and commercial areas of the Basin over the next few years. This transportation trail system can assist in diverting increasing numbers of trips from the road network to the trails system.

The timing and exact location of these trails and connections such as pedestrian under-crossings will be subject to final engineering design and funding constraints. However, these trails will play an increasing important role in providing safe and environmentally friendly access for residents as road conditions congest with increasing traffic volumes. Refer to the Snyderville Basin Special Recreation District Master Plan for the most current map of the trails system.

As previously establish, several off grade crossings are proposed within the study area. Existing location are: I-80 near Kimball's Junction, I-80 near the recreation center, I-80 near the water reclamation district access road, US-40 near Highland estates. Others are currently proposed near Jeremy Ranch exit, Landmark Drive over SR-224, with an over pass, SR-224 at Olympic Park / Redstone, Bear Hollow and SR-224 and SR-248 at the Rail Trail. Other Probable locations are near the Canyons and SR-248 on the west side of Quinns. The latter would be tied to specific projects.

Summit County is a tourist destination with a world wide reputation as bicycling-hiking area. With the growth of residents and tourism that has been clearly projected, it is time to integrate bicycle/pedestrian commuting facilities into the transportation network.

### **3.8. Combination of projects.**

Figure 3.8 shows all of the recommended road improvements identified in the Plan.

**Figure 3-8: All Recommended Improvements**





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## **4.0 Transportation Plan Strategy, Goals, Principles and Actions**

### **4.1 Introduction**

The Snyderville Basin General Plan (SBGP) is the adopted planning guide for the future of the region. Eastern County Goals and polices are consistent with the SBGP to the extent they are applicable for this transportation master plan (TMP). While the primary focus is on land use planning and design in these general plans, they do not contain detailed transportation goals and policies. As a supplement to the policies provided in those documents, this establishes goals, principles and actions to implement a comprehensive transportation program consistent with professional practices of transportation engineering.

As a rapidly growing recreational community, a multifaceted approach to meeting the region's transportation needs is essential. The overall transportation strategy contained in this plan is based on the following interrelated approaches:

#### **4.1.1 Manage the Demand**

Reduce or modify trips by using alternative modes, providing information about current road conditions, improving signal coordination, and better planning for special events. Travel is often discretionary and its timing, mode, and length can be influenced by a variety of factors.

#### **4.1.2 Greater Efficiency**

Make the most efficient use of existing road capacity before building new roads. Several techniques are available to increase efficiency on existing roads. Capacity enhancing tools are an integral part of this TMP, and are addressed further in the goals, principles and actions in this chapter.

#### **4.1.3 More Capacity**

Increase capacity on selected facilities to channel growth into appropriate corridors. Area traffic volumes are predicted to double within the next 25 years. However, new or expanded roads should be limited to key areas where the current infrastructure will be inadequate to meet demand.

#### **4.1.4 Land Use Planning**

Influence new developments to minimize impacts on the existing road network. Elements that can be tied to new approvals include requiring new development to minimize its traffic at peak times, providing for multi-use lots for staging park and ride for special events, and creating sites and programs for employee carpooling and supplementary transit.

#### **4.1.5 Realistic Expectations**

Establish and maintain realistic expectations of residents concerning the capacity of their roadway network. Many areas of the country are experiencing increasing traffic congestion. Traffic will increase in the study area, and despite the financial resources and programs dedicated to ease traffic woes, congestion will still occur. The County's challenge will be to manage congestion effectively, and reduce citizen frustration and inconvenience as much as possible.



#### **4.1.6 Regional Solutions**

Coordinate a regional plan to solve transportation issues. Traffic problems are inherently regional and the region is maturing. Effective solutions will require the active cooperation of UDOT, Park City Municipal Corporation, business leaders and other stakeholders. The success of any traffic management strategy will depend on a coordinated response from all the stakeholders.

### **4.2 Plan Strategy**

The strategy behind this Plan is to mitigate traffic congestion and facilitate alternative modes of travel within the area. This strategy emphasizes transportation demand management as a first response to traffic congestion, but requires roadway improvements if specified standards are not met. The transportation demand management program focuses on the following elements:

- Encourage area businesses and the Chamber of Commerce to participate in a transportation management association (TMA), with specific trip reduction targets for businesses operating in the Snyderville Basin. The Chamber would play an active role in reducing employee business trips in the Basin. The existing Transit Room Tax is a potential funding source for these efforts.
- Establish a standing committee of UDOT, city, county and chamber staff who would review traffic management plans for major special events such as Sundance, major ski events, and the Arts Festival.
- Dedicate funds for transit expansion in the Basin, in order to maintain a 5% transit mode share during the peak season.
- Complete the bicycle paths; accelerate plans for bicycle/pedestrian crossings under SR-224 and SR-248.
- Expand bicycle parking opportunities at businesses within the Basin.
- Coordinate with the ski resorts and the Chamber to avoid multiple major events taking place on the same weekend.
- Add signage on I-80 informing visitors of traffic conditions on SR-224 and SR-248. This could include directions to a park and ride lot at the Quinn's Junction interchange for major Park City events.
- Continue broadcasts of daily traffic reports on local radio during the peak season, describing traffic conditions on SR-224, SR-248 Quinn's and at Kimball Junction's.
- Work with retailers to schedule major sales events so that traffic congestion conditions are minimized.
- Annual monitoring of traffic conditions on area roads to report on the effect of planned mitigations.

### **4.3 Plan's Goals / Principles / Actions**

The goals, policies, and actions described in this section provide a series of measures which can be assigned and monitored annually for completion. The plan's actions are intended to address the area's existing and future transportation challenges and provide a clear means of measuring our progress towards the achievement of our goals and objectives. Progress reports should be presented annually to the County Council.

As stated the SBGP, the overall vision is to "Promote a comprehensive transportation infrastructure and convenient and efficient service system that meets the travel requirements of existing and future residents and visitors, but which is compatible with the mountain/resort, and rural characteristics of the Snyderville Basin." (*Objective 8, pg 31*) The vision can be achieved by following interrelated approaches listed above. The goals, policies, and actions of this TMP relate



to five broader categories: Transit and Multimodal Accessibility, Traffic Accident Reduction, Transportation Enhancement Policies, Level of Service, and Interagency Cooperation.

### 4.3.1 Transit and Multi Modal Accessibility

**GOAL:** *Maintain a minimum 5% transit share, and attempt to increase this share in the SR-224 and SR-248 corridors.*

**PRINCIPLE:** Set transit funding levels so this mode share goal can be achieved on an annual basis.

**ACTION:** Increase funding from local businesses and sales tax revenues, dedicate a portion of the County's share of TRT to transit, prioritize needed services, and seek new funds to provide these needed services. Agency: Public Works.

**PRINCIPLE:** Park and ride lots should be strategically located to maximize access to the transit system.

**ACTION:** Locate major commercial and residential interceptor locations for transit and carpooling stops intended to capture Kimball Junction, Quinn's Junction and other key locations on transit route. Agency: Public Works/Engineering.

**ACTION:** Require new development to provide use of parking lots for special event park and ride via agreement. Agency: Community Development.

**ACTION:** Continue to work with Park City in short and long range planning to determine the optimal route locations in providing expanded service. Agency: Public Works.

**PRINCIPLE:** Federal funding and good transit planning is on an approved / up-to-date Short Range Transit plan.

**ACTION:** Continue to update the short range transit plan no less than every five years and review progress annually with the Annual Transportation Report. Agency: Public Works/Community Development.

**GOAL:** *Strive to achieve a 5% non-motorized mode share for trips within 2 miles of the core area of Kimball Junction.*

**PRINCIPLE:** Winter use of non-motorized system is increasing in popularity and frequency. For the non-motorized mode of transportation to be successful, consistency and expectations need to be established.

**ACTION:** Maintenance of walks adjacent to properties should be by the respective owner as established by ordinance. Agency: Public Works/Legal

**ACTION:** Community services will provide maintenance of a trail or walk to a defined standard and location only where a unique condition exists or a particular public interest over rides individual responsibility. Agency: Public Works/Rec. District/Mountain Trails/ Engineering.

**PRINCIPLE:** Secure adequate transportation funds to build an interconnected urban trails network. Agency: Mountain Trails/Non-motorized/Rec.District/Community Dev.

**ACTION:** Provide a walkability study for key areas

**ACTION:** Incorporate key trail improvements into the capital facilities planning.

**ACTION:** Work with the Snyderville Basin Recreation District in improvements and maintenance of the trails.

**ACTION:** Work with the non-motorized trails committee to encourage this form of transportation.

**PRINCIPLE:** Encourage the public to use other travel modes through education and appropriate incentives.



**ACTION:** The County should consider a complete streets campaign to create a positive bicycle/pedestrian culture in those portions of the County which are urbanized. We will join with these partners to encourage safe non-motorized transportation with signage, striping, symbols, clean roads, bike racks and public education. We will encourage integrating bicycle/pedestrian needs into ongoing land use, transportation and economic development plans. Agency: Public Works/Community Development.

**GOAL:** *Provide a major transit hub in the Snyderville Basin by 2012.*

**PRINCIPLE:** Conduct alternatives analysis and seek local, state, and federal funds for the transit hub, preferably in a location associated with commercial activity or other amenities.

**ACTION:** Select a site that allows pleasant and convenient transfer between transit services, and that connects passengers with the community. Complete design and initiate construction of a major transit hub by 2012. Agency: Public Works/Engineering.

**GOAL:** *Maintain the high quality of non-motorized transportation, provided by the Snyderville Basin Recreation Service District as established by Summit County.*

**PRINCIPLE:** Support the Independent Service District in its master planning efforts.

**ACTION:** Coordinate transportation improvements with Special Service District. Agency: Public Works/Community Development.

**GOAL:** *Pursue regional transit opportunities, particularly to connect the Kimballs Hub to the Wasatch Front via commuter UTA bus or Park City system.*

**PRINCIPLE:** Coordinate with UTA to complete further study on the topic.

**ACTION:** Initiate discussions with UTA and research funding and application processes necessary to complete corridor studies. Agency: Public Works/Community Development.

**GOAL:** *Reserve opportunities to insure successful transit.*

**PRINCIPLE:** Future transportation networks will likely require accommodation of transit infrastructure.

**ACTION:** Summit County will consider all feasible options to insure successful transit in congested conditions, including designation of preferential lanes for transit. Agency: Public Works/Community Development.

### **4.3.2 Traffic Accident Reduction**

**GOAL:** *Work closely with UDOT to design and install needed safety improvements for SR-224.*

**PRINCIPLE:** Traffic accident rates are higher than anticipated on SR-224, and a continuous barrier has been identified as a needed safety improvement.

**ACTION:** Seek additional funding to complete medians to provide a continuous barrier for high speed traffic on SR-224 from Kimball Junction to current medians. Agency: Engineering/Public Works.

**ACTION:** Work with UDOT on speed surveys, crash analysis, and other safety programs. Agency: Community Development/Public Works

**PRINCIPLE:** Left turn storage and capacity is inadequate on SR-224 and needs improvement.



**ACTION:** Seek ways to reduce the potential for ramp and left turn storage to the eastbound turn from SR-224 to Ute Boulevard. Agency: Engineering.

**GOAL:** *Establish an on-going traffic accident review process to evaluate factors contributing to accidents in Summit County.*

**PRINCIPLE:** Hold a quarterly interdepartmental review of all accidents on roads that occur within Summit County.

**ACTION:** Based on the review of serious accidents implement any needed signage, safety or road projects in a timely manner. Agency: Engineering/Sheriff/Public Works/Park City Fire Department.

**ACTION:** Include traffic accident data in annual transportation report. Seek out funding and, if needed, dedicate local funding to safety measures. Agency: Engineering/Public Works

**GOAL:** *Complete SR-224/Landmark/Ute intersection programmed improvements to improve capacity and safety.*

**PRINCIPLE:** Landmark Drive phase 1 improvements are programmed and need to be implemented to improve capacity and safety on both Landmark and SR-224

**ACTION:** Work with UDOT to implement needed improvements. Agency: Engineering/Public Works/UDOT.

### **4.3.3 Transportation enhancement polices**

**GOAL:** *Pursue methods of Travel Demand Management (TDM) to minimize the need for system expansion. Balance roadway expansion that addresses anticipated long-term development impacts with demand management strategies that reduce peak hour traffic effects. Many strategies can and are used to moderate the traffic impacts of new development and winter visitors.*

**PRINCIPLE:** Implement transportation demand management programs where efficient, particularly with high demand users.

**ACTION:** Ask employers to reduce employee and visitor trips, and to provide incentives for using transit. Agency: Community Development/Chamber of Commerce/Public Works.

**ACTION:** Require new developments to implement programs enabling these goals, policies, and actions. Agency: Public Works/Community Development.

**ACTION:** Review plans for conformance and mitigation measures. Evaluate the process annually. Agency: Public Works/Community Development.

**PRINCIPLE:** Since visitors account for about 75% of winter transit users, resort-bound traffic is a strong candidate for traffic demand management. Generally these strategies seek to maximize existing system capacity by controlling supply or demand.

**ACTION:** Pursue the following supply factors that could reduce traffic congestion:

- Preferential parking for car/vanpools
- Expanded transit routes and schedules
- Intercept park and ride lot(s)
- On-site parking restrictions for employees
- Expanded transit shelter, stops and system amenities
- Signal integration and/or signal preference for transit vehicles
- Information signage to provide visitors with on-time performance for transit
- Expansion of shuttle services from airport to community and in community transport program
- Evaluation of pay parking



**ACTION:** Pursue the following demand factors that could reduce traffic congestion:

- Vary closing time for resorts to distribute PM peak hour traffic out onto SR-224 over a longer period
- Promotion of car-free vacations for area visitors by the Chamber of Commerce
- Provision of incentives such as a guaranteed ride home program for resort employees who participate in trip reduction programs
- Financial incentive for visitors who use transit (differential fees at resorts)
- Visitor information signage with alerts on area traffic conditions
- Daily traffic report on local radio station with existing and expected conditions
- Flexible work schedules for employees to spread out employee load-out

**GOAL:** *Pursue Intelligent Transportation Systems (ITS) strategies to best utilize existing facilities.*

**PRINCIPLE:** Make real time adjustments in signal timing to optimize traffic capacity at intersections.

**ACTION:** Continue work with UDOT in ITS, including temporary or permanent variable message signing. Agency: Public Works/Community Development.

**GOAL:** *Provide adequate opportunities for stakeholders to provide comments, solutions and support of transportation system in an organized fashion.*

**PRINCIPLE:** Stakeholders typically have the most insightful ideas and suggestions regarding their transportation system.

**ACTION:** Create a Transportation Management Association (TMA) with a charter to provide real solutions and implementation of this Plan and the SBGP with periodic updates provided by the TMA. Agency: Public Works Director/Community Development/stakeholders.

#### **4.3.4 Level of Service**

**GOAL:** *Make the most efficient use of the existing road network before building or expanding roads. (See SBGP Sections 9.5, 9.10 and 9.23 for reference and context.)*

**PRINCIPLE:** Arterials and Major Collectors should be mitigated to LOS D the 100<sup>th</sup> highest peak hour conditions with individual turn movements no less than LOS E during the peak 15-minute movement. These facilities shall have provisions for allowing LOS E in the high demand-unscheduled days with individual turn movements at LOS F during the peak 15-minute movement. Residential Collectors shall have LOS C in harmony with the desired character of the SBGP. Local Streets shall be constructed in harmony with the desired character of the SBGP.

**ACTION:** Enact necessary Code provisions to support and enforce the LOS standards stated above. Agency: Public Works/Community Development.

**GOAL:** *Evaluate transportation facilities annually with long-range vision. Identify long-term capital improvements needed to meet acceptable traffic LOS and adopted goals. Create guidelines for ongoing review of traffic, transit, and parking demands as well as periodic updating of the TMP.*

**PRINCIPLE:** Prioritize improvements annually based on new traffic data, identified needs and available funds.

**ACTION:** Review the CFP annually and update to take account of progress on project implementation in annual report to Commission. Assess goals annually,



amend or set new goals only in response to changed conditions. Agency: Public Works.

PRINCIPLE: Transportation needs will be met with greatest efficiency by reserving transportation corridors.

ACTION: Corridor or equivalent alternative will be set aside and preserved with all projects proposed and developed except as may be determined by the County Commission. Agency: Community Development.

PRINCIPLE: Consider roadway expansion when traffic conditions show signs of nearing unacceptable levels of service. For roadways and intersections, this would mean a 100<sup>th</sup> highest hourly volume to capacity ratio of greater than 0.72. Exceeding this ratio is the trigger for programming needed improvements. Since seasonal variations in travel on SR-224 adds 20-25% more traffic to the roadway system, this plan will tailor the planned roadway improvement to mitigate the road or intersection's 100<sup>th</sup> highest traffic congestion conditions, not the most critical seasonal or peak hour condition.

ACTION: Schedule roadway improvements to minimize impact on existing businesses, by phasing needed improvements in small increments or restricting movements only for specific time increments. Agency: Public Works/UDOT.

ACTION: Seek ways to match the level of restriction to the need for critical through movements to maintain free turn movements as long as possible. Agency: Public Works.

PRINCIPLE: Appropriate and project funds for items on the 5-year priority list.

ACTION: Annual transportation report should provide the County Commission with a 5-year priority list of projects reviewed and recommended by Public Works/Engineering. Agency: Public Works/Engineering.

GOAL: *Impacts of new development projects shall be mitigated to an acceptable LOS.*

PRINCIPLE: Traffic analysis will consider long-range impacts of project development.

ACTION: Approval of new development will be contingent on mitigating impact and demonstrating that it can meet established traffic LOS standards at each phase of its build-out. Approval will also depend on status of capital improvement projects and transportation goals. Agency: Public Works/Community Development.

ACTION: Projects must consider the near, medium, and long-range impacts on LOS, including construction phases and other traffic as currently entitled. Typically long range is no less than 25 years. Agency: Engineering/Community Development.

ACTION: Allow for plan modification to correct conditions, if conditions are substantially different than expected. Agency: Public Works/Community Development/ Engineering.

GOAL: *Street layout and access will be designed to a safe and efficient standard.*

PRINCIPLE: Enforcing access management standards will work to maximize the efficiency and capacity of roads and corridors in order to stay ahead of growing congestion. As discussed in Chapter 2, there are four basic methods of access management, summarized below:

- Limit the number of conflict points
- Separate conflict points
- Remove turning vehicles from through travel lanes
- Provide adequate internal circulation and storage.

ACTION: Proposed access and intersection spacing will follow Table 4.1. Agency: Community Development/Engineering.



**Table 4-1  
Snyderville Basin Access Management Standards**

Category	Minimum Signal Spacing (feet)	Minimum Street Spacing (feet)	Minimum Access Spacing (feet)	Minimum Interchange to Crossroad Access Spacing (feet)		
				To 1 <sup>st</sup> R-in R-out A	To 1 <sup>st</sup> Intersecti on B	From last R-in R-out C
Arterials	1,320/ 2,640	350/660	200/500	500/ 660	1,320	500
Major Collector	1,320	300	150	Not Applicable		
Residential Collector	N/A	200	80-100			

Source: Fehr & Peers, February 2005

**Table 4-1: Snyderville Basin Access Management Standards**

GOAL: *Private streets should be constructed to a safe standard.* (See SBGP Sections 9.4, 9.8, 9.14 and 9.22 for additional reference and context.)

PRINCIPLE: Design engineer is responsible for ensuring safety in these instances.

ACTION: Certified as built by project engineer. Agency: Engineering.

### 4.3.5 Interagency Co-operation

GOAL: *Work with UDOT to continue, review, and enhance the Cooperative Corridor Agreement for SR-224 and SR-248 to aid in regional addressing of transportation concerns.* (See SBGP Section 9.6 for additional reference and context.)

PRINCIPLE: Joint agency expectations are provided in the Cooperative Corridor Agreement for SR-224 and SR-248, which is mutually beneficial in accelerating the installation of safety and traffic management facilities. Summit County and UDOT will participate in on-going traffic management and implementation programs.

ACTION: Coordinate with UDOT on near-term projects, including new medians, decreasing speed limits, new signals, installation of an adaptive signal program and intersection approach improvements. The agreement will be reviewed and modified as needed at least every 3 years by UDOT and Summit County. Agency: Public Works/Engineering.

ACTION: Work with UDOT other beneficial agreements within the study area including Jeremy Ranch Interchange, future interchange, right-of-way preservation and design within the context of Summit County planning documents. Agency: Public Works/Engineering.

GOAL: *The plan will require a new and extraordinary level of cooperation and support from the stakeholders.*

PRINCIPLE: Summit County's transportation problems are regional in nature and cannot be effectively addressed by any one entity.

ACTION: Solicit functional transportation solutions and support from all stakeholders as occasion provides. Make the annual transportation report available to all stakeholders. Agency: Public Works/Community Development.

ACTION: Encourage the formation of a Transportation Management Association (TMA) to implement the private sector solutions. Agency: Public Works/Community Development.

ACTION: Non-motorized transportation facilities should routinely be included with all road construction and reconstruction projects. Basin Recreation, Park City Municipal Corporation, Summit and Wasatch Trail Planners and Mountain Trails Foundation are strong partners alternative transportation. Agency: Public Works/Community Development.



**GOAL:** *Consider innovative financing methods, in addition to traditional funding sources.*

**PRINCIPLE:** A well-functioning transportation system is beneficial to other entities and individuals besides Summit County alone.

**ACTION:** Development, special service districts, to minimize burdens placed on the citizens of Summit County. Chapter 5 of this plan outlines preferred funding sources. Agency: Public Works/Community Development/County Council.

**PRINCIPLE:** Identify the fair share of needed improvement costs among the stakeholders as appropriate. Adopt a CFP based on agreed share of these costs.

**ACTION:** Implement new funding sources such as traffic fee programs, assessments to businesses, direct developer contributions, and public share. Agency: Public Works/Community Development.

**GOAL:** *Work with Park City to identify new methods of traffic management for major special events in the region.*

**PRINCIPLE:** Require traffic management plans for special events, to be submitted by the event organizer.

**ACTION:** Review plans for conformance and mitigation measures, and release traffic control permits upon approval. Evaluate the review process annually. Agency: Public Works/Engineering/Community Development.

**ACTION:** Work with Park City and UDOT on the design, funding and installation of a regional variable message signage system for the major road corridors in the Snyderville Basin (estimated cost \$450,000). Agency: Public Works/Engineering.



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## **Appendices:**

**Appendix A – Future Land Use**

**Appendix B - UDOT Signal Installation Agreement and Corridor Preservation Agreement.**

**Appendix C - Cost Estimates – Road Improvements and Transit**

**Appendix A – Future Land Use**

**Appendix B -UDOT Signal Installation Agreement and Corridor Preservation Agreement.**

## Appendix C: Cost Estimates – Road Improvements and Transit

(Summary – with approximate adjusted numbers – see actual projects)

new project			
Project #	years		
<b>Phase 1 (0-5 years) 2009-2014</b>			
1-1		2	Jeremy Ranch Exit - Rassm/Kilby
1-2		1	Transit Operations Center
1-3	constructed		Landmark - A
1-4		1	Kimball Transit Hub
1-5		4	Kimballs/SR-224 Park and Ride
1-6		0	Bus Shelters
1-7		3	Canyons Resort Drive Roundabout
1-8	constructed		Canyons Transit Hub
1-9		2	Roundabout Silver Creek Dr/Pace/40 front
1-10		1	SR - 248 Park & ride
1-11		0	Landmark to Olympic Park - B
1-12		2	SR -224 Widen / I-80 to Bear Hollow
1-13		4	White Pine to Canyons Resort Drive
1-14		3	Crossing SR 224-Olympic Parkway
1-connect		1	Kimballs Connectivity Phase 1
<b>Phase 2 - (5-10 years) 2015-2019</b>			
2-1		5	Powderwood Drive
2-2		6	Bitner Road extension to Silver Creek Rd
2-3		7	West US-40 Frontage R-O-W preservation
2-4		6	South end US-40 Frontage Atkinson-248 widen
2-5		7	Silver Creek Dr extend to N Pace Frontage Rd
2-6		8	SR -224 Widen to Canyons
2-7		5	Ute / smith-Kmart intersection improvement/ roundabout
2-8		7	Rasmussen Widening
2-9		6	Kilby Rd Widening
2-10		8	Park-n-ride - Silver Creek Junction
2-11		8	Park-n-ride - Silver Summit
2-12		9	Park-n-ride Old Ranch
2-13		7	Crossing SR 224 - Bear Hollow
2-connect		5	Kimballs Connectivity Phase 2
<b>Phase 3 - (10-21 years) 2020-2030</b>			
3-1		11	Landmark C, widen to Factory Stores
3-2		15	Ute Grade Separated Intersection
3-3		18	Interchange frontage road
3-4		19	Interchange - At rest area
3-5		13	Landmark D Extend to Bear hollow
3-6		11	Quinns SPU!
3-7		21	Silver Summit Exit Widen
3-8		20	West US 40/Highland Dr to SR 248
3-9		16	Crossing SR 224-Canyons Resort
3-10		12	Roundabout Silver Summit Parkway and Highland
3-11		11	Transit Operations Center-expansion
3-connect		10	Kimballs Connectivity Phase 3