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# **Socioeconomics and Environmental Justice Specialist Report**

## **Garkane Energy Cooperative, Inc. Tropic to Hatch 138 kV Transmission Line**

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Prepared For:

US Forest Service – Dixie National Forest  
National Park Service – Bryce Canyon National Park  
Bureau of Land Management – Kanab Field Office  
Bureau of Land Management – Grand Staircase-Escalante National Monument

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# **SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE SPECIALIST REPORT**

## **1.1. INTRODUCTION**

Garkane Energy Cooperative, Inc. (Garkane) proposes to construct a 138 kV circuit transmission line supported by wood pole H-frame structures between the communities of Tropic and Hatch in Garfield County, Utah. The proposed new transmission line would replace portions of an existing 69 kV transmission line between the Tropic and Hatch Substations that currently provides service west of Tropic.

### **1.1.1. Purpose of Specialist Report**

The purpose of this Specialist Report is to characterize existing issues surrounding socioeconomics and environmental justice within the Project Area and to analyze and disclose potential environmental effects on these issues that would occur under the Proposed Action and Alternatives as described below. These data and impact analyses will be used to develop an Environmental Impact Statement (EIS) for the Garkane 138 kV Transmission Line proposal.

### **1.1.2. Proposed Action and Alternatives**

#### **1.1.2.1. Alternative A: Proposed Action**

Alternative A would be constructed within a right-of-way crossing public lands administered by the U.S. Forest Service (USFS) Dixie National Forest (DNF), Bureau of Land Management (BLM) Kanab Field Office (KFO), and the Grand Staircase-Escalante National Monument (GSENM); Utah State lands administered under the State Institutional Trust Lands Administration (SITLA); and private lands.

The Alternative A 100-foot-wide right-of-way would extend 30.41 miles. The route would begin at the proposed East Valley Substation located east of Tropic and extend northeast to adjoin the Rocky Mountain Power/PacifiCorp 230 kV transmission line right-of-way. The route would then parallel the west side of the Rocky Mountain Power/PacifiCorp transmission line route to the northwest across GSENM land and through Cedar Fork Canyon through a planning window for a utility right-of-way identified in the 1986 Land Resources Management Plan (LRMP). The route would diverge from the 230 kV line access route and extend west across John's Valley and skirt just to the north of the Bryce Canyon Airport. The route would continue west for approximately 4 miles and turn south, crossing SR 12, and extend southwest across the Johnson Bench area, passing to the south of Wilson Peak. The route would continue west down Hillsdale Canyon through a planning window for a utility right-of-way identified in the 1986 LRMP and turn north for approximately 0.5 mile. The route would continue to the west, crossing private property (Sunset Cliffs), and extend west to cross U.S. 89 where it would turn to the southwest for approximately 2 miles to the Hatch Substation. The proposed route would cross 17.35 miles of DNF, 3.31 miles of KFO, 3.68 miles of GSENM, 4.23 miles of SITLA, and 1.84 miles of private lands.

In addition to construction of the proposed transmission line, the proposed project includes the development of a new substation (East Valley) east of Tropic and the expansion of the Hatch Substation. Garkane's existing 69 kV transmission line between the Bryce Canyon Substation and Hatch Mountain Switch Station would be unnecessary once the proposed 138 kV transmission line is operational and would be removed (approximately 16.23 miles) and the right-of-way rehabilitated.

The Proposed Action would involve the development of overland access routes in portions of the right-of-way where a suitable route is not available and where development of an access route is permitted by the authorizing agency. Access to the Rocky Mountain Power/PacifiCorp 230 kV transmission line in the

Cedar Fork Canyon area would need to be improved. In *limited access areas*, the alignment would be accessed via helicopter and/or foot, and there would be no centerline access.

Implementation of the Proposed Action would also require the amendment of the GSENM Management Plan (2000) by changing the designation of a 100-foot-wide 3.68-mile stretch (44.58 acres) of the Primitive Zone to Passage Zone, and within this area, changing the existing Visual Resource Management (VRM) Class designation from Class II to Class III.

#### **1.1.2.2. Alternative B: Parallel Existing 69 kV Route**

Alternative B would be constructed within a right-of-way crossing public lands administered by the DNF and KFO, National Park Service (NPS) Bryce Canyon National Park (BRCA), and SITLA and private lands. This route would have no surface impacts on the GSENM.

The Alternative B 100-foot-wide right-of-way would extend 29.11 miles. This alternative route would begin at the proposed East Valley Substation located east of Tropic and extend west through the Tropic Substation (the Tropic Substation would be decommissioned) and then cross SR 12 and continue across BRCA (deviating slightly from the existing right-of-way for approximately 1.5 miles) to a point near the current Bryce Canyon Substation near Bryce Canyon City. For this Alternative, the Bryce Canyon Substation would be decommissioned and a new replacement substation would be built at a new location approximately 1 mile to the west to allow for needed expansion. The route would extend approximately 0.5 mile to the north around Bryce Canyon City, west across SR 63 and then parallel Garkane's existing 69 kV line right-of-way predominately across private and SITLA lands. The alternative route would parallel the existing right-of-way just to the south across the plateau in a northwest direction to Red Canyon, where it would generally follow the existing right-of-way through Red Canyon into Long Valley where it would cross U.S. 89 and continue to the Hatch Mountain Substation. From there the route would follow the existing line south to the Hatch Substation. This route would cross 5.58 miles of DNF, 8.29 miles of KFO, 2.81 miles of BRCA, 3.63 miles of SITLA, and 8.80 miles of private lands.

The proposed project includes the development of a new substation (East Valley) east of Tropic and the expansion of the Hatch Substation. The Tropic Substation would be removed. One new substation would be required in Bryce Valley. The existing Bryce Canyon Substation would be decommissioned, and a new replacement substation to the west of Ruby's Inn would be built. It would be located in one of two new locations (Option 1 on DNF land or Option 2 on private land). Once the proposed 138 kV transmission line is operational, the entire existing 69 kV line from approximately 1 mile east of the existing Tropic Substation to the Hatch Mountain Substation would be removed (approximately 21.57 miles) and the right-of-way rehabilitated.

In addition, under Alternative B approximately 9 miles of distribution lines would need to be constructed primarily on private and SITLA lands in 50-foot rights-of-way in conjunction with the new substations.

A 22.75-mile long two-track access route along the centerline of the proposed right-of-way would provide construction access. Centerline access would not be developed within *limited access areas*, including BRCA and portions of Red Canyon.

Under this alternative the GSENM Management Plan would not be amended.

#### **1.1.2.3. Alternative C: Cedar Fork Southern Route**

Like Alternative A, Alternative C would be constructed within a right-of-way crossing public lands administered by the DNF, KFO, GSENM, SITLA, and private lands.

The Alternative C 100-foot-wide right-of-way would extend 29.78 miles. This alternative route would begin at the proposed East Valley Substation located east of Tropic and extend northeast to adjoin the Rocky Mountain Power/PacifiCorp 230 kV transmission line right-of-way. The route would then parallel the west side of the Rocky Mountain Power/PacifiCorp transmission line access to the northwest across

GSENM land and through Cedar Fork Canyon through a planning window for a utility right-of-way identified in the 1986 LRMP. The route would diverge from the 230 kV line access and extend west across John's Valley and follow the south side of State Route (SR) 22 for just under 2 miles and then follow the western boundary of BRCA for approximately 1 mile. The route would then extend west to the north of Bryce Canyon City and across SR 63. The route would continue west across the southern portion of Johnson Bench and to the upper reaches of Right Fork Blue Fly Creek. The route would drop off the plateau at this point and traverse an unnamed canyon to Hillsdale Canyon and would extend south of private property and continue west, crossing U.S. 89, where it would turn to the southwest for approximately 2 miles to the Hatch Substation. This route would cross 13.58 miles of DNF, 3.43 miles of KFO, 3.68 miles of GSENM, 2.06 miles of SITLA, and 7.03 miles of private lands.

In addition to construction of the proposed transmission line, the proposed project includes the development of a new substation (East Valley) east of Tropic and the expansion of the Hatch Substation. Garkane's existing 69 kV transmission line between the Bryce Canyon Substation and Hatch Mountain Switch Station would be unnecessary once the proposed 138 kV transmission line is operational and would be removed (approximately 16.23 miles) and the right-of-way rehabilitated.

The Proposed Action would involve the development of overland access routes in portions of the right-of-way where a suitable route is not available and where development of an access route is permitted by the authorizing agency. Access to the Rocky Mountain Power/PacifiCorp 230 kV transmission line in the Cedar Fork Canyon area would need to be improved. In *limited access areas*, the alignment would be accessed via helicopter and/or foot, and there would be no centerline access.

Alternative C would also require the amendment of the GSENM Management Plan (2000) by changing the designation of a 300-foot-wide 3.68-mile stretch (133.81 acres) of the Primitive Zone to Passage Zone to accommodate both the proposed right-of-way and the existing 230 kV Rocky Mountain Power/PacifiCorp transmission line, as well as provide for future utility needs; and within this area, changing the existing VRM Management Class designation from Class II to Class III.

#### **1.1.2.4. Interconnect Options**

The purpose of the interconnect route options is to provide flexibility to decision makers to combine segments of the action alternatives to select the most appropriate route among the various alternatives to minimize impacts to resource values.

The North-South Interconnect option would extend 1.84 miles across DNF land west of Johnson Bench and could connect segments of Alternatives A and C together.

The East-West Interconnect option would extend 3.70 miles across DNF land south of Johnson Bench and could connect segments of Alternatives A and C together.

#### **1.1.2.5. Alternative D: No Action**

Though it does not meet the purpose and need statement, the No Action alternative is required under Council of Environmental Quality regulations for implementing the National Environmental Policy Act NEPA [40 CFR 1502.14(d)]. For this analysis, the No Action alternative is considered to be the continued operation of the existing 69 kV transmission line and future circumstances that would occur without federal approval of Garkane Energy's proposal to construct and operate a 138 kV transmission line from Tropic to Hatch. Specifically, it means that "no action" would be achieved by any one of the federal agencies declining to grant Garkane permission to build in the agency's respective jurisdiction. Thus, in the case of DNF, "no action" means denying the transmission line easement; for BLM, "no action" means denying approval of the proposed plan amendment and granting of a right-of-way permit for BLM lands; and, for BRCA, "no action" means denying a right-of-way permit. Each agency makes its decision independent of the others, so it is possible that one or more agencies could grant permission for the

proposal while another could deny permission. Thus, if any agency denied permission for the proposed transmission line, it would not be built.

The existing 69 kV transmission line has already passed its life expectancy. To maintain system stability and reliability, Garkane would need to overhaul the line within its existing right-of-way and permit conditions. Overhaul of the existing 69 kV transmission line would involve replacement of conductor and poles. Each pole would be inspected; Garkane estimates as much as 90 percent of the poles would need to be replaced. Overhaul would involve disturbance to the centerline access outside *limited access areas* using vehicles and equipment. Overhaul would require the use of temporary disturbance areas identified in conjunction with Alternative B, as the sites would be needed for pulling and splicing of wire and overall project staging. Total cost would range from 1.4 to 2.1 million dollars.

These activities would increase the amount of trucks, heavy equipment, and crews within the right-of-way far above average annual activity levels.

### **1.1.3. Impact-Inducing Activities on Socioeconomic Resources and Environmental Justice**

Social and economic impacts associated with the project may occur as a result of employment and spending related to construction and operation.

- Potential socioeconomic impacts could include temporary or permanent population increases. Stressors on local services or infrastructure from population increases, include the following;
  - a potentially increased tax burden to local residents that is not compensated by the project or improved fiscal condition through increased tax receipts from overall increased property valuation and population growth;
  - opportunity for growth of existing businesses due to improved reliability and availability of power and associated population growth, and,
  - changes in electrical reliability and rates (in part due to amortization of project costs).

Environmental justice impacts may occur if a racial, ethnic, or socioeconomic group bears a disproportionate share of adverse impacts associated with the project.

### **1.1.4. Socioeconomic Resource and Environmental Justice Issue Statement**

*The presence and development of a transmission line may result in socioeconomic impacts to the surrounding areas.*

Social and economic conditions may be affected by the project, resulting from employment, spending, and revenues related to construction and operation of the power line. Potential impacts may include short- and long-term growth related to the proposed project; opportunity for growth of existing businesses due to improved reliability and availability of power; and increased demand on existing infrastructure and community services to meet those growth needs. Impacts to local employment and wages, state and local tax revenues, environmental justice, and demands for public services resulting from construction and operation of facilities over the life of the project may also occur.

## **1.2. DESCRIPTION OF AFFECTED ENVIRONMENT**

### **1.2.1. Project, Study, and Impact Areas**

The Project Area is in Garfield County, between the communities of Tropic and Hatch in southern Utah. The Project Area includes the following:

- Proposed Action and alternative transmission line right-of-way.
- Temporary work areas.
- Proposed substation sites.
- Proposed access roads and routes, and access improvements.
- Existing 69 kV transmission line right-of-way.

Garfield County would be the area of greatest impact for both the construction and operations phases of the project and, therefore, the Study Area for both direct and indirect effects. Garfield County is among the most rural counties in Utah. In order to put the baseline socioeconomics of Garfield County in context, parallel baseline data for the five-county Southwestern Utah Region are included in most tables for comparison. The Southwestern Utah Region consists of Beaver, Garfield, Iron, Kane, and Washington Counties and includes the county with the lowest population density (Garfield) and the county with the highest growth rate (Washington) in the state. The Southwestern Utah Region was chosen for comparison because of its geographic proximity and economic dissimilarity, providing a clear contrast. Neighboring rural counties, such as Kane, Wayne, or Piute, are similar enough to Garfield that comparison would provide only subtle distinctions, whereas comparison with booming, urbanizing counties (such as Washington County) demonstrates how restrictions on growth have permeated the economic and social structure of the county. The impact area analyzed for the Proposed Action and Action Alternatives is Garfield County.

### **1.2.2. Data Sources**

The social and economic effects of the project within the Study Area are analyzed for both construction and operation phases. Primary sources of baseline data include the U.S. Bureaus of the Census, Economic Analysis, and Labor Statistics, as well as state and county sources (Utah State Tax Commission, Department of Commerce, Public Services Commission) and Garkane Energy.

### **1.2.3. Resource Management Direction**

Relevant land management plans were reviewed for consistency with the proposed action in the context of socioeconomics. The plans that were reviewed all recognized that the socioeconomic well-being of local communities is tied to their resources management decisions in one manner or another. Specific policies follow below.

In the 1986 Record of Decision for the DNF Final Environmental Impact Statement and LRMP, the basis for the selected management plan was that it “provided more jobs and income to communities than the Environmentally Preferred Alternative,” demonstrating the Forest’s commitment to local economies. Subsequent amendments to the Plan have not affected that commitment.

The BLM 2008 Resource Management Plan and Final Environmental Impact Statement for the KFO states that “In implementing the plan, the BLM will focus its resources on the highest priority issues determined to have the greatest significance to the health of the public lands involved and the socioeconomic well-being of local communities,” demonstrating the agency’s commitment to local communities. The Draft Plan says the following about resource use:

The public lands administered by the Kanab FO are managed for multiple uses. Multiple use management includes management for resource uses as well as for resource values. Resource uses involve activities that use the natural, biological, and/or cultural components of the decision area such as mineral development, livestock grazing, forestry and woodland harvest, and recreation. The decision area is viewed as some of the remaining lands in the region where traditional commercial uses and relatively

unrestricted recreational activities can still occur. These lands are considered by many to be vital to meeting the developing needs of neighboring communities, private lands, and contributing to the economic and social well-being of the area.

The Record of Decision for the GSENM Management Plan (GSENM 2000) lists among its “major management emphases in the Approved Plan” the following: “Major visitor facilities will be located in surrounding communities in order to protect resources and promote economic development in the communities” and “Commitments to work with local and State governments, Native American Indian tribes, organizations, and Federal agencies to manage lands or programs for mutual benefit consistent with other Plan decisions and objectives.” The Management Plan includes that “The BLM will work with local communities and utility providers to identify short and long-term community needs for infrastructure which could affect Monument lands and resources.”

The 2006 *Management Policies* of the NPS include the following statement:

NPS activities may have impacts outside park boundaries. Recognizing that parks are integral parts of larger regional environments, and to support its primary concern of protecting park resources and values, the Service will work cooperatively with others to

- anticipate, avoid, and resolve potential conflicts;
- protect park resources and values;
- provide for visitor enjoyment; and
- address mutual interests in the quality of life of community residents, including matters such as compatible economic development and resource and environmental protection.

Each of the above land management policy documents recognizes the interrelationship between the land resources under their stewardship and the local communities around them.

#### **1.2.4. Current Social and Economic Conditions**

If only one characteristic could be used to capture the essence of Garfield County, it would be that approximately 95 percent of the county is public land, managed by the USFS, BLM, NPS, or the State of Utah (see **Table 1.2-1**). On one hand, this provides an economic engine in natural resources and tourism industries. On the other hand, it limits the amount of development that can occur (since there is little private land to develop) and limits the tax base upon which the County and towns can draw to supply infrastructure and services (i.e., education, health, fire, safety, roads, etc.). The data that follow in this section will substantiate this overview in detail.

##### **1.2.4.1. Introduction**

Garfield County is located in south central Utah. The western half of the county is characterized by high forested plateaus separated by populated valleys. The eastern half is lower in elevation and mostly desert with very little population.

Garfield County is one of the most sparsely populated counties in Utah. Geographically, Garfield County is the fifth largest county in Utah, but it has the fifth smallest population. Most of the county’s residents are clustered near the high alpine environment on the west side of the county where the majority of water and private land can be found (State of Utah 2003).

Garfield County is characterized by vast rangelands that include some of Utah’s largest forest reserves and a low rate of private land ownership. Only 5.1 percent of the county is privately owned. Nearly 90 percent of the land in the county is federally administered; of this the USFS administers about 31 percent, BLM approximately 45 percent, NPS approximately 13 percent, and SITLA about 5 percent (see **Table**

**1.2-1).** Portions of three ranger districts lie in Garfield County, including nearly all of the Escalante and Powell Ranger Districts and about half of the Cedar City Ranger District.

Cities and towns within close proximity to forest lands include Panguitch, Hatch, Tropic, Antimony, Escalante, and Boulder. Panguitch is the largest city, with an estimated 2006 population of 1,485.

Garfield County’s economy is driven by tourism and agriculture (primarily cattle and lumber). The leisure and hospitality sector (tourism) accounts for more than 36 percent of all nonfarm jobs in the county. Agriculture accounts for almost 11 percent of all jobs (farm and nonfarm). The county’s largest employer is Ruby’s Inn, a resort located near Bryce Canyon that employs between 250 and 500 people and incorporated as Bryce Canyon City in 2007. The second largest non-agricultural employment sector is government, although income from government employment is greater than that from tourism (see **Table 1.2-17**).

**1.2.4.2. Land Ownership**

Nearly 90 percent of Garfield County is federally owned, including land managed by the BLM, USFS, and NPS. As shown in **Table 1.2-1**, this is in contrast to about 80 percent of public land in the southwest region of Utah and 75 percent of public land statewide. Privately owned land comprises 5.1 percent of the total land area of Garfield County, versus almost 15 percent regionally and over 20 percent statewide. The high percentage of public land translates into a high percentage of land that is not taxable; infrastructure such as highways and utilities must cover long distances to serve scattered population centers; infrastructure capital expenses and maintenance costs per person are increased; and limited available (private) land restricts growth potential.

**Table 1.2-1. Land Ownership/Management**

<b>OWNER/MANAGING AGENCY</b>	<b>GARFIELD COUNTY (ACRES)</b>	<b>GARFIELD COUNTY (% OF TOTAL)</b>	<b>SW REGION (ACRES)</b>	<b>SW REGION (% OF TOTAL)</b>	<b>STATE OF UTAH (ACRES)</b>	<b>STATE OF UTAH (% OF TOTAL)</b>
BLM <sup>1</sup>	1,491,099	44.8	5,886,894	52.2	22,809,674	42.0
USFS <sup>2</sup>	1,046,827	31.4	1,946,999	17.3	8,115,930	14.9
NPS <sup>3</sup>	446,281	13.4	686,676	6.1	1,950,979	3.4
Department of Defense	0		0		1,812,596	3.3
U.S. Fish & Wildlife Service	0		0		62,439	0.1
<b>Total Federal Lands</b>	<b>2,984,207</b>	<b>89.6</b>	<b>301,341</b>	<b>75.5</b>	<b>34,751,619</b>	<b>64.0</b>
<b>American Indian Lands</b>	<b>0</b>		<b>30,686</b>	<b>0.3</b>	<b>2,442,864</b>	<b>4.5</b>
State Parks	1,345	0.04	17,831	0.2	102,115	0.2
State Wildlife Lands	1,595	0.05	22,761	0.2	466,656	0.8

OWNER/MANAGING AGENCY	GARFIELD COUNTY (ACRES)	GARFIELD COUNTY (% OF TOTAL)	SW REGION (ACRES)	SW REGION (% OF TOTAL)	STATE OF UTAH (ACRES)	STATE OF UTAH (% OF TOTAL)
Other State Lands			2.5	0.0	682,024	1.3
State Trust Lands	157,282	4.7	624,754	5.5	3,419,682	6.3
<b>Total State Lands</b>	<b>160,222</b>	<b>4.8</b>	<b>675,549</b>	<b>6.0</b>	<b>4,670,839</b>	<b>8.6</b>
Total Water Bodies	17,617	0.5	94,840	0.8	987,426	1.8
<b>Private Lands</b>	<b>169,856</b>	<b>5.1</b>	<b>1,677,120</b>	<b>14.8</b>	<b>11,462,805</b>	<b>21.1</b>
Total Acres	3,312,409		11,288,469		54,315,191	

<sup>1</sup> BLM managed lands include national monuments, recreation areas, wilderness and others.

<sup>2</sup> USFS managed lands include national forests, recreation areas, wilderness and others

<sup>3</sup> NPS lands include national parks, monuments, historic sites, and recreation areas.

Source: BLM 2006.

### 1.2.4.3. Demographics

Demographics include population growth and characteristics. As in the previous section, the demographics of Garfield County are compared against those of the southwestern region of Utah (of which Garfield County is a part) as a means of providing a reference point for analysis. Demographics are also the basis for determining if minority populations are being disproportionately impacted under environmental justice guidelines, and reflect economic conditions as will be seen in the following sections.

#### Population

**Tables 1.2-2** and **1.2-3** show population counts, recent growth, and projections for the future. Projections of future growth are based on recent growth rates, so if, for example, population growth has been held back in an area because of limited availability of power or water, the projections will not reflect what the growth rate might be if the limiting factor is removed.

**Table 1.2-2. Current Population Statistics**

COUNTY/REGION	POPULATION 2000	POPULATION 2007	PERCENT CHANGE FROM 2000 TO 2007	POPULATION 2006	PERCENT CHANGE FROM 2006 TO 2007
Garfield	4,735	4,872	2.9	4,772	2.1
Southwestern Region	140,919	203,499	44.4	195,817	3.9
State of Utah	2,233,169	2,699,554	20.9	2,615,129	3.2

Source: 2000, 2000 Decennial Census; 2006, 2007, Utah Population Estimates Committee.

**Table 1.2-2** shows that the growth rate for Garfield County for the period of 2000 through 2007 is more than an order of magnitude below the rates of either the region or the State. **Table 1.2-3** shows the Average Annual Growth Rate (AAGR) for Garfield County as being 68 percent of the State AAGR through the year 2060 and 38 percent of the regional rate. Some differences between these two tables can be attributed to their different sources (U.S. Census, Utah Population Estimates Committee, and the Utah Governor’s Office of Planning and Budget). These differences are not unexpected, since growth is concentrated in urban areas rather than uniformly across the landscape.

**Table 1.2-3. Population Projections for 2000-2060**

COUNTY	2000	2010	2020	2030	2040	2050	2060	AAGR 2000-2060
Garfield	4,763	5,092	5,843	6,823	7,656	8,738	10,356	1.3
Southwestern Region	142,006	237,338	371,946	533,664	707,035	891,890	1,083,691	3.4
State of Utah	2,246,553	2,927,643	3,652,547	4,387,831	5,171,391	5,989,089	6,840,187	1.9

AAGR: Average Annual Growth Rate.

Source: Utah Governor’s Office of Planning and Budget, 2008 Baseline Projections; may differ from U.S. Bureau of the Census projections.

Despite the rural nature of the southwestern Utah geographic region, the majority of the population lives in urban areas, such as St. George and Cedar City. The 2000 Decennial Census determined that 69.9 percent of the population lived in urban areas (**Table 12.4-4**). Five urban areas were identified by the 2000 Decennial Census. These are St. George with a population of 62,630, Cedar City (21,978), Hurricane (8,246), Kanab (2,734), and Colorado City (1,505); these urban areas have a combined population of 97,103, which is 68.9 percent of the total population of the region (140,919). The U.S. Bureau of the Census defines urban areas as census blocks with a population density of at least 1,000 persons per square mile, adjacent blocks with population densities of 500 persons per square mile, and adjacent blocks with lower population densities if they meet certain criteria established by the Bureau of the Census. Boundaries of urban areas do not correspond to the city limits for which the areas are named. The population figures given above are for the urban areas and are not the city populations.

**Table 1.2-4** is based on the Census Bureau’s definition (above) of what constitutes an urban area. By that definition, none of Garfield County’s population lives in an urban area, while 68.9 percent of the region and 88.2 percent of the state’s population live in urban areas. **Table 1.2-5** shows populations of population centers by county for the region. Note that the largest population center in Garfield County (Panguitch) is smaller than the largest population centers of the other counties and tenth in size of the nineteen shown.

**Table 1.2-4. Urban and Rural Populations**

	GARFIELD COUNTY	SOUTHWESTERN REGION	STATE OF UTAH
Population (2000)	4,735	140,919	2,233,169
Percent Urban	0.0	68.9	88.2
Percent Rural	100.0	31.1	11.8
Population Density 2007 (people/sq. mi.)	0.9	11.6	31.9

Source: 2000 Decennial Census, Summary File 1, data element P2; 2007, Utah Population Estimates Committee.

**Table 1.2-5. Regional Population Centers by County (Four Largest per County), 2006**

COUNTY	CITY/TOWN	2006 POPULATION	CITY/TOWN	2006 POPULATION
Garfield	Panguitch	1,485	Escalante	750
	Tropic	467	Boulder	178
Beaver	Beaver	2,631	Milford	1,441
	Minersville	848		
Iron	Cedar City	25,665	Enoch	4,550
	Parowan	2,549	Paragonah	465
Kane	Kanab	3,754	Orderville	606
	Big Water	413	Glendale	350
Washington	St. George	67,614	Washington	15,217
	Hurricane	12,084	Ivins	7,205

Source: 2008 Economic Report to the Governor.

The State of Utah has a relatively young population, averaging 27.1 years statewide. The median population of Garfield County is 33.8 years (**Table 1.2-6**). Higher median age often reflects a lack of economic opportunity which leads younger people to leave the area for college or higher paying jobs out of the region.

**Table 1.2-6. Median Age**

	GARFIELD COUNTY	SOUTHWESTERN REGION	STATE OF UTAH
Median Age	33.8	29.9	27.1

Source: 2000 Decennial Census, Summary File 1, data element P13.

Garfield County has a higher percentage of one-person households than the region or the state and a lower percentage of non-family households of two or more persons. This is shown in **Table 1.2-7**. Average household size is slightly lower than for either the region or state at 2.92 persons per household. This reinforces the profile of younger people leaving the area, since household size is strongly influenced by children in a family, either older (post high school) children living with their parents or young families with young children.

**Table 1.2-7. Household Statistics, 2000**

	GARFIELD COUNTY	SOUTHWESTERN REGION	STATE OF UTAH
Households	1,576	46,361	701,281
One-Person Household	20.5%	17.6%	17.8%
Family Household – 2 or more persons	76.1%	77.4%	76.3%
Nonfamily Household – 2 or more persons	3.4%	5.0%	5.9%
Persons per Household	2.92	2.98	3.13

Source: 2000 Decennial Census, Summary File 1, data elements P15, P17, and P18.

## Race and Ethnicity

**Table 1.2-8** shows race and ethnicity for the three areas. As with the region and state, over 90 percent of the population is white. Race and ethnicity are used to ascertain if minority populations are located in a Project Area, as a first step in the process of determining if there are environmental justice issues.

**Table 1.2-8. Race and Ethnicity by Percentage**

ETHNICITY	GARFIELD COUNTY	SOUTHWESTERN UTAH REGION	STATE OF UTAH
<i>Population (2006)</i>	4,534	184,216	2,550,063
White	95.72%	95.29%	93.47%
Black	0.26%	0.42%	1.01%
American Indian	2.40%	1.53%	1.32%
Asian	0.42%	0.88%	1.97%
Hawaiian or Pacific Islander	0.04%	0.44%	0.76%
Two or More Races	1.15%	1.44%	1.47%
Minority Total	4.3%	4.7%	6.5%
Hispanic	4.3%	6.42%	11.22%

Note: The percentages reported here are the minority populations in each area relative to the total population in each area.

Source: 2008 Economic Report to the Governor.

### 1.2.4.4. Housing

Housing availability, structure, and value are indicators of economies and growth. **Table 1.2-9** shows Census 2000 housing data for the three areas. Garfield County had more than a 40 percent vacancy rate in its housing and a substantially lower median value of owner-occupied housing than either the region or the state. However, this is likely explained by the high percentage of seasonal, recreational, or occasional use housing in Garfield County, as compared with the region and the state. **Table 1.2-10** shows types of housing structures, and supports the suggestion in **Table 1.2-9** that a high percentage of housing units in Garfield County may not be primary residences, with high percentages of mobile homes and boats, RVs, vans, etc.

In the context of a NEPA analysis, housing occupancy and structure provide a baseline for determining housing availability for construction workers (short-term) and resulting long-term population growth, if any. If housing is readily available, an increase in population, temporarily or long-term, should not drive up the price of existing housing or increase property values significantly. In particular, a high percentage of construction workers who travel from job site to job site bring mobile homes or recreational vehicles (RV) with them to use as a short-term residences; if there are a substantial number of mobile home or RV parks in the Project Area, it is likely easier for these workers to find hook-ups for their rigs.

**Table 1.2-9. Housing Occupancy, 2000**

	GARFIELD COUNTY	SOUTHWESTERN UTAH REGION	STATE OF UTAH
Housing Units	2,767	59,290	798,594
Occupied	1,576	46,361	701,281
Percentage Owner	79.1%	72.7%	71.5%

	GARFIELD COUNTY	SOUTHWESTERN UTAH REGION	STATE OF UTAH
Occupied			
Percentage Renter Occupied	20.9%	27.3%	28.5%
Vacant	1191	12,929	67,313
Percentage Vacant	43.0%	21.8%	8.8%
Seasonal, Recreational, or Occasional Use	965 (34.9%)	8,970 (15.1%)	29,685 (3.7%)
Median Value of Owner-Occupied Housing	\$90,400	\$121,500	\$142,600
Median Year of Construction	1975	1986	1976

Source: Bureau of the Census 2000 Decennial Census, Summary file 3, data elements H6, H8, and H35.

**Table 1.2-10. Housing Structure**

	GARFIELD COUNTY	SOUTHWESTERN UTAH REGION	STATE OF UTAH
Housing Units	2,767	59,290	798,594
One-Unit Detached	2,180	39,116	520,101
One-Unit Attached	11	4,170	37,902
Two Units	11	1,461	29,243
Three-Four units	27	1,923	36,998
Five to Nine Units	2	1,646	27,677
10-19 Units	0	1,530	30,357
20 or More Units	0	1,377	22,720
Mobile Home	478 (17.3%)	6,711 (11.3%)	39,267 (5.0%)
Boat, RV, Van, etc.	58 (2.1%)	740 (1.2%)	2,201 (0.3%)

Source: Bureau of the Census 2000 Decennial Census, Summary file 3.

#### 1.2.4.5. Education

Garfield County and the four other counties in the southwest region each have their own school district defined along county lines (**Table 1.2-11**). The school districts are governed by elected school boards and operate independently of county governments. Total enrollment in public schools in Garfield County was 933 students in 2007, compared with 1,115 in 2000, down 16 percent over the period, compared with enrollment in the southwest region of 37,611 during 2007, up 28 percent from the 2000 enrollment of 29,313. The growth in school enrollment is concentrated in the Iron and Washington school districts. The other three districts, which are more rural counties, have experienced flat or declining enrollments in recent years. Again, this may indicate that younger families with children are moving out of the area, given that Garfield County's overall population is growing, but its school-age population is declining.

**Table 1.2-11. School District Enrollments<sup>1</sup>, 1995-2007**

						PERCENT GROWTH
DISTRICT	1995	2000	2005	2006	2007	2006-07
Garfield	1,167	1,115	940	938	933	-0.5%
SW Region	27,794	29,313	35,089	36,473	37,611	3.1%
State of Utah	473,666	474,732	498,484	504,792	515,457	2.1%

<sup>1</sup> Does not include private, charter or home school enrollment.

Source: Utah State Office of Education 2008a.

The Garfield County School District operates nine schools, as shown in **Table 1.2-12**. For 2007 the average school size was 104 students, while the average school size for the region and the state, based on **Table 1.2-13**, was 448 students and 568 students, respectively. This likely indicates that the Garfield County School District has ample buildings and infrastructure to accommodate either a short-term or long-term increase in students.

**Table 1.2-12. Schools in the Garfield County School District**

SCHOOL	LOCATION	SCHOOL	LOCATION
Antimony Elementary	Antimony	Panguitch Middle	Panguitch
Boulder Elementary	Boulder	Bryce Valley High	Tropic
Bryce Valley Elementary	Tropic	Escalante High	Escalante
Escalante Elementary	Escalante	Panguitch High	Panguitch
Panguitch Elementary	Panguitch		

Source: Utah State Office of Education 2007.

**Table 1.2-13. Schools by Region 2007**

DISTRICT	ELEMENTARY	MIDDLE	HIGH	OTHER
Garfield	5	1	3	
SW Region	44	14	17	9
State of Utah	508	145	110	145

Source: Utah State Office of Education 2008b.

There are two state institutions of higher learning in the study area. Southern Utah University (SUU) in Cedar City (Iron County) and Dixie State College (DSC) in St. George (Washington County). These institutions serve students from the region and state. As of spring 2007, SUU had an enrollment of 7,509 students. SUU offers associates, bachelors, and masters degrees. Dixie State College was granted baccalaureate degree status in 2000. Formerly, the college was a 2-year institution. Currently the school offers ten bachelor's degrees in addition to associate degrees and certificate programs.

#### 1.2.4.6. Health Care

The Garfield Memorial Hospital and Clinics, located in Panguitch, has 41 beds and is operated by Intermountain Healthcare, Inc., a nonprofit organization based in Salt Lake City. This suggests that the county

hospital has access to larger medical resources, and perhaps the financial backing to stay current with medical equipment and technology.

In addition to the Garfield hospital, the following hospitals are located in the southwest Utah region: Dixie Regional Medical Center in St. George has 245 beds; Valley View Medical Center in Cedar City has 46 beds and (like Garfield Memorial) is operated by Intermountain Healthcare, Inc.; Kane County Hospital in Kanab has 38 beds; Beaver Valley Hospital (49 beds) and Milford Valley Memorial Hospital (25 beds) are both in Beaver County (Directory of America's Hospitals 2008).

### 1.2.4.7. Employment

By contrast, the unemployment rate for the region was 2.95 percent in 2006, which is very close to the state unemployment rate for the same time period (see **Table 1.2-14**). Trade, transportation and utilities was the sector with the highest percentage of employment for the region and state at 21.20 percent and 19.50 percent respectively in 2006. This sector is much less seasonal than tourism and more stable year to year.

In 2006, nonfarm jobs in Garfield County totaled 2,260. The county's economy is highly concentrated in tourism and government (**Table 1.2-15**). In fact, Garfield County relies on tourism and recreation more than any other county in the state, largely due to the presence of BRCA. In 2006, 36 percent of all nonfarm employment in Garfield County was in the leisure/hospitality sector. The seasonal nature of the tourist economy explains the county's high annualized unemployment rate, 4.9 percent compared with the statewide rate of 2.9 percent in 2006. Government is the second largest sector, accounting for 26 percent of all nonfarm jobs and the largest income. When combined, employment in these two sectors accounted for more than 60 percent of all nonfarm jobs in Garfield County in 2006. Major employers in Garfield County include Ruby's Inn, Garfield County School District, South Central Utah Telephone, Garfield Memorial Hospital, and the Federal Government.

**Table 1.2-14. Employment and Unemployment Trends**

	2002	2003	2004	2005	2006
<i>Garfield County</i>					
Civilian Labor Force	2,587	2,549	2,655	2,681	2,668
Employment	2,345	2,322	2,447	2,487	2,536
Unemployment	242	227	208	194	132
Unemployment Rate	9.4%	8.9%	7.8%	7.2%	4.9%
<i>Southwest Utah Region</i>					
Civilian Labor Force	70,949	74,069	79,757	85,263	91,043
Employment	67,148	70,051	75,851	81,697	88,357
Unemployment	3,801	4,018	3,906	3,566	2,686
Unemployment Rate	5.36%	5.42%	4.90%	4.18%	2.95%
<i>State of Utah</i>					
Civilian Labor Force	1,181,691	1,200,364	1,230,539	1,263,774	1,311,073
Employment	1,113,645	1,132,948	1,169,163	1,211,803	1,272,801
Unemployment	68,046	67,416	61,376	51,971	38,272
Unemployment Rate	5.8%	5.6%	5.0%	4.1%	2.9%

Source: Utah Department of Workforce Services 2006.

**Table 1.2-15. 2006 Nonagricultural Payroll Employment by Economic Sector**

INDUSTRY	GARFIELD COUNTY		SOUTHWEST UTAH REGION		STATE OF UTAH	
	PERSONS	PERCENT	PERSONS	PERCENT	PERSONS	PERCENT
Total Nonagricultural Employment	2,260		75,660		1,203,914	
Natural Resources & Mining	12	0.53%	370	0.49%	10,024	0.83%
Construction	83	3.67%	10,515	13.90%	95,164	7.90%
Manufacturing	98	4.34%	5,417	7.16%	123,064	10.22%
Trade, Transportation, and Utilities	239	10.58%	16,043	21.20%	234,797	19.50%
Information	126	5.58%	1,149	1.52%	32,541	2.70%
Financial Activities	35	1.55%	3,232	4.27%	71,469	5.94%
Professional and Business Services	17	0.75%	5,154	6.81%	154,834	12.86%
Education and Health Services	207	9.16%	8,859	11.71%	134,410	11.16%
Leisure and Hospitality	821	36.33%	10,385	13.73%	108,477	9.01%
Other Services	27	1.19%	2,214	2.93%	34,651	2.88%
Government	595	26.33%	12,322	16.29%	204,483	16.98%

Source: 2008 Economic Report to the Governor.

### Wages and Income

Wage and income data for each county in the study area were obtained from the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis. **Table 1.2-16** shows information on average annual wages, and **Table 1.2-17** shows total annual wage and total annual wage by economic sector.

Despite strong wage growth in the region, the average annual wage in all counties stayed significantly below the 2006 state average of \$35,130. In Garfield County, the average annual wage (\$23,016) was more than 34 percent below the state average (\$35,130). The annual wage in the southwestern region was about 23 percent below the state average.

**Table 1.2-16. Average Annual Wage**

LOCATION	DOLLARS			PERCENT CHANGE	
	2004	2005	2006	2004-2005	2005-2006
Garfield County	\$21,498	\$21,819	\$23,016	1.49%	5.49%
Southwest Utah Region	\$23,807	\$25,201	\$27,090	5.86%	7.49%
State of Utah	\$32,171	\$33,328	\$35,130	3.59%	5.41%

Source: Bureau of Economic Analysis, State and Local Personal Income.

**Table 1.2-17. 2006 Nonagricultural Payroll Wages by Economic Sector (Dollars)**

INDUSTRY	GARFIELD COUNTY	SOUTHWEST UTAH REGION	STATE OF UTAH
Total Nonagricultural Employment	\$51,693,148	\$2,022,685,532	\$41,647,353,788
Natural Resources & Mining	\$585,019	\$9,617,153	\$630,281,003
Construction	\$1,760,187	\$304,503,110	\$3,379,405,308
Manufacturing	\$1,857,876	\$161,459,284	\$5,124,852,130
Trade, Transportation, and Utilities	\$5,039,956	\$445,154,886	\$7,717,382,477
Information	\$5,104,051	\$34,394,468	\$1,428,528,411
Financial Activities	\$859,349	\$113,272,270	\$3,198,497,231
Professional and Business Services	\$342,312	\$135,795,182	\$6,153,005,935
Education and Health Services	\$5,885,343	\$275,329,832	\$4,306,975,652
Leisure and Hospitality	\$11,914,795	\$139,988,889	\$1,554,459,256
Other Services	\$355,470	\$50,035,043	\$885,793,097
Government	\$17,988,790	\$353,135,415	\$7,268,173,288

Source: 2008 Economic Report to the Governor.

**Table 1.2-15** shows Garfield County had a substantially higher number of jobs in the leisure and hospitality sector than in the government sector; however, **Table 1.2-17** shows that the fewer number of jobs in the government sector paid more total wages than the greater number of employees earned in the leisure and hospitality sector. This substantiates the low average wages and seasonality of employment in the tourism industry, as well as the benefit to the economy of having government management offices in the County.

### Personal and Per Capita Income

Personal income is income received by persons from all sources (e.g., wages, investments, savings, rent). Per capita personal income is the mean income computed for every person living in a geographical area. Household income is the sum of income received in a calendar year by all household members, including household members not related to the householder, people living alone, and other non-family members.

From 2005 to 2006 total personal income in Garfield County increased at an annual rate of 6.1 percent, compared with 12.7 percent growth for the region and 8.2 percent statewide (**Table 1.2-18**). Garfield County per capita personal income grew by 7.25 percent between 2005 and 2006 (**Tables 1.2-19**). These show the limited economic growth in Garfield County for the period.

**Table 1.2-18. Total Personal Income**

LOCATION	MILLIONS OF DOLLARS			PERCENT CHANGE	
	2004	2005	2006	2004-2005	2005-2006
Garfield County	\$99.6	\$107.7	\$114.3	8.1%	6.2%
Southwest Utah Region	\$3,578.8	\$4,063.3	\$4,577.3	13.5%	12.7%
State of Utah	\$63,477.8	\$70,166.9	\$75,913.5	10.5%	8.2%

Source: 2008 Economic Report to the Governor.

**Table 1.2-19. Total Per Capita Income**

LOCATION	DOLLARS			PERCENT CHANGE	
	2004	2005	2006	2004-2005	2005-2006
Garfield County	\$22,378	\$23,506	\$25,210	5.04%	7.25%
Southwest Utah Region	\$21,881	\$22,578	\$24,848	3.19%	10.05%
State of Utah	\$26,214	\$27,231	\$29,769	3.88%	9.32%

Source: 2008 Economic Report to the Governor.

### Median Household Income

Based on data from the U.S. Bureau of the Census, the median household income of every county in the Southwestern Utah Region, including Garfield County, has been, and continues to be, significantly lower than the statewide median (**Table 1.2-20**) for the period of 2000 to 2005. Over the same period, household income has been rising faster in Garfield County and the region than it has been in the state as a whole (**Table 1.2-20**). Median household income is the indicator used to determine poverty thresholds, in conjunction with household size and household members' ages. For 2005, the poverty threshold for a one person household, under age 65, was \$8,959, while the threshold for a two person household, both under age 65, was \$11,591 (Census Bureau 2005). The threshold is calculated for a wide range of household sizes, ages and relationships. In 2000, 374 people in Garfield county were considered to be living below the poverty level (7.9 percent of the population) (EPA 2008).

**Table 1.2-20. Median Household Income Estimates, 2000-2005**

	GARFIELD COUNTY	BEAVER COUNTY	IRON COUNTY	KANE COUNTY	WASHINGTON COUNTY	STATE OF UTAH
2000	\$35,079	\$36,568	\$34,121	\$34,937	\$37,854	\$45,934
2001	34,283	36,339	33,440	34,239	36,976	45,914
2002	33,964	37,436	34,096	34,455	37,850	46,165
2003	34,910	38,039	35,862	36,117	39,777	46,709
2004	37,454	41,205	37,495	37,613	42,726	47,224
2005	38,751	38,822	37,624	37,395	43,566	48,155
Percent Increase, 2000-2005	10.5%	6.2%	10.3%	7.0%	15.1%	4.8%

Sources: U.S. Bureau of the Census, Small Area Income and Poverty Estimates; 2000 Decennial Census, Summary File 3, data elements P52 and P53.

### 1.2.4.8. Local Government Finances

Local government finances in 2002 for Garfield County, the region, and the state are summarized in **Table 1.2-21**. These data include all local governments—not only county governments but also all municipalities, school districts, and special service districts within the counties. **Table 1.2-21** illustrates another side effect of Garfield County being a rural county with a land base dominated by public lands. Regionally, 7.9 percent of revenues are from federal sources, while only 5.6 percent of Garfield County's revenue is from federal sources. Twenty-four percent of regional revenue is from state sources, but only 19 percent of Garfield County's revenue is from state sources. Consequently, a higher tax burden is placed on residents, as evidenced by per capita taxes in Garfield County being 56.7 percent higher than for the region, and per capita expenditures being more than three times those regionally. In other words, it

is more expensive, per person, to provide services where there is a limited tax base, greater distances to deliver services and fewer people to bear those costs.

**Table 1.2-21. Local Government Finances, 2002**

DESCRIPTION	GARFIELD COUNTY	SOUTHWEST UTAH REGION
General Revenue (thousands)	\$8,812	\$66,668
Intergovernmental Transfers, Federal (thousands)	\$493	\$5,277
Intergovernmental Transfers, State (thousands)	\$1,683	\$15,865
General Revenue, Other Sources, Total (thousands)	\$6,486	\$44,442
General Revenue, Other Sources, Total Taxes (thousands)	\$1,319	\$25,130
Per Capita Taxes (dollars)	\$279	\$178
Direct General Expenditures (thousands)	\$7,234	\$63,892
Per Capita Direct General Expenditures (dollars)	\$1,528	\$453
Total Outstanding Debt (thousands)	\$4,926	\$34,041
Per Capita Outstanding Debt (dollars)	\$1,040	\$220

Source: Bureau of the Census, 2002 Census of Government, Table 13, "Finances of Individual County Governments by State 2001-02."

### Property Taxes

Property tax data from the Utah State Tax Commission are shown in **Table 1.2-22**. The table shows how tax receipts have changed over time and their relative value to Garfield County, the region and the state.

**Table 1.2-22. Property Taxes Paid, 2001-2006 (in \$1,000s)**

	TOTAL REAL PROPERTY	TOTAL PERSONAL PROPERTY	UTILITIES	NATURAL RESOURCES	MOTOR VEHICLE	TOTAL PROPERTY TAXES
<i>2001</i>						
Garfield County	2,550	129	282	99	184	3,242
Southwest Region	71,806	3,889	6,318	522	7,217	89,752
State of Utah	1,113,901	108,044	122,080	47,612	150,291	1,541,929
<i>2006</i>						
Garfield County	3,627	124	302	186	450	4,689
Southwest Region	128,408	5,557	6,466	884	17,990	159,305
State of Utah	1,551,760	114,573	112,195	67,568	212,232	2,058,327

Source: Utah State Tax Commission, Property Tax Division, Annual Statistical Reports, years as indicated.

## Payments in Lieu of Taxes

The Federal Government makes “payments in lieu of taxes” (PILTs) to local governments to help offset losses in property taxes due to nontaxable federal land. During 2008, PILTs for Garfield County totaled \$433,138 (Table 1.2-23). Based on the number of acres which would fall under the PILT program, Garfield County received only 17 cents per acre, which is less than a third of the rate received in the region or the state. PILTs are based on population, receipt-sharing payments, and the amount of federal land within a county. Over this eight year period, payments have increased 21.1 percent to Garfield County, 31.6 percent to the region, and 30.6 percent to the state. This again shows how restraints on growth attributable to the limited base for taxation and development have affected the economy of Garfield County.

**Table 1.2-23. Payments in Lieu of Taxes, 2001-2008**

	GARFIELD COUNTY		SOUTHWEST UTAH REGION		STATE OF UTAH	
	TOTAL PAYMENT	PAYMENT PER ACRE	TOTAL PAYMENT	PAYMENT PER ACRE	TOTAL PAYMENT	PAYMENT PER ACRE
2001	\$357,580	\$0.14	\$3,694,251	\$0.43	\$15,352,775	\$0.47
2002	\$375,382	\$0.14	\$3,841,111	\$0.45	\$16,110,837	\$0.49
2003	\$416,983	\$0.16	\$4,427,564	\$0.52	\$18,656,877	\$0.57
2004	\$428,693	\$0.16	\$4,542,185	\$0.53	\$19,136,869	\$0.58
2005	\$433,660	\$0.17	\$4,694,502	\$0.55	\$19,622,224	\$0.60
2006	\$433,510	\$0.17	\$4,770,171	\$0.56	\$20,055,933	\$0.61
2007	\$432,721	\$0.17	\$4,813,399	\$0.56	\$20,057,363	\$0.61
2008	\$433,138	\$0.17	\$4,863,653	\$0.57	\$20,044,139	\$0.61

Source: U.S. Department of the Interior.

### 1.2.4.9. Agriculture

Since much of the study area is rural, agriculture and cattle ranching play a large part in the cultural identity of many of the residents. Livestock accounted for over 90 percent of agricultural production in Garfield County in 2002 (Table 1.2-24). Farmers in Garfield County reported average net losses, on a cash basis, during 2002 (Table 1.2-25).

**Table 1.2-24. Value of Agricultural Production, 2002**

	GARFIELD COUNTY		SOUTHWEST REGION <sup>1</sup>		STATE OF UTAH	
	MARKET VALUE (1,000s)	PERCENT OF VALUE	MARKET VALUE (1,000s)	PERCENT OF VALUE	MARKET VALUE (1,000s)	PERCENT OF VALUE
Value of Production	\$6,037		\$252,040		\$1,115,898	
Crops	\$490	8.1%	\$51,238	20.3%	\$257,797	23.1%
Livestock	\$5,547	91.9%	\$200,802	79.7%	\$858,101	76.9%

<sup>1</sup> Excluding Kane County, for which values were not disclosed.

Source: National Agricultural Statistics Service, 2002 Census of Agriculture 2002.

In most of the counties in the region, including Garfield, over 40 percent of the farmers have a principal occupation other than farming. In the remaining four counties, the majority of the farmers have nonfarm jobs in addition to their work on the farm. Although agriculture and ranching play a significant role in the culture and social makeup of the area, nonfarm employment is necessary to augment farm earnings.

**Table 1.2-25. Agricultural Economics, 2002**

	<b>GARFIELD COUNTY</b>	<b>SOUTHWEST REGION</b>	<b>STATE OF UTAH</b>
Number of Farms	225	1531	15,282
Average Size (acres)	355	700	768
Average Cash Income	-\$6,926	\$27,318	\$14,404
Sales Less Than \$10,000	60.0%	61.7%	66.4%
Operators Principal Occupation in Other Than Farming	43.6%	47.4%	51.3%
Operators Work Off the Farm	65.8%	61.3%	61.4%
Operators Work More Than 200 Days Off the Farm	47.1%	43.5%	46.8%

Source: National Agricultural Statistics Service, 2002 Census of Agriculture 2002.

### **1.2.5. Environmental Justice**

This section was prepared in compliance with Presidential Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (EO 12898), dated February 11, 1994, and Title VI of the Civil Rights Act of 1964. The purpose of this section is to provide baseline information for determining whether the proposed project would have disproportionately high and adverse human health or environmental effects on minority and/or low-income populations. This analysis focuses on the populations located within the area potentially affected by the proposed project. In accordance with EO 12898, this analysis documents minority and low-income populations within Garfield County.

Both EO 12898 and Title VI address persons belonging to the following target populations:

- **Minority.** All people of the following origins: Black, Asian, American Indian and Alaskan Native, Native Hawaiian or Other Pacific Islander, and Hispanic.
- **Low income.** Persons whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines.

As shown in **Table 1.2-8**, no significant populations of minority race or ethnicity are concentrated in Garfield County, relative to equivalent populations in either the southwestern Utah region or the state of Utah. Economically, although average annual wages in Garfield County (**Table 1.2-16**) are significantly lower than those for the region or the state, this is in large part due to the typically low wages associated with the dominant industry, tourism. At the same time, median household income (**Table 1.2-20**) and per capita income (**Table 1.2-19**) show Garfield County as comparable to the region and the state, using those indices. It can be concluded from the above that no populations exist in Garfield County that would be considered minority populations under CEQ guidelines.

## **1.3. IMPACT ANALYSIS**

### **1.3.1. Direct and Indirect Effects**

The Proposed Action and Alternatives outlined in previous sections may cause, directly or indirectly, changes in the human environment. This report assesses and analyzes these potential changes for inclusion in the EIS prepared for this proposal.

The terms “effect” and “impact” are synonymous under NEPA. Effects may refer to adverse or beneficial ecological, aesthetic, historical, cultural, economic, social, or health-related phenomena that may be caused by the Proposed Action or Alternatives (40 CFR 1508.8). Effects may be direct, indirect, or

cumulative in nature. A direct effect occurs at the same time and place as the action (40 CFR 1508.8(a)). Direct and indirect effects are discussed in combination under each affected resource. Indirect effects are reasonably foreseeable effects that occur later in time or are removed in distance from the action (40 CFR 1508(b)). In this report, direct and indirect effects are discussed in combination.

**1.3.1.1. Indicators and Methods of Analysis**

The following indicators will be evaluated for the Action Alternatives and compared with the No Action alternative as the means of determining the nature and extent of potential impacts from the project.

- Estimated temporary and permanent increases in local employment (jobs) and wages (\$) associated with construction and operation of the transmission line, including direct, indirect, and induced effects.
- Estimated number of skilled labor workers from outside the area and associated impacts to local economy and local services.
- Projected short- and long-term impacts on housing, including property values and reduced availability of tourist accommodations that are occupied by construction workers.
- Estimated impacts on local infrastructure and community services, including education.
- Changes in demographics.
- Projected increases in collection of property taxes and sales and use tax, during both construction and operations phases.
- Effect on rate structure to determine impact on rate payers as they relate to project construction and operation costs over the lifetime of the project (planned to be 30 years).
- Estimated number of additional households, commercial enterprises, and geographic service area that could be accommodated due to increased capacity or improved reliability of service.
- Estimated effect on county property valuations (both increases and decreases).

**Table 1.3-1** lists the terms used to describe the magnitude and duration of effects on socioeconomic resources.

**Table 1.3-1. Descriptions of terms for resource effects**

ATTRIBUTE OF EFFECT		DESCRIPTION RELATIVE TO SOCIOECONOMIC RESOURCES
Magnitude	Negligible	No measurable change from current conditions
	Minor	A small but measurable change from current conditions
	Moderate	A moderate, measurable change in current conditions
	Major	An easily measurable, obvious change from current conditions
Duration	Short-term	Five years or less
	Long-term	More than five years

For each Action Alternative and the No Action alternative, the socioeconomic specialist report will estimate the social and economic effects of the project within the study area during both construction and operation phases. Effects of resource impact indicators for Action Alternatives will be compared with those of the No Action alternative to determine percentage of change or impact.

The U.S. Department of Commerce, Bureau of Economic Analysis Regional Input-Output Modeling System (RIMS II) was used to determine economic impacts to Garfield County. The model is based on

“interindustry relationships within regions” (BEA 1997) and uses multipliers determined through recent economic activity to estimate indirect and induced effects of any given project on the modeled area beyond the direct expenditures. “Indirect effects,” as the term is used in economics, includes additional employment and wages resulting from spending by the construction companies, while “induced effects” are increased employment and wages resulting from the economic growth associated with increased spending by workers in the area.

Garkane has said that no new employees would be required for operations after the construction is complete, for either operations or removal of lines that would be replaced; consequently, these phases could not be modeled in RIMS II and are analyzed qualitatively. For the construction phase of the project, RIMS II was used to estimate direct, indirect, and induced economic impacts quantitatively. These impacts may include new short-term or long-term employment, wages, and overall economic growth (or decline). In every case, results are compared with the baseline data provided in **Section 1.2** as a means of determining whether the impacts would be major, moderate, minor, or negligible.

### **1.3.1.2. Direct and Indirect Effects by Alternative**

#### **Alternative A - Proposed Action**

##### Construction

Alternative A (the Proposed Action) would require approximately 31 miles of new line, 2.51 miles of construction in limited access areas using helicopters (25 structures), and two new/expanded substations. Estimated costs include \$1.90 million for clearing of the right-of-way, \$14.95 million for line construction, \$1.01 million for removal of replaced line, and \$4.00 million for substations for a total estimated project cost of \$22 million (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

The proponent estimates that the least number of employees would be used during clearing of the right-of-way, which should take approximately 10 workers. The maximum number of workers would be determined by the construction contractor, the timing of the permitting process, and permit conditions; the proponent estimates the maximum number of construction workers at one time would be 20, plus 4 additional for helicopter access tasks. Right-of-way clearing is estimated to take approximately 3 months; line construction would take 12 months; and substation construction would take 24 months, primarily because of the lead time for manufacture of some of the substation equipment. Garkane estimates that 90 percent of the construction crew would be from outside the local area. One hundred percent of the replaced line removal and substation construction crew would be local (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

**Table 1.3-2** shows the estimated labor costs for the project by task and workers’ wage classes. These estimates would vary depending on the contractor. Several assumptions have been made in developing these estimates. First, it is assumed that the 2.51 miles of limited access (helicopter) construction would take the helicopter crew of four approximately one month, assuming all holes for the supporting structures would be hand-dug by regular construction crews before the helicopter is employed (optimization of helicopter use). The cost of the helicopter and its crew (\$2,000/hour) has not been counted under labor costs, since labor costs are not separated in the overall rental cost. Second, the average work week for construction workers is estimated to be 50-60 hours/week; in the table, it is assumed the average week would be 55 hours and that workers would earn time-and-a-half for hours over 40 per week. Third, based on the relative cost of labor to total cost in the other tasks, it is assumed that the cost of labor for clearing the right-of-way is one-eighth the overall cost estimate of \$1.9 million for right-of-way clearing. Finally, while the substations are estimated to require 24 months to complete, the table assumes that, for half that time, no construction would occur because crews would be waiting for delivery of specialized equipment.

**Table 1.3-2. Estimated Labor Costs, Proposed Action**

# OF WORKERS	\$/HOUR	HOURS/WEEK	\$/WEEK (CREW)	# OF WEEKS	TOTAL
<i>Clearing Right-of-Way</i>					
10	Assume Labor Costs 1/8 Total Cost of \$1.9 Million				<b>\$237,000</b>
<i>Construction, Regular Crew</i>					
5 Journeymen	\$35	55	\$10,937.50	52	\$568,750
8 Apprentice	\$27	55	\$13,500.00	52	\$702,000
5 Equipment Operators	\$25	55	\$7,812.00	52	\$406,250
2 Project Foreman/Manager	\$40	55	\$5,000	52	\$260,000
<i>Construction, Helicopter Crew</i>					
1 Journeyman	\$35	55	\$2,187.50	4.5	\$9,844
3 Apprentice	\$27	55	\$5,062.50	4.5	\$22,781
<b>Transmission Line Construction Total</b>					<b>\$1,969,625</b>
<i>Removal of Replaced Line</i>					
2 Journeymen	\$35	40	\$2,800	12	\$33,600
4 Apprentice	\$27	40	\$4,320	12	\$51,840
<b>Line Removal Total</b>					<b>\$85,440</b>
<i>Substation Construction</i>					
2 Journeymen (Linemen)	\$35	40	\$2,800	52	\$145,600
2 Apprentice (Linemen)	\$27	40	\$2,160	52	\$112,320
2 Journeymen (Substation)	\$35	40	\$2,800	52	\$145,600
2 Apprentice (Substation)	\$27	40	\$2,160	52	\$112,320
<b>Substation Total</b>					<b>\$515,840</b>
<b>Total Labor, Project</b>					<b>\$2,808,405</b>
Total Labor, Local					\$1,035,743
Total Labor, Non-Local					\$1,772,662

Source: Garkane, 2008.

The RIMS II model was run for the Proposed Action (Alternative A) to estimate its impacts to the Garfield County economy. Using the total project cost of \$22 million, the model estimated total economic activity generated by the Proposed Action across all industries would be \$29,352,400, including the \$22 million from the project, indicating that approximately \$7,352,400 additional dollars of economic activity would be generated in Garfield County. Based on initial earnings of \$2,808,405 paid to construction workers for all phases of the project (**Table 1.3-2**), the RIMS II model projected overall earnings generated by the project in Garfield County at \$3,470,346. The model further estimated that a total of 46 jobs would be generated across all sectors (i.e., construction, retail, lodging, real estate, etc.) in Garfield County; it is important to note the temporary nature of this employment, as it relates to a short-term project (i.e., the term of construction).

Using the economic indicators described above (**Section 1.3.1.2**), the following level of impact to Garfield County may be expected:

- As many as 46 temporary jobs may be created in Garfield County, although approximately half of those would be workers from outside the local area. Compared with 2006 employment of 2,536 (**Table 1.2-14**), this represents a 1.8 percent increase.
- Estimating that approximately 22 workers would be from outside the local area and would live in the area for the duration of construction (1 year), this would represent an increase in the population, based on 2007 data (**Table 1.2-2**), of 0.45 percent. With a county-wide average household size of 2.92, if each of these workers brings two other family members or others, the increase in population would be approximately 1.35 percent. Note that the average annual growth rate for Garfield County is predicted to be 1.3 percent for the period 2000 to 2060 (**Table 1.2-3**) and was estimated at 2.1 percent between 2006 and 2007 (**Table 1.2-2**).
- If each of 22 workers from outside the local area rented a house or other housing unit (i.e., mobile home, RV) in the county, it would have a minimal impact on local housing. As shown in Table 1.2-9, as of the 2000 Census, there were 2,767 housing units in Garfield County of which 1,191 were considered vacant (43 percent). Deducting the 965 housing units that were classed as “Seasonal, Recreational, or Occasional Use” leaves 226 vacant housing units, or 8.2 percent of vacant housing.
- More typically, construction workers from outside an area would bring their own recreational vehicles (RVs) to use during a project, or they would stay in short-term housing such as hotels or motels. Due to the presence of several national parks and recreation areas, Garfield County has a relatively large number of accommodations compared to its population. The American Automobile Association (AAA) 2008 Southwestern Campbook shows the following number of RV hook-ups: Ruby’s Inn, 226; Bryce Canyon, 223; Panguitch, 260; Torrey (Capitol Reef), 160; Escalante, 82; Tropic, 12; and Cannonville, 87. Use of these sites for an extended period would make them unavailable to tourists, but it would also use the sites during the off-season when they would likely go unused otherwise. Given that there are at least 1,050 RV hookups, if all 22 non-local workers used RV hook-ups, it would represent 2.1 percent of the total available. This is without considering hotels, motels, and other accommodations.
- Local property values are unlikely to be impacted by either upgrading the existing line or building a new transmission line, since very little of the line crosses private land. Property values may stagnate or decline if future development is limited by restriction on new power hook-ups.
- Impacts on local infrastructure and community services would likely be negligible to minor, given the small size of the workforce and dispersed nature of the work (i.e., work would occur at several locations along the project corridor simultaneously). The Garfield Memorial Hospital and Clinics in Panguitch has 41 beds (**Section 1.2.4.5**). School enrollment has declined from 1,167 in 1995 to 933 in 2007 (**Table 1.2.4-11**), suggesting that the school system has the capacity to accommodate additional students.
- Given the small number of construction workers and their temporary tenure, it is unlikely that they would change the demographics of the county significantly.
- The proponent estimates that Garkane would purchase approximately \$7 million worth of materials on which sales or use tax would be paid. A percentage of this tax would go to county and local governments.

Overall, the net adverse effect of the construction phase of the project on county services and economics would be negligible to minor and the net benefit of this phase, based on increased money in the economy and increased tax collections, would be minor to moderate.

## Operations

Garkane does not anticipate hiring any additional staff for operations after construction is complete and the new line and substations are in operation. The company estimates additional annual maintenance costs of \$40,000 (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

After the new facilities are put into operation, Garkane would use existing employees to remove the transmission line and other facilities that are replaced by the project. Thus, while the budget for line removal is \$1.01 million, none of that money can be considered new spending for wages or salary. Line removal is expected to take 2 to 3 years as crews are available, using two journeymen linemen and four apprentice linemen (**Table 1.3-2**), with a labor cost of \$85,440 (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

The project would be financed over 30 years at the prevailing interest rate at the time of funding. This amount would be paid by ratepayers through a rate increase. Garkane is in the process of completing a rate increase application that would raise company revenues by 7.88 percent, which would increase an average residential bill (750 kwh) by \$3.37 per month to cover anticipated costs of rising interest rates, materials, and fuel (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

Using its existing transmission facilities, Garkane can safely transmit 8 MVA and serve approximately 3,500 meters/customers of various size and demand. The proposed line could safely transmit 30 MVA and serve an additional 9,500 meters/customers with a similar energy use profile (13,000 customers total).

The State would assess the value of the new line for property tax purposes and may or may not increase the valuation for tax purposes (Personal Communication, Bob Davis, Garfield County Assessor's Office, August 5, 2008).

Overall, the Proposed Action would have a minor adverse impact to Garkane customers by increasing the cost of their service. At the same time, the project would have a minor to moderate beneficial effect by increasing reliability of service to current customers and facilitating economic growth through improved infrastructure. Increased development may lead to increased property values and commensurate increases in property taxes.

## **Alternative B - Parallel Existing 69kV Route**

### Construction

Alternative B (the Parallel Existing 69 kV Route) would require approximately 26 miles of new line, 6.07 miles of construction in limited access areas using helicopters (61 structures), and four new/expanded substations. Estimated costs include \$1.6 million for clearing of the right-of-way; \$24.5 million for line construction; \$1.87 million for removal of replaced line; and \$8.00 million for substations for a total estimated project cost of \$36 million (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

The proponent estimates that the least number of employees would be used during clearing of the right-of-way, which should take approximately 10 workers. The maximum number of workers would be determined by the construction contractor and the timing of the permitting process and permit conditions; the proponent estimates the maximum number of construction workers at one time would be 20, plus 4 additional for helicopter access tasks. Right-of-way clearing is estimated to take approximately 3 months; line construction would take 18 months; and substation construction would take 24 months, primarily because of the lead time for manufacture of some of the substation equipment. Garkane estimates that 90 percent of the construction crew would be from outside the local area. One hundred percent of the replaced line removal and substation construction crew would be local (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

**Table 1.3-3** shows the estimated labor costs for the project by task and workers' wage classes. These estimates would vary depending on the contractor. Several assumptions have been made in developing

these estimates. First, it is assumed that the 6.07 miles of limited access (helicopter) construction would take the crew of four approximately 10.9 weeks, assuming all holes for the supporting structures will be hand-dug by regular construction crews before the helicopter is employed (optimization of helicopter use). The cost of the helicopter and its crew (\$2,000/hour) has not been counted under labor costs, since labor costs are not separated in the overall rental cost. Second, the average work week for construction workers is estimated to be 50-60 hours/week; in the table, it is assumed the average week would be 55 hours and that workers would earn time-and-a-half for hours over 40 per week. Third, based on the relative cost of labor to total cost in the other tasks, it is assumed that the cost of labor for clearing the right-of-way is one-eighth the overall cost estimate of \$1.6 million for right-of-way clearing. Finally, the two substations were expected to require only half the overall completion time (12 months) for Alternative A; for the four substations in this alternative, it is assumed that construction crews would be working the entire 24 months.

**Table 1.3-3. Estimated Labor Costs, Parallel Existing 69 kV Route Alternative**

# OF WORKERS	\$/HOUR	HOURS/WEEK	\$/WEEK (CREW)	# OF WEEKS	TOTAL
<i>Clearing Right-of-Way</i>					
10	Assume Labor Costs 1/8 Total Cost of \$1.6 Million				<b>\$200,000</b>
<i>Construction, Regular Crew</i>					
5 Journeymen	\$35	55	\$10,937.50	52	\$568,750
8 Apprentice	\$27	55	\$13,500.00	52	\$702,000
5 Equipment Operators	\$25	55	\$7,812.00	52	\$406,250
2 Project Foreman/Manager	\$40	55	\$5,000	52	\$260,000
<i>Construction, Helicopter Crew</i>					
1 Journeyman	\$35	55	\$2,187.50	10.9	\$23,844
3 Apprentice	\$27	55	\$5,062.50	10.9	\$55,181
<b>Transmission Line Construction Total</b>					<b>\$2,016,025</b>
<i>Removal of Replaced Line</i>					
2 Journeymen	\$35	40	\$2,800	12	\$33,600
4 Apprentice	\$27	40	\$4,320	12	\$51,840
<b>Line Removal Total</b>					<b>\$85,440</b>
<i>Substation Construction</i>					
2 Journeymen (Linemen)	\$35	40	\$2,800	104	\$291,200
2 Apprentice (Linemen)	\$27	40	\$2,160	104	\$224,640
2 Journeymen (Substation)	\$35	40	\$2,800	104	\$291,200
2 Apprentice (Substation)	\$27	40	\$2,160	104	\$224,640
<b>Substation Total</b>					<b>\$1,031,680</b>
<b>Total Labor, Project</b>					<b>\$3,333,145</b>
Total Labor, Local					\$1,518,723
Total Labor, Non-Local					\$1,814,422

Source: Garkane, 2008.

The RIMS II model was run for the Parallel Existing 69 kV Route (Alternative B) to estimate its impacts to the Garfield County economy. Using the total project cost of \$36 million, the model estimated total economic activity generated by Alternative B across all industries would be \$48,031,200, including the \$36 million from the project, indicating that approximately \$12,031,200 additional dollars of economic activity would be generated in Garfield County. Based on initial earnings of \$3,333,145 paid to construction workers for all phases of the project (**Table 1.3-3**), the RIMS II model projected overall earnings generated by the project in Garfield County at \$4,118,767. The model further estimated that a total of 46 jobs would be generated across all sectors (i.e., construction, retail, lodging, real estate, etc.) in Garfield County; it is important to note the temporary nature of this employment, as it relates to a short-term project (i.e., the term of construction).

Using the economic indicators described above (**Section 1.3.1.2**), the following level of impact to Garfield County may be expected:

- As many as 46 temporary jobs may be created in Garfield County, although approximately half of those would be workers from outside the local area. Compared with 2006 employment of 2,536 (**Table 1.2-14**), this represents a 1.8 percent increase.
- Estimating that approximately 22 workers would be from outside the local area and would live in the area for the duration of construction (18 months), this would represent an increase in the population, based on 2007 data (**Table 1.2-2**), of 0.45 percent. With a county-wide average household size of 2.92, if each of these workers brings two other family members or others, the increase in population would be approximately 1.35 percent. Note that the average annual growth rate for Garfield County is predicted to be 1.3 percent for the period 2000 to 2060 (**Table 1.2-3**) and was estimated at 2.1 percent between 2006 and 2007 (**Table 1.2-2**).
- If each of 22 workers from outside the local area rented a house or other housing unit (e.g., mobile home, RV) in the county, it would have a minimal impact on local housing. As shown in Table 1.2-9, as of the 2000 Census there were 2,767 housing units in Garfield County of which 1,191 were considered vacant (43 percent). Deducting the 965 housing units that were classed as “Seasonal, Recreational, or Occasional Use” leaves 226 vacant housing units, or 8.2 percent of vacant housing.
- More typically, construction workers from outside an area would bring their own recreational vehicles (RVs) to use during a project, or they would stay in short-term housing such as hotels or motels. Due to the presence of several national parks and recreation areas, Garfield County has a relatively large number of accommodations compared with its population. The AAA 2008 Southwestern Campbook shows the following number of RV hook-ups: Ruby’s Inn, 226; Bryce Canyon, 223; Panguitch, 260; Torrey (Capitol Reef), 160; Escalante, 82; Tropic, 12; and Cannonville, 87. Use of these sites for an extended period would make them unavailable to tourists, but it would also use the sites during the off-season when they would likely go unused otherwise. Given that there are at least 1,050 RV hookups, if all 22 non-local workers used RV hook-ups, it would represent 2.1 percent of the total available. This is without considering hotels, motels, and other accommodations.
- Local property values are unlikely to be impacted by either upgrading the existing line or building a new transmission line, since very little of the line crosses private land. Property values may stagnate or decline if future development is limited by restriction on new power hook-ups.
- Impacts on local infrastructure and community services would likely be negligible to minor, given the small size of the workforce and dispersed nature of the work (i.e., work would occur at several locations along the project corridor simultaneously). The Garfield Memorial Hospital and Clinics in Panguitch has 41 beds (**Section 1.2.4.5**). School enrollment has declined from 1,167 in

1995 to 933 in 2007 (**Table 1.2.4-11**), suggesting that the school system has the capacity to accommodate additional students.

- Given the small number of construction workers and their temporary tenure, it is unlikely that they would change the demographics of the county.
- The proponent estimates that Garkane would purchase approximately \$7 million worth of materials on which sales or use tax would be paid. A percentage of this tax would go to county and local governments.

Overall, the net adverse effect of the construction phase of the project on county services, under Alternative B, would be negligible to minor and the net benefit of this phase, based on increased money in the economy and increased tax collections, would be minor to moderate.

### Operations

Garkane does not anticipate hiring any additional staff for operations after construction is complete and the new line and substations are in operation. The company estimates additional annual maintenance costs of \$33,000 (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

After the new facilities are put into operation, Garkane would use existing employees to remove transmission line and other facilities that are replaced by the project. Thus, while the budget for line removal is \$1.01 million, none of that money can be considered new spending for wages or salary. Line removal is expected to take 2 to 3 years as crews are available, using two journeymen linemen and four apprentice linemen (**Table 1.3-2**), with a labor cost of \$85,440 (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

The project (\$36 million) would be financed over 30 years at the prevailing interest rate at the time of funding. This amount would be paid by ratepayers through a rate increase. Garkane is in the process of completing a rate increase application that would raise company revenues by 7.88 percent, which would increase an average residential bill (750 kwh) by \$3.37 per month to cover anticipated costs of rising interest rates, materials, and fuel for the project (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008). Because of the higher costs associated with this alternative, Garkane would need to seek additional funding beyond its current loan plan, which would require an additional rate increase (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

Using its existing transmission facilities, Garkane can safely transmit 8 MVA and serve approximately 3,500 meters/customers of various size and demand. The proposed line could safely transmit 30 MVA and serve an additional 9,500 meters/customers with a similar energy use profile (13,000 customers total).

The State would assess the value of the new line for property tax purposes and may or may not increase the valuation for tax purposes (Personal Communication, Bob Davis, Garfield County Assessor's Office August 5, 2008).

Overall, the Proposed Action would have a minor adverse impact to Garkane customers by increasing the cost of their service. At the same time, the project would have a minor to moderate beneficial effect by increasing reliability of service to current customers and facilitating economic growth through improved infrastructure. Increased development may lead to increased property values and commensurate increases in property taxes.

## **Alternative C - Cedar Fork Southern Route**

### Construction

Alternative C (the Cedar Fork Southern Route) would require approximately 30 miles of new line, 1.98 miles of construction in limited access areas using helicopters (22 structures), and two new/expanded substations. Estimated costs include \$1.80 million for clearing of the right-of-way; \$13.10 million for line construction; \$1.01 million for removal of replaced line; and \$4.00 million for substations for a total

estimated project cost of \$20 million (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

The proponent estimates that the least number of employees would be used during clearing of the right-of-way, which should take approximately 10 workers. The maximum number of workers would be determined by the construction contractor, the timing of the permitting process, and permit conditions; the proponent estimates the maximum number of construction workers at one time would be 20, plus 4 additional for helicopter access tasks. Right-of-way clearing is estimated to take approximately 3 months; line construction would take 12 months; and substation construction would take 24 months primarily because of the lead time for manufacture of some of the substation equipment. Garkane estimates that 90 percent of the construction crew would be from outside the local area. One hundred percent of the replaced line removal and substation construction crew would be local (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

**Table 1.3-4** shows the estimated labor costs for Alternative C by task and workers' wage classes. These estimates would vary depending on the contractor. Several assumptions have been made in developing these estimates. First, it is assumed that the 1.98 miles of limited access (helicopter) construction would take the crew of four approximately 3.6 weeks, assuming all holes for the supporting structures will be hand-dug by regular construction crews before the helicopter is employed (optimization of helicopter use). The cost of the helicopter and its crew (\$2,000/hour) has not been counted under labor costs, since labor costs are not separated in the overall rental cost. Second, the average work week for construction workers is estimated to be 50-60 hours/week; in the table, it is assumed the average week would be 55 hours and that workers would earn time-and-a-half for hours over 40 per week. Third, based on the relative cost of labor to total cost in the other tasks, it is assumed that the cost of labor for clearing the right-of-way is one-eighth the overall cost estimate of \$1.8 million. Finally, while the substations are estimated to require 24 months to complete, the table assumes that, for half that time, no construction would occur because crews would be waiting for delivery of specialized equipment.

**Table 1.3-4. Estimated Labor Costs, Cedar Fork Southern Route Alternative**

# OF WORKERS	\$/HOUR	HOURS/WEEK	\$/WEEK (CREW)	# OF WEEKS	TOTAL
<i>Clearing Right-of-Way</i>					
10	Assume Labor Costs 1/8 Total Cost of \$1.8 Million				<b>\$225,000</b>
<i>Construction, Regular Crew</i>					
5 Journeymen	\$35	55	\$10,937.50	52	\$568,750
8 Apprentice	\$27	55	\$13,500.00	52	\$702,000
5 Equipment Operators	\$25	55	\$7,812.00	52	\$406,250
2 Project Foreman/Manager	\$40	55	\$5,000	52	\$260,000
<i>Construction, Helicopter Crew</i>					
1 Journeyman	\$35	55	\$2,187.50	3.6	\$7,875
3 Apprentice	\$27	55	\$5,062.50	3.6	\$18,225
<b>Transmission Line Construction Total</b>					<b>\$1,963,100</b>
<i>Removal of Replaced Line</i>					
2 Journeymen	\$35	40	\$2,800	12	\$33,600
4 Apprentice	\$27	40	\$4,320	12	\$51,840
<b>Line Removal Total</b>					<b>\$85,440</b>
<i>Substation Construction</i>					

# OF WORKERS	\$/HOUR	HOURS/WEEK	\$/WEEK (CREW)	# OF WEEKS	TOTAL
2 Journeymen (Linemen)	\$35	40	\$2,800	52	\$145,000
2 Apprentice (Linemen)	\$27	40	\$2,160	52	\$112,320
2 Journeymen (Substation)	\$35	40	\$2,800	52	\$145,000
2 Apprentice (Substation)	\$27	40	\$2,160	52	\$112,320
		<b>Substation Total</b>			<b>\$515,840</b>
		<b>Total Labor, Project</b>			<b>\$2,789,380</b>
		Total Labor, Local			\$1,022,590
		Total Labor, Non-Local			\$1,766,790

Source: Garkane 2008.

The RIMS II model was run for the Cedar Fork Southern Route (Alternative C) to estimate its impacts to the Garfield County economy. Using the total project cost of \$20 million, the model estimate total economic activity generated by construction of the Cedar Fork southern Route across all industries would be \$26,684,000, including the \$20 million from the project, indicating that approximately \$6,684,000 additional dollars of economic activity would be generated in Garfield County. Based on initial earnings of \$2,789,380 paid to construction workers for all phases of the project (**Table 1.3-4**), the RIMS II model projected overall earnings generated by the project in Garfield County at \$3,444,837. The model further estimated that a total of 46 jobs would be generated across all sectors (i.e., construction, retail, lodging, real estate, etc.) in Garfield County; it is important to note the temporary nature of this employment, as it relates to a short-term project (i.e., the term of construction).

Using the economic indicators described above (**Section 1.3.1.2**), the following level of impact to Garfield County may be expected:

- As many as 46 temporary jobs may be created in Garfield County, although approximately half of those would be workers from outside the local area. Compared to 2006 employment of 2,536 (**Table 1.2-14**), this represents a 1.8 percent increase.
- Estimating that approximately 22 workers would be from outside the local area and would live in the area for the duration of construction (1 year), this would represent an increase in the population, based on 2007 data (**Table 1.2-2**), of 0.45 percent. With a county-wide average household size of 2.92, if each of these workers brings two other family members or others, the increase in population would be approximately 1.35 percent. Note that the average annual growth rate for Garfield County is predicted to be 1.3 percent for the period 2000 to 2060 (**Table 1.2-3**) and was estimated at 2.1 percent between 2006 and 2007 (**Table 1.2-2**).
- If each of 22 workers from outside the local area rented a house or other housing unit (e.g., mobile home or RV) in the county, it would have a minimal impact on local housing. As shown in Table 1.2-9, as of the 2000 Census, there were 2,767 housing units in Garfield County of which 1,191 were considered vacant (43 percent). Deducting the 965 housing units that were classed as “Seasonal, Recreational, or Occasional Use” leaves 226 vacant housing units, or 8.2 percent.
- More typically, construction workers from outside an area would bring their own recreational vehicles (RVs) to use during a project, or they would stay in short-term housing such as hotels or motels. Due to the presence of several national parks and recreation areas, Garfield County has a relatively large number of accommodations compared with its population. The AAA 2008 Southwestern Campbook shows the following number of RV hook-ups: Ruby’s Inn, 226; Bryce Canyon, 223; Panguitch, 260; Torrey (Capitol Reef), 160; Escalante, 82; Tropic, 12; and

Cannonville, 87. Use of these sites for an extended period would make them unavailable to tourists, but it would also use the sites during the off-season when they would likely go unused otherwise. Given that there are at least 1,050 RV hookups, if all 22 non-local workers used RV hook-ups, it would represent 2.1 percent of the total available. This is without considering hotels, motels, and other accommodations.

- Local property values are unlikely to be impacted by either upgrading the existing line or building a new transmission line, since very little of the line crosses private land. Property values may stagnate or decline if future development is limited by restriction on new power hook-ups.
- Impacts on local infrastructure and community services would likely be negligible to minor, given the small size of the workforce and dispersed nature of the work (i.e., work would occur at several locations along the project corridor simultaneously). The Garfield Memorial Hospital and Clinics in Panguitch has 41 beds (**Section 1.2.4.5**). School enrollment has declined from 1,167 in 1995 to 933 in 2007 (**Table 1.2.4-11**), suggesting that the school system has the capacity to accommodate additional students.
- Given the small number of construction workers and their temporary tenure, it is unlikely that they would change the demographics of the county.
- The proponent estimates that Garkane would purchase approximately \$7 million worth of materials on which sales or use tax would be paid. A percentage of this tax would go to county and local governments.

Overall, the net adverse effect of the construction phase of the project would be negligible to minor and the net benefit of this phase, based on increased money in the economy and increased tax collections, would be minor to moderate.

### Operations

Garkane does not anticipate hiring any additional staff for operations after construction is complete and the new line and substations are in operation. The company estimates additional annual maintenance costs of \$38,000 (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

After the new facilities are put into operation, Garkane would use existing employees to remove transmission line and other facilities that are replaced by the project. Thus, while the budget for line removal is \$1.01 million, none of that money can be considered new spending for wages or salary. Line removal is expected to take 2 to 3 years as crews are available, using two journeymen line men and four apprentice line men (**Table 1.3-2**), with a labor cost of \$85, 440 (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

The project (\$20 million) would be financed over 30 years at the prevailing interest rate at the time of funding. This amount would be paid by ratepayers through a rate increase. Garkane is in the process of completing a rate increase application that would raise company revenues by 7.88 percent, which would increase an average residential bill (750 kwh) by \$3.37 per month to cover anticipated costs of rising interest rates, materials, and fuel for the project (Personal Communication, B. Shakespear, Garkane Energy, July 21, 2008).

Using its existing transmission facilities, Garkane can safely transmit 8 MVA and serve approximately 3,500 meters/customers of various size and demand. The proposed line could safely transmit 30 MVA and serve an additional 9,500 meters/customers with a similar energy use profile (13,000 customers total).

The State would assess the value of the new line for property tax purposes and may or may not increase the valuation for tax purposes (Personal Communication, Bob Davis, Garfield County Assessor's Office August 5, 2008).

Overall, the Proposed Action would have a minor adverse impact to Garkane customers by increasing the cost of their service. At the same time, the project would have a minor to moderate beneficial effect by increasing reliability of service to current customers and facilitating growth through improved infrastructure. Increased development may lead to increased property values and commensurate increases in property taxes.

### **Alternative D - No Action**

The No Action Alternative does not meet the purpose and need. Under the No Action Alternative, the existing transmission line would be overhauled including possible replacement of conductor wire on the majority of the poles. Total cost for the overhaul is estimated to be between 1.4 and 2.1 million dollars.

Generators are currently used to temporarily increase capacity during peak loads (typically during higher demand times in the summer and winter). Increasing demand and limited capacity would cause safety equipment to shut down portions of the system more frequently, resulting in increased black outs and brown outs. If the project were not constructed, the continued operation of the existing 69 kV transmission line would mean that system reliability would continue to decrease even with major maintenance to the system. This would require increased use of additional diesel generators.

Even with major maintenance to the existing 69 kV transmission line, the availability of new power hook-ups to the Project Area would continue to be limited by existing transmission capacity. Without the ability to increase capacity, Garkane may need to impose a moratorium on new services in Hatch, south to Cedar Mountain, and to outlying areas of Panguitch, which would hamper future socioeconomic development of the area.

Increased demand over time would likely cause low voltage conditions below industry standards. This could cause damage to residential and commercial appliances and equipment and would be an adverse socioeconomic impact to Garkane customers.

#### **1.3.1.3. Summary**

From the standpoint of socioeconomics, among the three action alternatives, there would be negligible difference between the Proposed Action and the Cedar Fork Southern Route Alternative (Alternatives A and C, respectively). The Parallel 69 kV Line Route (Alternative B) would add approximately 64 percent more economic activity to the Garfield County economy; the increase would be distributed over a longer time period rather than at a higher rate; at the same time, Alternative B would increase rates to customers to pay for the higher costs. Overall, the project would have a beneficial effect on the Garfield county economy, regardless of the Action Alternative chosen.

#### **1.3.1.4. Environmental Justice**

No minority populations were identified as residing in or near the Project Area, nor is there a meaningfully greater percentage of individuals or families living at or below the poverty level than the general population of the region (southwestern Utah).

As for analysis of direct and indirect effects of the action alternatives, CEQ and EPA guidelines for environmental justice compliance were applied with the following results:

- Geographically, no concentrated minority population would be directly impacted, since none were identified.
- Economically, overall impacts would be beneficial, not adverse.
- The population of poor in Garfield County is not concentrated in any geographically identifiable area and would not experience any disproportionate adverse effects from the project during construction or operations.

In general, the area is rural. The analysis of environmental justice is affected by the incremental effects of employment, income, governmental revenue, and other social and economic characteristics that may change over time. No disproportionately high and adverse impacts to an environmental justice population were identified under past, present, or the reasonably foreseeable future developments for the Proposed Action or Action Alternatives. Therefore, the overall projected effects of this project to identified minority and low income populations are beneficial impacts resulting from increased economic opportunity.

### **1.3.2. Cumulative Effects**

This section addresses potential cumulative effects that would result from the effects of the Proposed Action or Action Alternatives when combined with the effects of other past, present, and reasonably foreseeable future projects. Cumulative effects are incremental in nature. They can result from individually minor, but collectively significant, actions taken over a period of time.

#### **1.3.2.1. Cumulative Effects Area**

### **1.3.3. Cumulative Effects Area**

The cumulative effects area for socioeconomics (**Figure 1.3-1**), unlike that for the other subject areas, includes the entire county. This difference is primarily because taxation, government agencies, law enforcement, and other services are generally administered by county unit, and socioeconomic statistics are reported by county or municipality.

#### **1.3.3.1. Past, Present, and Reasonably Foreseeable Actions**

National Forest lands and BLM lands administered by KFO are managed for multiple resource values and uses. In the cumulative effects area, past and present uses include timber and woodland product harvest; livestock grazing; and recreation uses including hunting, fishing, camping, picnicking, hiking, back country driving, and mountain biking. Lands are also available for mining, oil and gas development, and production of mineral materials (building stone and sand and gravel). Roads, transmission lines, pipelines, and communication sites are located on National Forest and other public lands. While these types of uses have resulted in an unknown amount of surface or subsurface disturbance and placement of human-made structures on the landscape, the National Forest and public lands still retain a largely undeveloped appearance. These lands are not characterized by urban or commercial development that is typical of cities and towns.

The GSENM is managed for a variety of resource values and uses, with a mandate from the Presidential Proclamation that established the Monument to protect myriad historic and scientific resources. To meet this objective, BLM manages the Monument to protect its primitive frontier state and safeguard its remote and undeveloped character. Further, BLM manages the Monument to provide opportunities for study of scientific and historic resources. Within this management focus, past and present uses of public lands in the Monument include livestock grazing, recreation, and realty actions. While the Monument is closed to mining and oil and gas development, roads, transmission lines, pipelines, and communication sites are located on these public lands. These uses have resulted in an undetermined amount of surface and subsurface disturbance and placement of human-made structures on the landscape, but public lands in the Monument still retain a largely undeveloped appearance.

BRCA, on the other hand, is managed with an emphasis on protection and enhancement of its unusual scenic beauty and its value for science and education, and for the benefit and enjoyment of the public. Even with this focus on protection and preservation, some past and present development has occurred in the Park for management of visitor use and the protection of Park resources. A paved access road runs the length of the Park, providing access to many sites and facilities, including administrative offices and buildings, Bryce Canyon Lodge, campgrounds, trails, interpretive sites, and others.

**Figure 1.3-1. Cumulative Effects Area for Socioeconomics**

Other infrastructure, including transmission lines, is also present. Garkane’s existing 69 kV transmission line crosses the northern end of the park, as does SR 12. However, even with this development, the vast majority of the Park in the cumulative effects area is undeveloped, and presents a natural landscape.

State lands in the cumulative effects area are managed by SITLA to produce revenue for the State school system. State lands are managed for a variety of uses that produce revenue, and past and present uses include livestock grazing, recreation uses, roads, highways, utility lines, and other commercial uses. Lands are occasionally sold for private development. As with federal lands, these uses result in surface disturbances, but generally, State lands retain an undeveloped appearance. The current amount of surface and subsurface disturbance is unknown.

Private lands in the cumulative effects area are used and developed for a variety of purposes, including residential, commercial, and industrial development in and adjacent to cities and towns. Many acres of private land are in farmland production, including irrigated pastures, range pastures, and hay, grain, and alfalfa.

Reasonably foreseeable future actions within the cumulative effects area that are currently planned or under review include activities that fall into several broad categories:

- Energy and communications
- Transportation
- Vegetation and fire fuels management
- Habitat improvement
- Land use and management
- Recreation
- Mining
- Miscellaneous

**Table 1.3-6** shows activities currently planned, under review, or in permitting in Garfield County that may be pertinent to cumulative effects for one or more resource areas. Projects within Garfield County but outside the cumulative effects area for all resources (except socioeconomics) are labeled “socio only.” The table is organized generally by project type (energy, transportation, forest fuels management, etc.), but many of the entries could easily fit into more than one classification.

**Table 1.3-6. Reasonably Foreseeable Future Actions in the Cumulative Effects Areas**

PROJECT (LEAD AGENCY)	LOCATION	DESCRIPTION	ESTIMATED DISTURBANCE (IF AVAILABLE)
<b>Energy &amp; Communications</b>			
Designation of Energy Corridors (USFS)	Forest-wide	Would designate energy corridors on the DNF and other federal land in 11 western states. Corridor 116-206 would be west of U.S. 89 in the cumulative effects area.	
Geothermal Leasing Programmatic EIS (USFS)	Forest-wide	USFS and BLM are preparing a joint programmatic EIS to analyze leasing of federal lands with moderate to high potential for geothermal resources in 11 western states	

<b>PROJECT (LEAD AGENCY)</b>	<b>LOCATION</b>	<b>DESCRIPTION</b>	<b>ESTIMATED DISTURBANCE (IF AVAILABLE)</b>
Oil and Gas Leasing Analysis (USFS)	Forest-wide	EIS to evaluate all BLM and USFS administered lands for oil and gas leasing	
Panguitch Lake Power Line Realignment (DNF)	Cedar City RD (Socio only)	Authorization to PacifiCorp for the relocation of 1.2 miles of 12.5 kV power line. Work would involve construction of a new overhead power line and removal of the old line. Area is approximately 17 miles southwest of Panguitch.	
South Central Utah Telephone Association (SCSRA) I-15 to U.S. 89 Fiber Optic Line (BLM)	(Socio only)	Fiber optic line from I-15 in Iron County to U.S. 89 in Garfield County 7.5 miles north of Panguitch requiring BLM right-of-way	
Oil and Gas Lease Sales (BLM)	BLM	Ongoing BLM program to lease lands suitable for oil and gas development, including lands in Garfield County classified as having high potential for oil & gas development	
<b>Transportation</b>			
DNF Motorized Travel Plan (DNF)	Forest-wide	To identify changes to the motorized travel system (roads) to meet administrative, fire, recreational, and resource needs; will generally prohibit cross-country (off-road) motorized travel on the Forest, but would remain open to hiking, horseback riding, cross-country skiing, and snowmobile use.	
Mammoth Highway Easement (DNF)	Cedar City RD (Socio only)	Issuance of a right-of-way easement to Garfield and Kane Counties for Mammoth Highway (Forest Road 068), northeast of Duck Creek Village, between State Highways 14 and 143.	
Tropic Canyon Highway Stabilization Project (BRCA)	BRCA	Repair and stabilize SR 12 and introduce water diversion into Tropic Wash, west of Tropic	210 linear feet of road shoulder; 5 stream barbs in Tropic Wash
SR-12 Environmental Study (UDOT, FHWA, GSENM)	Escalante to Boulder (Socio only)	EA for project to obtain over 14 miles of right-of-way from BLM and generally upgrade SR 12	
SR-12 Scenic Byway Improvements (UDOT, GSENM)	SR 12 throughout Garfield County	Improve overlooks, interpretive sites, and gateway features	

<b>PROJECT (LEAD AGENCY)</b>	<b>LOCATION</b>	<b>DESCRIPTION</b>	<b>ESTIMATED DISTURBANCE (IF AVAILABLE)</b>
SR-12 Corridor Management Plan Implementation (UDOT, GSENM)	SR 12 throughout Garfield County	Corridor Management Plan Implementation	
US-89 from SR-14 to Hatch (UDOT)	SR-14 to Hatch	Bituminous pavement, reconstruction, widen shoulders	
Notom Road (UDOT)	(Socio only)	Engineering and environmental study, preparatory to road improvements	
<b>Vegetation and Fire Fuels Management</b>			
Aerial application of fire retardant (DNF, KFO, GSENM)	Forest-wide	The USFS proposes to continue the aerial application of fire retardant to fight fires on National Forest System lands, including the DNF.	
Right-of-way Lakes Timber Management (DNF)	Freemont River RD (Socio only)	Fuels Management Reduction on approximately 600 acres of forested land to reduce the impacts of insects and disease	600 acres
Stump Springs Fire Treatments (DNF)	Escalante RD (Socio only)	Project uses prescribed fire treatments to disturb vegetation, slowly moving heterogeneous patches towards a fine-grained landscape that is more resistant and resilient to fire and other disturbance.	Approximately 5,400 acres over 9 years
Clayton Salvage (DNF)	Escalante RD (Socio only)	Timber salvage of 248 acres of dead and dying spruce on the Griffin Top Plateau.	248 acres (2008)
Pockets Vegetation Management (DNF)	Escalante RD (Socio only)	The Project is designed to reduce bark beetle risk and improve habitat for northern goshawk. It would include commercial timber harvest, pre-commercial stand treatment, fencing, and travel management. The Project covers an area of 8,564 acres and would include commercial timber harvest on 4,721 acres of conifers and 2,647 acres of aspen, including 82 acres along the Antimony Creek drainage. Smaller areas would receive additional treatments. In addition, 9 miles of new roads would be required, 7.0 miles of unauthorized roads would be designated NFS roads, and 13.4 miles of existing NFS roads would be improved.	8,564 acres 9 miles of new roads 7.0 miles added to system roads

<b>PROJECT (LEAD AGENCY)</b>	<b>LOCATION</b>	<b>DESCRIPTION</b>	<b>ESTIMATED DISTURBANCE (IF AVAILABLE)</b>
Toad Salvage (DNF)	Escalante RD (Socio only)	Salvage of dead and dying ponderosa pine within the perimeter of a Wildland Fire Use burn area. September 2007, 1400 acres burned.	230 acres
Boulder Town Fire Protection (DNF)	Escalante RD (Socio only)	Boulder was identified as a community at risk and a Community Wildland Fire Protection Plan was developed. 65 acres of prescribed burns and 186 acres of vegetative treatments are planned to provide community protection.	251 acres
Bug Lake Salvage Project (DNF)	Escalante RD (Socio only)	Timber Salvage of dead and dying spruce on the Aquarius plateau will use existing Forest roads with approximately 1 mile of road reconstruction.	228 acres (2007)
Dugout/Tarantula Mesa Veg. Project (BLM)	Richfield FO (Socio only)	Utilize mechanical (chainsaw, handsaws, etc.) to cut, lop, and scatter the pinyon and juniper trees that have encroached into the existing chainings that were established in the 1960s	
North Wash Tamarisk Control Project (BLM)	Richfield FO (Socio only)	Removal and chemical control of 20 acres of tamarisk (salt cedar) approximately 30 miles southeast of Hanksville in the Fiddler Butte Wilderness Study Area	
Bear Creek Fire Salvage and Reforestation, DNF, CE	Garfield County (Socio cumulative effects area only)	Salvage fire killed and damaged trees within the 1400-acre Bear Creek burn area	
Corn Creek Salvage and Reforestation, DNF, EA	Garfield County (Socio cumulative effects area only)	Salvage dead and dying timber and reforest areas within burn with inadequate stocking in a 2270-acre burn	
Paunsaugunt Aspen Vegetation Management, DNF, EA	Powell Ranger District	Manage aspen stands to increase aspen regeneration, reduce conifer encroachment, and develop multi-aged aspen stands	
GSENM Plan Amendment & Rangeland Health EIS	GSENM	The GSENM Management Plan Amendment and Rangeland Health EIS describes and analyzes alternatives for management of livestock grazing on public lands administered by the BLM.	2,168,726 acres (GSENM, Glen Canyon NRA, & KFO)
<b>Habitat Improvement</b>			
Cooperative Fisheries Enhancement Projects (DNF)	Powell RD	In cooperation with UDWR, re-establish native trout populations in 2 streams on the DNF (also 8 streams on the Fishlake National Forest)	

PROJECT (LEAD AGENCY)	LOCATION	DESCRIPTION	ESTIMATED DISTURBANCE (IF AVAILABLE)
Marshall Canyon Pinyon-Juniper Removal (DNF)	Powell RD (Socio only)	The Proposed Action is to treat up to 900 acres within an existing chained area to improve wildlife habitat on the western portion of the Sevier Plateau (Mt. Dutton). The Proposed Action consists of the following actions: Remove pinyon pine and juniper mechanically on approximately 900 acres using a skid steer (bobcat) or other tractor type device, or through hand thinning with chainsaws. Broadcast seed into seedbed using forbs and grass mixture. Where needed, native seed will be part of this mixture.	900 acres
Antelope Springs Draw Sagebrush Steppe Habitat Enhancement (DNF)	Escalante RD <sup>1</sup> (Socio only)	Mow or brushbeat 500 acres of dense even-aged sagebrush and interseed a native grass and forb mixture.	500 acres
Dipping Vat Habitat Improvement Project (DNF)	Escalante RD	Project would include the thinning of pine forests and the mechanical treatment of sagebrush for habitat improvement and fuels reduction in Johns Valley, approximately 7 miles north of Tropic. The Project would affect approximately 1,132 acres.	1,132 acres (2010)
Boulder Creek Wildlife Habitat Improvement (DNF)	Escalante RD (Socio only)	Removing encroaching conifers to restore Aspen Grove wildlife habitat	
Aquatic Monitoring Amendment, DNF	Forest-wide	Proposal to amend the Aquatic Management Indicator Species (MIS) in the DNF LRMP	
East Fork Boulder Creek Fish Passage Improvement DNF, CE	Garfield County (Socio cumulative effects area only)	Replace a culvert that is inhibiting fish passage on Road 166 with a new span designed for high and low flow maintenance of all aquatic species	
<b>Land Use and Management</b>			
Resources Management Plan (BLM)	Richfield Field Office BLM (Socio only)	Comprehensive Resource Management Plan for public lands and resources managed by the BLM Richland Field Office	
Resources Management Plan (KFO)	KFO	FEIS and Resource Management Plan for public lands and resources managed by the KFO	

PROJECT (LEAD AGENCY)	LOCATION	DESCRIPTION	ESTIMATED DISTURBANCE (IF AVAILABLE)
First Annual Centennial Strategy for Bryce Canyon National Park (BRCA)	BRCA	Reduce private vehicle use by providing public transportation for park visitors; planning addition of a bicycle transportation system in park; restore historic buildings; treat 193 acres of exotic weed infestation; inventory and assess condition of 224 identified archaeological sites	
Panguitch Lake Resort	Panguitch Lake (Socio only)	RV timeshare resort around Panguitch Lake that is under development	
Incorporation of Ruby's Inn	Ruby's Inn	Ruby's Inn was incorporated as Bryce Canyon City. Ruby's Inn has a single land owner. The intention of incorporating is to prepare for subdivision and growth.	
<b>Recreation</b>			
Red Canyon bike trail extension (DNF)	Powell RD	Extend existing bike trail along SR 12 3.1 miles east to the East Fork of the Sevier River Road.	
Canaan Mountain Reroute (DNF)	Escalante RD (Socio only)	The Canaan Mountain Loop Trail approximately 14.5 miles southwest of Escalante would be rerouted to move it off a waterline, reduce its grade, and provide for improved maintenance.	
Mossy Cave Trail Rehabilitation and Resource Protection (BRCA)	BRCA	Large boulders from Water Canyon adjacent to the trail will be moved to stabilize areas where the trail has eroded and footbridge abutments	
Grandview Trail Re-route (DNF)	Powell Ranger District	Construct several sections of non-motorized trail to eliminate dual use by motorized and non-motorized recreationists	
King Creek Campground Non-commercial Thinning DNF, CE	Powell Ranger District	Thin heavily stocked ponderosa pine to improve vigor and forest health in a developed recreation area	
<b>Mining</b>			
Boulder Gravel Pit (DNF)	Escalante RD (Socio only)	A gravel pit will be developed and managed to provide gravel for county and Forest needs.	< 5 acres
Troy M Mine Phase Two (BLM)	Richfield FO, near Ticaboo (Socio only)	Extend existing underground workings; construct mine shaft and waste rock storage area; construct ventilation shafts and expand existing evaporation pond for mine dewatering	

PROJECT (LEAD AGENCY)	LOCATION	DESCRIPTION	ESTIMATED DISTURBANCE (IF AVAILABLE)
Phase II, Abandoned Mine Reclamation, (GSENM)	GSENM	EA to address potential environmental impacts associated with the Phase II Abandoned Mine Reclamation Project, which includes the Henrieville Prospect Site east of Tropic	
Reopening of Ticaboo uranium mill and mine	Ticaboo/Bullfrog (Socio only)	Garkane has been contacted regarding service to the Ticaboo/Bullfrog area for planned re-opening of the uranium mill; the mine has been re-opened and is supplying its own power with diesel generators	
<b>Miscellaneous</b>			
Wild and Scenic River Suitability Study – Utah (USFS)	Pine Valley, Cedar City, and Escalante RDs	A draft EIS has been prepared analyzing the suitability of 86 Utah river segments, including 8 on the DNF in Garfield County, for inclusion in the National Wild and Scenic River System	
West Dixie Water Improvement (DNF)	Powell RD	No Information	3,000 acres (2007) 2,000 acres (2008) 2,000 acres (2009) 2,000 acres (2010)
West Deer Creek Grazing Allotment (DNF)	Escalante RD (Socio only)	Proposal to re-authorize livestock grazing on the West Deer Creek Allotment north of Boulder, Utah east of SR 12	
Ohio University Dinosaur Collection (GSENM)	GSENM	Proposal to excavate and remove remains of a horned dinosaur from GSENM.	
McGath Lake Dam (DNF)	Escalante RD (Socio only)	The McGath Lake Dam is deteriorating and in need of repair. Without action the dam is likely to fail and destroy an important fishery. McGath Lake is located approximately 16 miles north of Escalante.	
Dinosaur Documentary Film (BLM)	GSENM & BLM	Various locations within the GSENM, Wolverine Petrified Forest, The Blues Area, Red Canyon, Cocks Comb Road, etc,	

### 1.3.3.2. Cumulative Effects on Socioeconomics

Cumulative effects of any of the Action Alternatives in conjunction with past, present and reasonably foreseeable activities would be, overall, beneficial to Garfield County and its residents.

As noted in the affected environment section, the largest industries in Garfield County are tourism and government. **Table 1.3-6** demonstrates that ongoing and reasonably foreseeable actions planned for Garfield County show local, state, and federal investment in those industries. For example, linear projects such as those related to transportation, energy, and communications connect the county and its residents (and visitors) with the region and regional service providers. Projects related to vegetation management, fire fuels management, habitat improvement, recreation, and land use planning, all work towards maintaining and improving those features of the area that make it attractive for tourism, namely the relatively untouched natural environment, wildlife, and other recreational opportunities. Mining-related projects might be perceived as being at odds with these directions, but most of the reasonably foreseeable mining projects are located in the Ticaboo area east of the Project Area and the tourism centers. Mining-related projects would bring needed diversity to the area economy. The most revealing aspect of **Table 1.3-6** is the high percentage of projects that are federally (government) funded, as compared to state, county, or private; approximately 40 of the 58 projects are primarily funded through federal agencies (69 percent), although the federal-owned percentage of the land base is 89.6 percent.

For the most part, the effects of other actions in Garfield County can be adequately discussed by their activity class, as used in **Table 1.3-6**, but several individual projects will have substantial impacts on the economy. Chief among these is the incorporation of Ruby's Inn, which is now Bryce Canyon City. Although still owned essentially by one family, under state law incorporation entitles Bryce Canyon City to a share of taxes collected by the county that were previously dispensed at the county's discretion. This change is likely to have a greater long-term effect on county services than the Proposed Action or Action Alternatives.

BRCA and two BLM Field Offices are undergoing land use planning within Garfield County. These activities have the potential to impact the local economy and social structure to a far greater extent than the Proposed Action or Action Alternatives, depending on the management emphases that result.

Under the No Action Alternative, overhaul of the existing 69 kV transmission line would make contributions to cumulative impacts to socioeconomics similar to the Action Alternatives, but somewhat less because the scope of the overhaul effort would not be as extensive.

In summary any of the Action Alternatives, in the context of past, present, and reasonably foreseeable actions, would have a negligible to minor effect on the economy and social structure of Garfield County. The impact overall would be beneficial, facilitating increased services to residents and visitors alike.

## **1.4. PLAN CONSISTENCY**

The project is consistent with the management and growth plans for local government and management agencies within or partly within the County.

## **1.5. COMPLIANCE WITH OTHER LAWS AND REGULATIONS**

There are no laws, regulations, or permits pertaining to impacts on social and economic resources that apply to this project, other than the consideration of socioeconomic impacts through the NEPA process. The proponent would be required to comply with State regulations common to all businesses regarding tax withholding, workers' compensation insurance, property tax payments, and other regulatory and taxation laws.

The Proposed Action and Action Alternatives would comply with Presidential Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (EO 12898), dated February 11, 1994, and Title VI of the Civil Rights Act of 1964, as described in Section 1.3.1.5 above. No target populations were identified in the Project Area.

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**Addendum to**  
**Socioeconomics and Environmental Justice Specialist Report**  
**dated December 2009**

Prepared For:

US Forest Service – Dixie National Forest  
National Park Service – Bryce Canyon National Park  
Bureau of Land Management – Kanab Field Office  
Bureau of Land Management – Grand Staircase-Escalante National Monument

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This addendum updates the Socioeconomics and Environmental Justice Specialist Report dated December 2009 by expanding the report to include the Agency Preferred Alternative and providing errata to expand on or correct data previously presented.

## **Agency Preferred Alternative**

The Agency Preferred Alternative was developed through a joint effort of all agencies (USFS, BLM, and NPS) taking into consideration the impacts of all of the resources along the Action Alternatives. Alternative E is the Agency Preferred Alternative because it attains the project's purpose and need while still being sensitive to other resource concerns within the Project Area, and the missions and management objectives of the various land management agencies responsible for the public lands that would be crossed by the Agency Preferred Alternative.

The 100-foot-wide right-of-way for Alternative E, the Agency Preferred Alternative route (**Figure 1**) would begin with Segment C1 (17.36 miles), the East-West Interconnect option (3.70 miles), and a combination of portions of Segments A-3 and C-3 (referred to as E-3). Alternative E contains the segment combining portions of Alternatives A and C called E-3. Segment E-3 begins where the East-West Interconnect joins the Alternative A route and terminates at the Hatch Substation. Segment E-3 would follow Segment A-3 for 1.6 miles to the point where it intersects Segment C-3 and would follow the remainder of Segment C-3, terminating at the Hatch Substation for 6.76 miles. The total length of the preferred route would be 29.41 miles.

Approximately 16.23 miles of the existing 69 kV transmission line infrastructure from the Bryce Canyon Substation to the Hatch Mountain Substation would be removed.

Alternative E, the Agency Preferred Alternative, would also require the amendment of the GSENM MP (BLM 2000) by changing the designation of a 300-foot-wide 3.68-mile stretch (133.74 acres) of the Primitive Zone to Passage Zone, and within this area, changing the existing VRM Management Class designation from Class II to Class III.

**Figure 1. Alternative E, Agency Preferred Alternative Route**

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## Resource Impacts

Alternative E, the Agency Preferred Alternative route, is comprised of segments or portions of segments analyzed under Alternatives A and C, which are fully analyzed in the original Specialist Report dated December 2009. Resource specific disturbance acreages and other data specific to Alternative E, the Agency Preferred Alternative, are provided in the table below.

<b>SOCIOECONOMICS &amp; ENVIRONMENTAL JUSTICE</b>	<b>ALTERNATIVE E: PREFERRED ALTERNATIVE</b>	<b>69 kV LINE REMOVAL, ALTERNATIVE E</b>
Estimated temporary & long-term increases in local employment & wages	46 new temporary jobs (23 local) (1.8% increase)	None. All work performed by existing staff over a three year period
Estimated outside workers and effect on local economy & services	22 new temporary workers from outside the local area (population increase of 0.45 % relative to 2007) If workers bring families, the population would increase by 1.35 % Total estimated economic activity generated is \$26,430,332 of which \$20 million is direct project costs.	None
Projected impacts to housing	Negligible	None
Impacts on local infrastructure & community services, incl schools	Negligible due to low number of “new” people, dispersed nature of the project, and existing capacity in schools, etc	None
Changes in demographics	None to negligible	None
Effects on taxes – property, sales & use	Garkane would purchase approximately \$7 million worth of materials on which sales or use tax would be paid. A percentage of this tax would go to county and local governments.	None
Effects on rate payers	Would be financed at the prevailing rate at the time of the loan. Cost will be added to rate payers bills	None
Additional capacity in terms of additional households, businesses, and service reliability	Increase capacity from 3500 meters/customers to 13,000	N/A
Estimate on county property valuations	Negligible, in part because very little of the land is private	N/A
Environmental Justice	No minority or poor populations identified, therefore no economic justice issues. Benefits to economy	

SOCIOECONOMICS & ENVIRONMENTAL JUSTICE	ALTERNATIVE E: PREFERRED ALTERNATIVE	69 kV LINE REMOVAL, ALTERNATIVE E
	would benefit poor and minorities as well.	
General	Overall economic impacts beneficial.	

## Errata

Some changes, clarification and updates to resource-specific data and analysis were made as a result of the comments received on the Draft Environmental Impact Statement. The errata below update the original Specialist Report dated December 2009.

### Page 3

The second paragraph under the heading **1.1.2.2 Alternative B: Parallel Existing 69 kV Route** should read:

The Alternative B Route would generally parallel the existing 69 kV line right-of-way, but must be separated from the existing 69 kV line right-of-way for constructability and safety reason, in order to safely build and energize the line prior to removal of the existing line. Alternative B would extend 29.11 miles. This alternative route would begin at the proposed East Valley Substation located east of Tropic and extend west through the Tropic Substation (the Tropic Substation would be decommissioned) and then cross SR 12 and continue across BRCA (deviating slightly from the existing right-of-way for approximately 1.5 miles) to a point near the current Bryce Canyon Substation near Bryce Canyon City. For this Alternative, the Bryce Canyon Substation would be decommissioned and a new replacement substation would be built at a new location approximately 1 mile to the west to allow for needed expansion. The route would extend approximately 0.5 mile to the north around Bryce Canyon City, west across SR 63 and then parallel Garkane’s existing 69 kV line right-of-way predominately across private and SITLA lands. The alternative route would parallel the existing right-of-way just to the south across the plateau in a northwest direction to Red Canyon, where it would generally follow the existing right-of-way through Red Canyon into Long Valley where it would cross U.S. 89 and continue to the Hatch Mountain Substation. From there the route would follow the existing line south to the Hatch Substation. This route would cross 5.58 miles of DNF, 8.29 miles of KFO, 2.81 miles of BRCA, 3.63 miles of SITLA, and 8.80 miles of private lands.

### Page 32:

The second paragraph under the heading **Alternative D: No Action** should read:

Generators are currently used to temporarily increase capacity during peak loads (typically during higher demand times in the summer and winter). Increasing demand and limited capacity would cause safety equipment to shut down portions of the system more frequently, resulting in increased black outs and brown outs. If the project were not constructed, the continued operation of the existing 69 kV transmission line would mean that system reliability would continue to decrease even with major maintenance to the system. This would require increased use of additional diesel generators. When poor power quality causes customers electrical equipment to fail, increases outages and makes restoring power after an outage more time consuming and difficult, federal regulations require utilities to implement load shedding (rolling blackouts)

procedures which cut power to non-essential users in order to restore power quality (Garkane 2010).

**References**

The following is the addition to the DEIS References Cited.

Garkane. 2010. Comment letter on Tropic to Hatch 138 kV Transmission Line DEIS. March 4, 2010.

**Consideration of Best Available Science**

The techniques and methodologies used in this analysis consider the best available science. The analysis includes a summary of the credible scientific evidence that is relevant to evaluating reasonably foreseeable impacts. In addition, the analysis also identifies the methods used and references the scientific sources relied on. When appropriate, the conclusions are based on a scientific analysis that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

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Name (Printed)

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Signature

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Date