

GRAND COUNTY UTAH
GENERAL PLAN 2012



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CHAPTER 1



INTRODUCTION

1.1 Purpose of the General Plan

The General Plan is an officially adopted policy document that establishes the county's goals for the future and provides direction for decisions affecting the use and development of land, preservation of open space, transportation systems, partnerships with other organizations, economic growth and the expansion of public facilities and services.

Citizens provided the policy direction articulated in the General Plan through extensive and broad-based participation. Citizens can use the General Plan to protect the qualities that brought them to their community, such as open space, views, drinking water protection, economic opportunities and community character. Property owners and developers can use the General Plan as a guide to predict what uses could occur both on and near their properties, allowing them to make informed land-use decisions.

The General Plan is not the same as the land use code. It does not change existing regulation nor does it create new regulations. The General Plan is, however, an advisory document that recommends changes to the land use code.

The General Plan is written to provide general policy direction while also providing enough detail to guide decision-making and set priorities. Five factors make a General Plan "general":

- The plan covers the entire area of the unincorporated county.
- The plan integrates authentic and diverse community participation spanning the full-range of perspectives and interests.
- The time horizon considered in the plan is long-range, extending two decades into the future, well beyond the pressing concerns of today.
- The plan provides general guidance on where and how growth and various land uses should occur.
- The plan clarifies the relationships between social and economic goals, such as economic development and physical development goals, such as land use and infrastructure.

CHAPTER 1: INTRODUCTION

1.2 GENERAL PLAN STRUCTURE

1.2 General Plan Structure

The General Plan is comprised of several components, each of which provides a unique type of guidance for county decision-making.

Chapter 2 Economic and Demographic Trend Summary contains baseline data used to inform the dialogue throughout the planning process. This summary includes demographic characteristics of the county population, housing growth projections, economic indicators, social indicators and other information that is useful for planning for future growth.

Chapter 3 Vision, Goals and Strategies establishes what the community aims to achieve over the next 20 years and how we plan to get there. The Vision, Goals and Strategies are organized into the following categories that arose from the visioning process:

- Diverse, Prosperous and Sustainable Economy
- Ecology, Water, and Air
- Development Patterns
- Transportation
- Recreation and Access
- Public Lands

Chapter 4 Future Land Use Plan utilizes the Economic and Demographic Trend Summary, the Vision, Goals and Strategies, and the Fiscal Impacts of Development Patterns to guide the location and intensity of future development. The Future Land Use Map and associated narrative shows proposed land use intensities and settlement patterns that are appropriate based on the mapped opportunities and constraints and given the physical characteristics of the land, infrastructure, and community character.

Chapter 5 Fiscal Impacts of Development Patterns establishes the link between land use patterns and the cost to county government for providing basic county services and infrastructure. This analysis informed the development of the Future Land Use Plan. This chapter also profiles the existing conditions for key services (such as water, sewer, and fire protection) provided by other entities.

1.3 Relationship to Other Planning Documents

The 2011 General Plan (GP) update replaces the **2004 General Plan**. To check implementation progress and revisit goals and strategies, the consulting team conducted a 2004 General Plan performance evaluation to see what implementation measures have been accomplished and what actions have yet to be taken.

In 2008, the Grand County Land Use Code underwent a major overhaul. One purpose of the GP update was to consult with the community about what is still working and well-supported in the **2008 Land Use Code** and what needs to be changed. While most of the provisions in the Land Use Code are still supported by the community, several strategies in the General Plan recommend land use code amendments.

This countywide General Plan update replaces the decade-plus old **sub-area plans**. Five sub-area plans were adopted between 1998 and 2003: Crescent Junction to Thompson Springs, Highway 191 North Corridor, River Road Corridor, Spanish Valley Drive/Mill Creek Drive, and North Gateway. These plans focus on future land use patterns and contain conceptual maps. Some of the plans, however, contain a wide array of policy guidance, some of which is typically contained in a countywide General Plan, some of which is typically contained in a land use code, and some of which would more likely belong in a government strategic plan. Most of the general development standards listed in the sub-area plans were implemented in the 2008 Land Use Code as generally applicable standards that apply to all unincorporated county development regardless of location (avoiding development in the 100-year floodplain, for example). For the most part, the policy direction in these plans is still well-supported by the community and much of it has been incorporated into this update.

Figure 1.1 Plans Adopted by Reference in the General Plan

Plan Adopted by Reference	Year Adopted
Grand County Wilderness Plan	1995
Grand County Scenic Byways Corridor Management Plan	2008
Grand County and City of Moab Housing Study and Affordable Housing Plan	2009
Grand County Non-motorized Trails Master Plan	2011

The **Grand County Wilderness Plan** adopted as an amendment to the General Plan in 1995 is the county's policy document for the designation of wilderness on federal lands.

The **2008 Grand County Scenic Byways Corridor Management Plan** provides planning guidance along the scenic byways in the county.

The **2009 Grand County and City of Moab Housing Study and Affordable Housing Plan** contains recommendations, goals and objectives that would facilitate the construction of affordable housing. The Future Land Use Plan supports the implementation of the Affordable Housing Plan by encouraging higher density housing near Moab and offering incentives for affordable housing development.

The **2011 Grand County Non-motorized Trails Master Plan** (Trails Master Plan) identifies non-motorized recreation and commuter routes throughout the county. The General Plan update aligns with the trails plan and supports the implementation of it by recommending multimodal pathways or bike lanes along major county roads and highways. The Future Land Use Plan places trail corridors as a high priority for open space conservation and offers incentives for developers to preserve them.

CHAPTER 1: INTRODUCTION

1.4 COMMUNITY INVOLVEMENT IN CREATING THE GENERAL PLAN

1.4 Community Involvement in Creating the General Plan

Vision Workshop July 7, 2010

The Grand County General Plan Vision Workshop was the first community engagement event of the general plan. At this event the community participated in the development of a set of community vision statements for the year 2030. The visioning process helped to identify things people like about Grand County and do not want to see changed, things people would like to see changed or improved, and long-term aspirations for the community. One hundred and twenty people gathered at the Grand Center for this event during which participants were broken into small discussion groups who reported back to the entire group to establish the raw materials for the vision statements. Additionally, during this time an online questionnaire was developed for those who wished to participate in creating the vision but were unable to attend the workshop. All Vision process participants answered the same four questions:

1. What concerns about Grand County do you have now and for the future?
2. What do you treasure and want to preserve about Grand County?
3. What would you like to see different or change in Grand County?
4. What do you want Grand County to look like in 20 years?

Vision Verification Meeting July 22, 2010

The consulting team compiled all of the citizen comments and ideas and developed a series of thematically grouped draft vision statements. The draft vision statements were aired in an interactive Vision Verification Meeting on July 22, 2010. During the Vision Verification Meeting the consulting team asked, "Did we get it right?" Draft vision statements were then revised to reflect the results of this meeting. Key-pad polling results and online questionnaire results can be accessed at the county website or at the planning department.

Citizen Working Group August 2010 through April 2011

Utilizing the vision statements produced by the community a General Plan Citizens Working Group (WG) began developing goals and strategies over the course of eight facilitated meetings in Moab. The 13 member WG was selected by a sub-committee of planning commissioners and planning staff and represented a broad cross section of the community. There were two representatives from the County Planning Commission on the WG. The WG was responsible for providing general direction for the plan, reviewing draft materials, and providing written revisions to specific plan elements.

In addition to helping brainstorm ideas, the WG was also an important link to the larger community. The WG helped the consulting team informally network and establish contacts in the community. The WG also helped the consulting team promote the community meetings and interpret the results afterwards. One of the most important components of the planning process was the back-and-forth dialogue between the WG, the consulting team, and the community as a whole.

Open House Meetings and Key-Pad Polling February 2 and 3, 2011

On February 2nd and February 3rd the draft Vision, Goals and Strategies were presented at two open house meetings with a combined attendance of over 175 people. As they entered the event, participants were given an equal number of green and red dots and asked to place green dots on printed posters near goals and strategies they support and red dots near the goals and strategies they do not support. Additionally, the goals and strategies were posted online as a survey from February 1 – February 15, 2011. A total of 173 surveys were collected. Participants indicated whether they liked, were okay/neutral or disliked individual goals and strategies.

The event also included an educational presentation to clarify the meaning/intent of the goals and strategies. The presentation utilized key pad polling to ask participants for their opinions about the goals and strategies and other topics relevant to the Future Land Use Plan. The results of these open house meetings were compiled and discussed in WG meetings. Based on direction from the WG, the Vision, Goals and Strategies were revised to incorporate the results

CHAPTER 1: INTRODUCTION

1.4 COMMUNITY INVOLVEMENT IN CREATING THE GENERAL PLAN

from the open house key pad polling sessions and online survey. Key-pad polling results and online survey results can be accessed at the county website or at the planning department.

Once a draft of the Vision, Goals and Strategies was compiled, the consulting team met with the Planning Commission at a work session to incorporate their input at this mid-way benchmark in developing the plan.

Future Land Use Plan Workshops

The consultant team then developed a “Future Land Use Plan Work-In-Progress” consisting of mapped land use designations and conducted a series of workshops located in the three communities in Grand County: Spanish Valley/Moab, Thompson Springs, and Castle Valley. The Future Land Use Plan Workshops included a key-pad polling session describing the map designations, an open discussion and a mapping exercise during which participants placed sticker icons on the “Future Land Use Plan Work-In-Progress” to indicate alternative configurations of the map. This input from the people who live and work in the various reaches of the county was incorporated into the Future Land Use Plan.

Targeted Outreach

Informal communication during which the consultant team met informally with individuals and entities also played an important role throughout the planning process. Targeted outreach included one-to-one contact with the representatives of City of Moab, Town of Castle Valley, the School and Institutional Trust Lands Administration (SITLA), Bureau of Land Management, U.S. Forest Service, the Canyonlands Watershed Council and the National Park Service. Consultants also conducted ten interviews over a period of three days with county officials and other citizens to discuss planning issues.

General Plan Website

Documents distributed at the community events, to the working group and to the planning commissioners were posted on the website. The website also contained meeting schedules and flyers for events, background information, key-pad polling and survey results, and other documents related to the GP update. The website was also utilized to administer the on-line surveys.

Additional Outreach Methods

Community meetings and events were advertised in the Moab Times Independent. The Times Independent wrote feature stories on the planning process as well. In order to communicate about events and plan content, consultants were also interviewed on KZMU public radio station.

CHAPTER 2



ECONOMIC AND DEMOGRAPHIC TREND SUMMARY

2.1 Introduction and Key Findings

This chapter was released early in the planning process and provided important background information about demographic and economic trends and growth projections for participants in the General Plan update process. This background material is included in the General Plan document to provide the same information for readers. The Economic and Demographic Trend Summary was not used directly by the consulting team to develop Goals, Strategies, recommendations or elements of the Future Land Use Plan, but instead was used to inform community dialogue leading to the development of the General Plan.

RPI analysts used the most accurate and up-to-date economic and demographic data available, employing a variety of local, state, and federal data sources as cited throughout. Because the General Plan focuses on unincorporated lands, this report often separates the municipal trends from the unincorporated trends.

Key findings:

What is the forecast for the future?

- Grand County has experienced robust growth for over two decades, as evidenced by continuous growth in jobs, income, and population.
- The September 2008 through July 2009 recession has slowed the growth trends in Grand County.
- An additional 2,134 residents are forecasted to live in Grand County by 2030, a 22% increase over the 2010 estimated population. This translates to as many as 1,000 additional occupied housing units.
- The City of Moab is forecasted to accommodate over half of that growth. The unincorporated areas of the county are allocated 42% of the forecasted growth, an additional 881 people by the year 2030.
- Population growth is forecasted to outstrip job growth by 2-to-1, with an additional 930 jobs expected between 2010 and 2030, a 13% increase in jobs versus a 22% increase in population.

Who is in Grand County?

- The age structure is typical of a recreation-based, western, rural community. The decline in school-aged children reflects a national trend towards an increase to no-kids households. The baby boomers (ages 46-64) are evident in the Grand County age structure. The 18-to-29-year-age group, which is attracted to the outdoor recreation lifestyle and fills many of the jobs in the county is also evident in the Grand County age structure.
- The Census Bureau estimated that 12% of the homes in Grand County are second homes, but experience has shown that accurately determining the number of second homes in an entire county requires a customize site-specific study.
- RPI analysts estimate almost 1.6 million tourist visitor days in Grand County annually.

How does the economy work?

- The economic base consists of five main sectors: Tourism, Traditional and Industrial Exports; Professional Services and Regional Services; Resident Service; and Retail. Together, tourism and retail make up over half of the employment in the county. The higher-paying professional and technical services account for over one-fifth of the jobs.

2.2 DEMOGRAPHICS

How has our economy performed?

- Earned income (wages) and non-labor income (retirement, dividends on investment, social net programs) were both on the rise until the recent recession, as were bank deposits. However, average income per capita continues to lag behind state and national averages while unemployment is consistently higher in Grand County than in Utah or the U.S.
- The tourist economy is robust and second homes fuel a wide swath of the economy, but Grand County does lack diversity when compared to the U.S. as a whole. Grand County's construction and real estate sectors are stronger than the national average and the county does have a functioning mineral development industry, which brings higher wages and diversification. Still, the county is relatively weak in some of the more lucrative industries including manufacturing, professional services, technology, and healthcare. While activities in some of these industries may not fit well into the geography and community, having some strength in these industries would make the economy more diversified and result in higher wages.

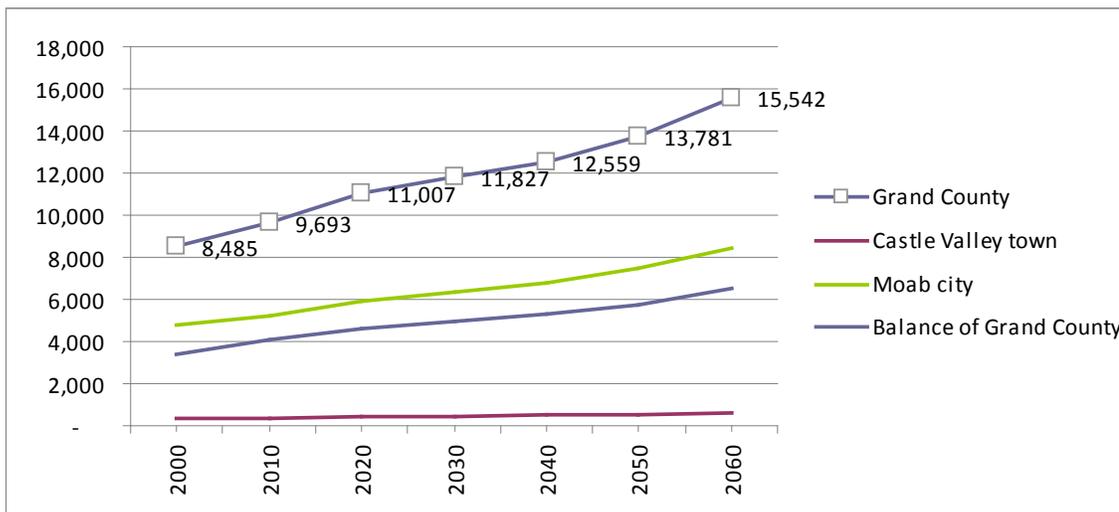
2.2 Demographics

What is Forecasted for the Future?

The Utah State Department of Demographics and Economic Analysis (DEA) prepares statewide population forecasts for counties and municipalities. The population forecasts were derived from a combination of economic-modeling software and specific local population dynamics to produce very specific forecasts (Figures 2.1 and 2.2). This methodology accounted for economic conditions such as labor force participation, housing prices, wage levels, and population component changes.

These projections were chosen because they represent official analysis conducted by the State, and State demographers use these projections for planning purposes. The DEA states, "DEA provides information and research to other governments, businesses, academia, and the public to facilitate informed judgments about issues impacting Utah".¹ Additionally, these projections were compiled using the most up to date data, technology and modern research methods.

Figure 2.1. Grand County and Municipality Population Forecast



Source: Utah DEA

¹ <http://www.governor.utah.gov/dea/aboutdea.html>

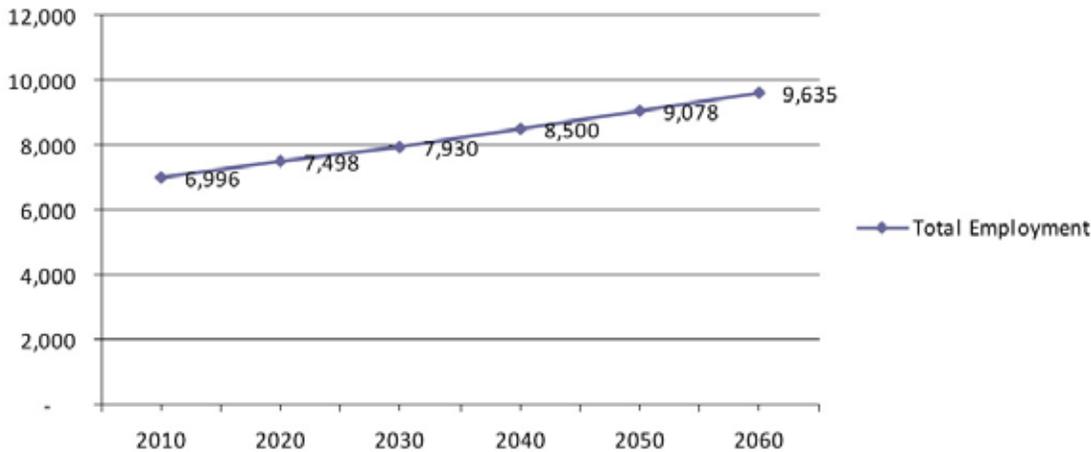
Figure 2.2. Grand County and Municipality Population Projection through 2060

	2010	2020	2030	2040	2050	2060
Grand County	9,225	11,007	11,827	12,559	13,781	15,542
Castle Valley town	319	444	477	509	558	629
Moab city	5,046	5,946	6,388	6,783	7,443	8,394
Unincorporated Grand County	3,860	4,617	4,962	5,267	5,780	6,519

Source: Utah DEA, 2010 Census

Demographers and state economists are forecasting continued population and employment growth in Grand County. On average the population has experienced a growth rate of 1.2% over the past 10 years; this trend is expected to continue through 2020. Employment in the county has been increasing at an average annual rate of 2.4% with growth in excess of 5% in 2004 and 2005. The DEA is projecting continued employment growth; however, growth is expected to be modest, averaging 0.7% through 2020 (Figure 2.3).

Figure 2.3. Grand County Total Employment Forecast



Source: Utah DEA <http://www.governor.utah.gov/dea/projections.html>

Who is in Grand County?

Grand County's demographics analysis must be broadened beyond estimates of the number of full-time residents because at any given time of year, there are thousands of people in Grand County who are not full-time residents. To keep this characteristic of the county in the forefront, the demographic description breaks the population into segments: 1) full-time residents, 2) tourists and 3) and part-time residents that include second-home/vacation home owners and seasonal workers.

Full-Time Residents

Approximately half of the full-time population in Grand County is part of the labor force. The average household size is 2.35, with 72% of residents owning homes and 28% renting (Figure 2.6). The average per capita income totals over \$29,000 (Figure 2.4), which is just below the state average and ranks 12th highest out of Utah's 29 counties.

CHAPTER 2: ECONOMIC AND DEMOGRAPHIC TREND SUMMARY

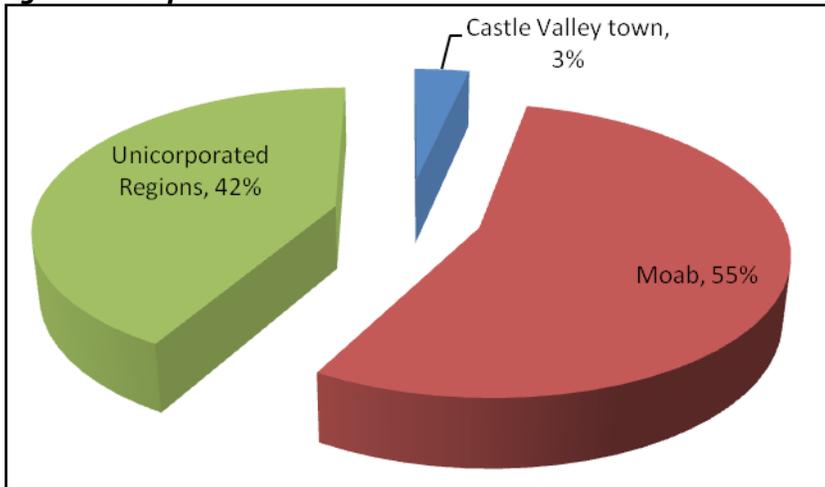
2.2 DEMOGRAPHICS

Figure 2.4. Population and Workforce Data

2008 Population	9,493	Utah Dept. of Demographic and Economic Analysis
2008 Labor Force	5,378	Utah Dept. of Workforce Services
2008 Per Capita Income	29,109	Bureau of Economic Analysis

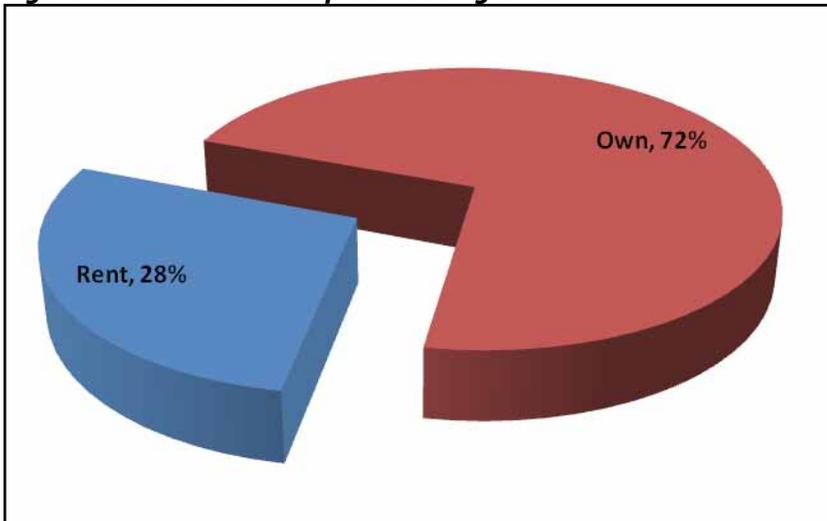
According to the 2010 Census, just over half of the county population resides in Moab, 42% in unincorporated regions of the county and 3% in Castle Valley (Figure 2.5).

Figure 2.5. Population Distribution



Source: 2010 Census

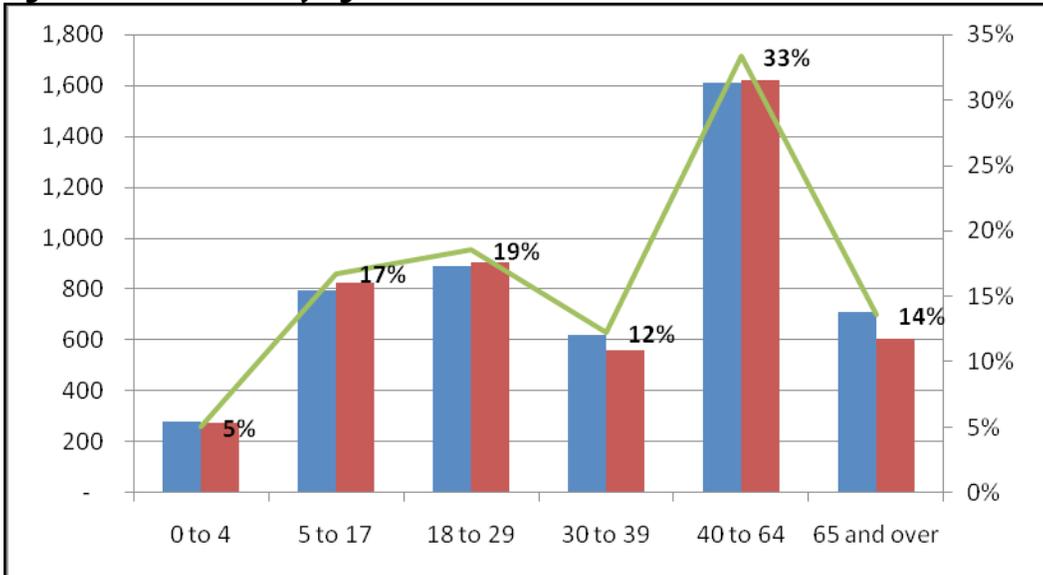
Figure 2.6. Tenure of Occupied Housing Units



Source: Grand County and City of Moab Housing Study and Affordable Housing Plan

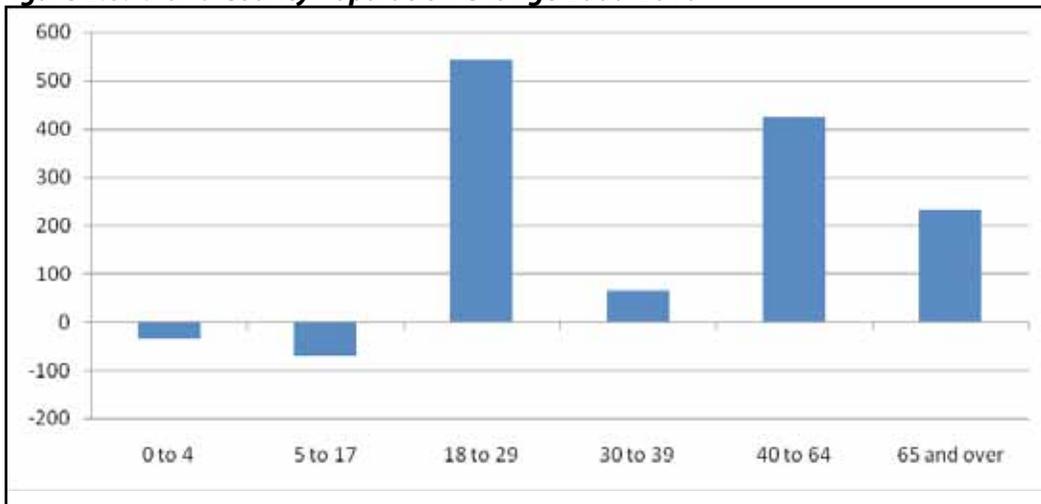
According to the 2008 age-structure estimate from the DEA, the baby boomer generation, currently ages 46 through 64, accounts for approximately one-third of residents in Grand County (Figure 2.7). According to DEA estimates, in the past decade the population of Grand County has increased by over 1,100 individuals, for a total increase of 14%. Examining the population change by age group shows that two age groups are moving to the area: baby boomers and young adults. Nearly half of new residents moving to Grand County are between the ages of 18 and 29 (Figure 2.8). Only 6% of new residents were in their 30's. This suggests that many of the new residents are young individuals attracted by the outdoor lifestyle and recreation in Grand County, and older, financially stable individuals nearing retirement age purchasing retirement and second homes.

Figure 2.7. Grand County Age Structure



Source: Utah DEA

Figure 2.8. Grand County Population Change 2000-2010



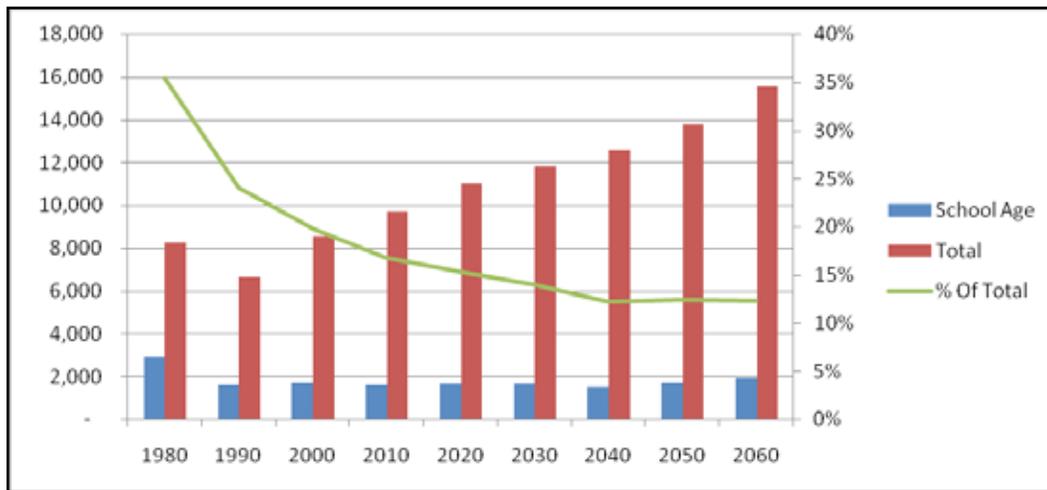
Source: <http://www.governor.utah.gov/dea/projections.html>

The negative growth rates in the bottom two age groups could spell decreasing enrollment in area schools, unless the swelling number of young adults can establish themselves in Grand County and remain through their 30's and 40's.

While the total population is projected to grow at an average annual rate of 1% through 2060, the school-age population is projected to increase by less than 0.5% (Figure 2.9). In 2000, individuals between the ages of 5 and 17 composed nearly 20% of the total population. This ratio is down from the 1990 level of 24% and down from 1980, when the school-age population totaled one-third of the total population. This ratio is expected to decrease to 12% by 2060.

2.2 DEMOGRAPHICS

Figure 2.9. School-Age Population through 2060



Source: Utah DEA, U.S. Census Bureau

The majority of Grand County's population is white; only 9% of residents are not white (Figure 2.10). The population has become slightly more diverse since 2000, when only 7% of the population was non-white. The 2010 Census also shows that 9.6% of residents are of Hispanic origin, which is measured separately from race.

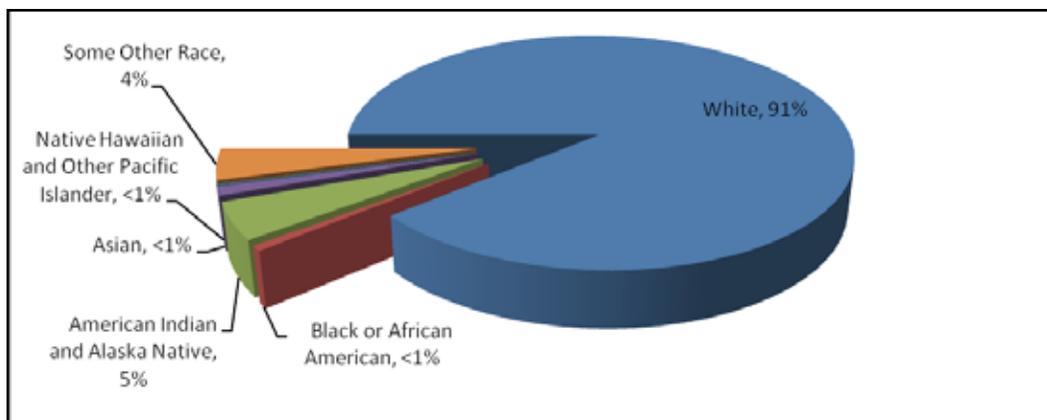
Part-time residents

There are two types of part-time residents: second home/vacation home owners and seasonal workers. Second home use parallels the peaks and off-seasons of the tourist seasons. Seasonal workers also reside in the region during the busy times of year when jobs are available.

Tourists

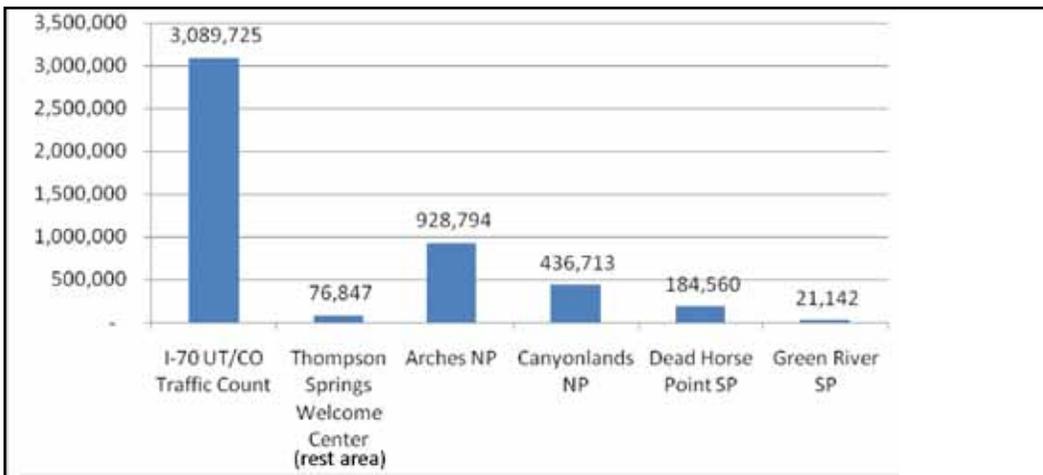
The Utah State Tourism Office collects and maintains data from numerous sources, which can be used as indicators for tourism trends (Figure 2.11). Annually over 3 million vehicles cross the 1-70 Utah/Colorado border. However, not all of these trips are tourism-related. In 2008, the two national parks in the area had a combined visitation greater than 1.3 million, state parks had over 200,000 visitors.

Figure 2.10. Grand County Population by Race



Source: 2010 Census

Figure 2.11. 2008 Grand County Tourism Indicators



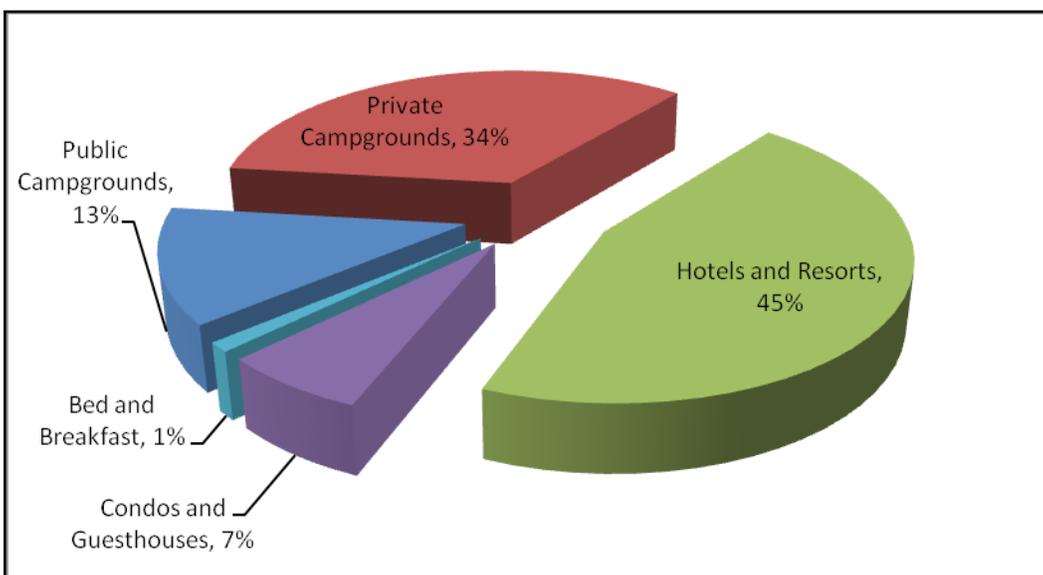
Source: Utah Office of Tourism

Another measure of tourist activity in Grand County is the county's lodging inventory (Figures 2.12 and 2.13). The county has over 4,000 campground sites and rooms. Forty-five percent of the lodging stock is rooms in hotels or resorts and 34% is private campgrounds. There are also over 500 established public campsites in the county.

Figure 2.12. Grand County Lodging Inventory

Public Campgrounds (Sites)	533
Private Campgrounds (Sites)	1,396
Hotel/Resort (Rooms)	1,853
Condo/Guesthouses (Rooms)	276
Bed and Breakfast (Rooms)	45

Figure 2.13. Grand County Lodging Inventory by Type



Source: Moab Travel Council

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2.2 DEMOGRAPHICS

A rough estimate of total visits can be derived by multiplying the total monthly room capacity, assuming double occupancy, by the monthly percent of peak transient room tax collections. This yields a total of nearly 1.1 million room nights (Figure 2.14). The total room nights are divided by the average stay length to calculate total overnight visitors. According to a Utah Office of Tourism survey of Utah visitors, 50% of leisure visitors are on day trips. Therefore, it is assumed that there are an equal number of day-trip visitors. This is added to the total room nights to achieve the end estimate of 1.5 million visitor days.

Figure 2.14. Total Estimated Visits

Total Room Nights	1,100,000	Moab Travel Council, RPI Calculations, Utah Tax Commission
Average Stay Length	2.25	Utah Office Of Tourism
Overnight Visitors	490,000	RPI Calculations
% Day Trips	50%	Utah Office of Tourism
Day Trips	490,000	RPI Calculations
Total Annual Visitor Days	1,590,000	RPI Calculations

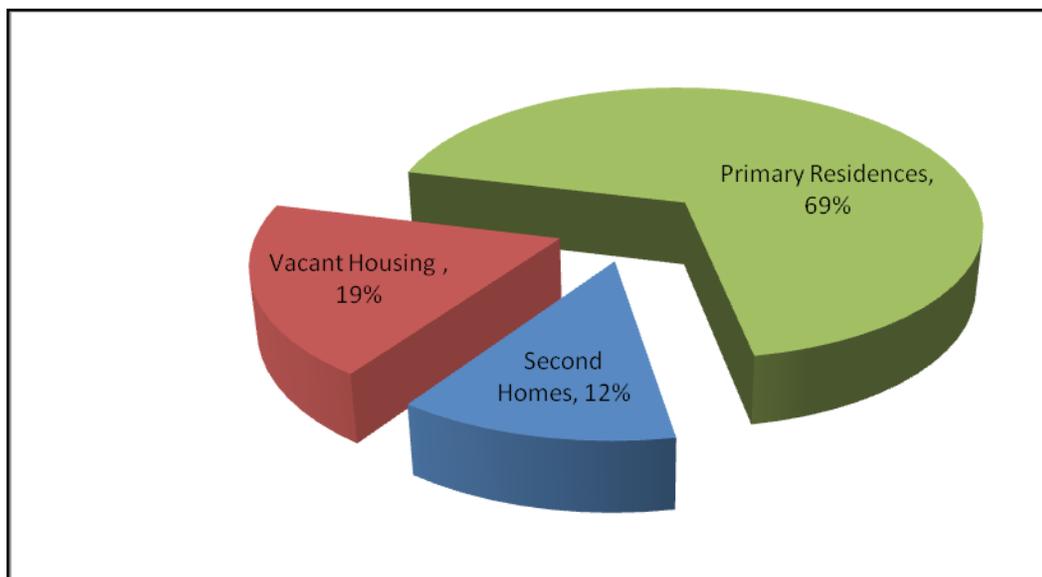
Source: RPI Calculations

Second Home Owners

According to the 2010 Census, part-time retirement homes and vacation homes made up 12% of the county's housing stock (Figure 2.15). While this may not seem like a significant portion of the housing stock, even a small external demand for housing units does seriously impact housing prices in a relatively small market. Experience has shown that an accurate measure of second-home ownership requires a customized site-specific study.

Grand County's landscape and moderate climate make it very appealing to out-of-area investors. Consequently, the local housing market has experienced increased external market demand for second/seasonal homes, retirement homes, and general investment properties. External-market real estate purchasers have the ability to bid higher purchase prices than those supported by prevailing wages in the local market.

Figure 2.15. Housing Unit Stock by Occupancy



Sources: 2010 Census

The impact of second homes in Grand County is relatively small when compared to mature resort communities such as Pitkin County and San Miguel County, Colorado. Secondary residences in these counties can impact peak population more than any other land use in the county. However, even the relatively small number of second homes in Moab could impact peak overnight population by about 4%.

Figure 2.16. Grand County Peak Overnight Population ²

Full-Time Residents Population	9,225
Tourists (full lodging inventory)	8,206
Second Homes	805
Total Overnight Population	18,236

Source: U.S. Census Bureau, RPI Calculations

² Second-home count was calculated using 2000 Census figures and household projections from the DEA.

2.3 ECONOMIC VITALITY

2.3 ECONOMIC VITALITY

How Does the Economy Work? – Understanding Economic Drivers

Economic driver industries are those that bring in dollars from outside the local economy. It is known that money must flow into economies from the outside or it would not be long until the local economy was bereft of capital, as all of its monetary resources drifted out through federal and state taxes, import of goods, and other forms of remote expenditures. In the West, money historically entered local markets from the outside when extractive industries (such as the natural gas and oil industry) sold products to purchasers outside of the local economy. However, many of these driver industries have been augmented by tourism and sometimes replaced by it. As a source of outside dollars, tourism has proven to be a very strong economic driver for many communities, although tourism can be cyclical and unpredictable. In Grand County, many diverse activities are the gateway for outside dollars to enter the local economy. Monitoring the strengths and weaknesses of our base drivers can tell us much about the economy because virtually everything else is dependent on the base drivers. Growth or decline in the economy can be traced to the health of the economic drivers. The rest of the economy either serves the driver industries (for example, a linen supplier that serves hotels and restaurants) or the employees in those industries (grocery stores, auto repair shops, shoe stores).

Grand County Economic Drivers

The Census Bureau and the Bureau of Economic Analysis provide estimates of jobs and income at the county level. These sources provide comparable industry-based totals that allow analysts to specifically examine the impacts of specific industries on a local economy. The industries were categorized into five sectors (Figure 2.17).

Figure 2.17. Economic Driver Industry Classification

Traditional	Agriculture, Forestry, Fishing/Hunting, Manufacturing, Government Utilities, Construction, Wholesale Trade, Transportation and Warehousing
Regional and Professional Services	Information, Finance and Insurance, Real Estate, Professional/Scientific/Technical Service, Management
Recreation and Leisure	Arts, Entertainment and Recreation, Accommodation and Food Services
Retail Trade	Merchandising
Resident Services	Various Sectors

Traditional

Traditional economic drivers are the industries that typically form the pillars of a local economy and focus on producing goods and services. These include exports from agribusiness, manufacturing, and mining. This category includes economic activity associated with governmental activity. Much of the revenue streaming into the county comes from larger-scale government entities, so expenditures from these levels of government bring new money into the county and also act as an economic driver.

Professional and Regional Services

Professional service industries provide specialized services for such industries as real estate and financial planning that are not geographically specific, and therefore bring outside money into the county. This category also includes industries such as trade and transportation, construction and utilities.

Recreation and Leisure

While not specifically isolated by the Census Bureau, recreation tourism is a significant economic driver for Grand County. Visitors to the county come and spend money originating from outside the county's boundaries. All tourist spending on recreation and leisure ranging from jeep rentals to meals at local restaurants act as an economic driver.

Retail

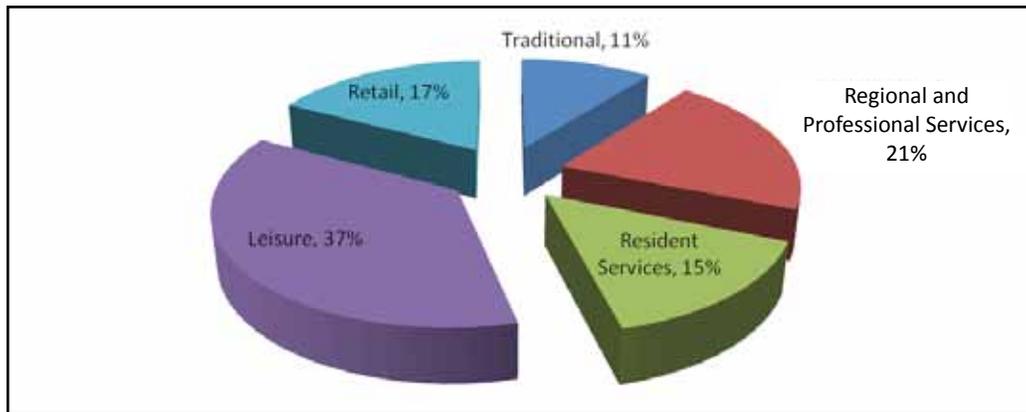
While typically not considered an economic driver, the retail portion of Grand County's economy is very significant,

contributing 17% of the total jobs, which is more than resident services and the traditional sectors. Some of the retail activity can be attributed to area residents, but it is likely that a significant portion is a result of visitors to the area. Because of Grand County’s status as a tourist destination, the retail trade sector is particularly important for attracting outside dollars.

Resident Services

Resident services also act as an economic driver in Grand County where non-labor income (retirement, dividends on investments, etc.) plays a major role. This money comes to the mailbox from outside of the county and acts as an economic driver.

Figure 2.18. 2008 Grand County Jobs by Industry

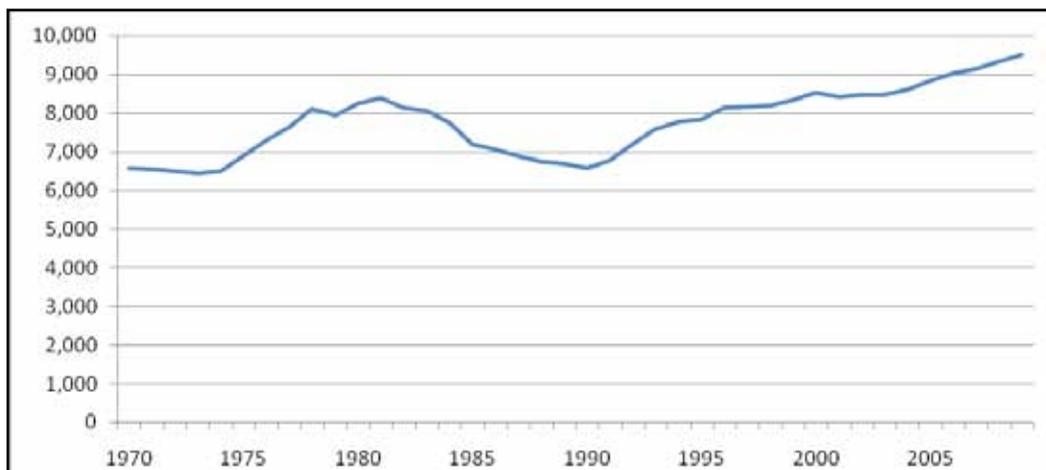


Source: U.S. Census Bureau

How has Our Economy Performed?

Between 1990 and 2009 the population of Grand County gained over 2,900 residents, a 44% increase, and an average annual growth rate of 1.8% (Figure 2.19). However, the previous 20-year period saw the total population rise throughout the 1970’s and early 1980’s and then begin to decline back to around 6,500 through 1990, effectively leveling the population change for these two decades.

Figure 2.19. Grand County Population 1970-2009



Source: Utah DEA

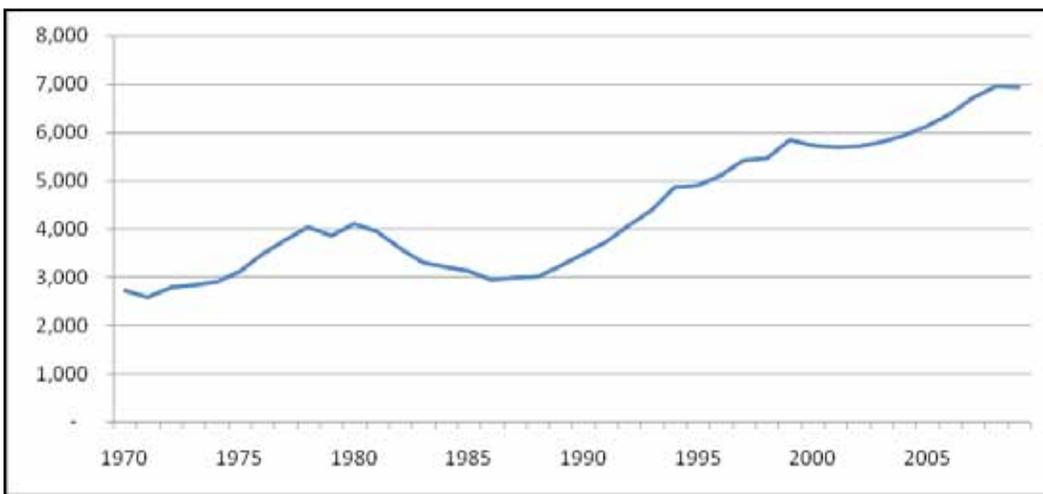
CHAPTER 2: ECONOMIC AND DEMOGRAPHIC TREND SUMMARY

2.3 ECONOMIC VITALITY

While numerous factors influence population levels and migration rates, the availability of jobs is the crucial condition for attracting new residents. Without jobs, population growth is likely to be stagnant. This trend is emphasized when the historical population is compared with historical employment data. As employment began to grow in the 1970's, the population also began to increase (Figure 2.20). Once employment levels began to decline around 1980, the population followed.

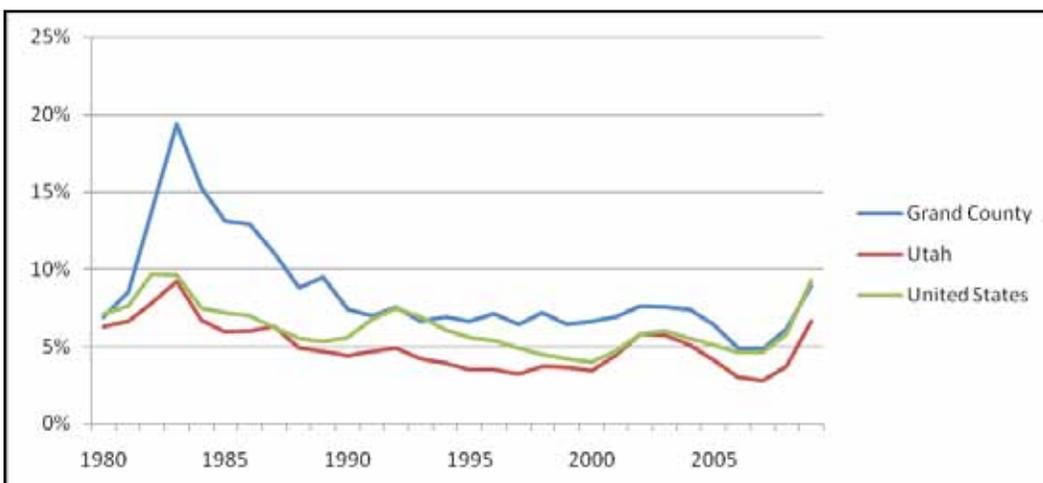
Despite positive gains in population, jobs and personal income, unemployment in Grand County has consistently been above the Utah state average and with a few exceptions been above the national average (Figure 2.21). The collapse of the uranium-mining industry in the 1980's led to county-wide unemployment rates in excess of 10%, which did not return to normal levels until the 1990's. On average the county unemployment rate has been 4% higher than the state and 2% higher than the national average.

Figure 2.20: Grand County Employment 1970 -2009 ³



Source: Bureau of Economic Analysis

Figure 2.21. Unemployment Rates 1980-2009



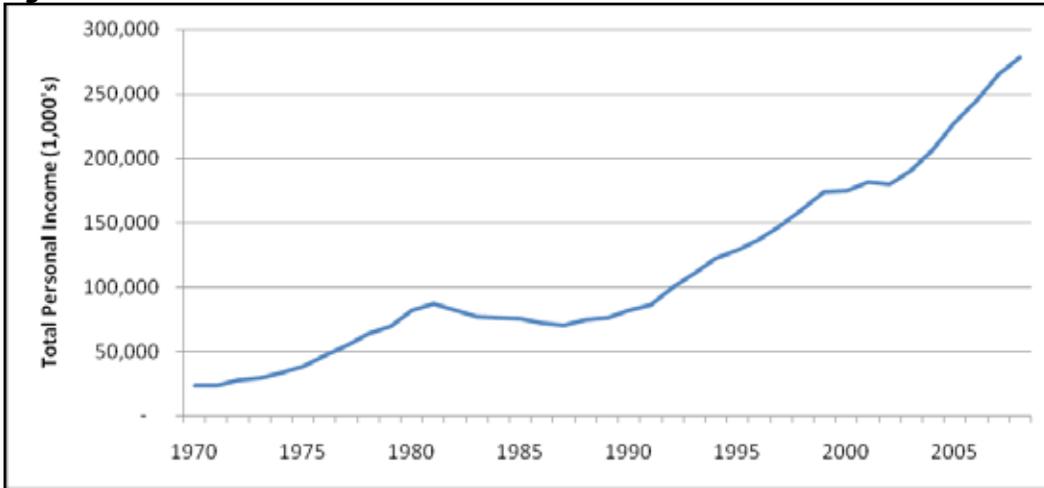
Source: Utah DEA, Bureau of Labor Statistics, Utah Department of Workforce Services

The rise and fall in population and employment seen in the 1970's and 1980's is reflected in the changes in total personal income over time (Figure 2.22). Similarly, a steady rise in Grand County's total personal income has been occurring

³ 2009 figures are estimates from Utah DEA.

since the late 1980's. However, the rise in personal income has occurred at a much more rapid pace than the increases in population or employment. Since 1990 the population has increased by a total of 44% while during the same period personal income grew by more than 100%, adjusted for inflation.

Figure 2.22. Total Personal Income 1970-2008



Source: Bureau of Economic Analysis

Over the past two and a half decades, the median household income in Grand County has been lower than state and national averages (Figure 2.23). On average, the income levels in the county have been 29% below state levels and 25% below national levels.

Figure 2.23. Median Household Income 1990, 2000, 2008

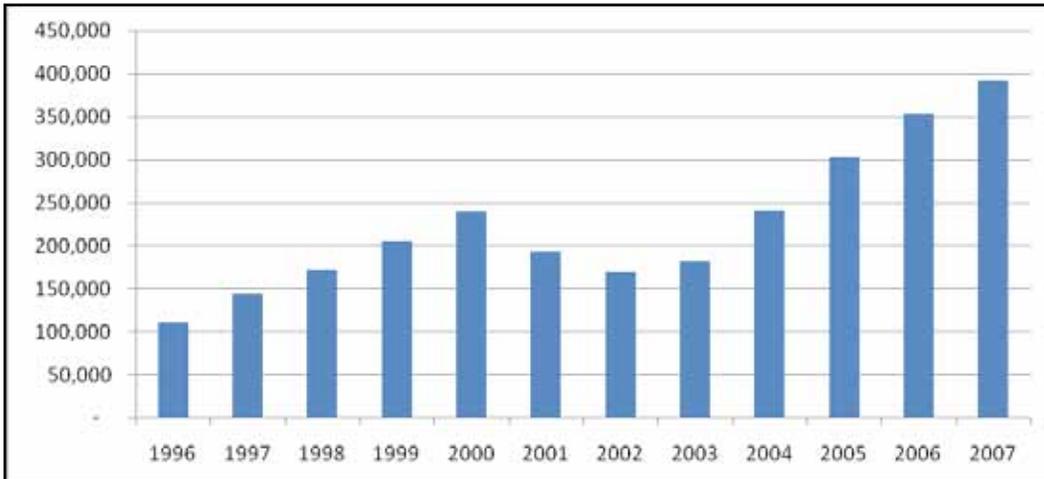


Source: US Census Bureau

As Moab and Grand County began to establish themselves as a tourist destination in the 1980's, and as Moab became a regional service provider for surrounding rural areas, the local businesses and investors began to realize the area's potential and therefore invested significant amounts of money in the area. In addition to a favorable local business climate, the increasing prosperity in Grand County is a result of national and even global trends that have transformed many communities throughout the rural West. A combination of factors came together in the late 1970's to create a 30-year surge of wealth creation in the United States (Figure 2.24). In 1978, 100,000 households in the U.S. brought home \$500,000 or more annually (in today's dollars). In 2007, over 1 million households had an adjusted gross income (AGI) of over \$500,000. The recent increase in personal wealth has occurred throughout the late 1990's and continued, with a slight post 9/11 dip, through 2007.

2.3 ECONOMIC VITALITY

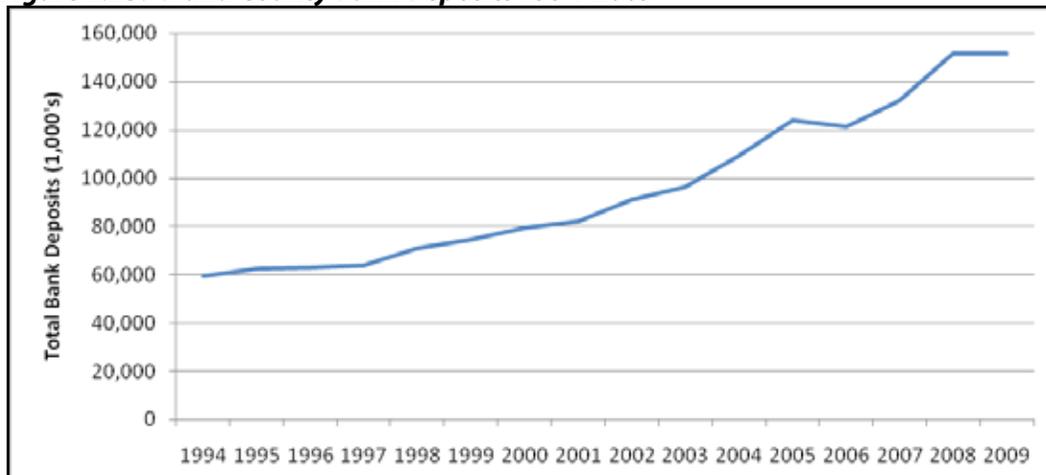
Figure 2.24. United States Tax Returns with AGI Greater than \$1,000,000 1996-2007



Source: Internal Revenue Service

Large quantities of discretionary income generated during the run-up of the past few decades have combined with better automobiles, expanding air travel, and revolutionary changes in communications technology to leave many families and individuals with more options and mobility. Amenity migrants have been leaving hectic urban environments for a more remote, small-town lifestyle in the rural West. Many new residents coming into the county have brought capital with them from careers in other places and are investing or spending money in Grand County.

Figure 2.25. Grand County Bank Deposits 1994-2009



Source: Federal Deposit Insurance Corporation

In the past 15 years, bank deposits in Grand County have increased by 75%, adjusted for inflation (Figure 2.25). In 2009 there was over \$150 million in bank deposits, compared with \$59 million (\$83 million adjusted for inflation) in 1994.

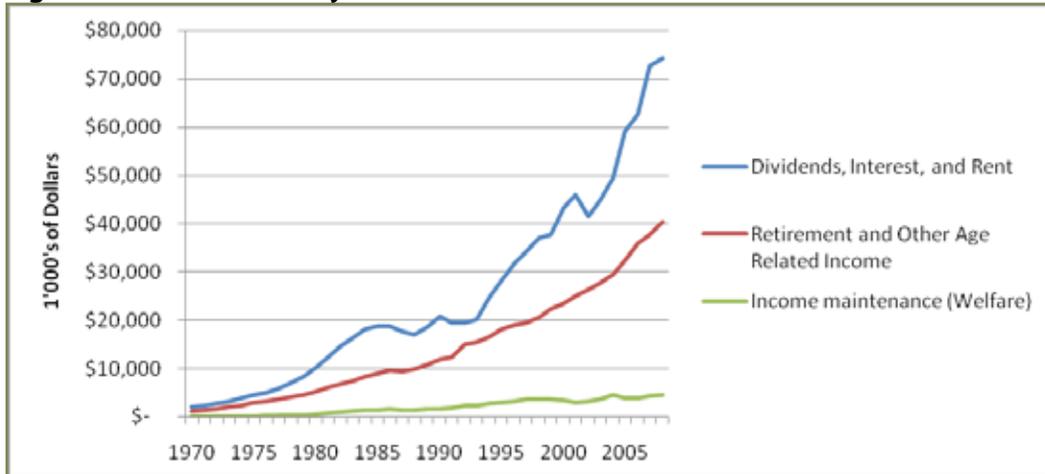
The Rise of Non-Labor Income

New residents with investments built in other economies have combined with Grand County locals who have made their own investments amid favorable local economic conditions to result in an increasing flow of income streaming into the county from dividends, interest, and rents earned from investments (Figure 2.26). Retirees add to the volume of non-labor income entering the county via Social Security payments and Medicare⁴. Transfer payments also include programs like unemployment and welfare which are a small part of the income base in Grand County but still bring outside dollars into the community.

Mining vs. Services - Economic Base Shift

Since the economic peak in 1980, the composition of jobs in Grand County has undergone a significant shift. In 1980, mining jobs accounted for 20% of total employment, while service-related jobs accounted for 16% (Figure 2.27). Once the jobs and population began to recover after the decline in the early 1980's, mining did not pick up. Instead services, which did not experience the same degree of decrease as other industries, filled the employment gap. When jobs recovered to 1980 peak levels in 1992, mining was responsible for only 6% of total employment while the services accounted for 28%. This trend has continued since the early 1990's; by 2008 mining had further declined to occupy only 2% of total employment while the service industry had continued to grow to 35%.

Figure 2.26. Grand County Non-Labor Income 1970-2008



Source: Bureau of Economic Analysis

Construction in Grand County did not help fill the economic base driver void left by mining. Across the West, as traditional industries have declined, construction, tourism and service-based jobs have typically replaced mining, forestry, and manufacturing as base economic drivers. However, in Grand County construction has seen only modest growth rates in terms of total jobs and has declined as a percentage of the entire economy.

Economic Diversity

One way to assess economic diversity is to compare the composition of Grand County's economy to that of the most powerful and diverse economy in the world, the U.S. economy. Comparing the share of the total jobs each employment sector holds as a share of the total jobs for Grand County vs. the entire U.S. economy reveals some important insights (Figure 2.28 and 2.29).

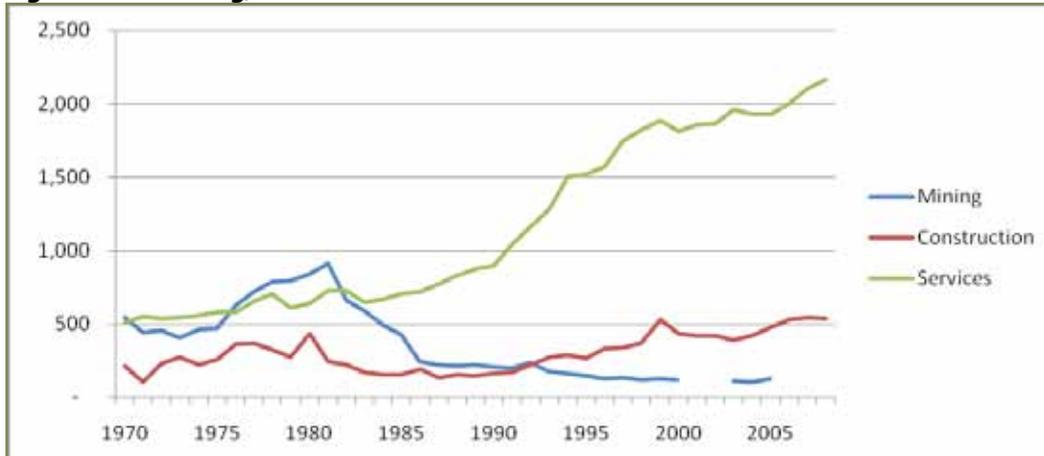
Mostly, tourists fuel the accommodations, food services, and recreation sectors. These industries are very susceptible to seasonal swings, which are seen during the winter months in Grand County.

⁴ 401K revenues are not counted as non-labor income.

CHAPTER 2: ECONOMIC AND DEMOGRAPHIC TREND SUMMARY

2.3 ECONOMIC VITALITY

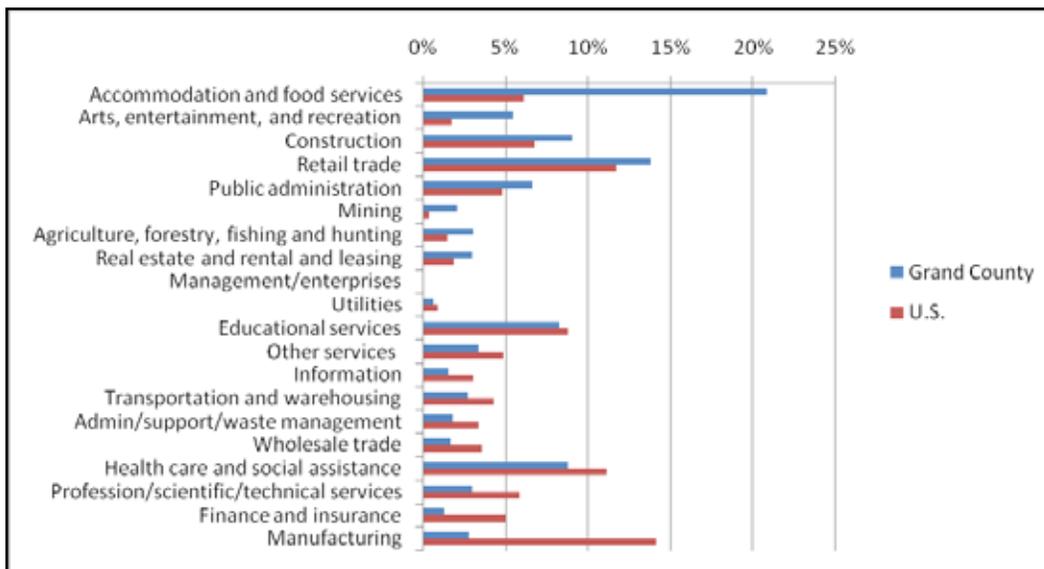
Figure 2.27. Mining, Construction and Service Jobs 1970-2008⁵



Source: BEA

Grand County's economy has a relatively weak position in manufacturing, finance, insurance, and professional services. These industries provide a stable economic base for many communities across the country. It is typical for a local economy to rely on some industries more than others.

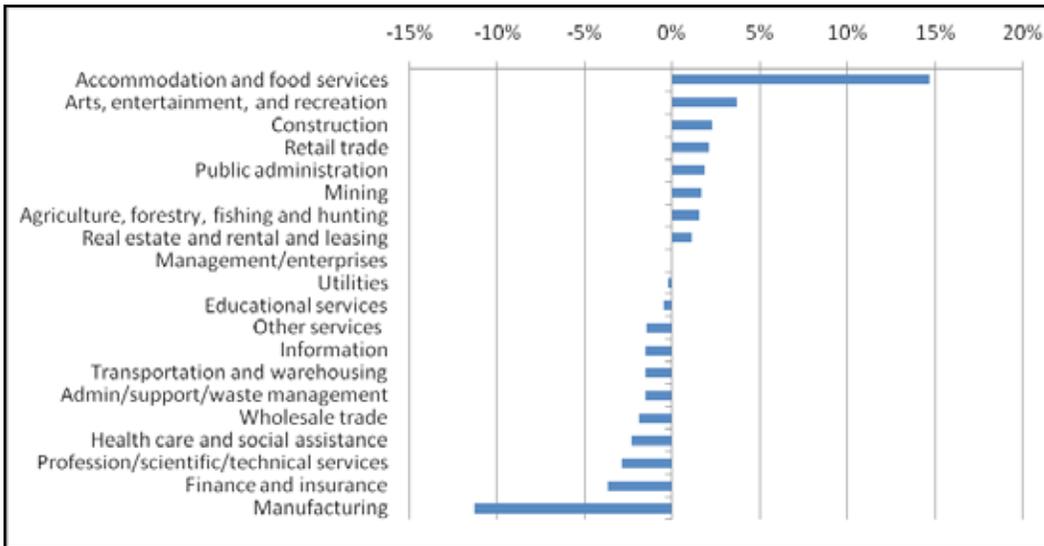
Figure 2.28. Employment Share of Total Economy - Grand County vs. United States



Source: Economic Profiling System, Headwaters Economics

⁵ Number of mining jobs suppressed for years, 2001-2002, and 2006-2008

Figure 2.29. Difference in Share - Grand County vs. United States



Source: Economic Profiling System, Headwaters Economics

2.4 BENCHMARKING GRAND COUNTY

2.4 BENCHMARKING GRAND COUNTY

In this portion of the report, key indicators in Grand County are compared to statewide indicators or indicators from other counties in the West. This helps the community to know where it stands in relation to other places.

Population

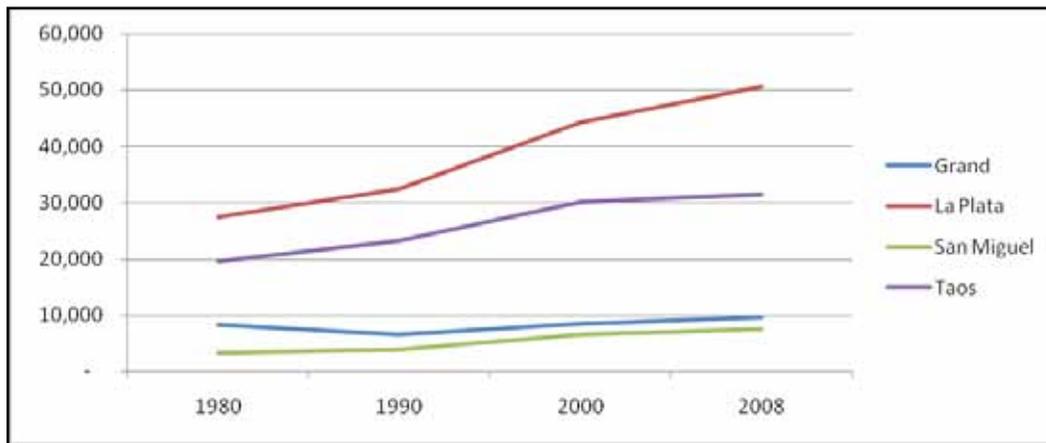
Since 1980 the population in Grand County has grown by 1,300 residents, representing a 16% increase (Figures 2.30 and 2.31). Three comparison counties were selected based on attributes they share with Grand County: they are remote from population centers, tourism is the main economic driver, they have established second homes/vacation home markets and there is history of traditional exports (minerals, lumber, livestock). In comparison, the population change in Grand County has been considerably lower than the population changes experienced in La Plata County, CO, San Miguel County, CO and Taos County, NM. The overall 16% increase in Grand County since 1980 includes a period of decreasing population rates which occurred in the 1980's when the mining industry in the county began to decline. The relatively low population change as compared to other tourist-destination counties is likely due to the relatively recent development of tourism in Grand County and Moab. Grand County has had only a couple of decades to establish itself as a major tourist destination; other counties began the transformation in the 1950's and 1960's. However, it seems as though Grand County has completed this transformation as the growth rates between 2000 and 2008 in Grand County are equivalent to those of La Plata and San Miguel counties and even stronger than those in Taos.

Figure 2.30. Population 1980-2008

County, State	1980	1990	2000	2008	%Change1980-2008
Grand, Utah	8,257	6,620	8,399	9,598	16%
La Plata, Colorado	27,431	32,505	44,221	50,633	85%
San Miguel, Colorado	3,192	3,741	6,616	7,527	136%
Taos, New Mexico	19,551	23,235	30,062	31,508	61%

Source: Bureau of Economic Analysis

Figure 2.31. Population 1980-2008



Source: BEA

Per Capita Income

Personal per capita income in Grand County has increased since 1980; however, as is the case with its population, the rate of increase has not been as high as in other counties whose economies are now built around the tourism industry (figures 2.32 and 2.33). The relatively small increase that occurred between 1980 and 1990 can again be attributed

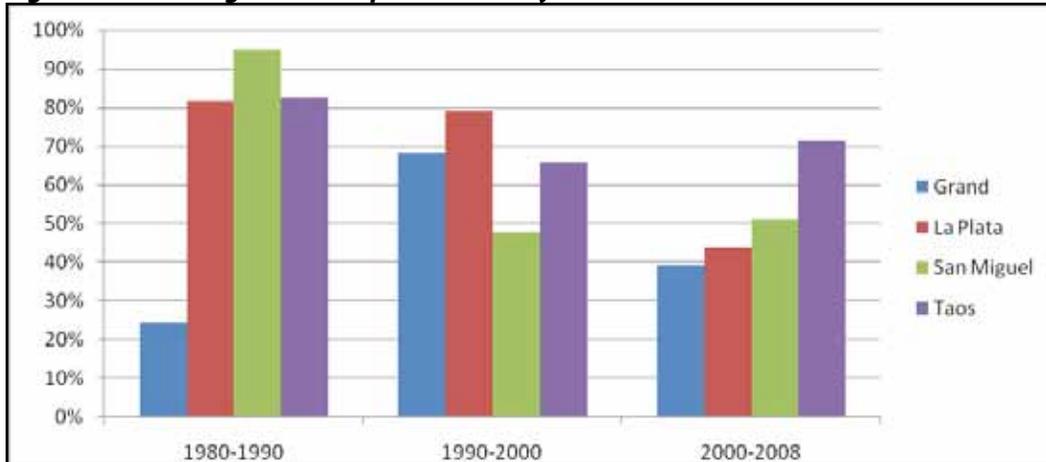
to the collapse of the mining industry. However, the slow growth was replaced in the 1990's as the county began to recover from the withdrawal of a major economic driver, and personal income is currently increasing at similar rates to other similar counties, with the exception of Taos County.

Figure 2.32. Per Capita Income 1980-2008

	1980	1990	2000	2008	%Change1980-2008
Grand	\$ 9,961	\$ 12,396	\$ 20,864	\$ 29,019	191%
La Plata	\$ 8,680	\$ 15,774	\$ 28,251	\$ 40,677	369%
San Miguel	\$ 8,707	\$ 16,968	\$ 25,079	\$ 37,914	335%
Taos	\$ 6,388	\$ 11,660	\$ 19,322	\$ 33,131	419%

Source: Bureau of Economic Analysis

Figure 2.33. Change in Per Capita Income by Decade



Source: BEA

Employment

Employment trends in Grand County mirror the population patterns described above. Total employment decreased in the 1980's; however, once the economy in Grand County shifted, and the county began to realize the value of its abundant natural resources and recreational opportunities, employment began increasing and the proportional job gains were again similar to those exhibited by other resort and amenity-based communities (Figure 2.34).

CHAPTER 2: ECONOMIC AND DEMOGRAPHIC TREND SUMMARY

2.4 BENCHMARKING GRAND COUNTY

Figure 2.34. Jobs 1980-2008

	1980	1990	2000	2008	%Change1980-2008
Grand	4,105	3,477	5,740	6,959	70%
La Plata	14,382	19,786	31,255	39,781	177%
San Miguel	1,840	3,613	7,252	8,712	373%
Taos	8,330	11,328	15,811	19,275	131%

Source: Bureau of Economic Analysis

Unemployment rates during a recession in Grand County have been higher than those in La Plata and San Miguel counties and lower than in Taos County (Figure 2.35). This suggests that the economies in La Plata and San Miguel generally weather a recession better than Grand County; this is most likely due to a diversified economy in La Plata County and a tremendous amount of relative wealth in San Miguel County. If personal income, development and employment trends continue, it is likely that Grand County could perform similar to other resort economies in future recessions.

Figure 2.35. Recession Year Unemployment Rates 1990, 2001, and 2008

	1990	2001	2008
Grand	7.4%	6.9%	7.3%
La Plata	5.8%	3.2%	6.1%
San Miguel	5.0%	3.8%	6.3%
Taos	15.7%	6.7%	11.0%

Source: Bureau of Labor Statistics

2.5 Public Lands

Like the education system, the presence of public lands in a community can have a direct effect on the quality of life and the local economy. This fact is especially prevalent for a community, like Grand County, that has a relatively large amount of public lands. Public lands in Grand County are administered by the following agencies: U.S. Forest Service, Bureau of Land Management, National Parks Service, Utah State Land Trust, Utah Division of Wildlife Resources, and Utah State Parks.

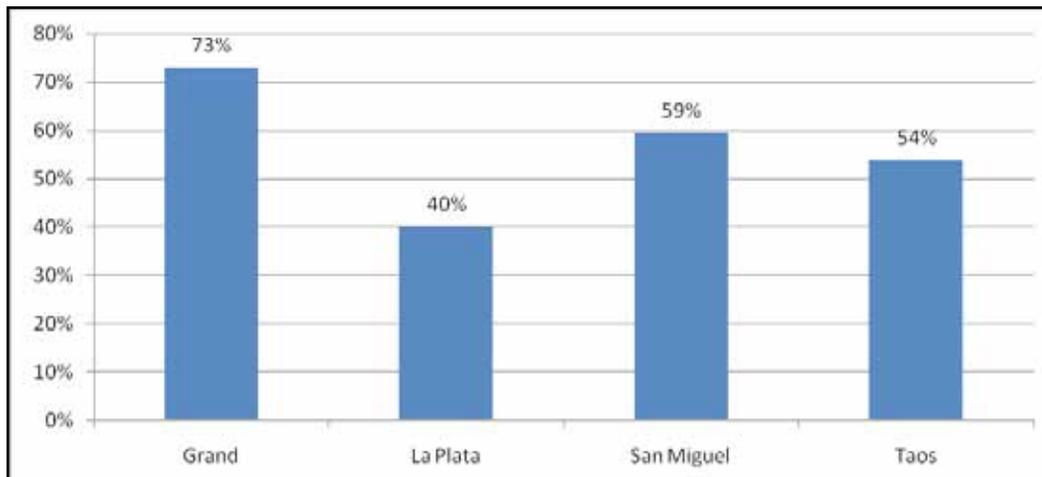
Grand County has a tremendous amount of federally administered public lands. Nearly three-quarters of all the land in the county, more than 1.7 million acres, is federal land. Federal lands include Arches National Park, the Manti-La Sal National Forest, the Moab Unit of the Bureau of Land Management and the McInnis Canyons National Conservation Area. By comparison, the other counties presented in this analysis are composed of between 40% and 60% federal lands (Figures 2.36 and 2.37).

Figure 2.36. Federal Acres as % of Total Land

	% of Total Acreage	Total Acreage	Acres of Federal Public Land
Grand	73%	2,364,160	1,723,750
La Plata	40%	1,088,000	436,394
San Miguel	59%	824,320	490,077
Taos	54%	1,411,200	758,728

Source: U.S. Department of the Interior, Payment In Lieu of Tax Statistics

Figure 2.37. Federal Lands as a Percentage of Total



Source: U.S. Department of the Interior, Payment In Lieu of Tax Statistics

2.6 DEPENDENCY RATIOS

2.6 Dependency Ratios

A dependency ratio measures the non-school age or labor force population against the number of dependents. This analysis presents two dependency ratios: a school age ratio and a labor force ratio (Figures 2.39 and 2.40). The school age dependency ratio measures the number portion of the population that is under 18 against the remaining population. Grand County has a lower school age dependency ratio than Utah as a whole; this means that the Grand County population is generally older, and there is a larger adult population underlying the school age population. The second ratio measures the number of individuals in the workforce against the non-working population; it includes children under 15 and adults over 64. Grand County has a slightly lower dependency ratio than the state as a whole.

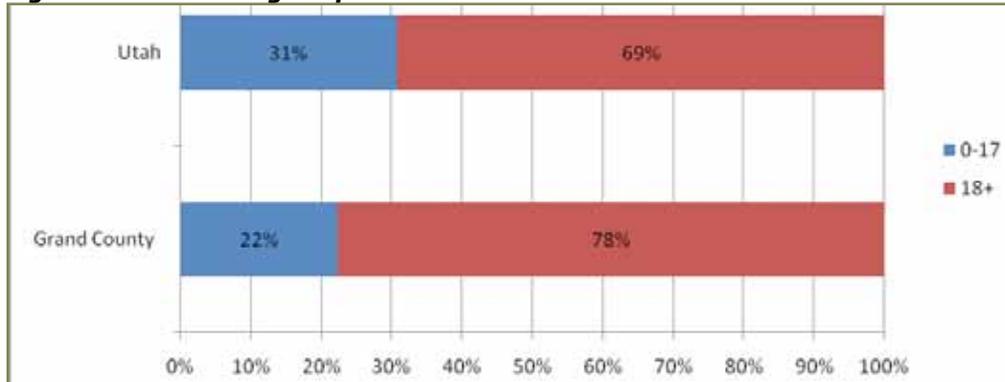
Figure 2.38. School Age and Labor Force Dependency Analysis

	Ages 0-17	% of Total	Age 18+	% Of Total	Total Population	School Age Dependency Ratio
Grand County	2,171	22%	7,522	78%	9,693	29%
Utah	899,090	31%	2,028,553	69%	2,927,643	44%

	0-14 and 65+		15-64		Total	Labor Force Dependency Ratio
Grand County	3,091	32%	6,602	68%	9,693	47%
Utah	1,025,541	35%	1,902,102	65%	2,927,643	54%

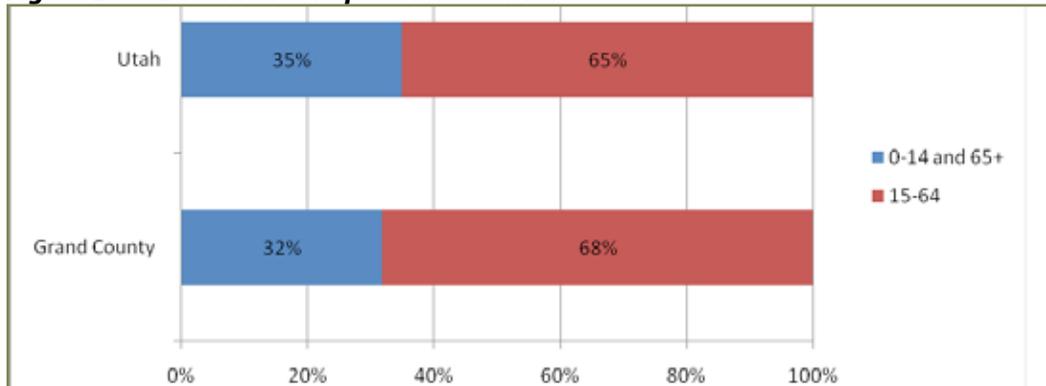
Source: Utah DEA

Figure 2.39. School Age Population % of Total



Source: Utah DEA

Figure 2.40. Labor Force Population % of Total



Source: Utah DEA

2.7 Education

Measuring per capita income against class size and graduation rates allows for a comparison between wealth and educational performance (Figure 2.41). The three richest counties, the three poorest counties, and the state as a whole were chosen to contrast against Grand County. Overall there is not a strong correlation between a county’s per capita income and educational performance. Grand County, which ranked 24 out of 48, occupies the middle range between San Juan County and Summit County. Grand County’s class size is also in the middle of the range; however the graduation rate was the highest out of all the counties examined. This suggests that the residents of Grand County place a high value on education.

Figure 2.41. Per Capita Income vs. Class Size and Graduation Rate

	Per Capita Income	Population	Average Class Size	Graduation Rate
Summit, UT	\$63,832	42,320	20	92%
Duchesne, UT	\$38,156	17,336	19	81%
Salt Lake, UT	\$38,026	1,079,679	22	80%
Grand, UT	\$29,019	9,693	20	95%
Iron, UT	\$23,147	50,601	22	89%
Sanpete, UT	\$21,162	27,557	21	85%
San Juan, UT	\$18,705	15,053	17	90%
Utah	\$32,050	2,927,643	21	88%

Source: BEA, Utah DEA and Utah State Office of Education

CHAPTER 3



VISION, GOALS AND STRATEGIES

3.1 Introduction

Vision, Goals and Strategies establish what the community aims to achieve over the next 20 years and how we plan to get there. The Vision, Goals and Strategies lay the foundation for a range of implementation actions. Some of the implementation strategies will require cooperation and partnerships with other entities, for example, planning for locally produced sustainable energy, and some implementation strategies the county can accomplish on its own, for example, recommended changes to the land use code.

Vision statements are broad but concise descriptions of what we want the community to be in the future. Vision statements articulate the desired future condition of the community in 20 years and serve as the foundation for the goals and strategies. Vision statements are written in the present tense in order to describe what the community will look like and how it will function in the year 2030.

Goals provide concise statements of WHAT the community aims to accomplish over the life of the plan. The goals provide the basic organization and direction for the plan's strategies.

Strategies are specific actionable measures for HOW to implement the goals.

The General Plan Vision, Goals and Strategies are organized into the following categories that arose from the visioning process:

- Diverse, Prosperous and Sustainable Economy
- Ecology, Water, and Air
- Development Patterns
- Transportation
- Recreation and Access
- Public Lands

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: DIVERSE, PROSPEROUS, AND SUSTAINABLE ECONOMY

3.2 Vision, Goals and Strategies

VISION: DIVERSE, PROSPEROUS, AND SUSTAINABLE ECONOMY

Locally-owned businesses are the economic engines of the community. Competitive and prosperous locally-owned businesses serve residents, visitors, export markets, and other local businesses while keeping most of the earnings at home.

Growth in new business sectors is balanced with tourism. Existing and new businesses tap new markets for locally produced goods and services, providing the basis for year-round prosperity and more high-paying jobs.

Tourism continues to contribute significantly to the economic base. The landscape, scenic resources, recreational amenities, special events and local businesses continue to attract and accommodate visitors.

Local food production makes us more self-sufficient. The local agricultural system is an important provider of food for residents and businesses and also reaches export markets.

Grand County is renowned for its energy independence and is an exporter of renewable and conventional/traditional energy.

Infrastructure investments contribute to a sustainable economy. Investments in water, energy, waste, communications, housing, and transportation infrastructure help achieve a sustainable economy.

GOALS AND STRATEGIES

Goal 1 - Make the county attractive for a wide range of economic sectors.

Strategy A - Support and participate in the established economic development efforts of local, regional and state government agencies to enhance existing businesses and attract new businesses.

Strategy B - Support efforts, such as those of the Business Expansion and Retention Program, to create and support an Economic Development Committee; an organized community group of interested citizens and business representatives spanning the perspectives in the community. This committee may have staff support and would work to:

- develop and maintain an economic strategic plan
- inventory assets to help identify efforts most likely to succeed
- obtain funding and support for economic development
- collect and disseminate market and economic information
- offer assistance for businesses and organizations seeking to expand or move into the county
- act in an advisory role to the Grand County Council

Strategy C - Create a liaison relationship between local businesses and local, regional and state government agencies to ensure that governments better understand how they can help or are hindering economic development and business opportunities.

Strategy D - Review the commercial and industrial zoning districts and update the Future Land Use Map to ensure that an adequate supply of land is available for accommodating business and other non-residential activity in appropriate locations.

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: DIVERSE, PROSPEROUS, AND SUSTAINABLE ECONOMY

Strategy E - Maintain and enhance the recreational, scenic, and cultural amenities unique to Grand County to attract and sustain economic activity.

Strategy F - Foster a business-friendly atmosphere where entrepreneurs can thrive.

Strategy G - Encourage businesses to develop solid and fluid mineral resources while using the best technology and mitigation techniques to protect natural amenities and natural resources (Figure 3.2).

Strategy H - Support the efforts of the Moab Regional Hospital and the Canyonlands Health Care Special Service District to address long-term health care and independent assisted living.

Strategy I - Support the development of a 4-year college and other education opportunities that enhance the workforce, provide training and establish the basis for expanded year-round employment.

Strategy J - Promote buy local programs.

Strategy K - The scenic and ecological qualities in and around Arches National Park are an economic asset, so National Park Service input will be sought regarding future land uses on neighboring state and private property.

Goal 2 - Facilitate business development through land use standards and approval processes that are clear, predictable, consistent, fair, timely and cost-effective.

Strategy A - Review the land use code and consider ways to increase clarity, predictability, consistency and efficiency in reviewing land use applications.

Strategy B - Review the land use code to find ways to reduce the number of times a land use applicant is required to appear before a review or decision-making body while still allowing for a thorough review of the application.

Goal 3 - Support the development and maintenance of infrastructure necessary for a sustainable local economy. (Also see Vision: Transportation)

Strategy A - Continue to coordinate with the City of Moab and special service districts to provide sewer, water and transportation infrastructure to accommodate efficient growth in appropriate areas (Figure 3.3).

Strategy B - Continue to coordinate with the City of Moab on annexation of efficient and appropriate growth areas accommodating both residential and non-residential development (Figure 3.2).

Strategy C - Continue to coordinate with the City of Moab to create and implement County and City land use regulations that are compatible in the municipal periphery/transition areas.

Strategy D - Support and participate in planning to upgrade the capacity of existing electrical infrastructure in the Spanish Valley, Castle Valley, Cisco, and along the I-70 corridor.

Strategy E - Support and participate in planning for locally produced sustainable energy and its local consumption and transport.

Strategy F - Support balanced and responsible natural-resource development that benefits the public and generates revenues for public service providers to help pay for public infrastructure improvements needed to achieve economic diversity.

Strategy G - Encourage the development and expansion of high speed broad band services as a critical component of job creation and economic development. Access to high speed internet is necessary to ensure a prosperous future for citizens living in remote, difficult-to-reach communities.

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: DIVERSE, PROSPEROUS, AND SUSTAINABLE ECONOMY

Goal 4 -Support the continuance of agriculture with incentives and land use flexibility.

Strategy A - Support voluntary efforts initiated by agricultural landowners to create Agriculture Protection Areas covering their properties per state code (Utah Code Title 17/Chapter 41).

Strategy B - Encourage interested agricultural landowners to take advantage of voluntary tax incentives by placing agricultural conservation easements on property that they own and wish to keep in agriculture.

Strategy C - Engage the community in revising the land use code to identify and reduce barriers to agriculture and value-added agricultural production such as building setbacks, food stand regulations and/or home occupations standards.

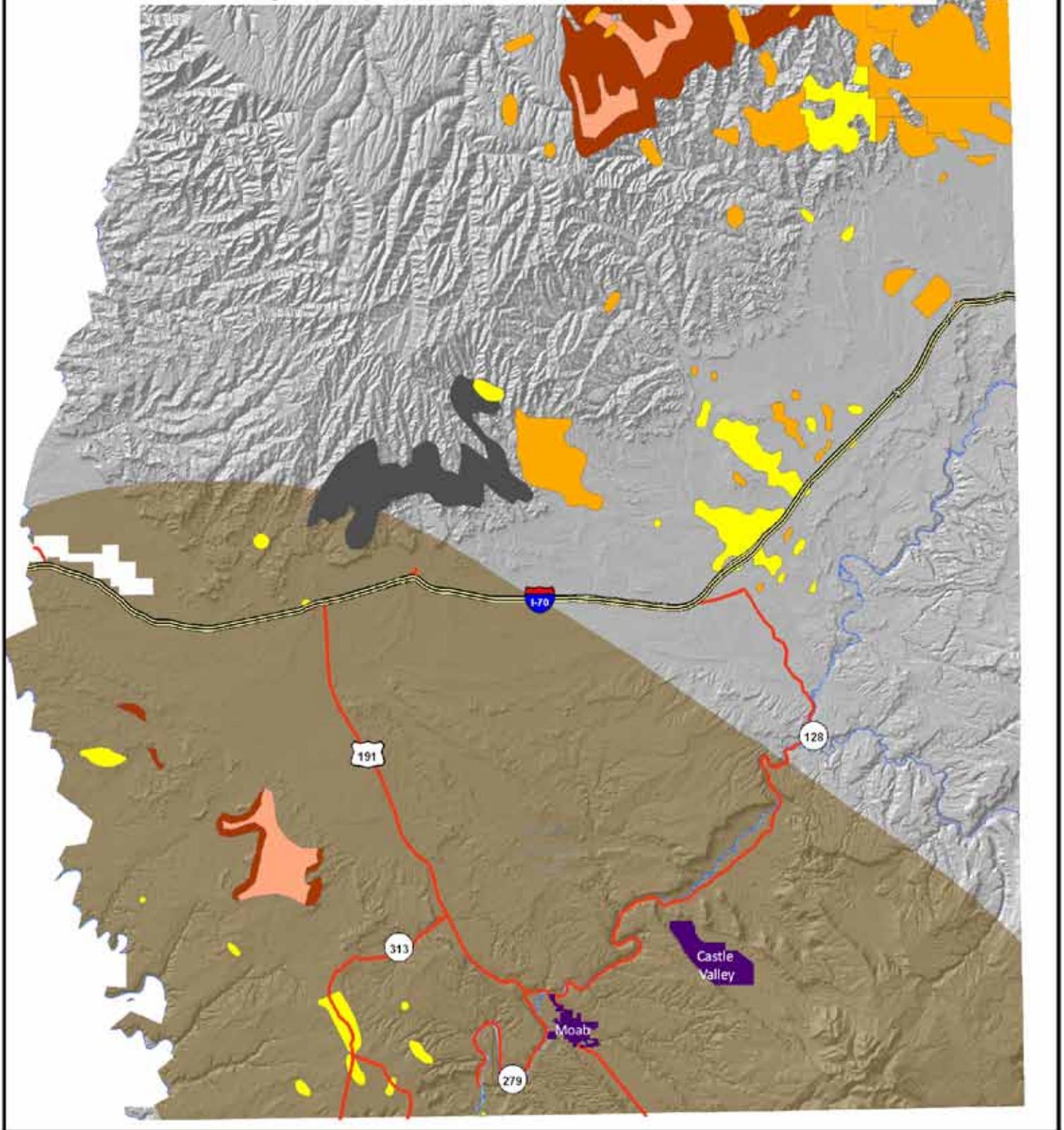
Strategy D - Continue to offer increased residential density as an incentive for developers to set aside irrigated agricultural land voluntarily as open space and keep some of the property in agricultural production.

Strategy E - Educate the public regarding the needs of agriculture, grazing, and ranching enterprises.



Agricultural land in the Moab periphery.

Figure 3.1 Solid and Fluid Mineral Resources



- | | | |
|--|---|--|
|  Coal Bearing Outcrop - 4 Ft. or Thicker Coal Seams |  Gas Field |  Lakes, streams, and rivers |
|  Oil Impregnated Rock (probable) |  Oil Field |  Terrain |
|  Oil Impregnated Rock (known) |  Potash Deposits | |

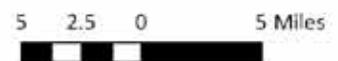
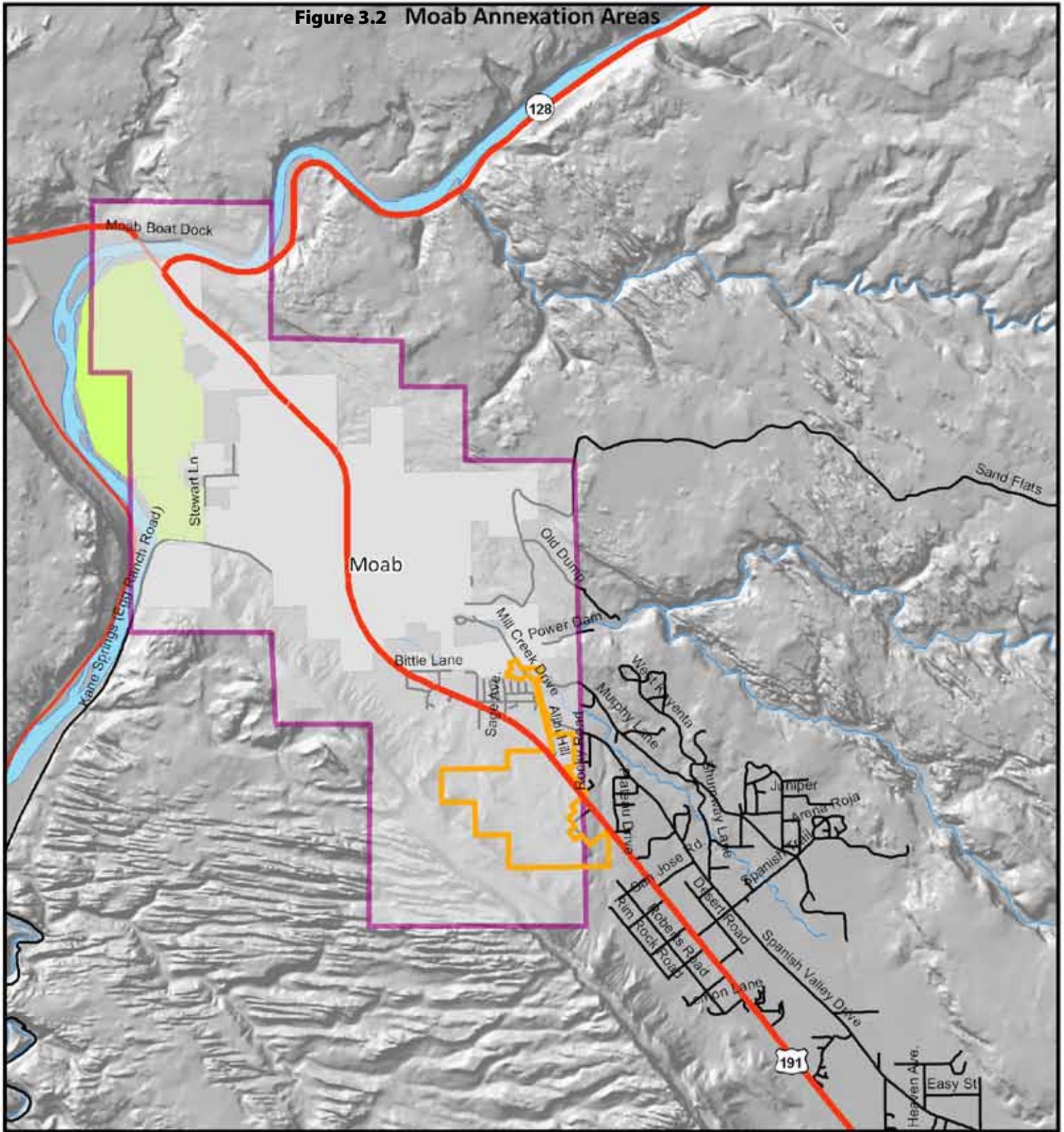


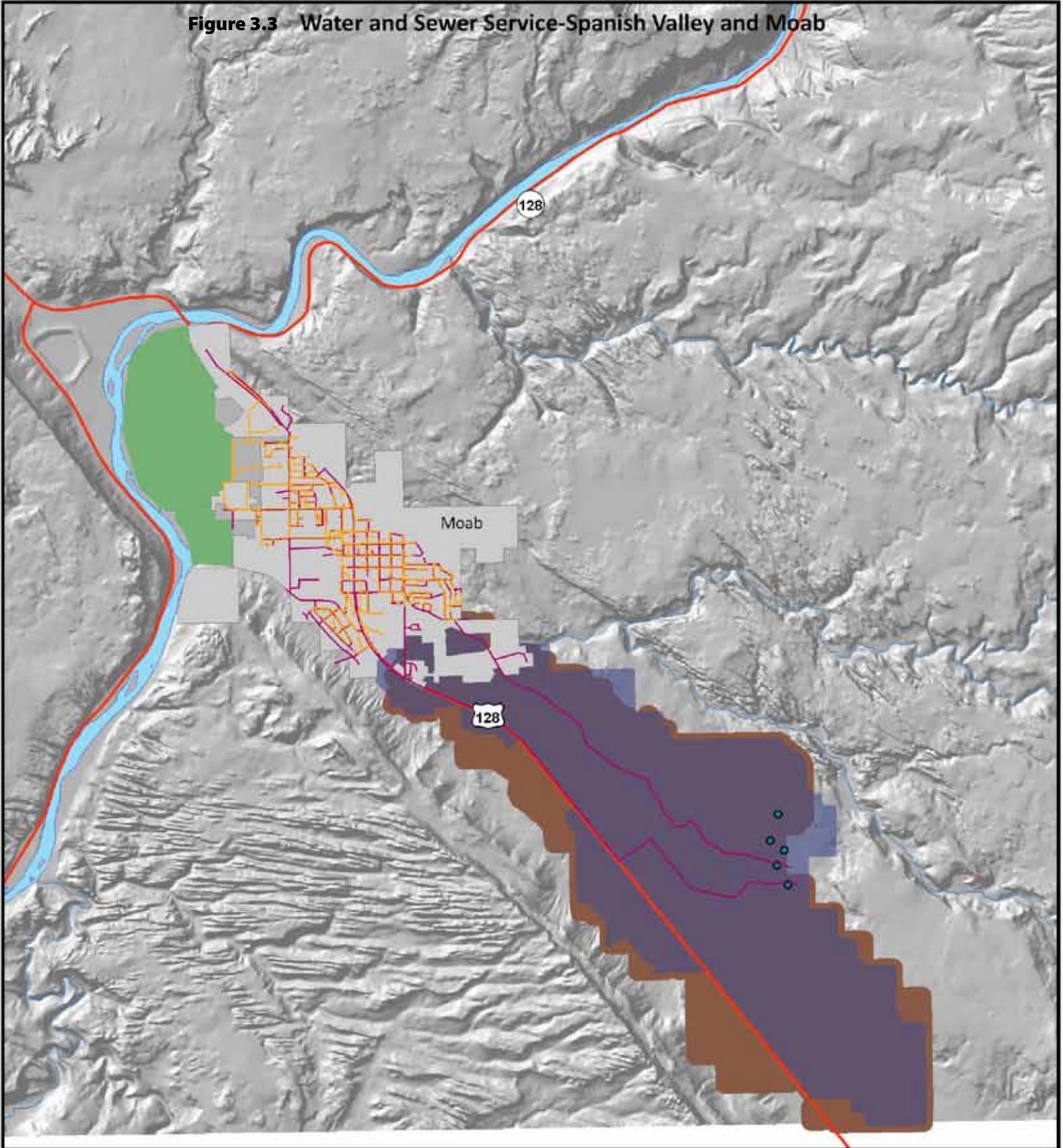
Figure 3.2 Moab Annexation Areas



- Pending Annexation
- Moab-Favorable for Annexation
- Highways
- Matheson Preserve



Figure 3.3 Water and Sewer Service-Spanish Valley and Moab



- Rough Extent of GWSSA Sewer
- City of Moab Sewer Lines
- Matheson Preserve
- Rough Extent of GWSSA Water
- City of Moab Waterlines
- City Limits
- System Wells
- Highways



CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: ECOLOGY, WATER, AND AIR

VISION: ECOLOGY, WATER, AND AIR

Comprehensive management of aquifers and watersheds ensures plenty of high-quality water. Landowners, land managers, local governments, and water and sewer service providers work in partnership to manage watersheds to maintain or enhance water quality and quantity for current and future generations.

Wildlife habitat is preserved and restored. Invasive weeds are reduced and native species thrive. Wildlife corridors connect natural areas throughout the county, creating ecosystem linkages and improving wildlife vitality. Wetlands and riparian habitats are intact.

Air quality is pristine. The community works to preserve or improve air quality at the local level.

The community strives toward an energy-efficient future. There are abundant opportunities to recycle, use alternative transportation, and use renewable and alternative energy.

GOALS AND STRATEGIES

Goal 1- Mitigate potential risks to the drinking-water supply.

Strategy A - Continue to encourage development and use of centralized sewage-treatment systems in and adjacent to populated areas. (Also see Development Patterns).

Strategy B - Revisit the Water Source Protection Overlay zone district to ensure that it addresses risks to the long-term drinking supply (2008 Land Use Code section 4.5).

Strategy C - Map the Watershed Protection Overlay zoning district to include all state-approved drinking-water source protection zone boundaries.

Strategy D - Protect against contamination of the Glen Canyon and Castle Valley aquifers by hazardous materials with land use standards and procedures that align with state and federal water-quality regulations designed to mobilize state and federal water-quality enforcement.

Strategy E - Participate in the Moab Area Watershed Partnership to work on comprehensive watershed planning and restoration.

Strategy F - Increase water conservation in agricultural and residential areas by encouraging secondary water systems for irrigation in new residential subdivisions.

Strategy G - Municipalities, water districts and public water suppliers are encouraged to work in partnership with the agencies that govern land use in their drinking watersheds to enact agreements for long-term watershed management.

Goal 2 - Support efforts to understand water quantity and quality dynamics of the Glen Canyon, Spanish Valley fill, Castle Valley and Thompson aquifers.

Strategy A - Pursue federal and/or state funding for the USGS Glen Canyon Aquifer water budget study that is already approved by Congress.

Strategy B - Support Castle Valley's and Thompson Springs' efforts to find funding for water quantity studies.

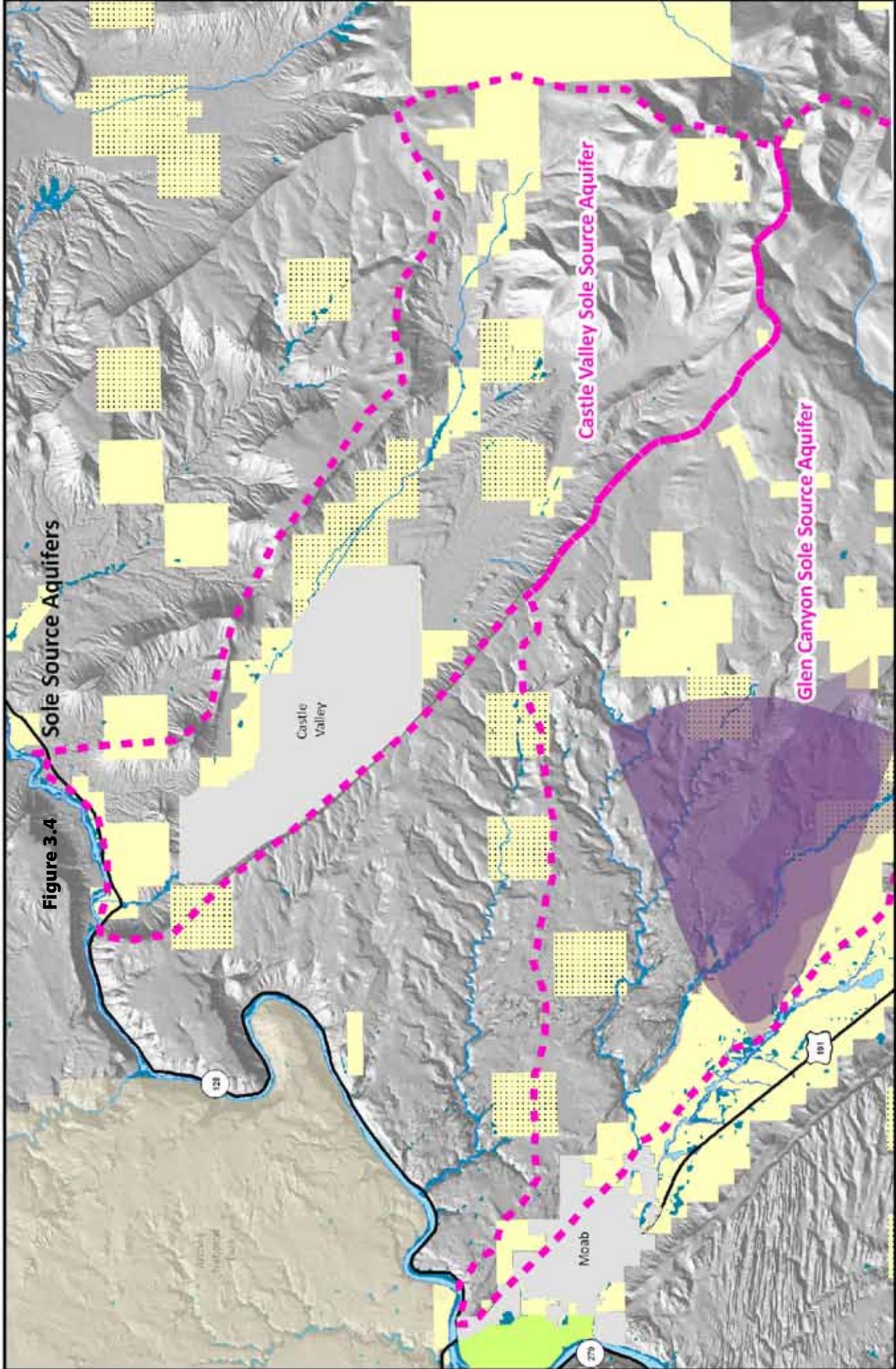


Figure 3.4
Sole Source Aquifers

Sole Source Aquifer Boundaries
 Lakes, streams, and rivers
 Riparian habitat
 Moab wells water source protection zones
 Floodplain
 Private and School and Institutional Trust Lands (SITLA)
 Pending SITLA Transfer to BLM
 Matheson Preserve



CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: ECOLOGY, WATER, AND AIR



Mill Creek

Strategy C - Collaborate with the Moab Area Watershed Partnership to consider the creation of an aquifer priority recharge overlay to prevent contamination of culinary water supplies, based on the results of bona fide studies and comparison of policies used in other communities.

Strategy D - Consider adopting an incentive-based water conservation program for residential and non-residential land uses.

Strategy E - Map the approximate boundaries of the Glen Canyon and Castle Valley sole-source aquifers in the general plan (Figure 3.4).

Goal 3 - Preserve wetlands and riparian habitats.

Strategy A - Map riparian habitat using the best available data.

Strategy B - Focus on riparian and wetland areas as high-priority open space in the land use code.

Strategy C - Develop a fee-in-lieu of the voluntary open-space incentives offered in the land use code. Use revenues to acquire land and/or easements in order to acquire riparian property and/or easements from willing landowners (see Recreation and Access, Goal 1 Strategy C).

Strategy D - Establish trail design standards that minimize impacts on sensitive riparian corridors.

Strategy E - Support the establishment of a local land trust to acquire land and facilitate the establishment of conservation easements.

Goal 4 - Minimize health risks from air pollution and sustain the county's Class I air quality status.

Strategy A - Encourage the National Park Service to continue monitoring air quality at Island in the Sky, to expand its air quality monitoring program and to notify the county of trends and potential air quality issues.

Strategy B - Align development permit standards and review procedures with state and federal air-quality rules and regulations and mobilize state and federal air-quality agencies for enforcement.

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: ECOLOGY, WATER, AND AIR

Strategy C - Enforce dust regulations in the Land Use Code.

Strategy D - Support efforts to establish an air quality committee to compile and share data with local and regional agencies and maintain relations with state and federal air-quality agencies.

Goal 5 - Minimize impacts to ecology and scenery from fluid and solid mineral development while still allowing such development to continue to benefit the economy.

Strategy A - Encourage oil, gas and mining companies to use the best technology and mitigation techniques to protect natural amenities and natural resources.

Goal 6 - Encourage conservation by reducing, reusing and recycling materials.

Strategy A - Support the goal in the Solid Waste Special Service District Management Plan to increase the percent of waste diverted from landfills.

Strategy B - Develop and promote recycling in county departments and facilities.

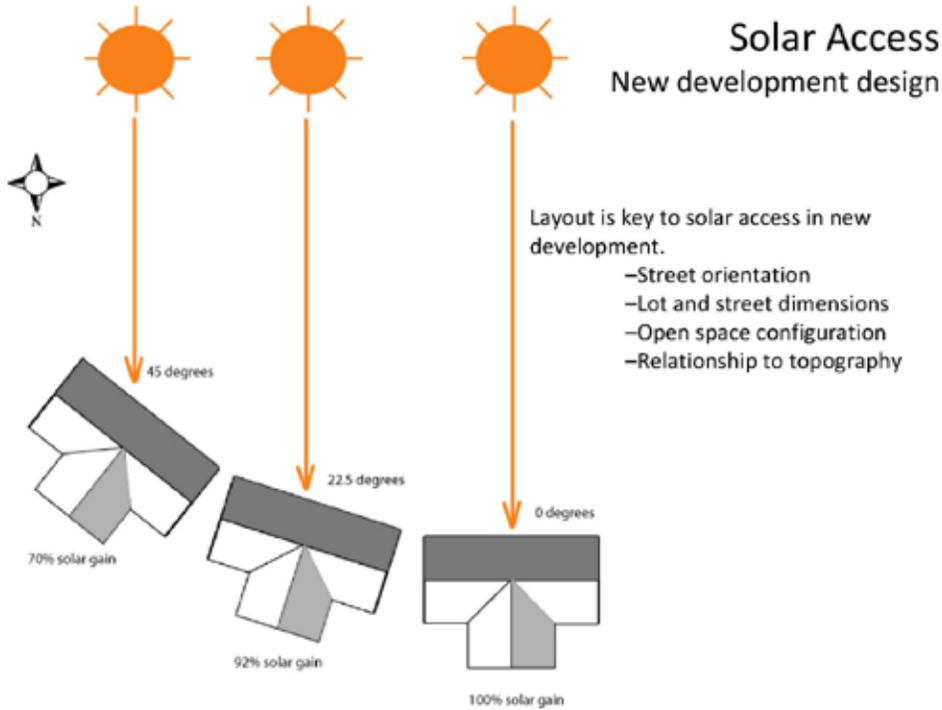
Strategy C - Update the county events permitting process and work with other event permitting agencies to require that special events recycle waste when cost-effective.



Natural Gas Facilities

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: ECOLOGY, WATER, AND AIR



Goal 7 - Reduce energy demand.

Strategy A - Develop an incentive-based energy conservation building code.

Strategy B - Consider amending the land use code to facilitate solar energy systems..

Strategy C - Consider amending the land use code to include commercial lighting standards based on guidelines for illumination levels developed by the Illuminating Engineering Society of North America and/or other similar organizations.

Strategy D - Include resource and energy efficiency as a significant factor in county purchasing and infrastructure investments while also considering cost-effectiveness.

VISION: DEVELOPMENT PATTERNS

Development patterns are fiscally responsible. Moab, Castle Valley, and Thompson are the centers of activity and attract quality development in and near them. Areas preferred for growth are supported by new or enhanced infrastructure and the utilization of existing infrastructure.

Ample housing choices are designed and priced to fit the range of local earning power, ages, and abilities. Government policies and business decisions result in more affordable housing on-the-ground.

Citizens are able to live and work in the county because of a well-planned mix of housing types and price-ranges in diverse and vibrant neighborhoods near employment and services. There are effective programs to provide housing choices for the elderly and those earning less than median income.

Efficiency, conservation, and design reduce energy demand. Compact development patterns reduce driving and increase opportunities for alternative modes of transportation.

Open space that is valuable to the community is integrated into development. The permanent open-space inventory enhances quality of life and visitor experiences. Innovative programs support agricultural viability and keep land in agricultural production without regulations that diminish land values.

Scenic resources are intact. Structures and other improvements are designed and sited to reduce impacts on scenic resources. Scenic resources are an important consideration for public and private land-conservation entities working in the area.

Business development is economically feasible, ecologically responsible and fits the community. Business development diversifies the economy, creating jobs and business activity that fit the needs and preferences of the workforce and residents, and is designed and located to avoid damaging natural amenities and resources.

The county guides development in a way that is symbiotic with municipalities, neighborhood communities, and property owners. Communication across the community is effective and citizens are confident in county government. Land use planning with an engaged public remains relevant as the community evolves.



Colorado River near Moab

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: DEVELOPMENT PATTERNS

GOALS AND STRATEGIES

Goal 1- Support and participate in the implementation of the Grand County and City of Moab Housing Study and Affordable Housing Plan.

Strategy A - Re-evaluate the affordable housing incentive program in the Land Use Code to make it effective in the local real estate development market.

Strategy B - Support rezoning to multi-family residential (MFR) within the MFR overlay and in Rural Centers when there is an affordable housing component in a proposed project.

Strategy C - Align code definitions of affordable housing with the Grand County and City of Moab Housing Study and Affordable Housing Plan.

Strategy D - Consider a voluntary fee-in-lieu of affordable housing units incentivized by subdivision standards in the Land Use Code, and use the revenue to help support affordable housing development.

Goal 2- Focus future development in centers where existing and planned infrastructure can accommodate it so that people can live close to where they work and obtain goods and services.

Strategy A - Encourage mixed residential and business development and re-development projects in the commercial zone districts in the US 191 South corridor.

Strategy B - Designate rural centers that can be served efficiently by existing and planned infrastructure where future non-residential and residential development will be encouraged.

Strategy C - Work in partnership with San Juan County and the State of Utah School and Institutional Trust Lands Administration (SITLA) to guide future development in southern Spanish Valley that is proposed to be served by Grand Water and Sewer Service Agency to ensure that development patterns are fiscally efficient and align with the Vision, Goals and Strategies of the General Plan.

Goal 3 - Minimize impacts of development on scenic resources.

Strategy A - Reevaluate US 191 north corridor with a focus on maintaining compact development patterns, preserving scenic resources, and locating development to avoid degrading natural amenities.

Strategy B - Map priority scenic landscape features such as prominent ridgelines, visible mesas, and canyon walls and encourage developers to set them aside as open space with incentives that allow for increased residential density.

Strategy C - Consider amending the land use code to require the re-vegetation of disturbed areas and fallow agricultural land in developments prone to invasive plant species.

Goal 4 - Promote community clean-up.

Strategy A - Amend the land use code to require applicants seeking development permits to submit a plan for the removal and/or screening of visible refuse, debris and inoperable vehicles on the property proposed for development.

Strategy B - Initiate a public information campaign (including, but not limited to radio, newspapers and flyers in property tax mailings) promoting the benefits of clean-up efforts and recycling, and explaining the health and safety risks from refuse, debris and inoperable vehicles.

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: DEVELOPMENT PATTERNS

Strategy C - Update the land use code to outline a clear process for enforcing clean-up of refuse, debris and inoperable vehicles:

- Establish a clear definition of refuse, debris and inoperable vehicles.
- Review county staff capacities, including enforcement personnel and attorney staff time.
- Review the county's role and responsibility in responding to citizen complaints.
- Create a method for documenting violations.
- Establish deadlines for clean-up.
- Establish a cost recovery system for county initiated clean-up of properties in violation.

Strategy D- Continue to support the Solid Waste Special Service District's voucher program, allowing each residential property one free truck load of trash disposal per year.

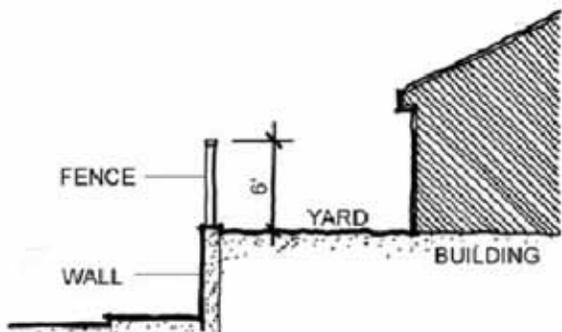
Strategy E – Include clean-up policies and design guidelines in a US 191 south corridor gateway plan for future development.

Goal 5 - Minimize impacts of natural hazards on properties and people.

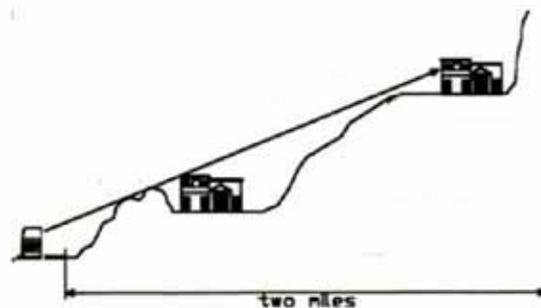
Strategy A - Avoid development in natural-hazard areas unless no other option exists on a property, in which case impacts on nearby properties and hazards to occupants and structures on the property need to be mitigated.

Strategy B - A top priority is to keep development out of the 100-year floodplain or major drainages unless there is no other option on the property.

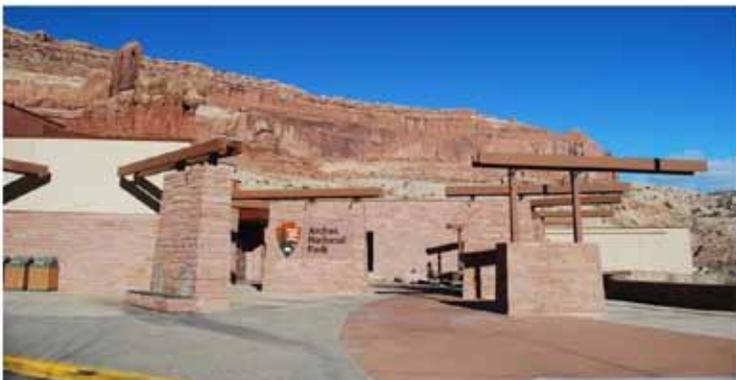
Strategy C - Improve base mapping for natural-hazards planning.



Buffering



Site Planning/
Ridgeline Protection



Architectural Design (color and materials)

Scenic Resource Protection

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: TRANSPORTATION

VISION: TRANSPORTATION

Rural roads are functional and safe for street-legal motor vehicles. Capital improvements focus on safety and the roads are low-speed and compatible with the rural setting.

Roads in and near population and employment centers have biking lanes or parallel multimodal pathways. As roads are redeveloped or added in and near population and employment centers, bike lanes and pathways are added to make roads safer for drivers and cyclists.



Bike Lane on Mill Creek Drive

GOALS AND STRATEGIES

Goal 1- Continue to focus county transportation infrastructure improvements on Moab as the heart of the community.

Strategy A - Prioritize improvements near the City of Moab, moving south through Spanish Valley.

Strategy B - Prioritize improvements to existing east-west roads and intersections which connect Spanish Valley neighborhoods to US 191 (Spanish Trail Road, Mill Creek Drive, San Jose Road, Sage Avenue, Resource Blvd., and Beeman Road).

Strategy C - Improve the north-south collector roads and intersections: Spanish Valley Drive, Mill Creek Drive, and Murphy Lane.

Strategy D - Include bike lanes and/or multi-modal pathways and parking areas along the north-south collector roads and the major east-west collector roads to build complete streets as these roads are improved.

Strategy E - Once existing infrastructure is improved, plan for and build additional east-west roads to connect Murphy Lane, Spanish Valley Drive, and US 191.

Strategy F - Promote revenue-generating activities for the county-approved Transportation Special Service District and the building of bike trails and their maintenance.

Strategy G - Continue to maintain an up-to-date transportation improvements plan and update development impact fees to ensure that future development pays its share of the cost of capital improvements.

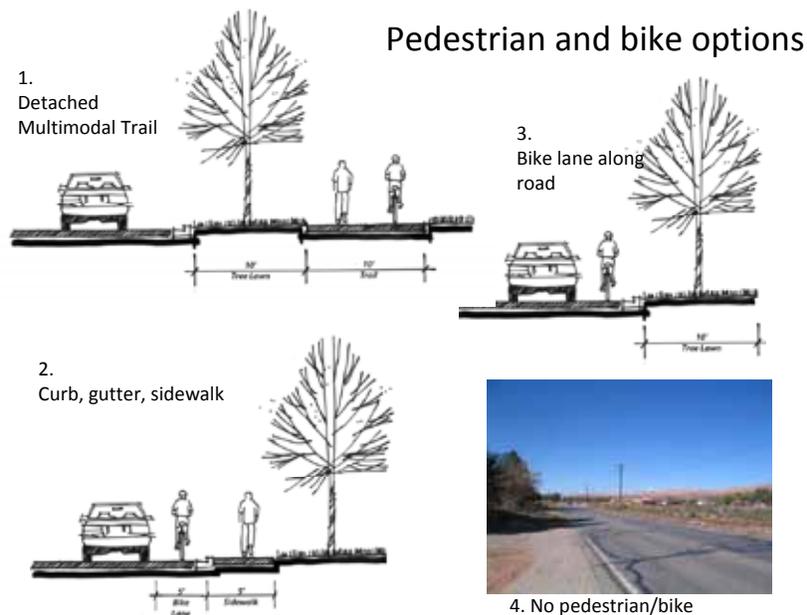
Goal 2- Continue to work in partnership with the Utah Department of Transportation and the City of Moab to improve US Highway 191 and its intersections south of Moab to balance the need for safe local access with the need to accommodate through traffic.

Strategy A - Work in partnership with the Utah Department of Transportation and the City of Moab to develop multi-modal pathways and related improvements parallel to US 191.

Strategy B - Work in partnership with the Utah Department of Transportation and the City of Moab to fund and develop an access management plan for the US 191 south corridor.

Strategy C - Preserve the internal circulation of existing subdivisions as US Highway 191 and its accesses are improved and plan for connectivity and multimodal transportation between future developments to reduce need to enter the highway.

Strategy D - Work with the Utah Department of Transportation to evaluate and enforce speed limits on US Highway 191 to protect motorists, pedestrians and bicyclists.



Goal 3 - Facilitate planning and coordination of regional multi-modal transportation.

Strategy A - Work in partnership with the National Park Service, City of Moab, Bureau of Land Management (BLM), and School and Institutional Trust Lands Administration (SITLA) to coordinate planning for shuttle services.

Strategy B - Support efforts to inventory and coordinate existing intra-city shuttle and bus transit services.

Strategy C - Encourage transit and shuttle services to include private enterprises.

Strategy D - Explore opportunities for the use of railroad infrastructure between Crescent Junction and Moab upon completion of Atlas cleanup.

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION: RECREATION AND ACCESS

VISION: RECREATION AND ACCESS

Ample trails and diverse recreational opportunities exist in Grand County for all ages and abilities. A safe and well-maintained bicycle and pedestrian-friendly trails network encourages recreation while providing alternative transportation.

There is a balance of active recreational facilities, organized sports and backcountry opportunities for all ages and abilities.

Backcountry trails and roads offer opportunities for recreation for a wide range of preferences. Users, including motorized, non-motorized, equestrian, cycling, and pedestrian, can find a place to enjoy their activity.

There is ready access to public lands within proximity to town. Neighborhood trailheads and trails provide quick entry to a natural setting.

GOALS AND STRATEGIES

Goal 1 - Support and participate in the Trail Mix Committee and the implementation of the Grand County Non-Motorized Trails Plan.

Strategy A - Identify priority riparian public trail corridors and acquire property and/or easements from willing landowners as opportunities arise.

Strategy B - Establish trail design standards that minimize impacts on sensitive riparian corridors.

Strategy C - Develop a fee-in-lieu of the voluntary open space incentives offered in the land use code. Use revenues to acquire land and/or easements in order to construct high-priority public trails and/or pathways.

Strategy D - Classify public trail corridors and access to public lands as primary open space (top-priority to set-aside) within the voluntary open-space provisions of the land use code.

Strategy E - Encourage development proposals that include dedication of easements that maintain access through historic corridors and to public lands and connect to existing and planned trails.

Goal 2 - Identify special places unique to Grand County in close proximity to Moab where public access should be established and maintained, including areas such as Mill Creek and Pritchett Canyon.

Public Lands

Purpose of General Plan Public Lands Policies

This set of policy statements is intended to act as a bridge between Grand County and federal and state land-management agencies. The Federal Lands Policy and Management Act calls for some decisions by federal agencies to be reviewed for consistency with plans adopted by local governments. The Public Lands section of the general plan provides guidance for some public lands decisions.

Economic Use of Public Lands

Public Lands Policy 1. Encourage the expeditious processing of permits for the economic use of public lands that benefit the local economy and are consistent with the policies of this plan, especially permits for the film industry, mineral extraction and recreation.

Watershed Management

Public Lands Policy 2. Public lands agencies are encouraged to adopt policies that enhance or restore watersheds for Moab, Spanish Valley, Castle Valley and Thompson Springs. The county supports classification of these aquifers to the highest quality standard. Grand County will follow all state and federal water protection laws and actively engage local, regional, and federal land management agencies in discussing risks to aquifers and aquifer recharge areas in Grand County.

Public Lands Ownership and Exchanges

Public Lands Policy 3. Support BLM-SITLA exchanges that are advantageous to Grand County residents for reasons such as: (a) protection of community watersheds; (b) protection of lands that are important to county residents for recreational or other economic values; (c) protection of lands from developments that might otherwise lead to a net increase in county costs for infrastructure and public services; or (d) consolidation of land-ownership patterns to reduce fragmentation.

Travel Management

Public Lands Policy 4. Encourage federal and state land-management agencies to develop, maintain and implement travel management plans that include designated roads, official trails and approved motor-vehicle open areas. The plans should address types and seasons of permitted uses, maintenance levels, public education strategies and enforcement.

Public Lands Policy 5. Travel management regulations and policies will continue to be publicly available on a countywide roads map maintained jointly by the county and federal/state land-management agencies. This comprehensive roads map will show the current travel-management designations of Class B county roads (maintained) and Class D county roads (not maintained) alongside public land-management agency travel-management road designations.

User Group Conflicts

Public Lands Policy 6. Encourage public land-management agencies to continue to work to resolve conflicts between user groups. In doing so, the guiding principle is that residents and visitors have a right to enjoy use of the public lands, but they need to do so while minimizing impacts on the land and on each others' public lands experiences.

Land Restoration

Public Lands Policy 7. Encourages public land-management agencies to restore damaged areas.

Special Areas

Public Lands Policy 8. Grand County contains many areas with special and unique character. The county supports the special areas identified in the 2008 BLM Resource Management Plan and will participate in considering the designation of and planning for future special areas.

Wilderness

Public Lands Policy 9. The Grand County Wilderness Plan adopted as an amendment to the General Plan in 1995 is the county's policy document for the designation of wilderness on federal lands.

CHAPTER 3: VISION, GOALS AND STRATEGIES

3.2 VISION, GOALS AND STRATEGIES

Special Uses, Events and Activities

Public Lands Policy 10. Work in cooperation with public land-management agencies to permit and promote special uses, events and activities, that support the local economy. Special uses, events and activities should mitigate adverse impacts.

High-Use Areas

Public Lands Policy 11. Promote cooperation with federal and state agencies to identify and implement appropriate management of high-use and special-value areas, including areas such as: Sand Flats, Mill Creek, Potato Salad Hill, the Highway 128 corridor, the Kane Creek corridor, and Moab Rim Trail.

Illegal Dumping

Public Lands Policy 12. Promote cooperation with federal and state agencies and neighboring counties to implement special control measures on public lands where illegal dumping and littering are occurring.

Unsafe Firearm Practices

Public Lands Policy 13. Support creation and maintenance of a public shooting range at an appropriate location in order to encourage firearm safety and minimize safety risks to the public and the environment.

Reintroduction of Species

Public Lands Policy 14. Participate with land management agencies in evaluating the impacts on county residents and businesses of species reintroduction on public lands.

Economic Study

Public Lands Policy 15. Support the BLM and other organizations in conducting a study detailing the economic benefits of recreation on public lands in Grand County.

Dark Night Skies

Public Lands Policy 16. Consult with public land-management agencies to ensure dark skies are not compromised on public lands.

Natural Quiet

Public Lands Policy 17. Encourage public lands agencies to implement measures to ensure natural quiet is not degraded.

Uranium Mill Tailings Remediation Action (UMTRA) Project

Public Lands Policy 18. The county will continue to be an active participant in planning for the future use of the UMTRA site.

Wildfire Management

Public Lands Policy 19. Continue to work with the State of Utah Division of Forestry Fire and State Lands to implement the Wildland Fire Plan and to reduce wildfire hazard of fire in the wildland-urban interface.

Campgrounds

Public Lands Policy 20. Encourage federal land agencies to continue to coordinate with the County on proposed campground development and expansion, specifically for areas within close proximity to Moab.

CHAPTER 4



THE FUTURE LAND USE PLAN

4.1 Introduction

The Future Land Use Plan (FLUP) consists of a map and associated narrative designations that serve as a guide to where and in what development patterns future growth should occur. This critical element of the General Plan is a physical planning tool to help a community arrive at a future of its own making. The FLUP guides decisions about proposed intensities of development, the locations of future commercial and residential development, incentives for land conservation and incentives for affordable housing development. The FLUP is an advisory plan that lays the foundation for making changes to zoning in the future, but it is not zoning or the zoning map.

The FLUP brings together all of the elements of the General Plan. Chapter 2 Economic and Demographic Trend Summary provided information about future needs for housing and economic growth trends as the FLUP was developed. Chapter 5 Fiscal Impact Analysis of Development Patterns also informed the development of the FLUP by showing the relationship between the location of future development and the cost to the county to serve that development with basic infrastructure and services. Together, the FLUP Map and the narrative FLUP Designations provide an additional layer of detail and clarity to guide implementation of Chapter 3 Vision, Goals and Strategies.

Several mapping analyses were prepared to assist the community in developing the FLUP⁶. The Opportunities and Constraints map (Figure 4.11) identifies land attributes such as areas of 30% or greater slopes, 100-year floodplains, state and federally approved water source protection zones, riparian areas, and agricultural lands cover. The water and sewer service areas for the City of Moab and Grand Water and Sewer Service Agency (GWSSA) (Figure 3.3) were mapped as well as the annexation map for the City of Moab (Figure 3.2).

In order to highlight the importance of the Glen Canyon and Castle Valley aquifers to the communities in the county, the General Plan includes a map of the federally designated sole source aquifer boundaries (Figure 3.4).

The Working Group discussed the FLUP maps and narrative designations and made comments and suggestions. The consultant team then developed a “Future Land Use Plan Work-In-Progress” consisting of a map and narrative land use designations and conducted a week-long series of workshops to get input from the three communities in Grand County: Spanish Valley/Moab, Thompson Springs, and Castle Valley. Further refinements to the FLUP map and narrative designations were made following these workshops.

⁶ Mapping data sources include: State of Utah GIS Portal (environmental, infrastructure, parcels, land ownership), Grand County (zoning, county roads), City of Moab (annexation area, municipal boundary, water and sewer lines), Environmental Protection Agency (EPA sole source aquifer designations, State of Utah approved drinking water source protection zones), Bureau of Land Management (wilderness study areas, pending transfers from BLM to State of Utah School and Institutional Trust Lands Administration -SITLA- ownership), and Grand Water and Sewer Service Agency (water and sewer lines).

CHAPTER 4: FUTURE LAND USE PLAN

4.2 OVERVIEW OF THE INCENTIVE-BASED OPEN SPACE CONSERVATION APPROACH

4.2 Incentive-Based Open Space

The 2008 Grand County Land Use Code and zoning map (LUC) establish a base density and associated development rights for all private and State Institutional Land Trust Administration (SITLA) lands in Grand County. The LUC also offers increased density as an incentive for projects that include open space. The FLUP builds on this established conservation program by recommending some changes to the open space incentives, by listing the community's open space priorities and by offering an optional fee-in-lieu of open space for funding the conservation of high priority open space.

Residential Subdivisions/Developments



The FLUP public involvement process showed strong community support for continuing to implement and adapt the incentive-based open space conservation system established in the 2008 LUC. The FLUP land use designations begin with a base density, which is the same as the density allowed under zoning adopted by the county in the LUC. From these base development rights, applicants for future residential developments are encouraged to set-aside open space in order to increase the gross density of the project, giving them the ability to create more development rights. Open space incentives for residential development vary by designation. The open space set-aside and gross density are both calculated according to the area of the development parcel of the proposed subdivision/development.

While the FLUP establishes general community support for the existing conservation system, the FLUP designations suggest some changes. The FLUP encourages larger, more useful open space areas in residential neighborhoods by recommending greater density bonuses in the Rural Residential designation for developments that set aside at least 40 acres for open space.

Conservation Design Subdivision

Non-Residential Development

The FLUP also offers incentives to set-aside open space for developments that require a change from a residential or agricultural use to a commercial use. This applies to the North Corridor Recreation designation that calls for a 25% open space set-aside for changing from a residential or agricultural use to a commercial use. The Range, Resource, and Recreation designation also calls for a 50% open space set-aside for recreation/resort development.

Fee-In-Lieu of Open Space

The FLUP proposes a fee-in-lieu option collected to help fund high-priority open space purchases. Developers would pay the fee instead of setting aside open space in order to earn a density bonus or the right to change from an agricultural or residential use to a commercial use. This approach would result in accessible or publicly valuable open space instead of fragmented parcels throughout the county. The fee amount will need to be established analytically in order to create an attractive incentive in the Grand County market. Once the fee amount is established, the LUC will need to be amended to include the fee-in-lieu option.

Open Space Priorities

During the February 2011 Open Houses, the community prioritized their preferences for various types of open space using key pad polling. These up-to-date priorities, which are included in the FLUP, call for minor



Resort on the Colorado River

CHAPTER 4: FUTURE LAND USE PLAN

4.2 OVERVIEW OF THE INCENTIVE-BASED OPEN SPACE CONSERVATION APPROACH

amendments to the open space standards in the LUC. The priorities list can help determine what areas in a proposed development are acceptable as open space. The priority list can also provide guidance for investing funds collected from the proposed fee-in-lieu. It can also articulate priorities to land conservation entities.

The following list of priorities represent the priority level of each type of open space. The types of open space with the highest priority are encouraged to be set aside first to achieve development incentives, followed by the lower priority types of open space.

#1 Riparian Areas - A riparian area is a plant community contiguous to and affected by rivers, streams, drainage-ways or lakes that supports an ecosystem that is distinct from the surrounding areas not affected by hydrologic features.

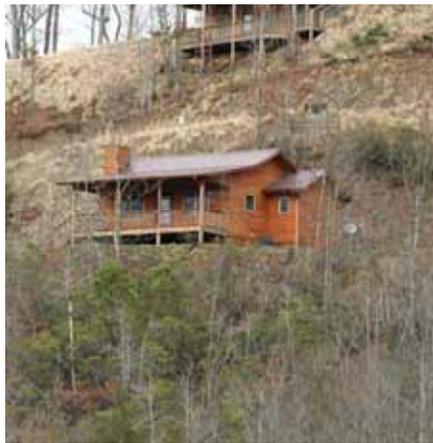
2 100-Year Floodplain – The 100-year floodplain includes any land area along a river, stream, or drainage way that is susceptible to inundation. The 100-year floodplain is an area with a 1% probability of a flood occurring in any given year.

#3 Trail Corridors - Ready access to public lands contributes greatly to quality of life and prosperity in Grand County. Historic routes as well as new opportunities for accessing public lands were identified as a top priority for open space.

#4 Ridgelines – The FLUP focuses on ridgelines viewed from major public rights of way: US Highway 191, State Road 128, Mill Creek Road, Spanish Valley Drive and La Sal Loop Road. Skylines and prominent ridgelines in the foreground that define the natural form of the landscape are the highest priority for protection.



Geological Hazards



Steep Slopes



Ridgelines



Riparian Areas



Historic Sites



Agricultural Lands

Open Space : Types

CHAPTER 4: FUTURE LAND USE PLAN

4.2 OVERVIEW OF THE INCENTIVE-BASED OPEN SPACE CONSERVATION APPROACH

#5 Agricultural Land - Agricultural land uses include the cultivation of plants and raising of animals useful to humans.

#6 Historic or Archeological Sites - Physical evidence of the county's history and pre-historic human settlement.

#7 Geologic Hazard Areas - Geologic hazards include rock-fall, landslides, debris flows, avalanches, expandable/collapsible soils, and unstable slopes.

#8 Steep Slopes - Thirty percent rise over run is the threshold above which slopes are considered steep. Steep slope instability can threaten structures, roads and other development. Cut-fill excavation and construction on steep slopes can also cause visual impacts and scarring.

Lower Priority - Landscaped site elements such as street buffers and landscaped medians are still considered open space, but are of lower importance than other types of open space. The same is true for other significant natural features visible from public roads such as rock outcroppings, meadows or fields, and mature trees.

4.3 Incentive-Based Affordable Housing

The 2009 Grand County and City of Moab Housing Study and Affordable Housing Plan is the guiding document for affordable housing (Housing Plan). The Future Land Use Plan supports the Housing Plan by clarifying public support for the existing program in the LUC that offers incentives to build affordable housing in exchange for higher levels of residential density. From the base development rights, residential development applicants are encouraged to develop a portion of the units as affordable housing in order to increase the gross density of the project, giving them the ability to create more development rights. Residential density bonus incentives for including affordable housing vary by designation. In exchange for additional density, developers are required to develop a percentage of the total units as affordable housing according to the county's adopted parameters for determining and maintaining affordability.

A significant change called for by the FLUP is that developers are offered an option of paying a fee-in-lieu of these voluntarily-built affordable housing units. The county would collect the fees and use the revenue to help support affordable housing developments and/or programs. The fee amount will need to be established analytically in order to create an attractive incentive in the Grand County market. Once the fee amount is established, the LUC will need to be revised to include the fee-in-lieu option.

Setting incentives for affordable housing is very complex and most programs require frequent adjustments to the incentives. This system needs to be monitored as the housing market recovers from the 2008-2009 recession and evaluated for necessary changes. If the county amends the LUC to include the affordability and income parameters outlined in the Housing Plan, the incentives are also likely to need adjustment. Replacing the current LUC affordability and income eligibility standards with the standards proposed in the Housing Plan would result in lower priced units defined as 'affordable' because the proposed standards target lower income brackets than those in the currently adopted LUC. If these changes are made, maintaining an effective program will require a greater density bonus to make up for the lower price of affordable housing. Careful monitoring and adjustment of the affordable housing incentive program is an important objective in coming years.



Senior Housing in Moab

CHAPTER 4: FUTURE LAND USE PLAN

4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP

4.4 Future Land Use Plan Designations and Map

FLUP designations are intended to give broad direction and set general parameters for the density and uses of private and SITLA lands in the future. FLUP designations are only referenced when a new project application for development is submitted to the county. Implementation of these designations would not affect existing or vested uses.

FLUP designations integrate the underlying zoning districts adopted in the 2008 Land Use Code. The adopted zoning sets the parameters for the density, location and use of land in the unincorporated county. FLUP designations build on the densities and uses allowed under the currently adopted zoning. The FLUP Designation Summaries (Figures 4.1-4.3) provide an abridged explanation of the designations.

Figure 4.1 - FLUP Designation Summary: Compact Housing Near Moab and Rural Development Patterns Further Out.

Designation	Parameters
Residential Infill	Single family residential: two units per acre base density and up to 3.2 dwelling units per acre with a 50% open-space set-aside or fee-in-lieu of open space and 25% affordable housing or fee-in-lieu. Multi family residential: up to 18 dwelling units per acre with a 50% open-space set-aside or fee-in-lieu of open space and 25% affordable housing units or fee-in-lieu.
Transition Residential	Single family residential: two units per acre base density and up to 3.2 dwelling units per acre with a 50% open-space set-aside or fee in lieu of open space and 25% affordable housing units or fee-in-lieu.
Rural Residential	Single-family residential: one dwelling unit per acre base density and up to 1.6 dwelling units per acre with a 50% open-space set-aside or fee in lieu and 25% affordable housing units or fee-in-lieu. Up to 2 units per acre for developments that include (a) a 50% open space set-aside area totaling 40 or more contiguous acres or a fee-in-lieu, (b) has 25% affordable housing units or a fee-in-lieu, and (c) includes multi-modal options (pedestrian/bicycle, at minimum).
Range, Resource, and Recreation	Residential densities range from one dwelling per five acres up to one dwelling per three acres with a 50% open-space set-aside or fee-in-lieu and 25% affordable housing units or fee-in-lieu. In addition to residential uses this designation includes recreation/resort development, agriculture and development/extraction of natural resources.

CHAPTER 4: FUTURE LAND USE PLAN

4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP

Figure 4.2 - FLUP Designation Summary: Opportunities for Economic Vitality

Designation	Parameters
Rural Center	Ranges in size from 5 to 30 acres and includes neighborhood scale retail, small businesses, local commercial, local tourism, on-site renewable energy and residential neighborhoods. Residential density of up to 3.2 units per acre if it includes (a) 50% open space set-aside area or fee-in-lieu, (b) 25% affordable housing units or a fee-in-lieu, (c) multi-modal options (pedestrian/bicycle, at minimum), and (d) no more than one-half of the total dwelling units are multi-family.
North Corridor Recreation	Nodes of tourism-oriented, resort commercial development, rural density residential development with sensitivity to scenic resources. Residential densities range from one dwelling per five acres up to one dwelling per three acres with a 50% open-space set-aside or fee-in-lieu and 25% affordable housing units or fee-in-lieu.
Industry Resource	Economic development opportunities for commercial and industrial land uses and renewable and conventional energy development.
Highway Mixed Use	A highly accessible and visible land base for business in the unincorporated county.
General Business	A wide variety of service, sales, and hospitality establishments serving residents, tourists, and other businesses including the possibility for residential upstairs.
Business Park/Light Industrial	Employment-generating activities including light industrial, light manufacturing, business park, small businesses, renewable energy production, and institutional/civic uses that serve the region.

Figure 4.3 - FLUP Designation Summary: Resource Overlays

Scenic Corridor Overlay	Corridors along major highways with high scenic value and areas visible from high use areas in arches national park where site and structure design standards may be applied to minimize impact on scenic resources.
Ridgeline Protection Overlay	Area where new structures, buildings, fences, or walls are to be located so that they do not visually disrupt ridgelines as seen from specific public roads in Spanish Valley.
Public Drinking Water Source Protection Zones	Drinking water source protection zones referenced in approved water source protection plans approved under the State of Utah's Drinking Water Source Protection program.

Compact Housing Near Moab and Rural Development Patterns Further Out

The first four land use designations and the FLUP map work together toward the broadly-supported community goal to achieve a compact community where people live near their jobs, shopping and services. These designations combined with the Future Land Use Plan Map call for urban density neighborhoods, including multi-family housing near Moab with tiers of decreasing density for single-family neighborhoods to the county line.

Proximity between people, goods, and services encourages the use of pedestrian and bike connections for day-to-day activities, thereby reducing both the number and length of vehicle trips. Not only does this reduction in driving save energy, reduce air pollution, and promote healthy lifestyles, but it also saves the county money. Chapter 5 Fiscal Impact of Development Patterns shows that compact development patterns reduce commutes on county roads and save the county money on roads and law enforcement. One additional benefit of a compact development pattern is that higher density housing, especially multifamily housing, tends to be more affordable than lower density single-family housing.

Policies supporting compact development patterns in Grand County date back to the sub-area plans adopted between 1998 and 2003 (Spanish Valley Drive/Mill Creek Drive, Highway 191 North Corridor, North Gateway - all replaced by this GP update). The 2008 LUC implemented the base densities and other components of these sub-area plans.

CHAPTER 4: FUTURE LAND USE PLAN

4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP



Figure 4.4- Residential Infill

Established Residential Subdivision in Spanish Valley

In addition to the changes to the open space and affordable housing incentives in the LUC described in the previous sections, the FLUP suggest some changes to the development pattern. The area between the City of Moab's pending annexation southwest of the Mill Creek Drive - US Highway 191 intersection and the existing city boundary is designated in the FLUP map as Residential Infill (Figure 4.4). The 2008 LUC Rural Residential zone district for this area promotes a rural development pattern with a base density of one dwelling unit per acre. This area lies between the existing City of Moab boundaries and the pending annexation area, so increased density would result in a compact development pattern with people living close to Moab.

Residential Infill

This designation encourages housing near Moab (Figure 4.4 and 4.12). The residential infill area includes a mixture of single-family residential (two units per acre base density and up to 3.2 dwelling units per acre with a 50% open-space set-aside or fee-in-lieu of open space and 25% affordable housing units or fee-in-lieu) and multifamily residential development (up to 18 dwelling units per acre with a 50% open-space set-aside or fee-in-lieu of open space and 25% affordable housing units or fee-in-lieu).

Transition Residential

This single-family residential designation is intended to provide a transition from the Residential Infill designation to the Rural Residential designation (two units per acre base density and up to 3.2 dwelling units per acre with a 50% open-space set-aside or fee in lieu of open space and 25% affordable housing units or fee-in-lieu). See Figure 4.12.

Rural Residential

This designation accommodates agriculture and single-family residential uses (1 dwelling unit per acre base density and up to 1.6 dwelling units per acre with a 50% open-space set-aside or fee in lieu and 25% affordable housing units or fee-in-lieu). In order to encourage larger open space parcels that are valued by the community, a project in Rural Residential can achieve a gross density of up to 2 units per acre that includes (a) a 50% open space set-aside area totaling 40 or more contiguous acres or a fee-in-lieu, (b) has 25% affordable housing units or a fee-in-lieu, and (c) includes multi-modal options (pedestrian/bicycle, at minimum). See Figure 4.12.

Range, Resource, and Recreation

Dispersed pockets of private land and SITLA lands create a patchwork across the recreation landscape and contain a broad range of resources and are encouraged to be used to generate livelihoods and contribute assets to the community (figure 4.13-4.15). Residential densities range from one dwelling per five acres up to one dwelling per three acres with a 50% open-space set-aside or fee-in-lieu and 25% affordable housing units or fee-in-lieu. Recreation/resort development can create opportunities that align with the backcountry, recreational setting and economy and is therefore included in this designation. Livestock operations and other types of agriculture are a critical link between the economy, the culture and the land so this designation encourages the use of land for agriculture. This designation covers areas with

CHAPTER 4: FUTURE LAND USE PLAN

4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP

underlying mineral property rights and therefore includes development/extraction of natural resources subject to review.

Opportunities for Economic Vitality

The planning process showed strong support for diversifying and expanding the economy. The vision, goals and strategies (Chapter 3) list a range of actions the county can take to help build a sustainable economy. A top priority is to ensure that the FLUP allows opportunities for businesses and organizations to locate, relocate, or expand in the unincorporated county. The following six land use designations combined with the Future Land Use Plan map work together to lay the groundwork for opportunities for economic growth.

The Highway Mixed Use, General Business, and Industrial/Light Industrial designations generally align with the underlying zoning in the 2008 LUC. The concepts in the underlying zoning districts are expanded upon in the designations with purpose statements, context about each designation's role in the community and considerations for interfacing with adjacent neighborhoods.

Rural Center, North Corridor Recreation and Industry Resource encourage changes to the existing zoning and development patterns in order to create opportunities for economic activity. While economic diversification and growth are well-supported by the community, they should not adversely impact community assets, such as scenic resources. To protect scenery and other important resources, these designations also provide incentives for open space conservation.

Rural Center

These can be existing rural centers, or new centers, which typically have public gathering places or community facilities with a mix of land uses associated with them, such as neighborhood scale retail, small businesses, local commercial, local tourism, on-site renewable energy and residential neighborhoods with a diversity of housing types. The total developed area of a new rural center ranges in size from 5 to 30 acres and non-residential elements cover no more than 10 acres. Rural Centers should be located within a travel distance of a half-mile of state or federal highways or municipal streets to minimize travel on county roads.

The residential component of a project in a Rural Center has a base gross density equal to the base density of the underlying zoning in the 2008 LUC but can achieve up to 3.2 units per acre if it includes (a) 50% open space set-aside area or fee-in-lieu, (b) 25% affordable housing units or a fee-in-lieu, (c) multi-modal options (pedestrian/bicycle, at minimum), and (d) no more than one-half of the total dwelling units are multi-family.

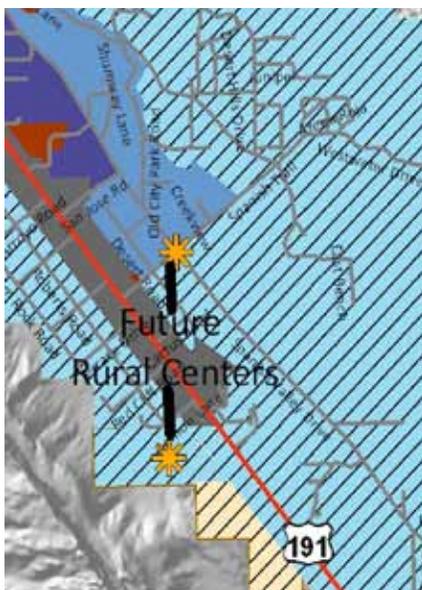


Figure 4.5- Future Rural Centers

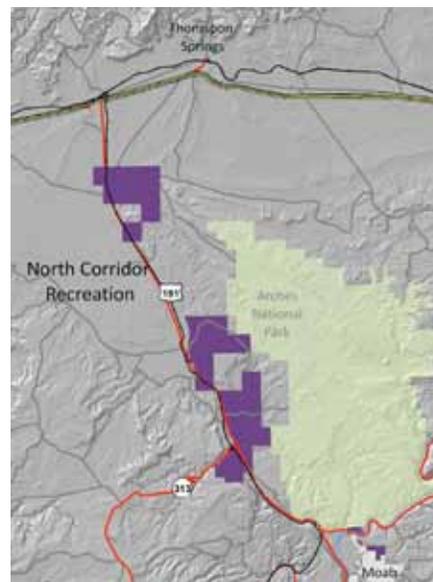


Figure 4.6- North Corridor Recreation

CHAPTER 4: FUTURE LAND USE PLAN

4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP

There are three rural centers proposed in the FLUP: Thompson Springs, an existing rural center, and two future rural centers, one in the vicinity of the intersection of Spanish Valley Drive and Spanish Trail Road and another near Lemon Lane (Figures 4.5 and 4.13-4.15). These new rural centers arose from the input gathered during the Future Land Use workshops in May 2011 (see Chapter 1, Section 1.3 Community Involvement for details on these workshops).

North Corridor Recreation

This designation encourages nodes of tourism-oriented, resort commercial development, rural density residential development and viable livestock grazing and natural resource development on the private and state lands along US 191 north of Moab and near the north entrance to Moab (Figures 4.6, 4.14 and 4.15). New commercial development requires an open space set-aside of at least 25%. Scenic resources are protected in new developments along this corridor traveled by visitors accessing Moab, the Spanish Valley, Arches, Canyonlands National Park, and millions of acres of other public lands (see scenic corridor overlay). While this designation emphasizes the protection of scenic resources it does not call for limitations on uses allowed under the zoning adopted in the 2008 Land Use Code, including natural resource development.

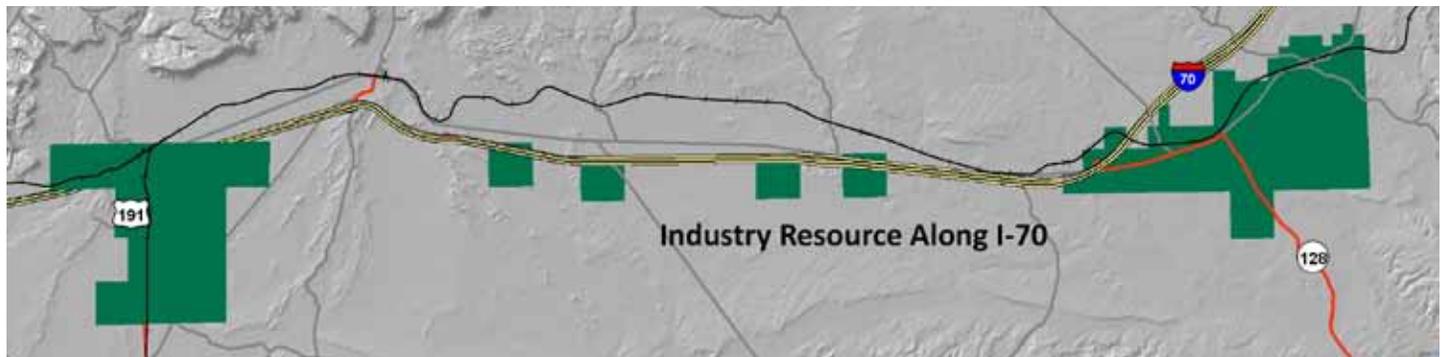


Figure 4.7- Transportation Resource along I-70

Industry Resource

Active railways, Interstate 70, US Highway 191 and the airport present economic development opportunities for commercial and industrial land uses and renewable and conventional energy development (Figures 4.7 and 4.14). This designation is focused in areas of private and SITLA lands that are accessible by major components of the transportation system. Water is scarce and the electrical infrastructure has capacity limits or is absent in most areas with this designation, so infrastructure investments will be necessary for most development projects to be possible.

Highway Mixed Use

The highway mixed use corridor is an integral component of the economy providing a highly accessible and visible land base for business in the unincorporated county (Figures 4.8 and 4.15). The historic mixed use pattern along US 191 South of Moab is comprised of businesses that depend on highways for customers as well as mixed use businesses that may or may not depend on highway traffic for customers but need easily accessible, large commercial lots with sewer



Commercial Development along US 191 south of Moab

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4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP



Figure 4.8- Highway Mix-Use

and water. Limitations on retail uses in this designation direct sales tax generating activities into Moab or rural centers while maintaining the mixed use land base and avoiding a retail strip development pattern.

The highway mixed use corridor abuts mostly residential property, meaning that the industrial uses are limited to those that are not a nuisance to residents with more intensive uses subject to land use review.

Because the corridor is a prominent entrance to Moab, it is important to balance the flexibility of a mixed use land base with the need to improve the appearances of this gateway. Standards for screening, landscaping, earth tone colors, and non-reflective materials should be applied to new development and major additions/redevelopment.

General Business

This designation encourages mixed use with a wide variety of service, sales, and hospitality establishments serving residents, tourists, and other businesses while also including opportunities for businesses to produce and distribute goods (Figure 4.15). Retail sales establishments are unlimited except for those that require a large land base relative to their output (such as a tree nursery). Because this designation sometimes abuts residential neighborhoods and includes residential upstairs of commercial, manufacturing and other intensive uses are limited to those that are not a nuisance to residents and are subject to land use review.

Business Park/Light Industrial

This designation should be used to mark the location for future opportunities of employment-generating activities including light industrial, light manufacturing, business park, small businesses, renewable energy production, and institutional/civic uses that serve the region. Typically this designation will range from 20 to 100 acres. The Future Land Use Plan does not include areas designated as Business Park/Light Industrial, but this designation may be utilized in future land use code and General Plan amendments.

Scenic Resource Protection

Because the scenery and natural environment are such critical components of the economy and quality of life, residents and business owners strongly support land use standards that protect scenic resources. Policies for scenic resource protection date back to existing sub area plans adopted between 1998 and 2003 (Spanish Valley Drive/Mill Creek Drive, Highway 191 North Corridor, North Gateway). The 2008 LUC implements these policies with narrative standards but



Fisher Towers seen from SH 128

CHAPTER 4: FUTURE LAND USE PLAN

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does not provide overlay mapping. The FLUP consolidates and clarifies the long-standing policies for scenic resource protection in these narrative designations and the overlay mapping in the FLUP map.

Scenic Corridor Overlay

These are corridors along major highways with high scenic value and areas visible from high use areas in Arches National Park (Figures 4.13-4.15). In order to protect the natural appearance of the open desert and canyon walls and the visibility of the night sky, design guidelines should be adopted within the overlay that consider site design, building heights, parking areas, visual buffers, setbacks, lighting, and signage. Design guidelines should also direct that building color, building design, and exterior materials are compatible with the heritage of the area and exhibit unity of form across buildings. New development is to be designed/sited so that new structures, walls, and fences do not visually disrupt ridgelines as seen from the public road defining the corridor. Development in scenic corridors is to be sited and designed to protect critical attributes. Design guidelines in the scenic corridor overlay should apply to all new developments, other than agricultural uses and single-family development on previously approved parcels or lots. Scenic corridors encompass visible property up to two miles perpendicular from the public road defining the corridor.

River Road Corridor

The River Road Corridor, extending along the length of SH 128, has unique characteristics requiring additional planning guidance. In 1998 the County underwent an extensive planning process and developed The River Road Corridor Plan. Many of the policies outlined in the 1998 River Road Corridor Plan have been implemented in the 2008 Land Use Code and the FLUP.

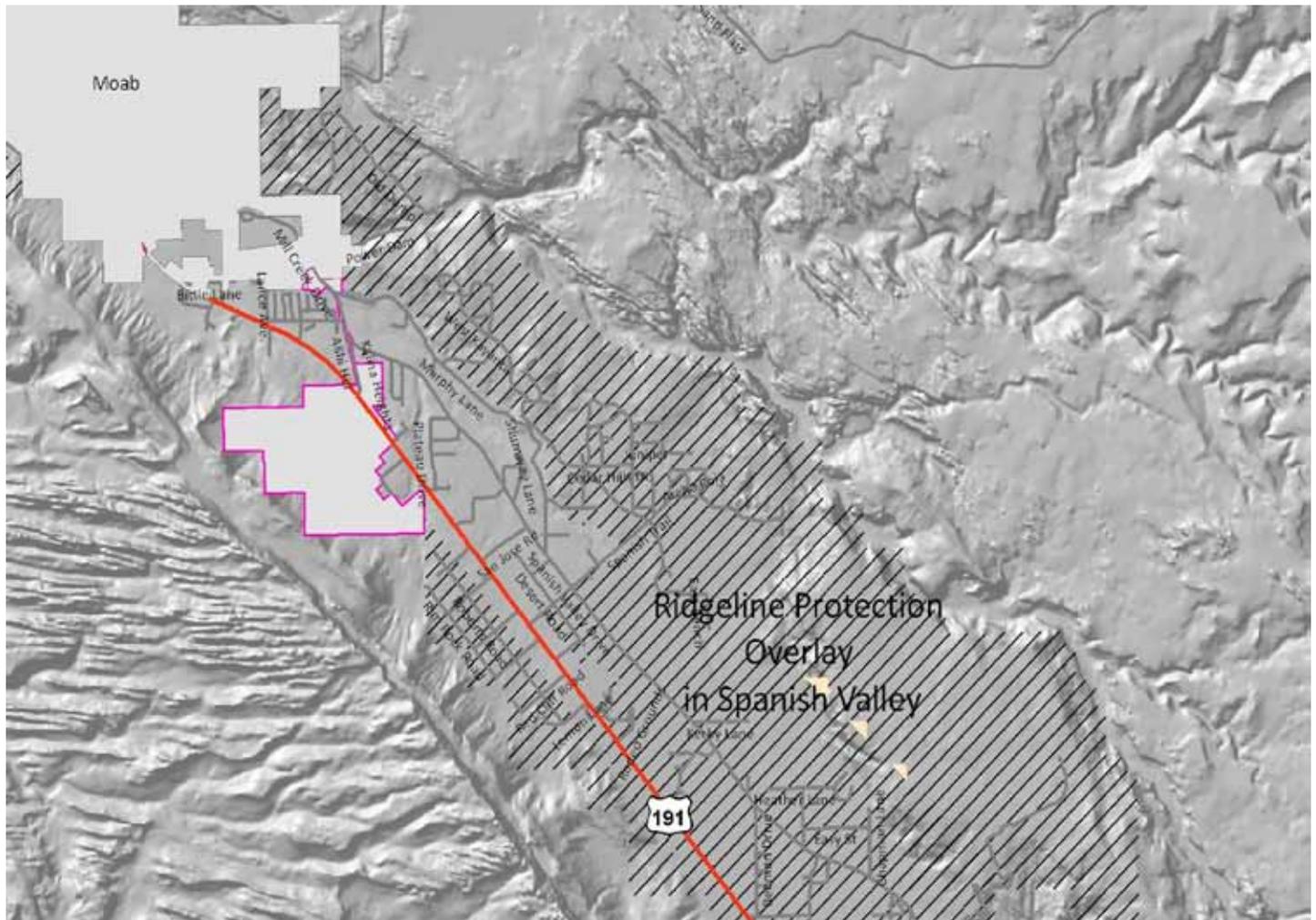


Figure 4.9- Ridgeline Protection Overlay in Spanish Valley

CHAPTER 4: FUTURE LAND USE PLAN

4.4 FUTURE LAND USE PLAN DESIGNATIONS AND MAP

Additional considerations unique to the river road corridor include the following:

- Cluster new development as necessary to protect critical canyon attributes, such as: agricultural fields, roadless areas, 100-year floodplain areas, wildlife and wildlife habitats, native vegetation, the clear night sky, and the natural appearance of steep slopes.
- Principal land uses in the River Road Corridor are to continue to be agriculture, ranching, grazing, and low density residential.
- Low impact commercial development may be appropriate where it can be demonstrated that the impacts of such development are no greater than the residential uses that would otherwise be allowed (see Range, Resource, Recreation FLUP Designation above). Commercial development should reflect the unique character of the corridor and should not be duplicative of services offered elsewhere in the County.
- Additional campgrounds and/or campground expansion is discouraged.
- Proposed uses should not generate excessive traffic. Traffic generation can be evaluated against that of single family development in the RG zone district.
- The tree canopy along the Colorado River is a unique resource and deserves special protection.
- Wildlife habitat should be protected to the extent possible as property is developed.
- Consider establishing a minimum setback for development from the Colorado River.
- Continue to work with UDOT to: improve the SH 128 roadway and its intersections, and to apply for grants or budget funds to further extend the bike lane / path from the 128/191 intersection.
- Avoid changes to SR128 that would significantly increase speeds or change its character as a two-lane moderate speed, winding highway.
- Promote non-native plant removal and river corridor restoration.
- Consult with the Division of Wildlife Resources to protect wildlife from the impacts of new development.
- Support efforts to enhance native fisheries.
- Consider reinstating mandatory PUD requirements in the Range Grazing zone district.

Ridgeline Protection Overlay

New structures, buildings, fences, or walls located within two miles and visible from US Highway 191, State Road 128, Mill Creek Road and Spanish Valley Drive are to be located so that they do not visually disrupt ridgelines as seen from these public roads (Figures 4.9 and 4.15).

Public Drinking Water Source Protection Overlay

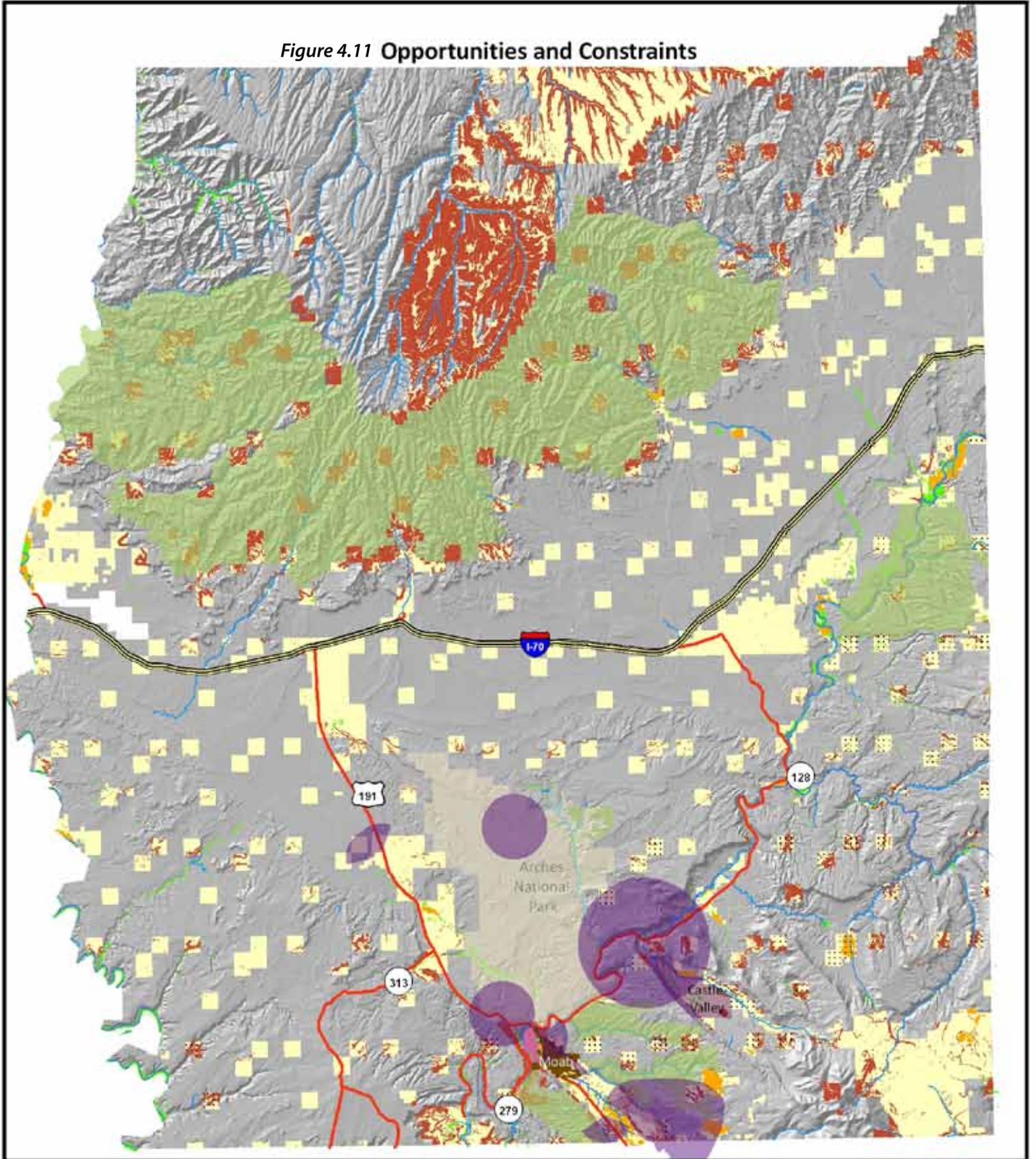
The Opportunities and Constraints maps (Figures 4.11 and 4.12) delineate the drinking water source protection zones referenced in water source protection plans approved under the State of Utah's Drinking Water Source Protection program. The purpose of this state-local government cooperative program is to protect public drinking water systems from accidental contamination. Goals and strategies regarding the protection of drinking water call for LUC and Zoning Map amendments to help implement approved water source protection plans (Chapter 3, Vision: Ecology, Water, and Air, Goals 1 and 2). See Figure 5.20 for a list of public water sources that have state approved water source protection zones.



The Town of Castle Valley, although it is a public water provider charged with administering water rights in the town boundaries, is dependent on private groundwater wells. As a result, the town does not currently qualify for source water protection under the state's Drinking Water Source Protection Program.

Figure 4.10- Water Source Protection Zones

Figure 4.11 Opportunities and Constraints



- | | | |
|--|---|--|
|  Lakes, streams, and rivers |  Riparian habitat |  Slopes Greater than 30% |
|  Floodplain |  Water source protection zones |  Agriculture |



- | |
|--|
|  Federal Lands |
|  Private and School and Institutional Trust Lands (SITLA) |
|  Pending SITLA Transfer to BLM |
|  BLM Wilderness Study Areas |
|  Matheson Preserve |

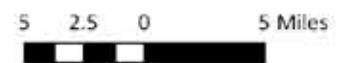
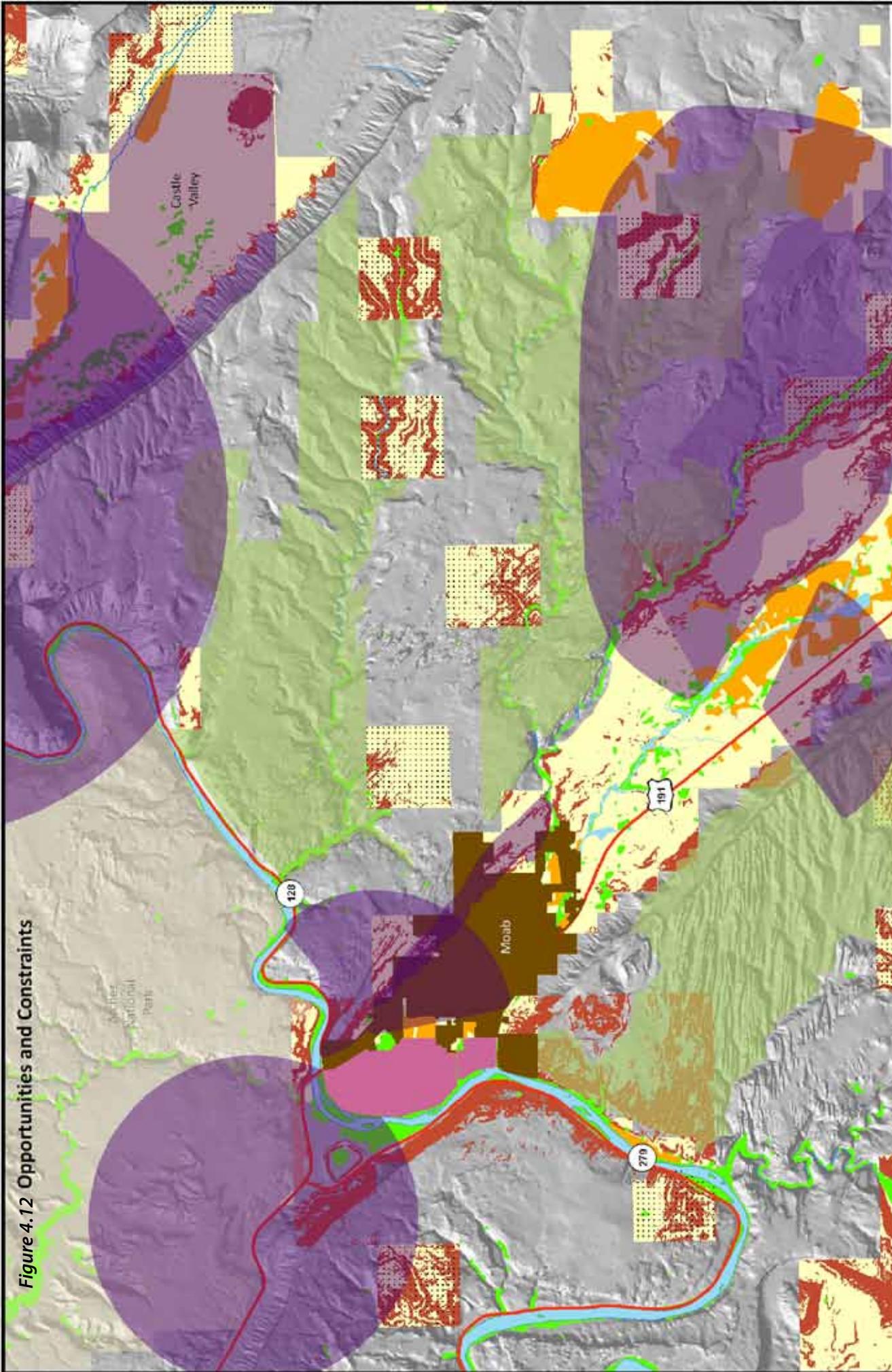
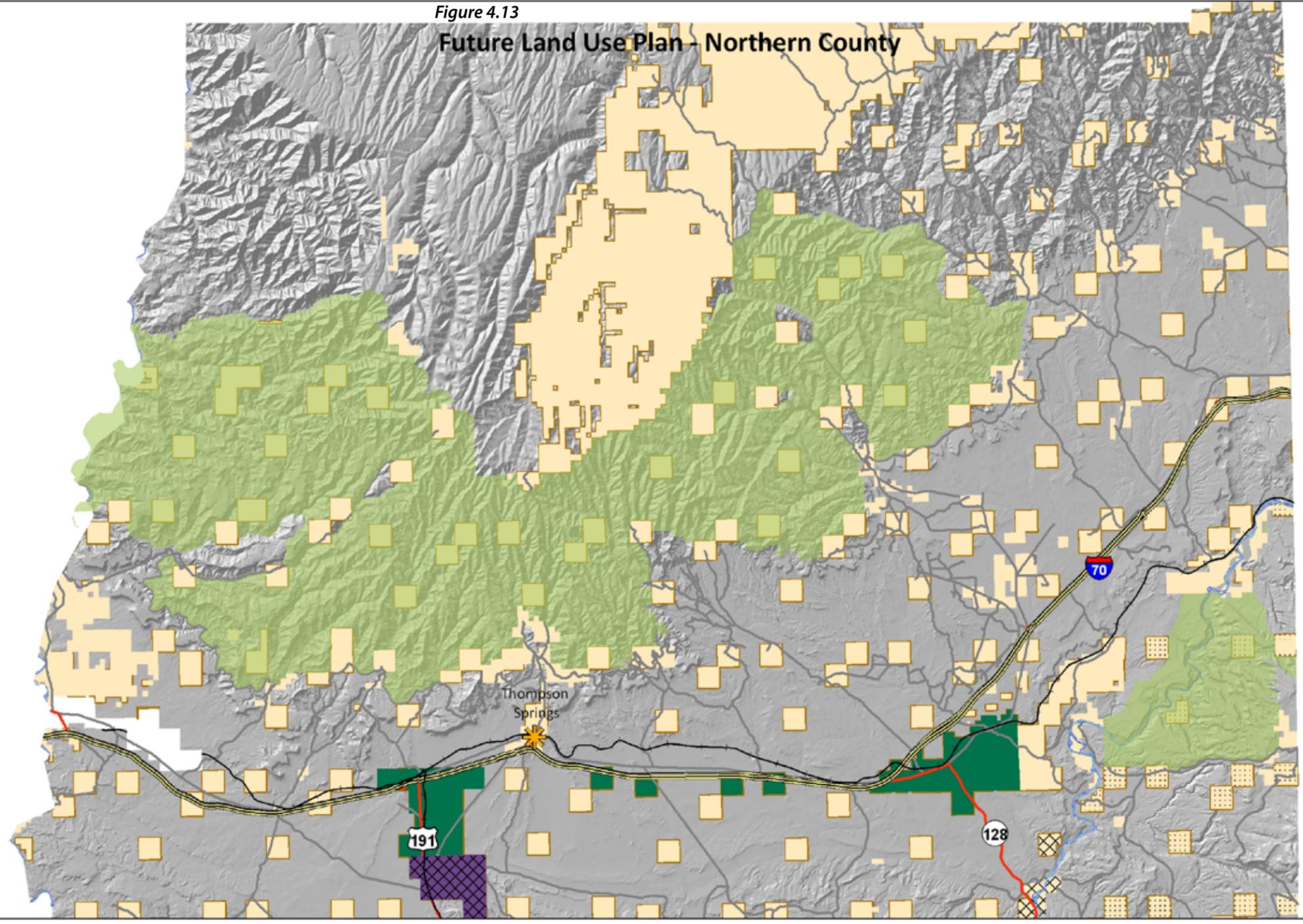


Figure 4.12 Opportunities and Constraints



- Lakes, streams, and rivers
- Floodplain
- Riparian habitat
- Water source protection zones
- Agriculture
- Slopes Greater than 30%
- Federal Lands
- Private and School and Institutional Trust Lands (SITLA)
- BLM Wilderness Study Areas
- Matheson Preserve
- Pending SITLA Transfer to BLM

Figure 4.13
Future Land Use Plan - Northern County



Future Land Use Plan Designations

General Business	North Corridor Recreation	Residential Infill	Rural Residential	Rural Center	Ridgeline Protection
Highway Mixed Use	Industry Resource	Transition Residential	Range, Resource, and Recreation	Scenic Corridor	
I-70	State Land Trust	Pending SITLA Transfer to BLM			
Highways	Federal Lands	BLM Wilderness Study Areas			
Local Roads	Railroad				

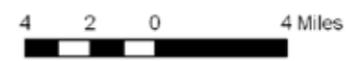
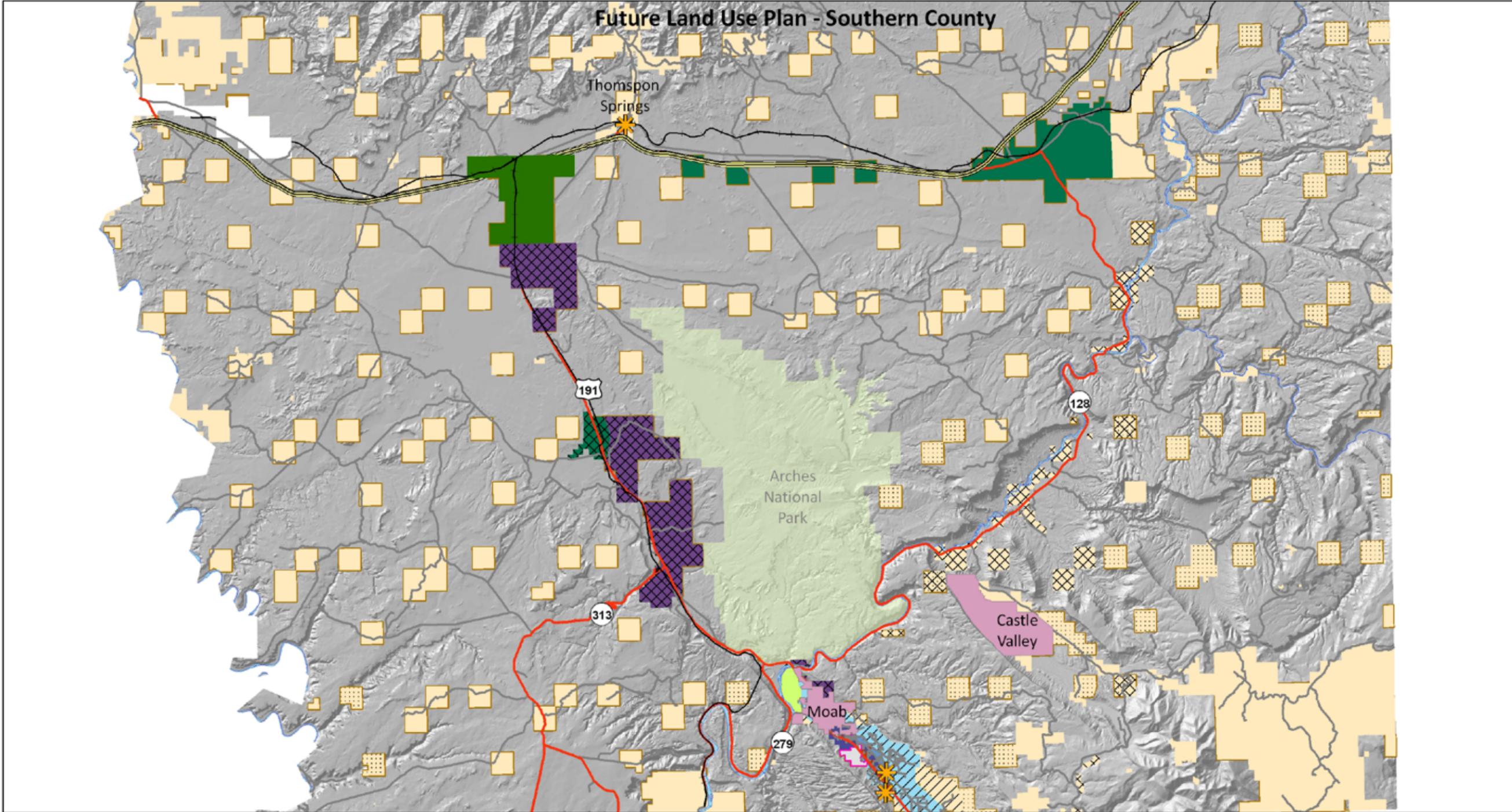


Figure 4.14

Future Land Use Plan - Southern County



Future Land Use Plan Designations

- | | | | | | |
|-------------------|---------------------------|-------------------------------|---------------------------------|-----------------|----------------------|
| General Business | North Corridor Recreation | Residential Infill | Rural Residential | Rural Center | Ridgeline Protection |
| Highway Mixed Use | Industry Resource | Transition Residential | Range, Resource, and Recreation | Scenic Corridor | |
| I-70 | State Land Trust | Matheson Preserve | | | |
| Highways | Municipalities | Pending SITLA Transfer to BLM | | | |
| Local Roads | Railroad | Federal Land | | | |

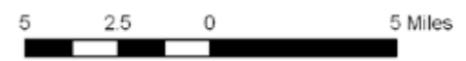
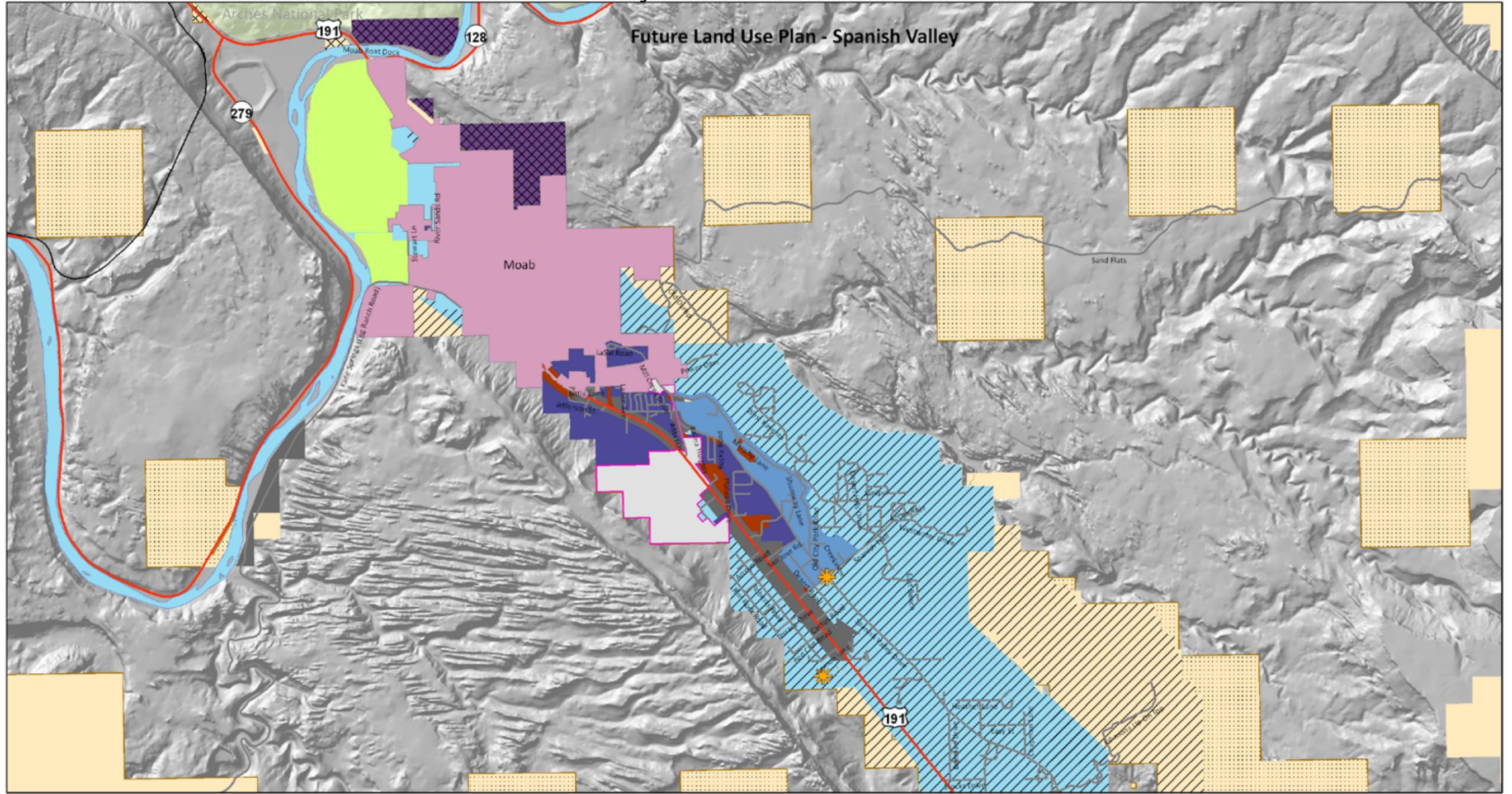


Figure 4.15

Future Land Use Plan - Spanish Valley



Future Land Use Plan Designations

- | | | | | | |
|-------------------|---------------------------|------------------------|---------------------------------|--------------|----------------------|
| General Business | North Corridor Recreation | Residential Infill | Rural Residential | Rural Center | Ridgeline Protection |
| Highway Mixed Use | Industry Resource | Transition Residential | Range, Resource, and Recreation | Rural Center | Scenic Corridor |

- | | | |
|-------------|------------------|-------------------------------|
| I-70 | State Land Trust | Matheson Preserve |
| Highways | Federal Lands | Pending SITLA Transfer to BLM |
| Local Roads | Railroad | Pending Annexation |



CHAPTER 5



FISCAL IMPACT OF DEVELOPMENT PATTERNS

5.1 Introduction

Purpose

This chapter was released early in December of 2010 as a stand-alone report and provided important background information to participants in the development of the FLUP. This background material is included in the General Plan document to provide the same information for readers. The central focus of this chapter is to show the relationship between the location of future residential development and the cost to the county to serve that development with basic infrastructure and services. This chapter was not used directly by the consulting team to develop elements of the FLUP, but instead was used to inform community dialogue leading to the development of the FLUP. In order to further inform the county's fiscal policy, this report includes general information on critical public services not provided by county government: water, sewer, and fire protection.

County revenues are derived from property tax, state/federally disbursed revenues (payment in lieu of taxes, mineral lease revenues, grants, transportation funding) and fees for services and fines. This chapter does not include analysis of revenues because the primary focus is on the relationship between costs to the county and development patterns.

Key Findings of this Chapter

The central finding from this analysis is that a compact development pattern, with housing closer to towns and highways, is far more efficient to serve than dispersed development patterns. Each home in the county generates more or less Vehicle Miles Traveled (VMT) largely based on its location. Residents located further from towns and highways drive further on county roads for each trip to work, the grocery store, and other destinations in the community. Because demand for county roads is generated by driving, houses that generate more VMT on county roads have higher costs. A future development pattern that concentrates growth near municipalities and within primary transportation corridors will cost less to provide with county roads than dispersed development and will save the county money.

Other Public Service and Facility Information Contained in this Chapter

This analysis also compares Grand County's level of service to other jurisdictions. A comparison of Grand County annual operations expenditures with several comparable Colorado and Utah Counties shows that Grand County provides a relatively high level of service. Total per capita expenditures show that Grand County offers a higher level of service than many of its peer communities.

To check how Grand County development fees compare to those in other communities, RPI conducted a 16 community survey of development fees (see figure 5.18) and found that Grand County sits in-the-middle between higher fees totaling more than \$20,000 and lower fees totaling just over \$4,000. The fee comparison includes roads, water and sewer (GWSSA fees), storm water drainage, parks, fire, and police. Approximately 70 percent of the fees for developing in Grand County are GWSSA fees for water and sewer connections.

In order to further inform the existing array of public services, the chapter also includes general descriptions of important services in the county that are provided by other entities: water, sewer and the fire protection. This chapter also includes a brief literature review describing the water supply and outlines threats to the water supply and efforts to protect it.

CHAPTER 5: FISCAL IMPACT OF DEVELOPMENT PATTERNS

5.2 COUNTY DEPARTMENTS LEVEL OF SERVICE ANALYSIS

5.2 County Departments Level of Service Analysis

A simple analogy serves to illustrate the concept of level of service. Suppose that you entered a restaurant with a small kitchen, two tables, and two waiters; you sit at one of the tables and begin dinner. You would expect, given the ratio of waiters to tables for the service to be good. Now consider that you enter the same restaurant a week later, with the same kitchen and the same two waiters, to discover that they have added one hundred additional tables and that the restaurant is packed with people. Certainly, after having been seated, you would expect a significantly decreased level of service from the two waiters. Of course, the same happens with the provision of government services and infrastructure. If new growth is not accounted for in police, streets, fire, health, sewer and a host of other services while population is being added, we should expect to see a decrease in our overall level of service. Meaning, that perhaps we are stuck in traffic more often, our parks are more crowded, we must wait weeks to see a doctor, or that our water use is limited to certain times of day.

Level of service also allows the community to see where it stands in relation to other communities or even against national standards. It is a measuring stick from which the community can decide to increase or decrease its existing service. For example, suppose your community has law enforcement service that is higher than the national standard, but your open space system is less than that of other similar sized communities. You may decide to de-emphasize funding priorities for law enforcement and instead focus on growing the open space system, while imposing a fee structure that ensures that new growth and development will not degrade the law enforcement that you currently have.

Quantifying local government services levels requires analyzing annual departmental spending, development inventories and the relative quantities of residential vs. non-residential development. Using information obtained from the county and the State of Utah, it is possible to calculate level of service using a housing unit as the baseline unit of measurement.

Operational Expenditures

Annual expenditure figures were obtained from the 2008 and 2009 Grand County financial audits. The audits provide spending levels for all departments and are organized into the following core services: general government, public safety, road and bridge, and social services (services or financial resources dedicated towards programs advocating for victims of crime, youth services, affordable housing, health services and senior citizen services). Capital outlays are removed from total expenditures to isolate operational spending.

Proportionate Share Calculations

Because county services benefit both residential development and commercial development, it would be inequitable to attribute all spending to the residential sector. To account for this, a proportionate share calculation factor was employed to eliminate expenditures related to the commercial sector. Proportionate share only applies to the general government and public safety departments. Calculation of proportionate share for these county functions was based on property valuation figures obtained from the Grand County Assessor. Property values represent the relative quantity and intensity of land uses in the county and constitute an objective measure for determining the relative share of impacts arising from activities on residential vs. non-residential land uses. Road and bridge service levels were measured according to land use traffic generation by residential vs. non-residential land uses, which are measured using average daily trips. All demand for social services is assumed to originate from the residential sector and all costs are attributed to housing units because demand for social services is directly related to the number of people who reside in the area. Visitors and workers who live in other counties are unlikely to contribute to the demand for county social services.

Housing Unit Estimate Methodology

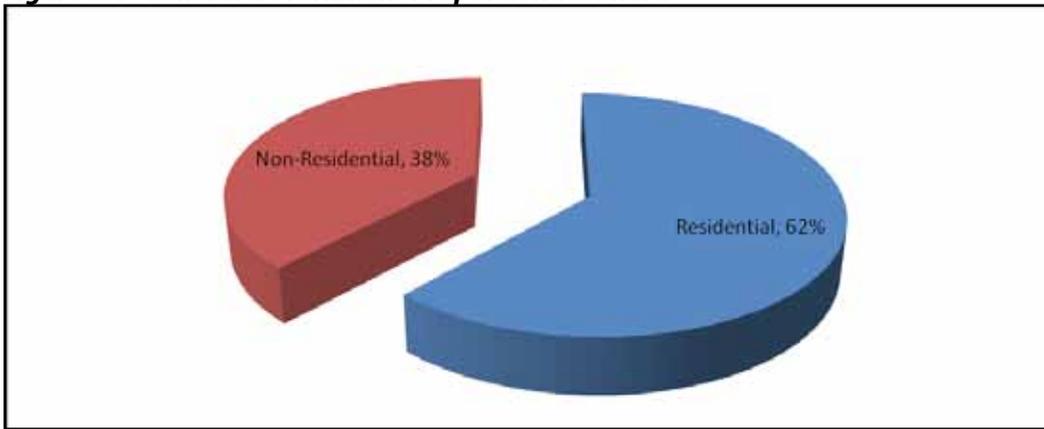
The housing unit inventory was estimated using State of Utah Department of Demographic and Economic Analysis population estimates for Grand County, Moab and Castle Valley, and figures from the 2000 and 2010 Census. The Census shows that there are 2.1 residents per housing unit in Grand County; this is down from 1990 when there were 2.2 residents per housing unit, reflecting the increase in second home ownership.

Because services provided by public safety and the road and bridge departments primarily benefit residents of the unincorporated regions of the county, it was necessary to calculate the number of housing units that are located outside of the incorporated towns. Over the past two decades, on average, 48% of the population has resided in the unincorporated areas. This report estimates that in 2010, there were a total of 4,776 housing units in Grand County, 2,016 of which were in the unincorporated regions.

General Government

General government includes offices such as clerk, assessor, attorney and district court. Because these departments provide services to development within the city limits as well as in the unincorporated regions, entire county housing unit counts including municipalities and proportionate share ratios were applied. The residential proportionate share of the impact on general government is 62%, and the annual operational expenditures average \$3.1 million dollars annually (Figure 5.1). The combined general government departments annually spend \$429 per residential unit (Figure 5.2).

Figure 5.1- General Government Proportionate Share



Source: Assessor Data

Figure 5.2- General Government Operational Level of Service (LOS)

	2008	2009
Total Operational Expenditures	\$3,244,169	\$2,996,587
Residential Sector Expenditures	\$2,006,941	\$1,853,779
Residential Units (Total County)	4,465	4,545
Per Unit Expenditures	\$449	\$408
Average Annual Per Unit	\$429	

Source: 2008-2009 Audits, Housing Unit Estimate

Public Safety

The public safety departments include the sheriff's department, the jail, and emergency management. In the areas served by the county's public safety departments, the residential proportionate share of the impact on public safety is 71%. Because Moab has a police force, the calculations included only properties in Castle Valley and the unincorporated regions. The public safety departments spend \$637 per housing unit each year (Figure 5.3).

CHAPTER 5: FISCAL IMPACT OF DEVELOPMENT PATTERNS

5.2 COUNTY DEPARTMENTS LEVEL OF SERVICE ANALYSIS

Figure 5.3- Public Safety Operational LOS

	2008	2009
Total Expenditures	\$2,880,630	\$3,137,044
Residential Sector Expenditures	\$2,053,329	\$900,941
Residential Units (Unincorporated and Castle Valley)	2,308	2,349
Per Unit Expenditures	\$890	\$384
Average Annual Per Unit	\$637	

Road and Bridge

Road and bridge services are measured according to the amount of traffic generated by a specific land use. The Institute of Transportation Engineers (ITE) has extensively studied trip generation by land use type and found that the average housing unit generates 9.57 average daily trips (ADT), and a mixed business uses generate 4.04 ADT per employee. Based on housing unit counts and employment levels, county roads experience an average of 13,000 trips per day. Operational expenditures are divided by total traffic volume, which shows an LOS of \$121 per ADT (Figure 5.4). The LOS is multiplied by the adjusted residential ADT rate to calculate an operational per housing unit cost of nearly \$600.

Figure 5.4- Road and Bridge Operational LOS

	2008	2009
Total Operational Expenditures	\$1,589,145	\$1,721,719
Residential ADT	10,297	10,479
Non-residential ADT	2,788	2,818
Total ADT	13,085	13,297
Expenditure Per ADT	\$121	\$129
Average Per ADT	\$125	
Average Annual Per Housing Unit	\$598	

Source: 2008-2009 Audits, Housing Unit Estimate, Institute of Transportation Engineers, DEA, Census Bureau

Social Services

All demand for social services is assumed to originate from the residential sector and all costs are attributed to housing units because demand for social services is directly related to the number of people who reside in the area. Visitors and workers who live in other counties are unlikely to contribute to the demand for county social services. The social service functions of the county cost \$72 per housing unit (Figure 5.5).

Figure 5.5- Social Services Operational LOS

	2008	2009
Total Operational Expenditures	\$294,139	\$349,314
Residential Units	4,465	4,545
Per Unit Expenditures	\$66	\$77
Average Annual Per Unit	\$72	

Source: 2008-2009 Audits, Housing Unit Estimate

⁷Average daily trip weekday driveway volumes contained in the ITE are adjusted to avoid double counting. For example, a single-family residence has a driveway volume of about 9.57 ADT, but only half of those trips have the residence as the destination and are assigned to that land use, the other half are headed to other destinations and should be assigned to those land uses accordingly.

5.3 Level of Service Benchmark Analysis

LOS Comparison

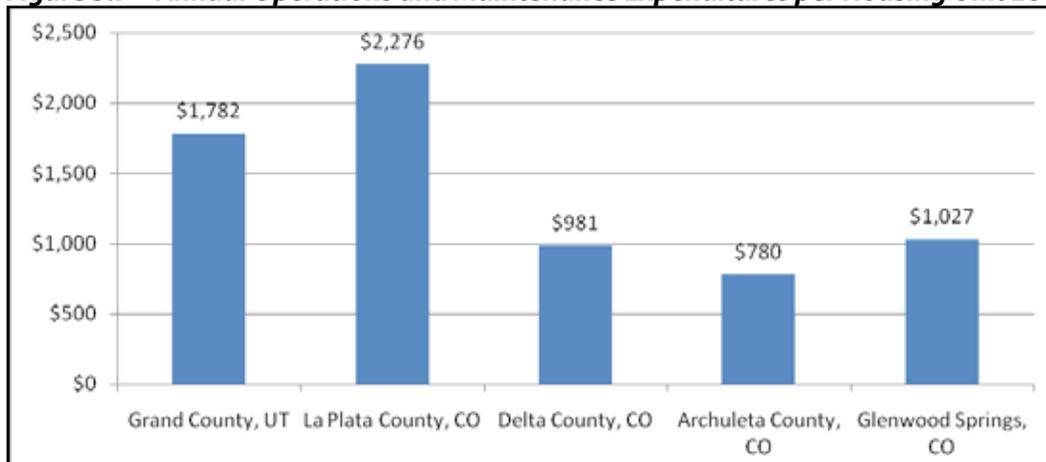
Recently completed LOS analyses performed for similar communities show that in comparison, Grand County provides a relatively high level of service for basic county services (general government, public safety, social services, road and bridge). Grand County and other counties provide additional services beyond these basic functions such as library support and solid waste, but this comparison focuses on core services. Grand County’s operations and maintenance per housing unit LOS is \$1,782 per housing unit, which is lower than La Plata County but higher than Delta and Archuleta counties in Colorado (Figures 5.6 and 5.7). Grand County has higher per unit road and bridge expenditures and lower relative per unit social service expenditures relative to the comparison counties.

Figure 5.6- Annual Operations and Maintenance Expenditures per Housing Unit LOS

	General Government	Public Safety	Road and Bridge	Social Services	Total
Grand County, UT	\$429	\$683	\$598	\$72	\$1,782
La Plata County, CO	\$647	\$818	\$561	\$250	\$2,276
Delta County, CO	\$217	\$169	\$308	\$287	\$981
Archuleta County, CO	\$287	\$239	\$254		\$780
Glenwood Springs, CO	\$325	\$567	\$135		\$1,027

Source: RPI Survey

Figure 5.7 – Annual Operations and Maintenance Expenditures per Housing Unit LOS



Source: RPI Survey

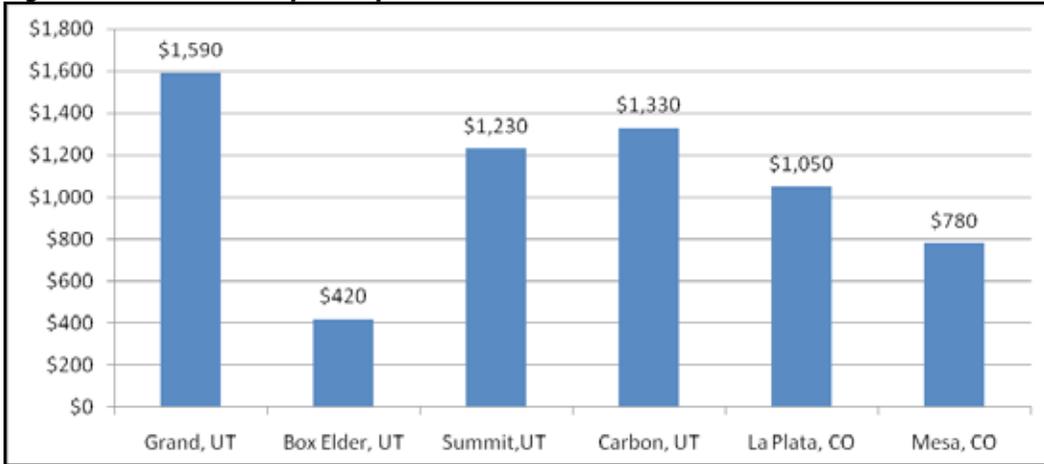
Total per capita expenditures also show that Grand County offers a higher level of service than many of its peer communities.

Comparatively, Grand and La Plata Counties have the highest total per capita expenditures totaling over \$1,590, and \$1,330 respectively. The remaining counties average per capita expenditures of \$870 reflects a lower level of service. Maintaining the level of service should be a top priority when considering future growth in the county.

CHAPTER 5: FISCAL IMPACT OF DEVELOPMENT PATTERNS

5.3 LEVEL OF SERVICE BENCHMARK ANALYSIS

Figure 5.8- Total Per Capita Expenditures LOS



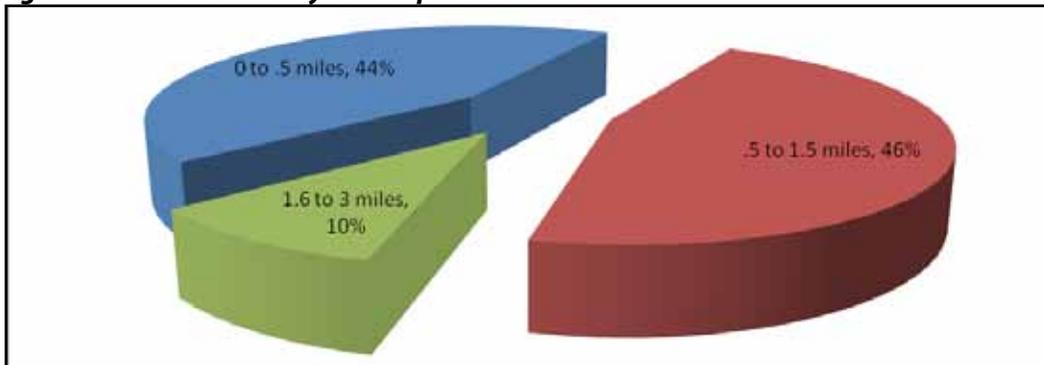
Source: RPI Survey

5.4 Spatially Dynamic Fiscal Impact Analysis

A significant portion of Grand County’s budget is tied directly to driving patterns, including road construction, maintenance, traffic enforcement and accident response. Given the impact of driving on county government costs, it is essential to estimate the relationship of the quantity and spatial distribution of development. For the most part, off-the-shelf transportation models are designed for urban transportation systems and are extremely data intensive. To reflect the realities of rural transportation systems, RPI Consulting developed and refined a rural transportation model specifically targeted at estimating impacts of development on county roads. The model was built by RPI Consulting using geographic information software to estimate the relative distances of private and SITLA land to and from state and federal highways and municipal streets. Refer to Figures 5.11 and 5.12 for the mapped results of the model and Figures 5.9, 5.10, and 5.13-5.16 for numeric results.

The rural transportation model shows that 90 percent of development in the unincorporated county is located 1.5 miles or less out a county road (Figure 5.9). Forty-four percent of development is located within a half mile of a municipality or highway. The County Assessor records used to develop the model did not indicate any developed properties beyond 3 miles from a county road.

Figure 5.9 – Grand County Development Pattern



Source: GIS data from Grand County Assessor and State of Utah GIS Portal

A weighted average of improved parcels in the unincorporated county shows that average trip length on county roads is one mile (Figure 5.10). Development has occurred relatively close to incorporated areas or highways. Only 177 improved parcels are located more than 1.5 miles on a county road. Private parcels are located throughout the county; however, most of the developed parcels are in close proximity to Moab, Castle Valley, state highways or I-70.

Figure 5.10 – Trip Lengths in Grand County⁸

Average Trip Length	Number of Improved Parcels in Unincorporated Regions
0 to .5 miles	740
.5 to 1.5 miles	782
1.6 to 3 miles	177
Sum Product	1,669
Weighted Average Trip Length	1

Source: Grand County Assessor and State of Utah GIS Portal

On average 20 percent of Grand County’s operational expenditures are a result of operating and maintaining county roads. Road and bridge operating expenditures are directly related to the number and length of trips that occur on county roads. Future operating costs depend on where anticipated development occurs. A future development pattern that concentrates growth near municipalities and within primary transportation corridors will cost less than dispersed development.

⁸ The improved property numbers do not correspond to housing unit counts because more than one unit can be built on a parcel.

CHAPTER 5: FISCAL IMPACT OF DEVELOPMENT PATTERNS

5.4 SPATIALLY DYNAMIC FISCAL IMPACT ANALYSIS

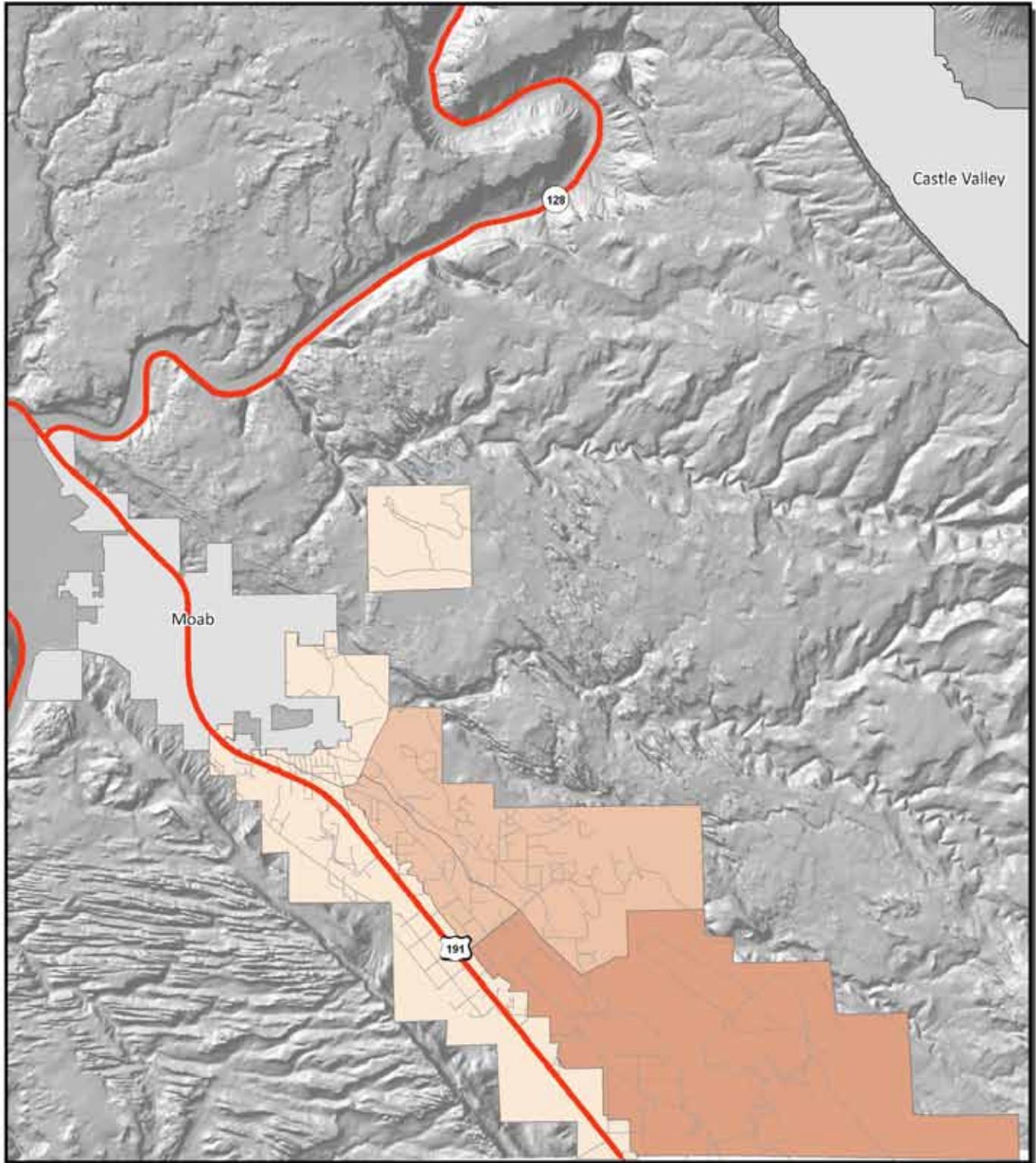


Figure 5.11 - Average Trip Length

Average Trip Length on County Roads
Spanish Valley and Moab Area



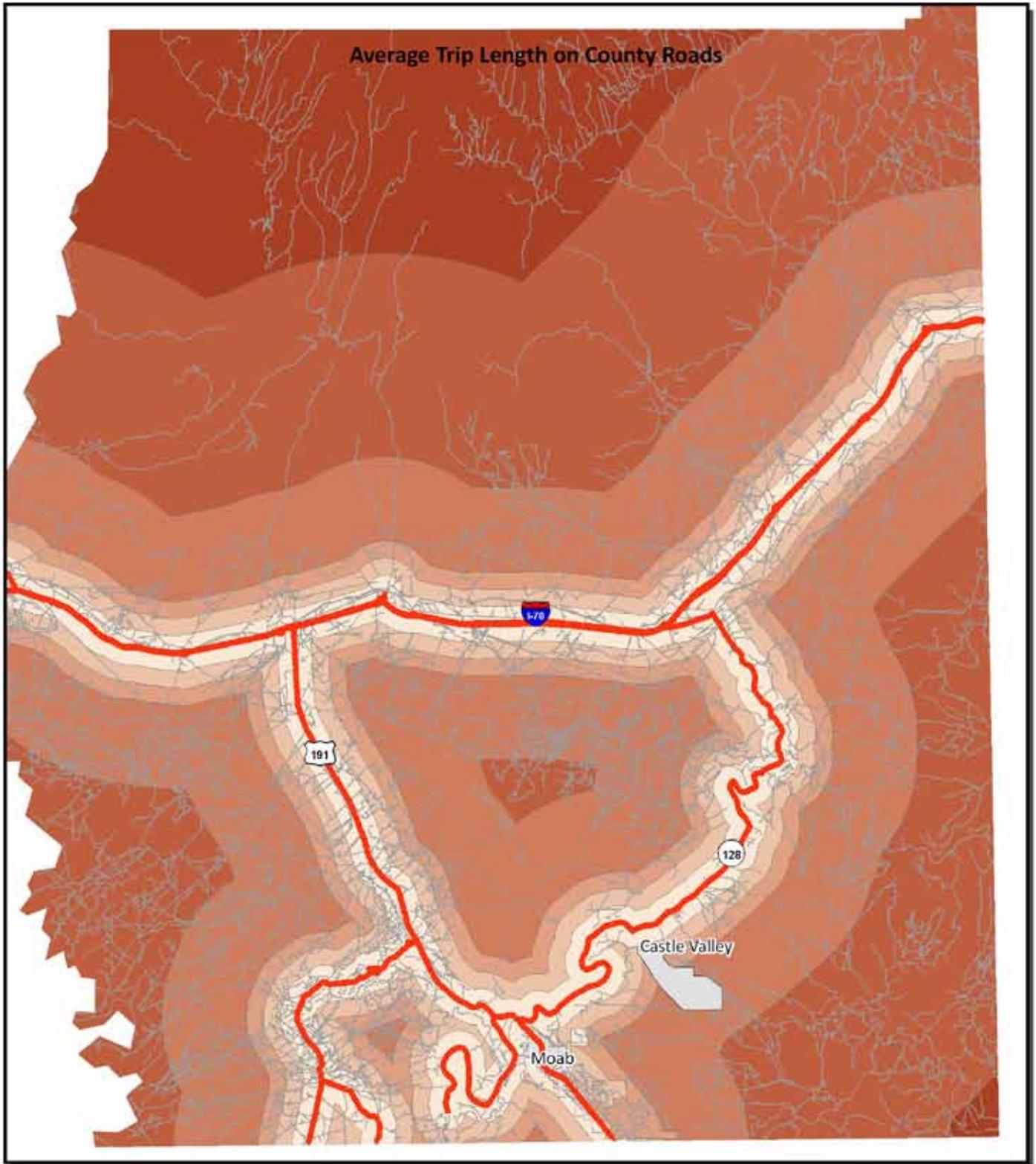
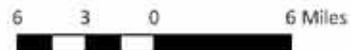
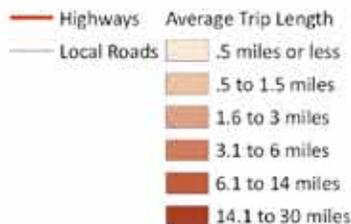


Figure 5.12 - Average Trip Length



CHAPTER 5: FISCAL IMPACT OF DEVELOPMENT PATTERNS

5.4 SPATIALLY DYNAMIC FISCAL IMPACT ANALYSIS

Existing development in Grand County is relatively compact compared with other western counties. Counties where the rural travel model has been used show average trip lengths of over 1.3 miles with some as high as 3 miles (Figure 5.13).

Figure 5.13- Comparison Average Trip Lengths on County Road

County	Average Trip Length on County Roads
Grand, UT	1.0
Mineral, CO	1.8
Lake, MT	1.3
Beaverhead, MT	2.7
Gallatin, MT	1.8
Teton, ID	1.7
Madison, MT	1.3
La Plata, CO	3.3

Sources: Fiscal Impact Analyses for Gallatin, La Plata, Teton, and Madison Counties

If future development occurs in a less compact pattern, operating costs will increase proportionally. Using the VMT estimates generated by the travel demand model and the level of service estimates calculated in the previous section, analysts calculated that the 2009 road and bridge operational level of service is \$203 per VMT.

Figure 5.14- VMT on County Roads

		2009 Housing Units	ADT	Average Trip Length	VMT	2020 VMT	2030 VMT
0 to .5 miles	44%	954	4.8	0.25	1,141	1,323	1,422
.5 to 1.5 miles	46%	1,008	4.8	1	4,823	5,592	6,010
1.6 to 3 miles	10%	228	4.8	2.3	2,511	2,911	3,129
Total					8,475	9,826	10,561

Source: Rural Transportation Model

In 2009, there were nearly 8,500 VMT. If the development pattern continues, VMT will increase to 9,800 in 2020 and over 10,500 in 2030 (Figure 5.14). Future operation costs can be calculated using the per unit costs and projected housing unit counts. If development patterns remain static, operational costs will total \$10.9 million in 2020 and \$11.7 million in 2030 (Figure 5.15).

Figure 5.15- Existing Pattern Future Costs

	2009	2020	2030
Housing Units (Total County)	4,545	5,269	5,662
Housing Units (Unincorporated County)	2,190	2,539	2,729
Unincorporated VMT	8,475	9,826	10,561
Road and Bridge VMT Costs	\$1,722,000	\$1,996,000	\$2,145,000
General Government Costs	\$1,950,000	\$2,260,000	\$2,429,000
Police Costs	\$5,399,000	\$6,259,000	\$6,727,000
SS Cost	\$327,000	\$379,000	\$408,000
Total Cost	\$9,398,000	\$10,894,000	\$11,709,000

Source: Rural Transportation Model

If future growth develops in a more dispersed manner and average trip lengths increase by a hypothetical 25%, Grand County could expect a 4.6% increase in total operating costs (Figure 5.16). The increase would be attributable to the additional VMT generated by less compact development. Conversely, if future growth develops in a pattern that decreases trip lengths by 25%, total operating costs would decrease by 4.6%.

Figure 5.16- Scenario Cost Comparison

	2020	2030	% Change
Total Cost Existing Development Pattern	\$10,894,000	\$11,709,000	
Total Operating Costs With 25% Increase in Trip Length	\$11,393,000	\$12,246,000	4.6%
Total Operating Costs with 25% Decrease in Trip Length	\$10,395,000	\$11,173,000	-4.6%

Source: Rural Transportation Model

This highlights the fact that operational costs are directly related to the distance that residents drive on county roads and that compact development patterns allow counties to maintain a level of service without increasing expenditures as growth occurs.

Important Note: This analysis does not consider the impacts of traffic associated with oil and gas development. Significant extraction development in the very rural parts of Grand County could substantially impact operational and capital expenditures.

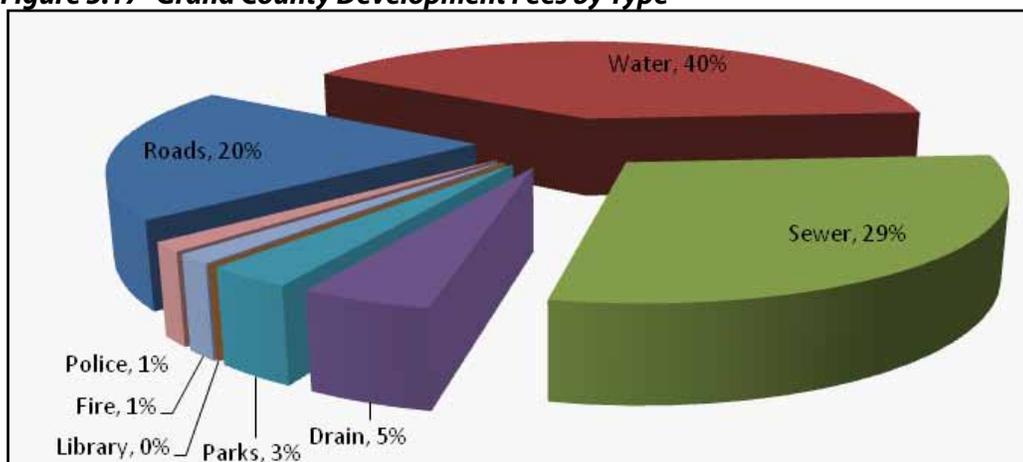
5.5 Development Fee Cost Comparison

Development fees are payments paid to a local government to offset capital expenses associated with providing services. Development fees typically apply to all new residential and commercial development. Exceptions can be made in order to encourage a certain type of development such as affordable housing. One way to evaluate the capacity of communities to maintain service levels is to evaluate their development fees. As communities change, it is good practice to review development fees to make sure that there are no unintended consequences or shortfalls associated with the fee structures. It can be particularly useful to compare development fees with other jurisdictions to evaluate whether the fee structure is creating incentives or disincentives for development.

Current Single Family Home Fees in Grand County-\$7,000

Sixty-nine percent of the fees are GWSSA water and sewer fees, which are necessary and charged by virtually any water/sewer provider or district (Figure 5.17). The remaining development fees pay for capital investment in the road system, fire protection system, parks, police protection services and drainage infrastructure. To check how Grand County fees compare, RPI conducted a 16 community survey of development fees and found that Grand County sits in-the-middle between higher fees totaling more than \$20,000 and lower fees totaling just over \$4,000 (Figures 5.18 and 5.19).

Figure 5.17- Grand County Development Fees by Type



Source: Grand County Planning Department

CHAPTER 5: FISCAL IMPACT OF DEVELOPMENT PATTERNS

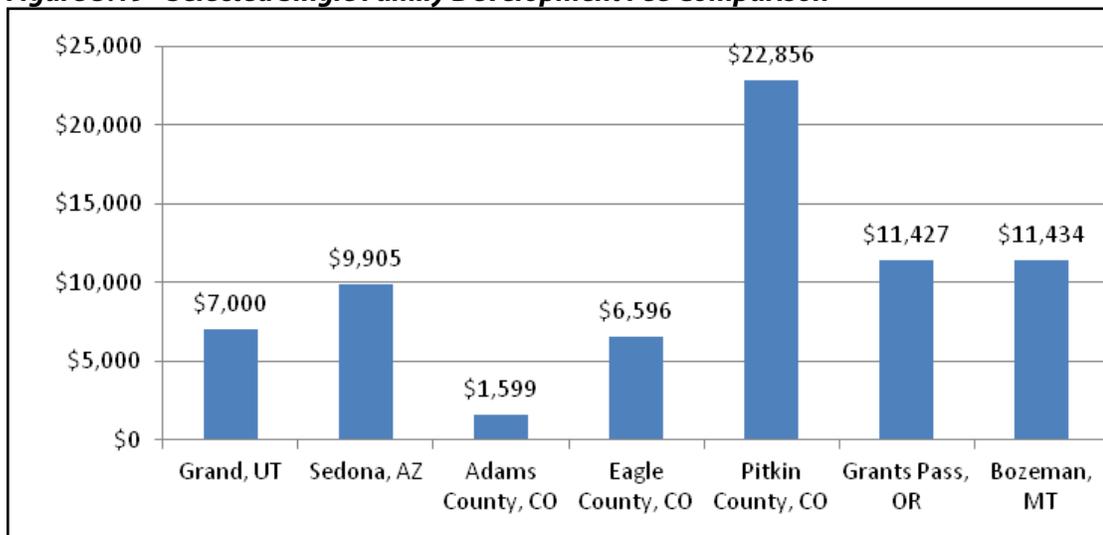
5.5 DEVELOPMENT FEE COST COMPARISON

Figure 5.18- Single Family Development Fee Comparison (Single Family Home)

Jurisdiction	Total	Roads	Water	Sewer	Drain	Parks	Library	Fire	Police	Gen Gov	Schools
Grand County, UT	\$7,000	\$1,404	\$2,798	\$2,052	\$324	\$223		\$101	\$98		
Glenwood Springs, CO	\$16,380		\$5,197	\$3,118		\$4,309		\$1,284			\$2,471
Sedona, AZ	\$9,905	\$1,939			\$671	\$6,718			\$313	\$264	
Fountain Hills, AZ	\$5,114		\$1,291			\$2,192		\$163	\$99	\$441	\$928
Show Low, AZ	\$5,376	\$1,112	\$815	\$2,712		\$557	\$180				
Chino Valley, AZ	\$10,353	\$3,028	\$854	\$4,961		\$546	\$148	\$358	\$303	\$155	
Prescott, AZ	\$17,303	\$469	\$10,803	\$3,273		\$1,116	\$253	\$525	\$589	\$275	
Adams County, CO	\$1,599	\$1,599									
Eagle County, CO	\$6,596	\$4,378						\$2,218			
Durango, CO	\$10,516	\$2,169	\$5,582	\$1,520		\$300					\$945
Pitkin County, CO	\$22,856	\$7,158				\$13,287					\$1,494
Santa Fe, NM	\$6,246	\$2,100	\$2,013	\$735		\$1,214		\$136	\$48		
Truckee, CA	\$4,161	\$2,381						\$1,780			
Grants Pass, OR	\$15,349	\$3,120	\$6,585	\$2,605	\$422	\$2,617					
Bozeman, MT	\$11,434		\$3,834	\$3,586	\$3,201			\$813			

Source: RPI Survey

Figure 5.19 - Selected Single Family Development Fee Comparison



One way to gauge the effect of development fees on the market is to run them through a financing scenario. This will give some sense of how the development fees will affect monthly payments.

Assumptions:

- Price= \$187/ ft²
- Size = 1,100/ ft²
- Interest Rate/Term/\$Down =5%/30yr/20%

In total, the upfront cost of development fees increase the monthly payment for one single family unit by \$30 per month under a typical mortgage. A developer looking at building a 20 unit multi-family development faces a more substantial increase in payment of \$600 potentially more than one of the units would garner in rent. The development fee could increase construction costs and debt payments costs by 3%. In conclusion, the increased monthly mortgage payment is a disincentive, but not likely a “deal-breaker” for someone who wants to live or develop in Grand County. It is also worth noting once more that nearly half of the development fees are for water and sewer, which would be an expense for new residences in any location.

5.6 Fire and Emergency Services

There are four primary agencies that provide emergency services for the residents of Grand County. Fire protection services are provided by the Moab Valley Fire Protection District, Castle Valley Fire Protection District and the Thompson Springs Special Service Fire District. Ambulance services are provided by Grand County Emergency Medical Services, a department of Grand County.

Moab Valley Fire Protection District

The Moab Valley Fire Protection District (MVFPD) protects nearly 30 square miles of property including all of the City of Moab and some unincorporated regions surrounding the City. The service territory includes parts of Arches National Park and portions of San Juan County. A total of 40 volunteers and employees operate the District's three stations and 16 vehicles. The District has an annual operating budget of just over half a million dollars.

Castle Valley Fire Protection District

The Castle Valley Fire Protection District (CVFPD) provides fire protection services to the Town of Castle Valley and development in the surrounding areas. The department does not have any full time paid employees and relies on 19 volunteers, who operate out of two stations and nine response vehicles. The department has an annual budget of approximately \$60,000.

Thompson Springs Special Service Fire District

The Thompson Springs Special Service Fire District (TSSSF) was reactivated in late 2010 after a couple years of inactivity. The district will provide fire protection services to the Thompson area and assist other local agencies when necessary.

Grand County Emergency Medical Services

Ambulance services in Grand County are provided by the Grand County Emergency Medical Services (GCEMS) department. GCEMS covers all of Grand County, including the incorporated regions, as well as portions of San Juan County including parts of Canyonlands National Park and Dead Horse Point State Park. The department relies on Grand County Search and Rescue for backcountry emergency medical incidents that occur in the vast backcountry regions of the county. GCEMS has two full time paid employees and 33 part time employees and volunteers that operate six ambulances and three quick response vehicles from one station in Moab. The department has an annual budget of around \$600,000 and is completely self-funded through patient charges.

5.7 Grand County Water, Sewer and Sanitation

Grand Water and Sewer Service Agency (GWSSA) provides water and sewer service to residents of the unincorporated county that do not rely on septic systems and wells. The drinking water system provides water originating from four wells that lie adjacent to the base of Johnson's Up-On-Top. These wells have a maximum production capacity of over 3,200 gallons per minute. GWSSA has more than 1,600 water hookups and over 1,700 sewer hookups to both residential and non-residential customers. GWSSA also manages the Ken's Lake/Sheley Tunnel irrigation system that serves 760 acres of land through nearly 150 connections. The irrigation system can store over 2,600 acre feet of water and annually supplies over 3,700 acre feet to agriculture in the Spanish Valley.

Average drinking water consumption grew 5.14% between 2004-2008. Drinking water production between 1999-2008 was relatively stable and averaged 17,948 gallons annually per connection. Outdoor watering is the primary source of overuse, but water loss also occurs at non-metered construction sites. In 1999 the agency instituted a water management and conservation plan additionally which directs customers to refrain from watering between 10 am and 6 pm. The agency currently has a goal to reduce water consumption by 25%.

Solid waste in the unincorporated regions is managed by the Solid Waste Special Service District #1. The district currently operates the Moab and Klondike landfills as well as the closed portions of the Moab Municipal Landfill. Waste is hauled by franchised waste haulers in the county. The district also owns and operates a recycling center.

5.8 Drinking Water Supply

The information presented in this section is drawn from two primary sources: A Summary of the Ground-Water Resources and Geohydrology of Grand County by Chris Eisinger and Mike Lowe, Utah Geological Survey, 1997 and, The Hydrogeology of Moab-Spanish Valley, Grand and San Juan Counties Utah, with Emphasis on Map for Water-Resource Management and Land-Use Planning, Mike Lowe, Janae Wallace, Stefan M. Kirby, and Charles E. Bishop, Utah Geological Survey, 2007.

Water Use and Discharge – Total County

Each year 315,000 acre feet discharge to the Colorado River and 108,000 acre feet discharge to the Green River. Grand County has 3,859 acres of irrigated land that utilizes 19,808 acre feet per year. Seventy-nine percent of municipal, culinary and industrial supply water originates from groundwater sources. 4,534 acre feet of potable water is distributed in the following manner:

- 2,776 for residential use
- 818 acre feet/year commercial use
- 940 acre feet/year industrial purposes
- 704 acre feet/year secondary uses

Water Use and Discharge Moab/Spanish Valley

Each year 17,330 acre feet is discharged to the Colorado River through the Spanish Valley, the majority of which originates as underground seepage. Local wells and springs discharge an estimated 6,400 acre feet per year. Recharge for the area totals 16,300 and is primarily a result of springtime runoff and snowmelt.

Threats-Groundwater Contamination

Groundwater contamination originates from pollutants from the following sources by seeping into the groundwater: Examples of threats of groundwater contamination include (this is not an exhaustive list):

- Mining operations and uranium tailings
- Agricultural practices
- Junkyard and salvage operations
- Governmental facility and equipment storage of salts and mosquito abatement chemicals
- Fertilizers, pesticides, and preservatives originating from cemeteries, nurseries, greenhouses and golf courses
- Oil and fuel storage tanks

Threats – Septic Systems

Septic systems in the Spanish Valley could threaten water quality through the discharge of nitrates from the numerous dispersed systems. The state recommends a septic density of 10 to 20 acres per system. The central areas of the valley could withstand a greater concentration of dispersed systems as opposed to outer margins and southeastern portions of valley. The outer margins and southeast portions of the valley are currently experiencing impacts from poorly engineered systems.

EPA Sole Source Aquifers and Water Source Protection Zones

A sole source aquifer is defined as providing at least 50% of the drinking water to the population residing above the aquifer. Service areas of an aquifer are typically defined by well location. The term applies to projects that receive federal financial assistance and have the potential to contaminate a sole source aquifer in a manner that creates a significant hazard to public health.

The Glen Canyon Aquifer and Castle Valley sole source aquifers have been mapped and are contained in the Ecology, Water, and Air element of the General Plan. These aquifers are of critical importance for the people of Grand County.

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5.8 DRINKING WATER SUPPLY

Water source protection plans delineate protection zones according to state standards. Water source protection zones were created by the state specifically as a tool for local governments to adopt local ordinances that protect public drinking water. State rules and water source protection plans provide standards specifically for land uses authorized by local governments.

The water source protection zones are delineated in the Opportunities and Constraints Map (Figures 4.11 and 4.12). The State of Utah GIS records include “water sources” (wells) named by facility:

Figure 5.20 - Public/Community Water Sources With Water Source Protection Zones

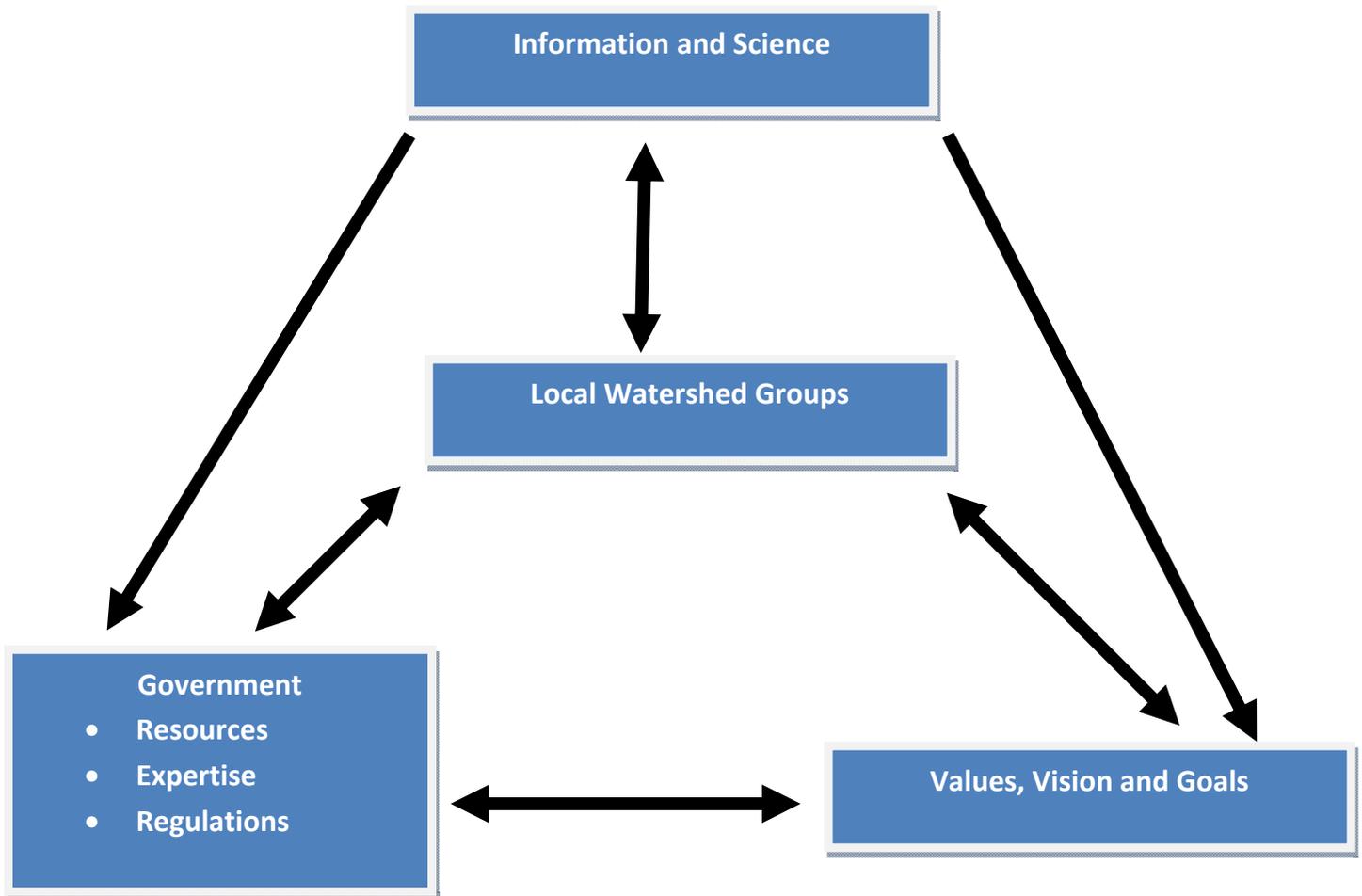
ARCHES NATIONAL PARK HQ
BUCKS GRILL HOUSE
CANYONLANDS FIELD
KANE SPRINGS HWY R.S.
DAY STAR ADVENTIST ACADEMY
GRAND WATER AND SEWER AGENCY
LA SAL LIVESTOCK INC
LA SAL SCHOOL
MATRIMONY SPRING
MOAB
MOAB KOA CAMP
MOAB SALT INC
OOWAH LAKE PICNIC LOOP
PACK CREEK WATER COMPANY
RED CLIFFS RANCH WATER
SLICKROCK CAMPGROUND
WARNER CAMPGROUND & GS
WILSON ARCH RESORT COMM
MOAB FIRE STATION

Spanish Valley Fill

The valley fill aquifer is an important source of culinary and agricultural water. Recharge to the valley-fill aquifer is from springs and subsurface flow from the Glen Canyon aquifer system, from direct precipitation, and from infiltration of streamflow from Pack and Brumley Creeks and Ken’s Lake. Ken’s Lake is supplied by water diverted from Mill Creek.

Aligning the Parts of Watershed Planning to Achieve a Local Vision

Success in water resource planning requires far more than the county alone. Grand County plays a relatively narrow role in the regulation of water resources. In addition to the county, there are at least five state agencies and two federal agencies that set policy and regulate water quality in Grand County. The primary purpose of water planning at the local level is to protect health and achieve outcomes for water resources that align with the values of the community. In order to achieve this, Grand County will need to align with government agencies and local watershed groups and utilize generally accepted science.



GLOSSARY

Affordable Housing: Owned or rented housing costing less than 30 percent of a household's total gross income, assuming that this income equals the median for a county or an area.

Agriculture: The production, keeping or maintenance for sale, lease or personal use, of plants and animals useful to man including, but not limited to: forages and sod crops; grains and seed crops; dairy animals and dairy products; poultry and poultry products; livestock, including beef cattle, sheep, swine, horses, ponies, mules or goats, or any mutations or hybrids thereof, including the breeding and grazing of any or all such animals; bees and apiary products; fur animals; trees and forest products; fruits of all kinds and vegetables.

Agriculture Protection: Production for commercial purposes of crops, livestock products if 50 percent or more of the material processed or marketed is produced by the farm operator. Production of forage, grains, livestock, trees and fruits, vegetables; nursery, floral and ornamental stock with reasonable expectation of profit is agricultural production activity.

Amenity: A desirable or useful feature or facility of a specific location.

Annexation: The process of incorporating an area of land into a municipality.

Aquifer: An underground geologic formation that contains sufficient saturated, permeable material to yield significant quantities of groundwater to wells and springs.

Average Daily Trip (ADT): One average daily trip is one vehicle making a single one-way trip once per day, on average.

Bike Lane: A division of a road marked off with painted lines, for use by cyclists.

BLM: Bureau of Land Management

Building: Any structure built for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind. Building includes yurts, removable sheds, and similar uses, but does not include signs or fences.

Building Code: Code requirements that a building or construction site is legally obligated to follow.

Business Development: The process of employing numerous techniques with the goal of attracting new business and strengthening existing businesses.

Capital Improvements: A physical asset that is large in scale or high in cost, typically capital improvements have a useful lifespan greater than five years and are valued above \$5,000.

Class I Air Quality: Established by the Clean Air Act, a Class I area is one in which visibility is protected more stringently than under the national ambient air quality standards and includes national parks, wilderness areas, monuments, and other areas of special national and cultural significance.

Class B County Road: Roads/highways for which the county receives state gas tax funds to help with maintenance; all are identified on state maps and are possible with a regular 2-wheel drive passenger vehicle.

Critical Habitat: Areas designated as critical for the survival and recovery of threatened or endangered species.

Conservation Easement: A recorded legal agreement between a landowner and a qualified conservation agency that transfers development rights from the owner to the agency to protect natural or historic features.

County: Grand County, a duly constituted political subdivision of the state of Utah.

GLOSSARY

Density: The maximum number of dwelling units per acre of land permitted in a zone district.

Design Standards: A set of guidelines on the appearance and aesthetics of buildings or improvements that governs construction, alteration, demolition or relocation of a building or improvement, including land improvements.

Development: Any man-made change to improved or unimproved real property, the use of any principal structure or land, or any other activity that requires issuance of a building permit.

Development Impact Fee: A payment of money imposed as a condition of development approval to pay for a proportionate share of the cost of public facilities. This term is also referred to as an impact fee in this LUC.

Earning Power: A quantifiable measure of an individual's ability to earn income.

Economic Development: A program, a group of policies, and/or activity that seeks to improve the economic well-being and quality of life for a community. Ideally, it will create and retain jobs and provide a stable tax base. This can include programs to encourage business growth and investments to improve business attraction, retention and expansion, tourism, startup and emerging business to the county.

Economic Diversity: The degree to which an economy's mix of industries, sectors, skill levels and employment levels differ from a larger reference economy.

Ecosystem: The naturally interacting community of plant and animal species and their physical environment.

Federal Lands Policy and Management Act: Passed in 1976, the federal law that governs the way in which the public lands administered by the Bureau of Land Management are managed.

Fee-in-lieu: A payment to a local government entity that takes the place of a required capital investment for affordable housing or land dedications.

Floodplain: Any land area (typically adjoining a river, stream, lake, or other body of standing water) that is susceptible to inundation by a 100-year flood. A 100-year flood is a flood that has a 1 percent chance of being equaled or exceeded in any given year.

GWSSA: Grand Water and Sewer Service Agency

Green Building: The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from sitting to design, construction, operation, maintenance, renovation and deconstruction.

Goal: A broad statement of desired outcomes to which effort is directed in order to bring a community closer to its overall vision of the future. It expresses the broad desired results of the Plan.

Incentive: Any factor (financial or non-financial) that enables or motivates a particular course of action, or counts as a reason for preferring one choice to the alternatives. It is an expectation that encourages people to behave in a certain way.

Infrastructure: Public facilities and services needed to support and sustain industry, residence, commerce and all other land use activities. It includes transportation, water and sewer, energy, telecommunications, recycling and solid waste disposal, parks and other public spaces, schools, police and fire protection, and health and welfare services.

Key Pad Polling: Wireless polling technologies that facilitates community participation in events and to bring a focus to discussion and decision making.

- Land Trust:** A private, nonprofit organization that protects natural and cultural resources through conservation easements, land acquisition, and education.
- Land Use Code:** The implementation tool which provides regulations for how and where future land development may occur in Grand County. The land use development code is the regulatory and legal framework for achieving the goals and strategies articulated in the comprehensive plan.
- Land Use Map:** A map, usually officially adopted, that geographically and specifically locates existing and future land uses such as residential, commercial, industrial and institutional (public areas and buildings) that have been established in the land use plan.
- Mineral Lease:** The right given to use land for purpose of exploration, specifically for minerals, with rights to remove minerals, if found, for a finite period of time, or indefinitely, upon payment of royalties to the landowner.
- Mixed Use:** A development pattern where a variety of complementary land uses occupy buildings in close proximity to each other, generally including residential, commercial, civic and business accommodations in one area.
- Buy Local First Program:** 501(c)(3) not-for-profit organization that seeks to strengthen communities and local economies by promoting, preserving, and protecting local, independently owned businesses throughout Utah.
- Multi-Family:** A land use categorized by three or more families living independently of one another within the same building.
- Multi-modal:** A holistic view of circulation in which individual modes work together or within their own niches to provide users with the best choices of service. Multi-modalism considers how policies for a single mode affect all other modes.
- Native Species:** A species that originates and occurs naturally in a particular region or environment.
- Natural Hazards:** Any atmospheric, earth or water related occurrence, the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.
- Natural Resources:** Viable and/or renewable products of nature; natural environments of soil, air and water; plants and animals on grasslands, rangelands, croplands, forest, lakes, and streams.
- Non-Residential Development:** Any development approved by a local government that is not intended for residential use, includes churches, schools, government, and commercial development.
- Open Space:** A primarily undeveloped landscape that provides scenic, ecological, or recreational values or that is set aside for resource protection or conservation; an area of managed production such as forestland, rangeland, or agricultural land that is essentially free of visible obstructions.
- Payment in Lieu of Taxes:** Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries.
- Private Property Rights:** The basic rights of individuals to the peaceful possession, control and enjoyment of the things they own as well as their rights to make contracts to rent, sell or give away all or part of their various ownership rights over these possessions (or these possessions' services) to any other people willing to accept the owners' terms.
- Renewable Energy:** An energy source that is replenished continuously in nature or that is replaced after use through natural means. Renewable energy sources include the sun, the wind, flowing water, biomass and geothermal energy.
- Review Process:** The process for determining the appropriateness of a proposed development project.

GLOSSARY

Residential Development: Any development approved by the local government for residential use.

Riparian Area: A plant community contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways). Riparian areas have one or both of the following characteristics: (1) distinctively different vegetation species than adjacent areas, and (2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian areas are usually transitional between wetland and upland.

Rural: Of or relating to the country, country people or life, or agriculture.

Rural Centers: A centralized, concentrated area of locally oriented commercial, public, and semipublic services and activities.

Scenic Resources: Landscape patterns and features that are worthy of preservation because they are visually or aesthetically pleasing with distinctive cultural, historic, natural, or other unique qualities which contribute affirmatively to the definition of Grand County.

Scenic Overlay: An area that requires attention to scenic resources.

Setback: Unobstructed, unoccupied open space between a structure and the property line of the lot on which the structure is located.

Single Family: Land use characterized by lots containing individual residential homes surrounded by yards.

SITLA: School and Institutional Trust Land Administration

Sole Source Aquifer: An aquifer that supplies 50% or more of the drinking water of an area.

Special Service District: A body corporate and politic with perpetual succession, separate and distinct from the county or municipality that creates it; a quasi-municipal corporation.

Strategies: Statements that outline the approach or specific action to achieve a particular goal. A strategy is a short term action, policy, or regulation that is specific enough to be implemented.

Steep Slopes: Terrain with sustained grades greater than 30%.

Subdivision: Any land that is divided, re-subdivided or proposed to be divided into 2 or more lots, parcels, sites, units plots, or other divisions of land for the purpose, whether immediate or future, for offer, sale, lease, or development either on the installment plan or upon any other plans, terms, and conditions. "Subdivision" includes the division of land whether by deed, metes and bounds description, devise or testacy, lease, map, plat, or other recorded instrument. "Subdivision" does not include a bona fide division or partition of agricultural land for agricultural purposes.

Sustainable Development: Development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. It is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable, Sustainable Practices: Improving the quality of human life while living within the carrying capacity of supporting eco-systems.

Tax Incentives: A tax benefit offered in order to encourage or discourage targeted activities.

Terrestrial Wildlife: The large, primarily undomesticated (wild) vertebrate animals, the fauna that live on the land.

Trail: A linear, multiple-use, public-access route for recreation or circulation.

Trail Corridor: An area or stretch of land identified as having the common purpose of providing trail use.

Trail Network: A system of interrelated and connected trails.

Transit: A transportation mode that moves larger numbers of people than an automobile; generally refers to passenger service provided to the public along established routes with fixed or variable schedules at published fares.

UDOT: Utah Department of Transportation.

Unincorporated: Areas of the county not chartered as a self-governing village or city; lacking the tax, police, and other powers conferred by the state on incorporated municipalities by the State of Utah.

Vehicle Miles Traveled (VMT): A vehicle mile traveled is one vehicle traveling one mile per day, on average.

Vision: A description of a realistic and credible desired future for the county. A vision is a key part of strategic planning process.

Vision Statement: A statement which concisely expresses the mutually agreed upon vision of the county's future, reflecting the aspirations of the residents.

Vulnerable Populations: Portion of the population that are disadvantaged by their financial circumstances or place of residence, health, age, personal characteristics, functional or developmental status, ability to communicate effectively, and presence of chronic illness or disability.

Wastewater: Used water drained from homes, business, and industries; primarily sewage flow.

Water Source Protection Zone: A boundary intended to protect groundwater and the recharge basin for current and future public, culinary water supplies in Grand County.

Watershed: The land area that contributes runoff to a given stream, river, or reservoir.

Wetlands: Areas that are inundated often enough to support plants and animals adapted to saturated soil conditions.

Wildlife Corridor: An often limited or constrained area providing connectivity to larger animal habitats.

Working Group: A group of local residents that represent a broad cross section of the community, that establishes direction and reviews draft materials prepared by the staff, consultants and community.

Workforce: The total number of people who could be employed in a defined geographic area.

Zoning: The delineation of districts and the establishment of regulations governing the use, placement, spacing and size of land and buildings.

Zoning Code: A set of legally binding provisions adopted by ordinance by the Board of County Commissioners to govern zoning. Along with the subdivision ordinance, the zoning ordinance is used to implement the goals, objectives, and policies of the comprehensive plan.

Zoning Map: The certified Official Zoning Map upon which the boundaries of the various zoning districts are drawn.