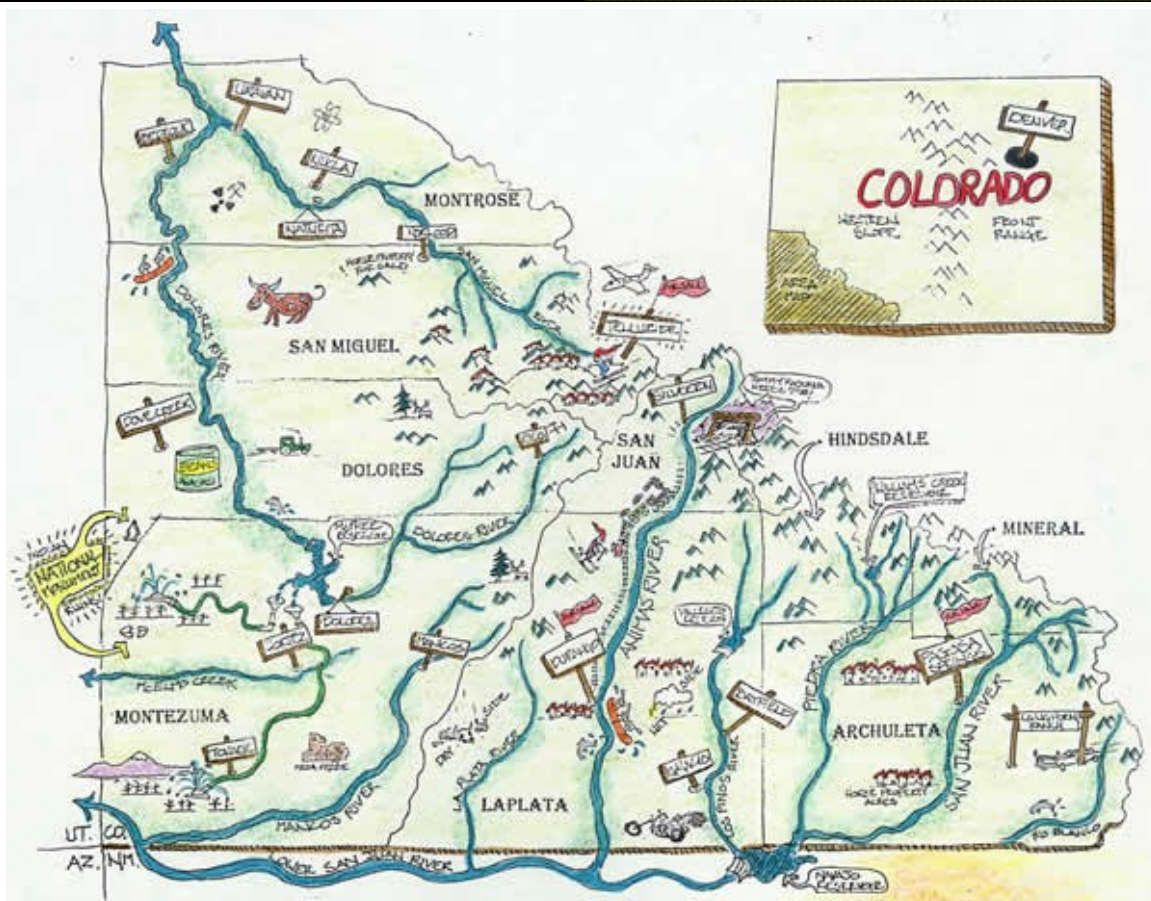




Productive Harmony Analysis

Interpretative Framework
for Social and Economic
Assessment for Southwest Colorado
Communities and Public Lands



Productive Harmony Analysis (October, 2005 Version)
Interpretive Framework for Social and Economic Assessment
of Southwest Colorado Communities and San Juan Public Lands

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Purpose and Key Findings:

This interpretive framework is designed to provide a social and economic context for the development of the San Juan National Forest and Bureau of Land Management Plan Revisions including the formulation, analysis and implementation of Plan Revision Alternatives supported by active citizen engagement. This framework will also have utility in decision making related to the land and resources under the jurisdictions of other Federal agencies as well as State and local government entities with an interest in the San Juan Public Lands.

A key finding of this assessment is that Southwestern Colorado is a mosaic of natural features, settlement patterns, economic activities, recreational activities, social values, formal institutional relationships and informal communication networks, all of which are tightly interrelated. From a social standpoint these elements represent “attachments to the land,” that define the historic and contemporary context within which decisions about the future should be made and executed.

To the extent that these “land attachments” are isolated and dealt with as competing interests in a “zero sum game,” the result will be polarization, conflict and gridlock. To the extent that these land attachments can be understood in their critical biological and social interrelationships, the opportunity exists to move these land attachments towards a higher degree of productive harmony.

The concept of “productive harmony” is taken directly from Section 101 of the National Environmental Policy Act (NEPA) of 1969 which states:

“ . . . it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, . . . to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.”

Meeting the intent of Section 101 of NEPA is, fundamentally, a social process. While the biological and ecological sciences are at the core of this process, the utility of these sciences in land management depends on the ability of people to build and incorporate scientific data and information into knowledge and wisdom about the relationships between land stewardship and community health and to put this knowledge into practice. In the same way that ecology has served to integrate the reductionist knowledge of the physical and biological sciences, a “social ecology” is needed to understand social interrelationships in a way that facilitates ecological or “ecosystem” stewardship.

This interpretive framework is built upon a set of “Cultural Descriptors,” capable of exploring this interrelated mosaic of natural features, settlement patterns, economic activities, recreational activities, social values, formal institutional relationships and informal communication networks, that can be instrumental in developing plans, policies and action strategies that bring together land stewardship and community health. Or in the language of NEPA, “to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.”

It should be stressed, from the outset that the foundation for this approach to social and economic assessment is the collaborative relationships, and the social capital that has been built in over a decade of constructive engagement between the San Juan Public Lands Center (SJPLC) which manages the San Juan Public Lands and local communities. Below, additional phrases from Section 101 of NEPA will be used to describe some of the social and institutional capital that has been instrumental to this approach.

Federal, State, Local, Concerned Public/Private Cooperation by “All Practicable Means:”

There is a ten year history of institutional collaboration at all levels of government in Southwest Colorado. There is no need for this assessment to be a start from scratch data compendium, because substantial, collaboratively developed data and analytical products are already in publication including:

- The Region 9 “Comprehensive Economic Development Strategy” (CEDS) of 2004 reflecting the cumulative efforts to analyze economic trends and monitor regional and county level economic development goals dating back to the first “Economic Development Plan published in 1994 as a result of a collaborative efforts involving the Region 9 Economic Development District, the SJNF and the Office of Community Services at Fort Lewis College (OCS/FLC).
http://www.scan.org/reg_9.html#ceds
- An Economic Base Analysis begun by a partnership between the SJNF, OCS/FLC and Colorado State Demographer, which accounts for employment and earnings from tourism, amenity migration, and regional services in relation to traditional direct base, export effect industries. This effort began in the five Southwest Colorado Counties and has been exported to all 63 Colorado Counties. <http://dola.colorado.gov/demog/leifal.cfm>
- An Index entitled Pathways to Healthier Communities, the fifth edition of which was published in 2005. The index focuses on social issues such as education, quality of life and family health indicators. <http://www.operationhealthycommunities.org/>
- “Gaining Ground or Shaky Ground?: Tourism Employment in The Southwest Colorado Travel Region.” http://www.scan.org/tourism_report.pdf

There are also a variety of collaborative community-based stewardship initiatives that have emerged out of this decade of collaboration including:

- The Ponderosa Pine Forest Partnership which has brought together, land managers, county commissioners, scientists, loggers and environmentalists in a sustained, science-based process of restoring ecological health and reducing fire hazard in the ponderosa pine forests that overlap the boundary between much of the San Juan Forest and local communities. Publications, journal articles, and a review by an independent science team have addressed the social, economic and ecological knowledge and results that have accrued from this project.
<http://ocs.fortlewis.edu/Stewardship/default.htm>
- Community Fire Plans outlining strategies to reduce fire hazard risks have been developed in cooperation with local fire protection districts, presented in a regional forum, which provided the basis for formulating region-wide strategies as part of the National Fire Plan.
<http://www.southwestcoloradofires.org>
- There is a Management Plan for the San Juan Skyway, one of the premier scenic by-ways in the country, which links local communities via the San Juan and GMUG Forests.
- A Plan for the Preservation of Historic Mining Structures has lead to site preservation and acquisition of key parts of historic mining districts.
- The Mountain Studies Institute (MSI) a non-profit mountain research and education center established in 2002 in Silverton, Colorado to enhance understanding and sustainable use of the San Juan Mountains by facilitating field research, academic studies, and experiential learning opportunities. <http://www.mountainstudies.org>

- A Site Stewardship Program, to train and support volunteers to monitor archaeological and historic sites, is being operated by the San Juan Mountain Association.
- The San Juan National Forest: At the Crossroads of Many Cultures, An Ethnographic Overview, FLC/OCS

Beyond the institutional collaboration, all of the above efforts involve “plans” that are being actively implemented on a foundation of active citizen engagement. This combination of collaboratively developed data and analysis, citizen engagement and action creates the focus for a social and economic assessment:

How can a social and economic assessment be framed in a way that taps into the institutional collaboration, the citizen engagement, and the wealth of information, communication and knowledge that have resulted? How can this assessment add value to the Forest Plan Revision that will continue to build social capital that can contribute to improved land stewardship “by all practicable means”?

“Create and maintain conditions under which man and nature can exist in productive harmony”

Between April 1996 and January of 1998 geographically based Study Groups and issue based Working Groups were convened as part of pre-revision dialogue in preparation for Forest Plan Revision. What Section 101 of NEPA refers to as “man and nature”, became focused on the community-public land relationship in these discussions. Roughly 100 participants in discussion groups spread over three counties had the opportunity to share knowledge and values with agency managers and specialists and other citizens with wide spectrum and backgrounds and perspectives. <http://ocs.fortlewis.edu/forestPlan/past.asp>

A second series of Study Group activities occurred in 2005, with a series of twenty three meetings in the three San Juan Public Land Center Districts. This round of Study Group discussions focused on a series of landscapes to develop community perspectives on public land uses, outstanding features, concerns and opportunities followed up by interactive discussions with SJPLC District staff on options for land use allocations, and the development of desired future statements for the Districts as a whole. All input is in a data base and available for use in the planning process and public review. <http://ocs.fortlewis.edu/forestPlan/>

Along with learning a great deal from one another, many Study and Working Group participants commented on how much more complex public land management became once they were exposed to the full range of values and interests that are part of public land attachments. There was also progress on the part of many in moving from narrow advocacy for a particular interest towards problem solving and opportunities for “productive harmony.” Additional questions relative to social assessment comes into focus as a result of the study group/work group experience:

How to create a framework that allows interested people and organizations to add value to the social and economic assessment and it’s ability to contribute to productive harmony?

“Fulfill the social, economic, and other requirements of present and future generations”

Public Land Management Plans tend to be long on biological information and analysis and short on social and economic analysis. The social and economic data that is included is generally treated as background rather than in dynamic interaction in the formulation and analysis of management alternatives. The most direct applications tend to be projected economic gains or losses as commodity outputs or skier days move up or down.

One thing that can be learned from the polarization, conflict and gridlock that has followed the first round of forest planning in the 1980s is that accomplishing anything in public land management is

essentially a social process. The Study and Work Group experience provides an added insight about the potential that understanding social dynamics holds for moving from adversarial to problem solving relationships. Another question becomes:

How can social dynamics be utilized to support constructive planning and land stewardship?

In order to address the above questions this assessment method is built on “cultural descriptors,” grounded in Section 101 of NEPA, to create a social framework to support planning and active stewardship. This framework is intended to be open to community members and land managers to support additional knowledge building and problem solving in the search for productive harmony.

The narrative, statistical, and graphic information that will be organized under these cultural descriptors is structured to be open to the knowledge of citizens who choose to engage the public land planning process. The intent is that participants will add value to, and take ownership of, the social and economic assessment process and the resulting knowledge and stewardship strategies.

Study Area and Methods

The primary focus of this assessment is the communities adjacent to the San Juan National Forest and BLM lands. In depth analysis will be focused on the five counties, which make up Colorado State Planning Region 9 of Southwest Colorado and encompass most of the San Juan National Forest: Archuleta, Dolores, La Plata, Montezuma and San Juan counties. These five counties share institutional and human geographic relationships that facilitate such analysis.

From a “human geography” perspective, the five counties represent three “Human Geographic Units” or “HRUs” the boundaries of which have been defined by using the cultural descriptors that are a key part of the assessment framework (See Figure 1, The Four Corners Social Resource Unit/Human Resource Unit (HRU) Map on the following page).

A Human Resource Unit “is characterized by a sense of place; a sense of identity with the land and the people; a sense of common understanding of how things are normally done.

Human Resource Units are characterized by frequent and customary interaction. People’s daily activities occur primarily within the HRU including work, school, shopping social activities and recreation . . . The regularity of interaction within the HRU reinforces recognition by the residents of natural and man-made features as “home.” [James Kent and Associates, “Delineation of Human Geographic Units and Their Working Definitions”, Project Working Paper for the USDA, 1989, p. 6-8]

<http://www.naturalborders.com/index.htm>

Montezuma and Dolores Counties are in the Montelores HRU, La Plata and San Juan Counties are in the La Plata HRU, and Archuleta County is in the Pagosa HRU.

The social assessment will take up each of the Cultural Descriptors, defined below in the order that they will be presented:

Cultural Descriptors

Geographic Boundaries and Natural Features: *A geographic boundary is any unique physical feature with which people of an area identify. Physical features separate the activities of a population from those in other geographic areas.*

Settlement Patterns: *A settlement pattern is any distinguishable distribution of a population in a geographic area, including the historical cycles of settlement in the area. This cultural descriptor identifies where a population is located and the type of settlement . . . It also describes the major historical growth/non-growth cycles and the reasons for each successive wave of settlement.*

Work Routines: *A work routine is a predictable way in which people earn a living, including where and how. The types of employment, the skills needed, the wage levels and the natural resources required . . . the opportunities for advancement, the business ownership patterns, and stability of employment activities . . . can be used to evaluate how alternative uses of natural resources will affect the ways people earn a living and how changes in work routines, in turn will impact future natural resource uses.*

Recreational Activities: *A recreational activity is a predictable way in which people spend their leisure time. Recreational opportunities available, seasonality of activities, technologies involved and money and time required are aspects of the recreational descriptor. The frequency of local/non local uses . . . the preferences of local/non local users, and the location of the activities are also included.*

Publics: *A public is any segment of the population that can be grouped together because of some recognized demographic feature or common set of interests . . . it may reside permanently in the geographic area, or may live elsewhere and have an interest in the management of the natural resources.*

Networks: *A network is comprised of individuals who support each other in predictable ways and have a shared commitment to some common purpose. Networks may be informal arrangements of people tied together for cultural, survival, or caretaking reasons. Networks may also be formal arrangements of people who belong to an organization, club or association, which have has a specific charter or organizational goals. Networks may function in a local geographic area or may influence resource management activities from regional or national levels.*

Support Services: *A supporting service is any arrangement people use for taking care of each other. Support services occur in an area in both formal and informal ways.*

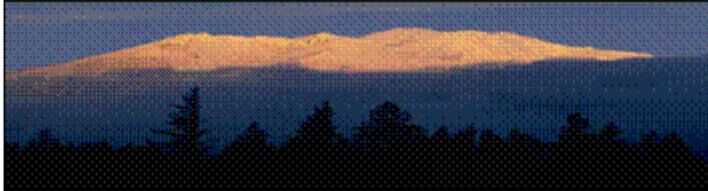
Figure 1
Human Geographic Units:
The Four Corners Social Resource Unit/Human Resource Units (HRUs)*



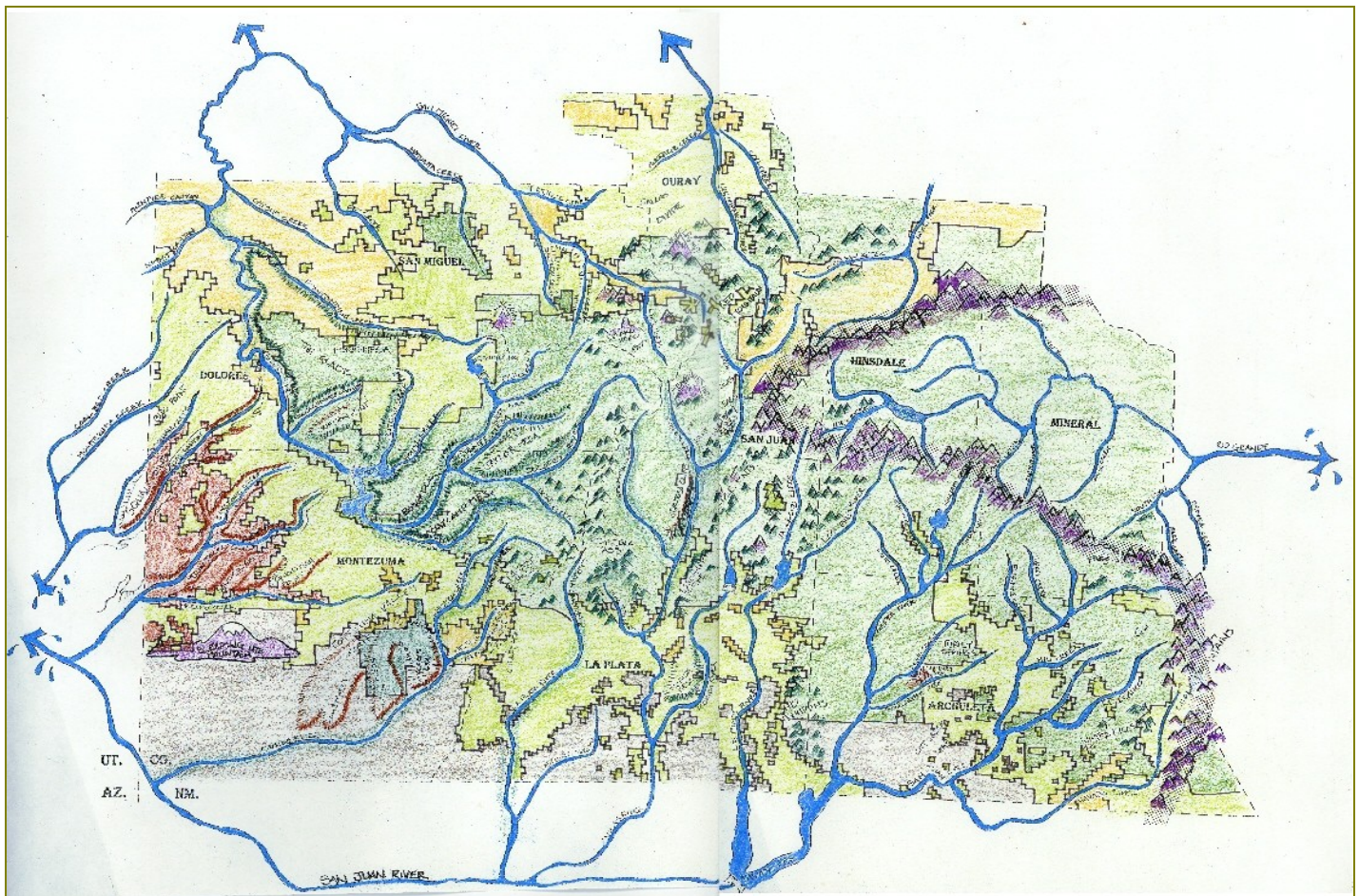
*Creating Productive Harmony Between Human and Natural Environments
Copyright: James Kent Associates, 1989



Cultural Descriptor



Geographic Boundaries and Natural Features



Cultural Descriptor: Geographic Boundaries and Natural Features

A geographic boundary is any unique physical feature with which people of an area identify. Physical features separate the activities of a population from those in other geographic areas.

The primary jurisdictional focus for this analysis are the five Counties in Southwest Colorado (La Plata, San Juan, Archuleta, Montezuma and Dolores Counties), and the Federal Lands that fall within the Boundaries of these Counties, including the San Juan National Forest and BLM Resource Area (including Canyons of the Ancients National Monument), and Mesa Verde National Park. The distinct geographic boundaries and natural features that define the region are fundamental to the settlement patterns, recreational activities and the evolution of the local economy and work routines.

When one looks at the “Human Resource Units” or HRUs (Figure 1 on page 6) defined by the cultural descriptors that drive this analysis, it is striking how closely the county boundaries, the ranger districts on the San Juan National Forest, and culturally defined HRUs are aligned:

- The Dolores Ranger District corresponds with the Montelores HRU, which encompasses Montezuma and Dolores Counties.
- The Columbine Ranger District corresponds with the La Plata HRU, which encompasses La Plata and San Juan Counties.
- The Pagosa Ranger District corresponds with the Pagosa HRU, which encompasses Archuleta County and the southern part of Hinsdale County.

The consistency of these jurisdictional alignments is reflective of the distinctiveness and dramatic variation of geographic features that have shaped settlement patterns, as well as economic and recreational uses of the landscape including:

- The dramatic range of elevations (from 14,000 to 5,000 feet);
- the variation in terrain from Alpine, to red-rock canyon and high desert;
- the related variation in vegetation types including high altitude spruce/fir forests, mixed conifer forests, ponderosa pine/gambel oak forests, pinyon juniper forests, sage brush, and developed farmland, and
- The San Juan and Dolores River systems from headwaters to river bottom valleys.

Under the Settlement Pattern Descriptor, the analysis will focus on how the settlement of high altitude hard rock mining communities were supported by timber, agricultural and trade communities in the lower valleys and connecting transportation networks. Subsequent migrations were driven by oil and gas development, tourism and amenity migration. Geographic and natural features have shaped all of these migrations and the way in which settlement has been placed on the landscape. The interface between settlement patterns, geographic features and land ownership is profoundly relevant to the trends that will be discussed under the Settlement Patterns Descriptor.

In the Recreational Activities Descriptor the role of geographic and natural features are primary shapers of the range of recreational activities that attract tourists and migrants, and support livelihood and lifestyle for local residents. In the Work Routines Descriptor the ties of livelihood and work routines to the land will also be apparent.

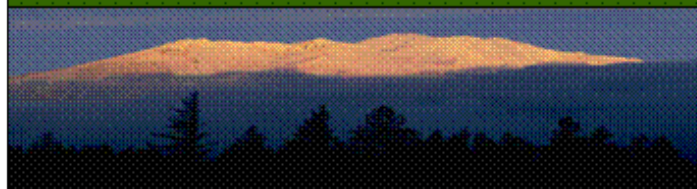
The Geographic Boundaries and Natural Features map on page 8, depicts key features, boundaries, and “place names” that will provide the geographic foundation upon which Settlement Patterns, Recreational Activities, and Work Routines will overlay.

San Juan Plan Revision Applications: Geographic Boundaries and Natural Features

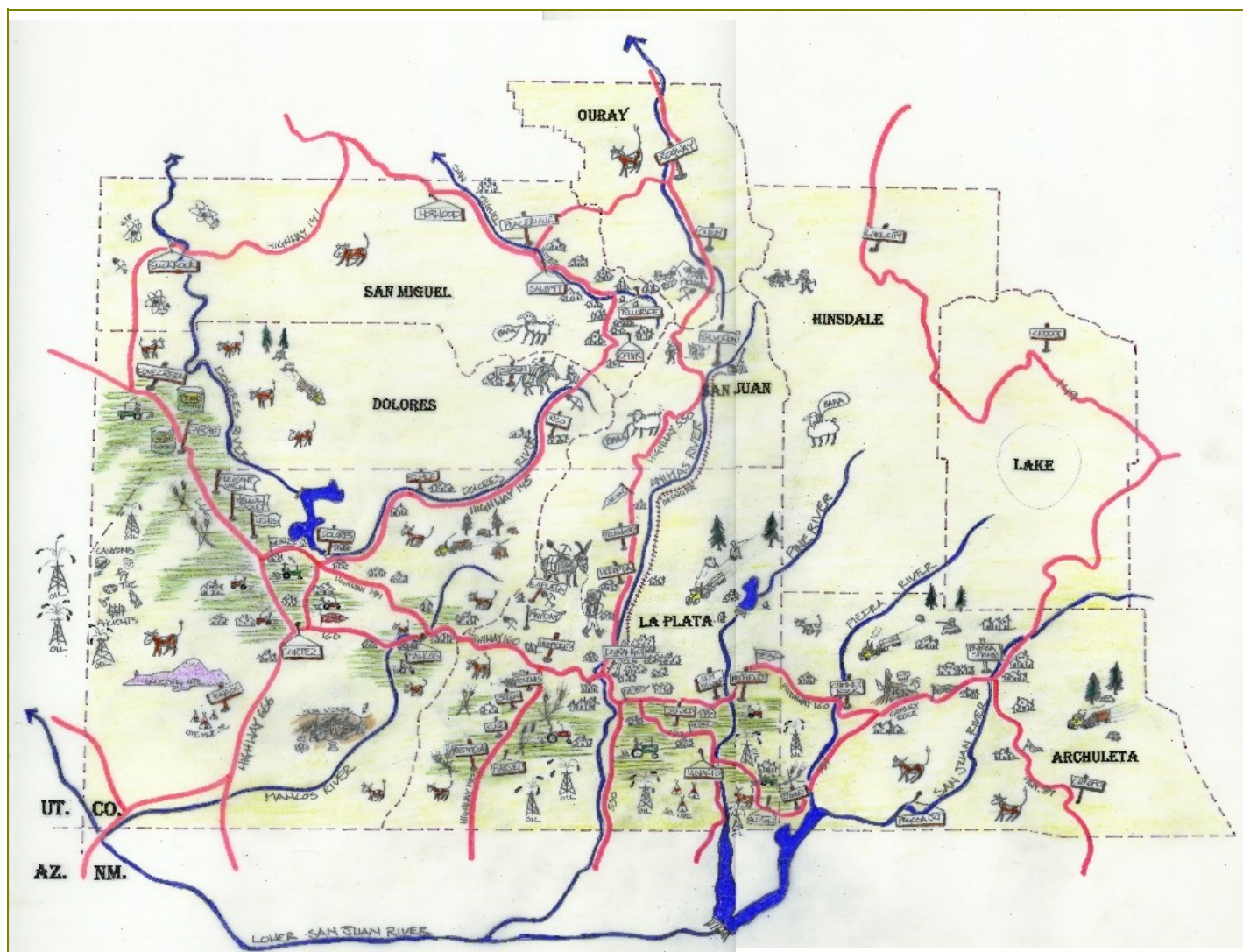
1. A major component of the community involvement process in the San Juan Plan Revision has been Community Study Groups organized around the Montelores, La Plata and Pagosa Human Resource Units (HRUs) depicted in Figure 1.
2. The three HRUs are shaped by a combination of natural and human geography and correspond very closely with the three Ranger Districts on the San Juan.
3. The San Juan Forest and BLM Resource Management Plans are being developed congruently using a landscape based approach to gather knowledge and input from the community study groups.
4. Each of the three San Juan Districts were divided into approximately 10 “landscapes” based on a combination of geographic features and “sense of place”, to provide a structure for Study Group discussions and the integration of Study Group input with natural resource information.
5. Geographic Information Systems (G.I.S.) provide a critical tool in integrating social and ecological information input and analysis.



Cultural Descriptor



Settlement Patterns



Cultural Descriptor: Settlement Patterns

A settlement pattern is any distinguishable distribution of a population in a geographic area, including the historical cycles of settlement in the area. This cultural descriptor identifies where a population is located and the type of settlement . . . It also describes the major historical growth/non-growth cycles and the reasons for each successive wave of settlement.

The “historical cycles of settlement” in the San Juan and Dolores River Basins in Southwest Colorado will be presented in terms of “eras” including: the Pre-European Settlement and Migration Era, the European Settlement Era, the Conservation Era, the Post World War II Energy Development Era, and the New West Amenity Migration Era. Use of the term “Era” is not intended to reflect a sharply defined sequence of beginnings and endings. Eras, rather, define the dominant focus of migration and settlement at in a particular time frame. Each of these eras is like a wave of migration that rolls in and partially subsides, leaving behind a foundation upon which future waves of migration are overlaid.

Each settlement era overlay adds to the mosaic of past and ongoing settlement patterns on the physical landscape as well as the social, cultural economic and institutional mosaic that characterizes the contemporary study area. The extensive structures that the Anasazi left behind play a profound role in communities of today. Likewise the mines, towns, ranches, and remnants of the rail system developed during the era of European Settlement continue to shape the relationship between people and the land. The Resource Conservation Era created the public land agencies and management regimes that continue to be adapted via the Forest and BLM Plan process. The Post World War II energy development era is still alive in the form of a coal bed methane boom. The New West era of amenity migration dominates community life as the 21st Century opens. The challenges posed by the New West and the assets available to meet these challenges involve the cumulative and persistent contributions of everything that has gone before.

Pre-European Settlement and Migration Era

The extensive dwellings and artifacts left by the “Anasazi” or “Ancestral Puebloans” tell the story of a people who migrated to find the shifting balance between increased precipitation at higher elevations and a longer growing season at lower elevations. These people sustained themselves with a combination of farming, gathering and hunting. They appear to have left the area when drought, and possibly deforestation, made their livelihood unsustainable. The extensive archaeological sites that remain attest to the aesthetic and spiritual value they placed on the spectacular vistas that characterize the region. The Ute and Navajo people that migrated into the area subsequent to the Anasazi and prior to European settlement also migrated seasonally between mountains, valleys, canyons and deserts in order to live off of the land by hunting, gathering and limited crop production.

(Social) Trends and (Land Use) Patterns:

- Seasonal and weather cycle migration for hunting, gathering and farming
- Extensive surface and subsurface structures and artifacts.

Forest Plan Issues:

- Archaeological protection/mitigation
- Cultural properties

The Era of European Settlement/Mining: 1870-1910

Gold, Silver and Hardrock Mining: Silverton and Rico

It was gold and silver that brought European settlers into Southwest Colorado. The early boom towns were Silverton (incorporated 1876) on the upper Animas River and Rico (1876) on the upper Dolores River. Silverton and Rico peaked at about 5,000 residents each between 1890 and 1910. Severe winters, steep terrain, and a short growing season necessitated the development of down-river settlements to produce food, lumber, mine timbers and smelt gold, silver and other minerals.

La Plata HRU: L. P. County, Animas and Pine River Valleys, Durango, Bayfield, Ignacio

It was during this initial mining era that Durango (organized 1874) established itself as the dominant town in Southwest Colorado and the La Plata County seat. Durango was in proximity to rich coal deposits, fertile agricultural lands, extensive timber resources and ample water supplies. The Denver-Rio Grande narrow gauge railroad along the Animas River corridor carried ore to be smelted in Durango and carried food, lumber and supplies up to Silverton. Narrow gauge rail connections were also established to Durango from Rico and other San Juan mining districts. Thus Durango became the rail hub for the San Juan Basin to Chama and on to emerging urban markets in Denver and the Midwest.

Other river valley towns and agricultural settlements developed in Southwest Colorado during the era of European Settlement. Two towns were established in the Pine River Valley in eastern La Plata County. Cattle were brought into the Bayfield area in 1875 and the Town of Bayfield was incorporated in 1906. The Brunot Treaty of 1873 established the current boundaries of the Southern Ute Reservation and the Ignacio Agency for the Southern Ute Tribe was established in 1877, attracting an influx of Spanish American settlers from Northern New Mexico and the San Luis Valley. Ignacio was incorporated in 1913.

Pagosa HRU, Archuleta County, Piedra, San Juan and Rio Blanco River Valleys:

The Brunot Treaty of 1873 also touched off an influx of Hispanic settlers into southern Archuleta County and Anglo settlers into northern Archuleta County. The Denver-Rio Grande Railroad reached Pagosa Junction in 1881 and connected Pagosa Springs in 1900 in response to the development of two large and several small lumber mills. Ranches were established in the Piedra, San Juan and Rio Blanco River Valleys.

Montelores HRU, Dolores and Montezuma County, Dolores and Mancos River Valleys:

While hard rock mining was getting started in Rico on the east side of Dolores County, livestock settlers were being attracted to the lush native grasses on west side of the County. By 1910 open range overgrazing had converted native grasses into sagebrush.

The Mancos River Valley in the east side of Montezuma County, was settled by ranch families beginning in the 1870s. In 1891 the narrow gauge railroad connected from Dolores to Durango through the Town of Mancos (established 1894). Dolores was established when the narrow gauge rail line was built to connect Rico and Telluride to Durango. The narrow Dolores River Valley supported ranching and sawmills, establishing it as a supply town to the mines.

It is believed that at one time the Dolores River was connected to McElmo Creek, but a geologic uplift turned the Dolores north, leaving the fertile Montezuma Valley without a river. Work began in the 1880s to punch a tunnel through uplift at the bend of the River and bring Dolores River water into the Montezuma Valley. The Town of Cortez was platted by the original water company in 1886, and the Montezuma Valley was opened to homesteading.

Ute Tribes:

Prior to the discovery of gold and silver in the San Juans, the Ute people occupied most of the western slope of Colorado, migrating with the seasons to hunt, gather and winter. The expansion of Anglo and Hispanic settlement resulted in a series of land cessions. By 1895, the Muache and Capote bands had taken up allotments on what today is the Southern Ute Reservation. The Weeminuche band refused to take up allotments and communally occupied today's Ute Mountain Ute Reservation to the west.

Summary of the European Settlement/Mining Era:

Native Americans were displaced as Europeans came into the area in search of gold and silver and created high altitude boom towns. Agricultural and sawmill settlements grew up in the valleys to support the mining towns and persisted when the mining economy collapsed after the turn of the 20th Century.

The San Juan Mountains provided wood products for shelter, and watershed resources that were vital to establishing agricultural settlements in an arid environment. The mountains also provided a ready source of livestock forage, resulting in unregulated grazing, prior to the turn of the century, which did serious damage to the watersheds. While the saw mills, farms and ranches persisted, mining continued to boom and bust and was eventually overshadowed by the extraction of energy resources beginning in the 1950s.

These migrations, settlements and economic activities profoundly affected the ownership and land use patterns that continue to shape the area. The Valleys came into private ownership through a combination of the Homestead Act, and the development of water storage and irrigation systems under the emerging water rights priority system. Water availability also determined the location of town-sites. With the exception of mining patents and water facilities, most of the San Juan Mountains remained in public domain with "open use" for timber harvesting, for spring-summer-fall grazing and for hunting. The canyon country supported a combination of mining patents and open winter grazing.

Trends and Patterns

- Towns, valleys, public domain
- Natural resource economies

Forest Plan Issues:

- Preservation of historic structures
- Impacts of unregulated use of the public domain
- Basis for future tribal water, and hunting rights claims

The Resource Conservation Era

Conservation measures were initiated by President Theodore Roosevelt, in the first decade of the 20th Century, to address deteriorating conditions on western public domain lands. To address overuse, resource deterioration, user conflicts and community stability; most of the San Juan Mountains, that hadn't been homesteaded came under the management by the U.S. Forest Service with the creation of the San Juan National Forest in 1905. In the high desert and mesa country to the south Reservations were established for the Ute Mountain Ute, Southern Ute, and Navajo Tribes. In 1906, Mesa Verde National Park was set aside, as a preserve for the spectacular Anasazi cliff dwellings. The land that became Mesa Verde National Park had been part of the Ute Mountain Ute Reservation.

The open range in the canyon country to the west came under the Bureau of Land Management (BLM) grazing management as a result of the Taylor Grazing Act of 1936. This was part of a series of conservation initiatives undertaken by Franklin Roosevelt in response to the “dust bowl.” The 1930s also saw the homesteading and conversion of privately owned non-irrigated rangelands into dry land farms in western Montezuma and Dolores Counties, and the “dry-side” on Fort Lewis Mesa in southwestern La Plata County. Many of the people that came in to take up dry land farming were escaping the “dust-bowl” crisis in the Midwest.

Another conservation era Federal agency that shaped southwestern Colorado was the Bureau of Reclamation. The construction of larger scale Reservoirs such as Vallecito Reservoir on the Pine River and Jackson Gulch Reservoir on the Mancos River provided irrigation and domestic water, as well as flood control. Smaller reservoirs also continued to be built to deal with the “hydrograph” of San Juan Basin rivers, which run most of their volume in the spring when the snow pack melts, with diminishing flows in the summer when irrigation and domestic water demands are highest. Reservoirs allow spring runoff to be stored and used later in the season, when it is needed. Reclamation projects such as the Dolores Project, and Animas La Plata Project (currently under construction) were shaped by the changing conditions and values, laws and policies of the “New West Era” described below.

A general pattern of land use and ownership had been established by the 1950s involving small towns encompassed by privately owned irrigated valleys and dry land farms, encompassed by National Forest Land to the north, Indian Reservations to the south and BLM managed canyon lands to the south and west. Substantial BLM ownership was also established in the mining districts in the Silverton area. Grazing rotations involving National Forest, private, and BLM lands represent a more intensive variation on the seasonal uses and migrations that have characterized human settlement and livelihood since pre-European times.

Post World-War II Energy Development Era

Energy Development:

As World War II ended, the economy of Southwest Colorado was primarily driven by production of renewable resources including farming, ranching, and wood products. The discovery of the Aneth Oil field in Southeastern Utah added a non-renewable dimension to the natural resources economy. The success of the Aneth Oil Field stimulated exploration and development of other oil, gas, coal and uranium fields in the Four Corners. The smelter mountain area along the Animas River became a uranium mill for a time creating a tailings pile that took until the 1990s to remove. During the energy boom of the late 50s and early 60s, Durango became the headquarters for energy company executives and engineers.

Cortez, in closer proximity to Aneth field, became home to most of the oil field workforce. The growth and new money from the oil field resulted in new housing subdivisions, schools and paved streets, as well as major improvements in Highways 160 and 666 and the opening of the McElmo Canyon Road to access the oil field. Cortez, which had struggled for lack of a railroad or river, and a series of irrigation company bankruptcies, outgrew Dolores and Mancos to become a regional trade town. This expanded physical and commercial infrastructure also laid the foundation for future tourism development.

Durango had long established its dominance in Southwest Colorado as a center for commercial and professional services. Energy company headquarters were a natural extension of this position. The most profound change for Durango resulted from the energy crash in the early 1960s. Town fathers looking for a way to pick up the pieces, focused on transforming Fort Lewis A&M, which had been a two year college located in Hesperus into a four year college. Fort Lewis College moved to its

current College Heights location in Durango in 1956, and granted its first baccalaureate degrees in 1964 .

Since many of the energy reserves were discovered on the Southern Ute, Ute Mountain Ute and Navajo Reservations, the energy boom had the effect of beginning to bring the Tribes into the economic mainstream. Opportunities for Tribal government revenues and jobs, and the need to enter into business arrangements resulted in the reorganization of tribal governmental structures and a dramatic increase in tribal buying power in local economies.

Another profound change set in motion by the energy boom was the dramatic growth of Farmington, across the New Mexico State line at the confluence of the Animas and San Juan Rivers. In addition to developing new energy fields, the Farmington area became a center for the intersection of the energy pipeline system developed to carry resources to distant markets. The eventual growth of Farmington to three times the size of Durango has created competition for commercial and professional services.

Other Post World War II Changes:

Growth during the energy boom also began to fuel demand for wood products, which coupled with growing export opportunities, began to increase harvest levels on National Forest Land. Tourism, recreation and hunting had begun to play an increasing, but still minor role, as post World War II America became more mobile, and transportation and communication systems were improved in the Region.

Trends and Patterns

- Towns, valleys, regulated public lands
- Energy booms (and busts)

Forest Plan Issues:

- Energy field and pipeline revenues and potential impacts on public land
- Tribes begin to develop economic/institutional clout
- Timber harvest levels begin to increase.

The Era of Tourism/Amenity Migration: “The New West”

Throughout the Conservation and Post World War II energy development eras, tourism was a social and economic factor in Southwest Colorado. Hunting and fishing, the cliff dwellings of Mesa Verde, and the narrow gauge train from Durango to Silverton attracted modest numbers of visitors and helped to soften the swings of what continued to be a natural resource based economy. The establishment of Purgatory Ski Area, carved out of the San Juan National Forest in the 1960s was a hint of changes to come. But as of 1970, Durango had little in the way of up-scale bars and restaurants, there was no resort at Purgatory, and “Rio Grand Land,” east of the train station was in ruins. The historic core of downtown Durango was populated by auctions, second hand stores, as well as the drug stores, dime stores, and hardware stores. The only “shopping center” was on Camino Del Rio. Highway 160 east was two lanes on the east side of the Animas River and looked down on the San Juan lumber mill. The San Juan Forest Supervisors Office was on the second floor of the Old Post Office Building on Main Street.

A look at how Durango has changed in the 30 years since 1970 is evidence of the dramatic shift in economic orientation that has occurred. But it is the changes on the rural landscape that have the most profound ramifications for Forest Planning. In the early 1970s Tammaron Resort was built, and the first large rural mobile home park was developed at the junction of Highway 550 and Trimble

Lane, primarily to accommodate incoming construction workers. During this same period, the first few houses were built in what would become the Durango West complex of large subdivisions.

By 2000 the number of developed lots in the Durango West area was in the thousands with future development constrained by the availability of water. Headlines in the year 2002 talk about a Durango Mountain Resort (formerly Purgatory Ski Area) on the La Plata County/San Juan County Line that has been scaled back to 1,649 units and 410,000 square feet of commercial space. A proposal to develop the River Trails Ranch in the East Animas Valley was proposed for annexation into the City of Durango and the development of over 2,000 residential units. The River Trails ranch annexation proposal was denied by the City in the face of opposition to such high density development on the southern end of the Animas Valley, and will go forward as a lower density, high dollar development of 60+ residential lots. In the meantime an annexation in the Grandview Area east of Durango was proposed and approved in 2004 including a new location for Mercy Hospital, and the “Three Springs” development involving 2,100 residential units as well as substantial commercial development. Conceptual plans are under consideration for 1,500 to 3,000 homes, and office park and golf course on Ewing Mesa just southeast of downtown Durango, an excellent location for high density development except that it will require substantial investment to create access and sewage treatment capacity.

The constraint on high density growth in the Animas Valley by the denial of the River Trails Ranch annexation, the growth in Durango West, and the approval of high density development of Three Springs to the east of Durango, and plans to develop Ewing Mesa are reflective of the reality that Durango has outgrown its historic geographic boundaries within the southern Animas Valley. Another trend is increased density within the historic boundaries of Durango in the form of a significant number of townhouse units. From a social standpoint all of these development trends involve the interrelated issues of density, housing affordability, and open space. River Trails was blocked in the name of open space, Three Springs promises “attainable housing”, and the high end development at Durango Mountain Resort incorporates an affordable housing element. As of July of 2005, the median home price in Durango was \$356,000 up 19% in one year, while the median price for county homes near Durango were \$370,000. This is resulting in growth and price pressure on nearby small towns such as Bayfield and Mancos.

The general trend towards more new house lots in higher density City annexations and townhouses and proportionately less low density development in the County provides one building block for open space preservation. The increasing social value being placed on open space is being supported by land conservancies, and attempts at preservation through County comprehensive planning and the consideration of tools such as TDRs. Voters in the City of Durango passed a sales tax increase in 2005 to acquire open space. There is still, however, a trend towards high end residential development in areas adjacent to public lands which will undoubtedly continue.

The change in Archuleta County is epitomized by the contrast between a billboard with Art Linklater’s picture and an observation tower overlooking undeveloped land in the early 1970s, and what in 2002 is Pagosa Lakes resort, commercial center, and second home oriented subdivision that dwarfs historic Pagosa Springs. Pagosa Springs could also be impacted by proposed resort development adjacent to the Wolf Creek Ski Area that could eventually accommodate as many as 10,000 people. Even the slower pace of growth in Montezuma County is resulting in ranchettes, and subdivisions in what recently were hay fields and pinyon-juniper grazing lands. Since 2000 Montezuma County has seen its largest subdivision of 135 lots in a fire prone area adjacent to BLM land.

The sea change reflected in the anecdotal contrasts described above between 1970 and 2005, and quantified in Table SP-1 has been described by the term “amenity migration,” coined in 1994 by Dr. Laurence Moss:

Amenity Migration

[Amenity migrants are] “focusing on places around the world that are rich in nature and culture, places that until recently were veiled by their relative remoteness. Tourists, and similarly motivated longer-term migrants, are seeking to enjoy our planet’s dwindling reserves of natural beauty and cultural diversity.” (p. 2).

. . . Moreover, in this context, longer-term, or resident amenity migrants now appear to be as important, or more important, than the amenity tourist. Together these migrants are a formidable force for change” (p. 6). [Dr. Laurence Moss (1993, August) in “Beyond Tourism: The Amenity Migrants.” XIII Conference of World Futures Studies Federation, Turku, Finland, revised 1994.]

“Relative remoteness” and “reserves of natural beauty and cultural diversity”, have proven to be assets that have driven a large share of the migration into Southwest Colorado since 1970. It should be emphasized however that the ever-increasing influence of amenity migration is interwoven with the continuing influences of previous eras. The growth during the early 1970s in Figure SP-1, reflects the maturation, and for a time, the dominance of tourism. People migrated into Southwest Colorado to join in the development of tourism generated economic opportunities and take advantage of related employment opportunities.

By the latter part of the 1970s the Arab oil embargo had spawned an energy boom in Western Colorado and the Four Corners that promised (or threatened) to permanently transform the region. By the mid-1980s the energy boom had turned into another bust and population growth went flat. Growth stopped, property values fell, agriculture was in a trough, and businesses contracted or failed.

When the economy began to recover and growth resumed in the early 1990s the influence of the “amenity tourist” was overshadowed by the influence of the “amenity migrant.” Anecdotal evidence strongly indicates that most amenity migrants were originally amenity tourists. The growth in tourism of the early 1970s sowed the seeds for the amenity migration of the 1990s. A variety of forces are at play in this trend:

- Many of the people that had visited the area over the years, or were raised in the area, are reaching retirement or early-retirement age.
- Pollution, crime and traffic are making life in metropolitan areas more difficult, and for many, the prospect of living in a rural area more attractive.
- Relatively high land and business values in metropolitan areas have created substantial leverage to cash in and invest in Southwest Colorado.
- Information technologies and the decentralization of professional services in the global economy have opened up new opportunities to conduct business in rural areas.
- A desire to connect or reconnect with a “sense of community” and “sense of place,” often rooted in family histories with ties to small town and agrarian living is attracting people to rural areas.
- Lifestyles built around outdoor recreation are an increasingly strong priority to potential migrants, young and old.

- As desire to reconnect with nature and advocate environmental protection motivates people to move to more natural non-urban settings.
- Communities surrounded by public lands desired for their recreational and aesthetic, and environmental values and public access.

Summary of Settlement, Population and Land Use Trends 1890-2001

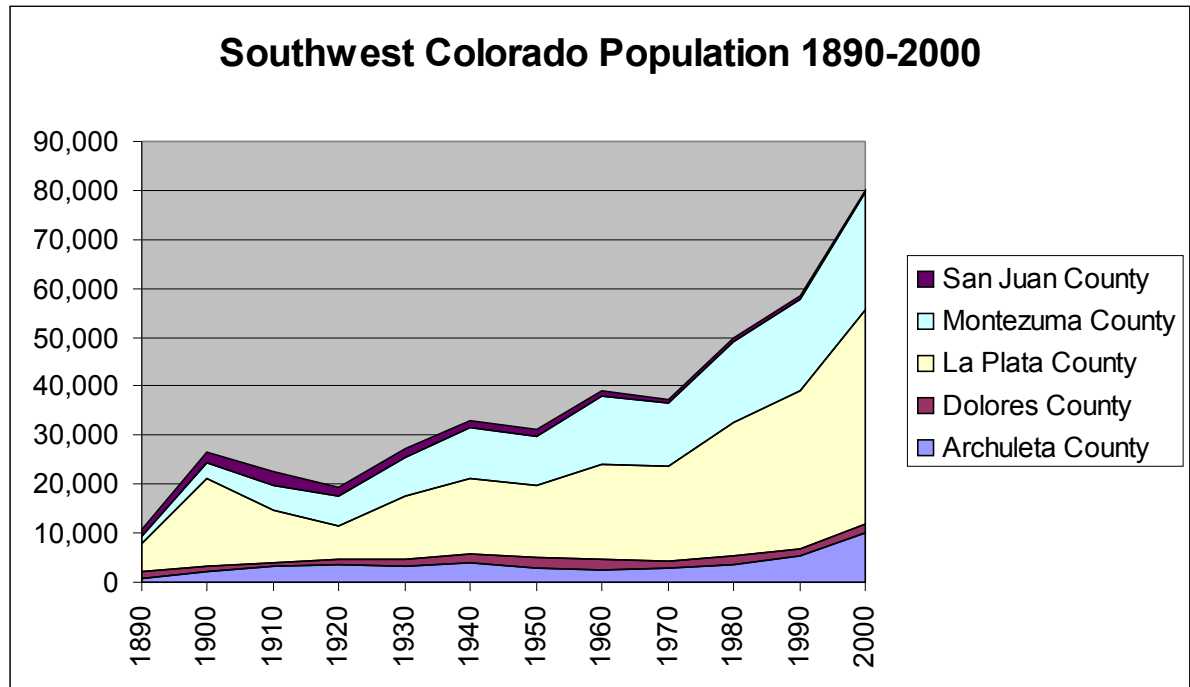
The land use patterns that have evolved in the current Amenity Migration Era are overlaid on the settlement patterns that have been carried forward from previous eras. Matrix SP-1 provides a summary overview of this progression. It also links the settlement patterns in each era with the related land attachments and cultural values, because these attachments and values have also been carried forward into the current era.

Matrix SP-1

Era	Settlement and Land Use Patterns	Land Attachments and Cultural Values
Pre-European Migration/Settlement	Seasonal and weather cycle migration. Extensive stone and pottery artifacts. Extended family oriented settlements.	Game, water, farmable soils, stone, wood, vistas, communal/family life.
European Settlement/Mining Era	High altitude hard rock mining boom towns supported by saw mill and agricultural supply towns, set in irrigated valleys, connected by a narrow gauge rail system. Private property established via homesteading laws, with unclaimed land remaining in the public domain.	Resource extraction, survival, community building, overcoming of geographic isolation, establishment and protection of private property rights and water rights. The free and open use of the public domain.
Resource Conservation Era	Agricultural land base expanded by improved irrigation, soil conservation and production technologies. Development of community water supplies and rural electrification. Export oriented agricultural & timber production. Creation of public land management agencies, regulations, & resource development programs. Aggressive fire suppression on public lands.	Community identity and heritage tied to the improved productivity of land and water resources. Prosperity tied to natural resource exports. Survival of boom-bust cycles tied to family and community self-sufficiency. Ambivalence towards federal land management: recognizing need for orderly allocation/use of grazing, timber, water resources, while resisting federal intrusion on traditional rights and practices.
Post WW II Energy Development Era	Leasing and development of sub-surface resources impacts primarily agricultural uses. Significant compensation only to surface owners who control mineral rights. High paying jobs, stimulate local economies, spur population growth and provide needed cash to supplement farm income/improvement. High export values underwrite transportation access to isolated areas, expand local tax base.	The infusion of cash and high paying jobs is appreciated along with resulting community improvements and tax base development. Concerns about the transience of the oil-field work force are off-set, in part, by local job opportunities, and many oil field migrants becoming permanent members of the community. Tension develops over pipeline impacts on private land.
“New West” Tourism/Amenity Migration Era	Increasing residential development in agricultural areas and adjacent to public land boundaries. Resort, second home, gated community development. Diminishing access to public lands. Impacts on rural infrastructure and services. Increasing property values. Degraded, and in some cases enhanced ecological conditions. Increased recreational use on public land coupled with tourism accommodations in towns, along highway corridors. Increase in environmental regulation and protected areas (e.g. wilderness).	Values oriented towards open space, wildlife, aesthetics, and recreation. Desire to participate in community life vs. desire for isolation. Commitment to manage/restore degraded private land vs. passive approach to land ownership. Advocacy for environmental protection on public land vs. advocacy for maximizing recreational access/use. Tendency to access local/federal land use planning opportunities.

Figure SP-1 below depicts the population trends reflecting settlement patterns during the eras summarized in Matrix SP-1 above. Growth from 1890 and 1900 during the “European Settlement Era” was lead by mining and followed by a bust between 1900 and 1920 after the silver crash. Growth resumed between 1920 and 1940 during the “Resource Conservation Era” lead by opportunities related to land and water available for agricultural and renewable resources livelihoods. After decline during the WW II years, growth resumed during the 1950s driven primarily by oil and gas development. The 1970s begins the “Era of Tourism and Amenity Migration.”

Figure SP-1



It is crucial to emphasize that the eras that created the settlement patterns summarized in the Matrix SP-1 are not “over” or “ended.” Rather these eras overlay and overlap one another and should be viewed as major themes in the unfolding of local settlement patterns, which persist and become part of the mosaic, as new eras of emphasis unfold.

The remains of pre-European settlements by the Ancestral Puebloans are a dominant physical, intellectual and economic feature of the region. The more nomadic Ute and Navajo Indians that came in after the Anasazi are a cultural and economic presence of increasing significance.

The mine, town, agricultural valley, and transportation corridor patterns, established during the era of European Settlement, provided the template upon which everything that followed was set. The damage done to the public domain during this era established the constraints and possibilities for public land restoration.

The Resource Conservation Era saw the establishment of boundaries, jurisdictions, authorities and public land management policies intended to preserve, allocate, and provide access to the natural, scenic and recreational resources that have attracted and complemented the settlement, land use and economic development patterns that have evolved. The Resource Conservation Era also saw the

strengthening of the agricultural infrastructure and practices that have sustained the valley component of the town, valley, and public land mosaic.

The Post WW II energy development era resulted in improved transportation, community expansion and infrastructure development, and expanded property tax base, royalty income and good wages (some of which helped stabilize and improve farm and ranch operations). The post World War II energy development era was also a period of expanded timber production. The development and availability of energy and wood products was part of a societal trend towards increasing mobility and a major expansion in the nation's housing needs and expectations. Increased mobility supported amenity tourism, which in turn stimulated amenity migration and the resulting development, which have become dominant themes in the New West Amenity Migration Era.

What needs to be emphasized about the New West transition from amenity tourism to amenity migration is the central role played by the public lands in attracting tourists and migrants. In an article entitled "The West's Forest Lands: Magnets for New Migrants and Part-time Residents", published in the Winter/ Spring 2001 edition of The Rocky Mountain West's Changing Landscape, economist Larry Swanson analyzes "Population Change in Non-Metro Areas Nearby Forest Service Lands in the West". This analysis demonstrates a doubling of the growth rate when the 1980s the 1990s are compared, and that net migration growth is more than double natural change in these communities. There is a parallel increase in per capita income when these two periods are compared.

"These lands, managed and planned for by the US Forest Service and Congress, have become and will remain 'magnets' for new migrants in the West. The management and use of these lands have heavily shaped the history of settlement and economic development in the West. They will continue to do so in the future, but under vastly different circumstances and prerogatives than in the past."

[Swanson page 25]

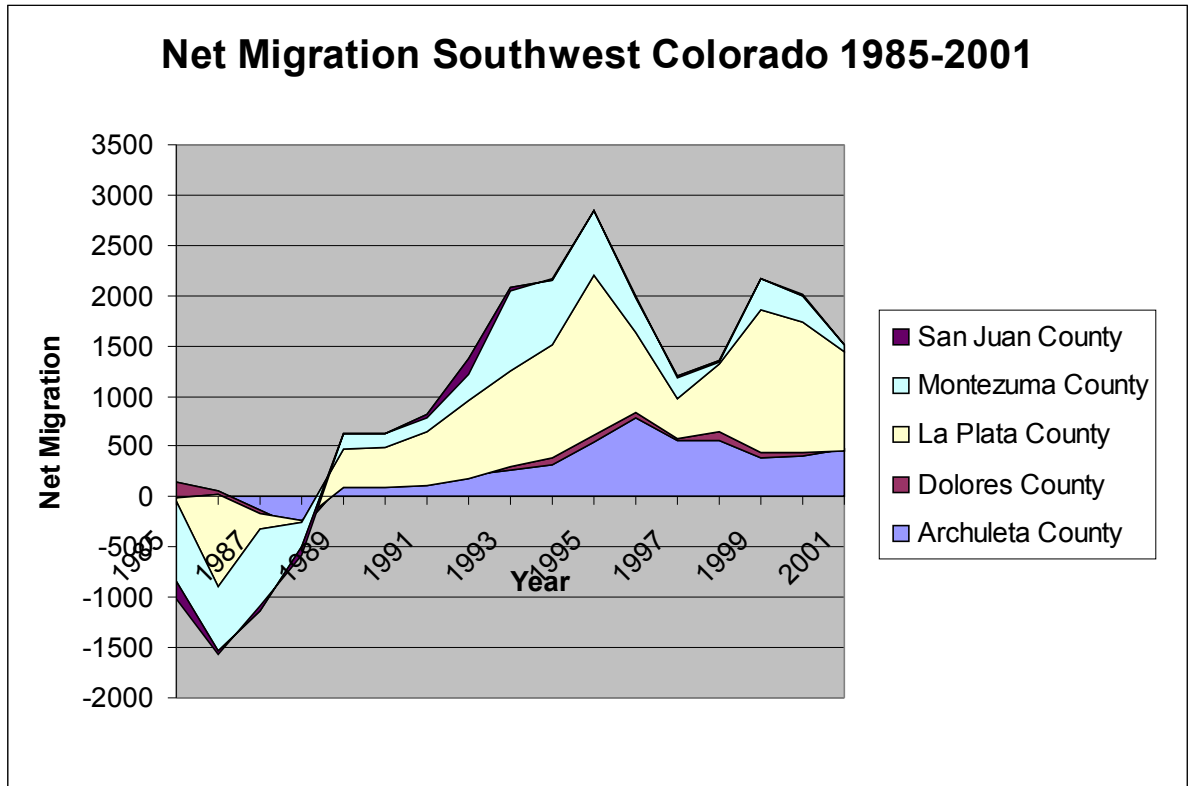
Table SP-1 presents Total Natural Population Increase and Net Migration in the five Southwest Colorado Counties from the peak of the out-migration in the mid-1980s through 2001. Natural population increases were at their highest between 1985 and 1988 (with a peak of 720 in 1985) at the same time that negative net migration was peaking at -1,561 in 1986. From 1992 on when positive net migration ranged from 1,200 to 2,800, natural increase dropped below 400. These figures provide a clear contrast between the wind-down after the energy bust of the mid-1980s and the acceleration of the amenity migration boom during the 1990s.

Table SP-1
Southwest Colorado Region 9
Natural Population Increase and Net Migration 1985-2001

Total Region 9	1985	1986	1987	1988	1989	1990	1991	1992	1993
Natural Population Increase	720	486	556	502	435	452	395	425	394
Net Migration	(1,010)	(1,561)	(1,087)	(577)	623	626	792	1,222	2,045
Total Region 9	1994	1995	1996	1997	1998	1999	2000	2001	
Natural Population Increase	399	375	391	328	353	291	346	361	
Net Migration	2,160	2,840	1,988	1,188	1,345	2,165	2,004	1,508	

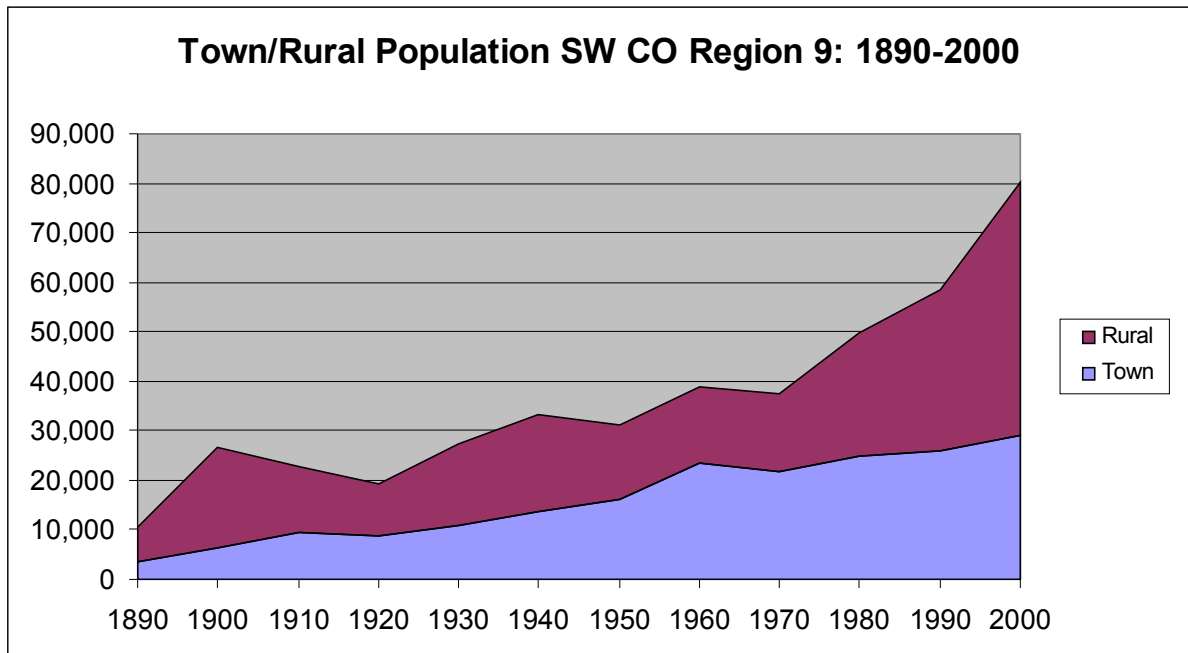
Figure SP-1 above shows the population curve get noticeably steeper in the 1990s. Figure SP-2 below is a graphic presentation of the net migration trends presented in Table SP-1

Figure SP-2



The other trend since 1970 has been an increasing amount of residential growth in the unincorporated or rural areas under County jurisdiction as opposed to growth in the cities and towns. Figure SP-3 below depicts this trend over the entire period from 1890-2000.

Figure SP-3



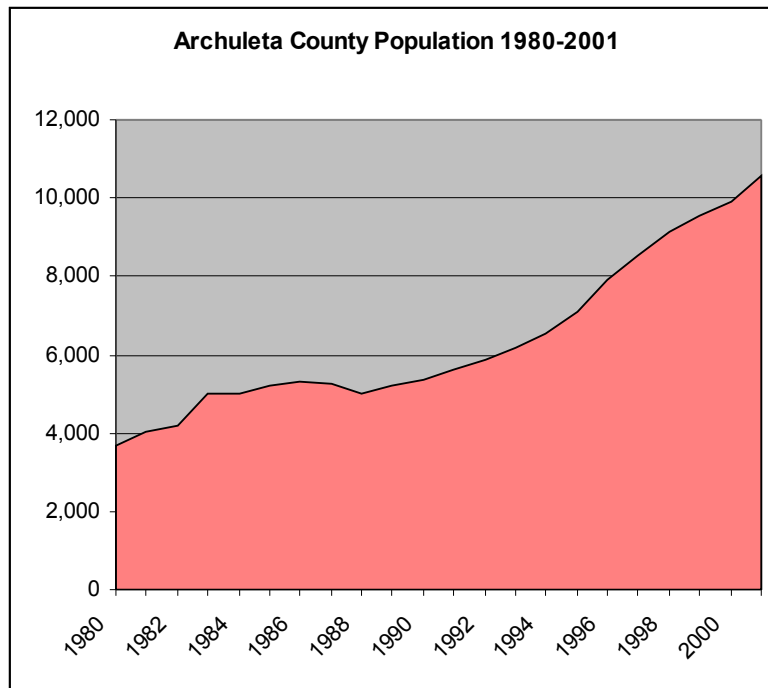
During the mining led boom at the turn of the century most of the population growth was outside of incorporated towns. The same can be said during the resource conservation era boom from 1920 to 1940. The energy boom from 1950-60s stimulated much more “in town” growth. From the 1970s on growth in the rural areas resumed dominance.

Most of the new settlement is in the agricultural and wooded belts between the Towns and the public lands. People want to live in an agrarian or semi-agrarian setting. The result is sprawl moving outward from the towns as people try and combine country living with an easy commute to town. There is also sprawl moving inward from the public land boundaries as people seek the seclusion and recreational access to public land.

A more refined County level analysis of population and settlement patterns during the period from 1980 to 2001 reveals a shift from the job lead growth of the early 1980s to the amenity lead growth of the 1990s. This analysis, beginning with Figure SP-4 will also address the unique population and settlement trends within each County.

Archuleta County Population and Settlement Trends and Patterns

Figure SP-4

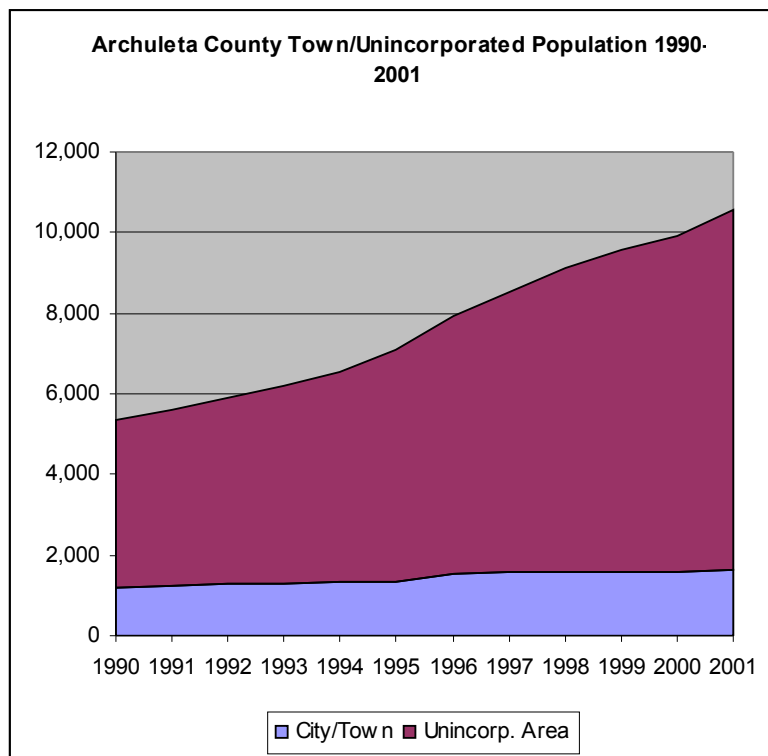


Archuleta County Population Trend 1980-2001

Archuleta County experienced the flat growth characteristic of Region 9 as a whole between 1984 and 1990 with a surge in amenity migration beginning in 1994 that shows no signs of abating.

The net result was that the population of Archuleta County nearly doubled increasing 97% from 5,345 in 1990 to 10,548 in 2001.

Figure SP-5



Archuleta County Urban Rural Trend 1990-2001

Virtually all of the growth was in the unincorporated portion of Archuleta County. Between 1990-2001 Pagosa Springs grew 34% from 1,207 to 1,621, while the incorporated area of the County grew by 4,798 or 116%

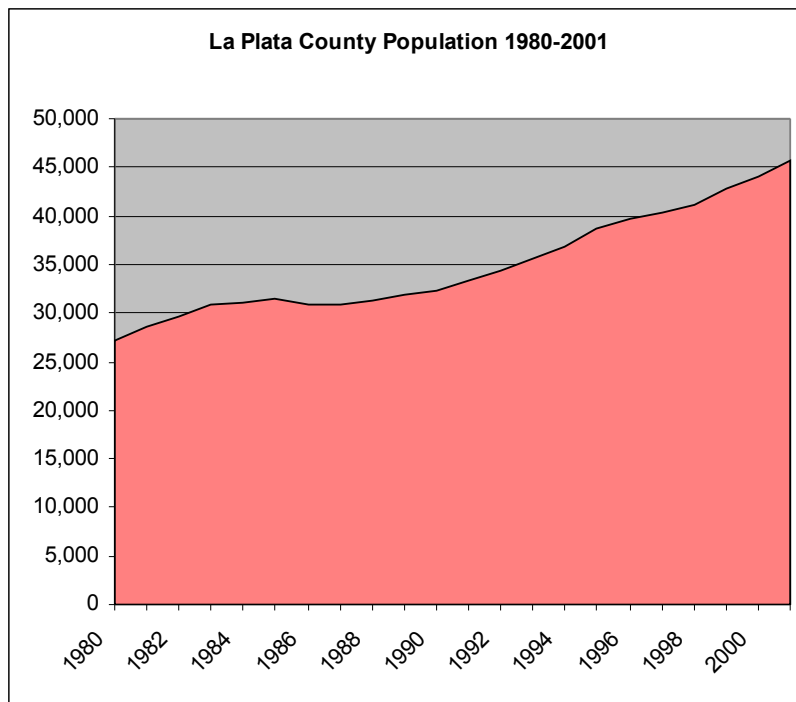
It is important to note however that much of the “unincorporated growth” was in the Pagosa Lakes area, which exceeds the population of Pagosa Springs but has never been incorporated or annexed into Pagosa Springs. There is, however substantial commercial development in the Pagosa Lakes area that has been annexed into the Town of Pagosa Springs, creating a very favorable revenue base for the Town.

Key Population and Settlement Trends and Issues in Archuleta County:

- Archuleta County has experienced steady growth of 3-5% per year making it one of the fastest growing smaller counties in Colorado.
- The unincorporated growth in Pagosa Lakes now exceeds the population of the Town of Pagosa Springs. The result is that a relatively high density of residential development in Pagosa Lakes which is supported by infrastructure that must be maintained by a combination of County, Special District and Homeowner Association service providers.
- Pagosa Lakes includes a mix of year round and seasonal homes as well as a golf course, with associated resort and commercial development incorporated by the Town of Pagosa Springs. The commercial annexations have put the Town in a strong revenue position.
- There is a proposed resort development on the Mineral County side of Wolf Creek Ski Area which could stimulate population growth, economic growth and housing costs even faster than recent trends.
- Highway 160, in addition to being a major east west State Highway corridor, is also the primary transportation artery for movement in and around Pagosa Springs/Pagosa Lakes community.
- The combination of these factors present challenges in County governance, revenues, infrastructure and service capacities which are likely to intensify.

La Plata County Population and Settlement Trends and Patterns

Figure SP-6

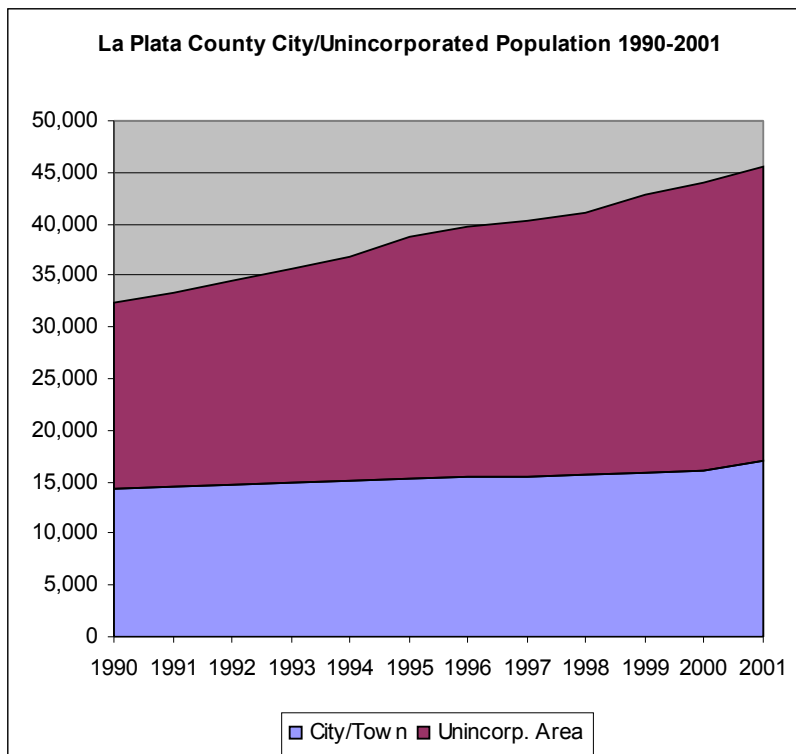


La Plata County Population Trend 1980-2001

La Plata County came off of the slump of the mid to late 1980s with consistent amenity driven growth of between 3% and 4% per year.

Between 1990 and 2001 the County grew by 13,330 or 41% from 32,284 to 45,614

Figure SP-7



La Plata County Urban Rural Trend 1990-2001

Throughout the 1990s most of the growth was occurring in the unincorporated areas of the County (58% between 1990 and 2001 compared to 18% in Durango which grew from 12,439 to 14,708). Bayfield nearly kept pace with the unincorporated county growing by 56% from 1,090 to 1,695.

Beginning in 2000 there were the beginnings of a shift back towards growth in the Towns. From 2000-2001 the Towns grew by 6% while the unincorporated county grew by only 2.5%. Durango grew by 786 while the unincorporated areas grew by 706. This "urbanizing" trend appears to be accelerating supported by recent and proposed annexations.

Key Population and Settlement Trends and Issues in La Plata County:

- **Water and Sewer Infrastructure.** A substantial portion of recent growth in unincorporated areas of the County, has been in larger scale, relatively high density residential developments such as those in the “Durango West” area. With no municipal or public water and sewer provider, such development often ends up being serviced by privately owned water and sewer systems, resulting in uncertainty as to long term service capacities, costs, and compliance with public health standards. The Historic constraints on development in rural La Plata County related to water will in part be overcome by the development of the Animas La Plata Project currently under development and the creation of a rural water system in the east part of the County with water from Vallecito Reservoir.
- **Transportation Infrastructure.** Another issue related to higher density rural residential development is the impacts on transportation arteries. By example, Highway 160 West of Durango is able to handle the traffic generated by development in the Durango West area and points west without much problem. By contrast traffic generated on 160 to the east of Durango creates rush hour bottlenecks at the “Farmington Hill” intersection of Highway 160 and 550 and congestion along Highway 160 from Bayfield to Durango. The new hospital and Three Springs development will intensify this congestion until substantial highway improvements are made.
- **Wildfire Hazard.** Much of the rural development over the last two decades has been in wooded areas with the potential for catastrophic wildfire. The magnitude of this threat became tangible in the summer of 2002 with the 75,000 acre Missionary Fire and ensuing flooding and mudslides. Beyond prompting dramatically increased wildfire mitigation efforts by property owners, and the consideration for more “Firewise” land use planning standards, it is likely an additional factor in a shift back towards living in Town. The realities of the Missionary Ridge fire have also sparked opposition to higher density development in the Vallecito Lake Area.
- **City/Town Growth.** Statistical indications for 2000-2001 in Figure SP-7 suggest that growth is shifting back to the Towns, and are picking up momentum with the convergence of the above issues (i.e. problems related to water and sewer, traffic and wildfire).
 - **Durango.** The real estate market in Durango has continued to heat up even as it has cooled down in unincorporated La Plata County. Durango has out-grown its natural geographic boundaries and growth proposals in any direction are controversial particularly in terms of traffic, and the “rural character” that has prompted so many to settle out of Town in the past few decades. A major annexation has been approved in Grandview to the East and River rejected for Trails Ranch to the north of Durango, and conceptually approved on Ewing Mesa just southeast of downtown. Any growth in and around Durango will also impact traffic in “Historic Durango” where Highway 550 and 160 converge. As geography forces Durango to leap-frog there is a related concern about the health of the commercial core of Durango as commerce continues to follow the spread of residential development along with major services such as the new Mercy Medical facility proposed for Grandview.
 - **Bayfield** has more than doubled in population from 724 in 1980 to 1,695 in 2001. The surrounding area provides plenty of opportunity for Bayfield to grow. In 2005 Bayfield updated its comprehensive plan setting the stage for increases in density and opportunities for future subdivisions and annexations. A key issue in the growth of Bayfield is improved connections to Highway 160 which divides traditional Bayfield to the South from the residential and commercial growth areas to the North of Highway 160.
 - **Ignacio** showed no population growth during the 1990s but has seen substantial commercial development related to the Sky Ute Casino. Future plans to develop a 51,000 square foot office building to house the Tribal Growth Fund which includes

the Tierra Group, a Tribal real estate development enterprise would suggest potential for future residential and commercial growth in Ignacio. The Town has recently acquired a 65 acre parcel of land and is planning the development of 110 family housing units. There are other properties adjacent to Ignacio that could be developed in the future.

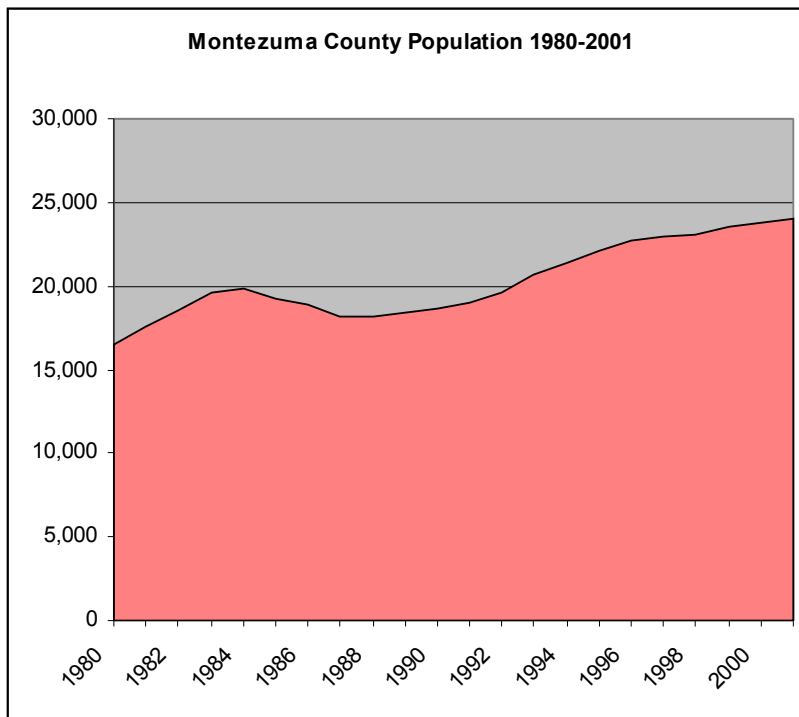
- **Resort Development** began in the 1970s with the development of Tamarron Golf Course and Resort (now known as the Glacier) in the North Animas Valley between Durango and Purgatory Ski Area (now known as Durango Mountain Resort). This trend continued over the next 25 years with condominium developments in and near the Ski Area and assorted small destination resorts and retreats. The potential scale of resort development took a quantum leap in 1999 when big time real estate developers took a majority interest in Durango Mountain resort. A proposal has been approved by the La Plata County Planning Commission and upheld by voter referendum to “build up to 1,649 housing units and 410,000 square feet of commercial space in a series of “villages” along both sides of Highway 550.” Construction is set to begin on the first phase of a 25 year master plan to develop 612 acres. [“DMR construction begins”, Durango Herald, September 24, 2003].

If the 25 year master plan for large scale resort development materializes the effects on the Animas River corridor between Durango and Silverton will profoundly affect the issues outlined above of water, sewage disposal, transportation infrastructure and the future growth and commercial health of Durango and Silverton. The evolution from a “family ski area” initially sited on National Forest land in the 1960s into a major resort complex is reflective of the growing complexity and integral nature of National Forest, local government and private sector planning and decision making.

- **Coal Bed Methane.** Coal bed methane extraction began in earnest in the 1980s supported by tax incentives. Technology and market forces combined to make this a feasible without tax subsidies. As a result well spacing has been reduced from the original one well per 320 acres to a recent decision allowing one well per 80 acres. Many of the existing and proposed wells are on private land with impacts intensified by smaller, high value parcels owned by amenity oriented residents. The result has been intense public objection which has spawned tighter county regulation, more environmental oversight and public input by the Colorado Oil and Gas Commission, which is beginning to prompt MOUs between the County and energy companies which address increased mitigation of impacts on private property and public infrastructure. Proposed methane development on public land, particularly in the HD Mountains has also been controversial particularly in isolated, unroaded areas. Since the HDs are already under lease, regulation can only address the intensity of development coupled with mitigation measures.
- **Community/Public Land Interface.** Durango and the Animas Valley are closely bounded by National Forest Land. The interface between the public lands and the local economy will be discussed under the “Work Routines” Descriptor. The recreational interface will be described under the “Recreational Activities” Descriptor.

Montezuma County Population and Settlement Trends and Patterns

Figure SP-8



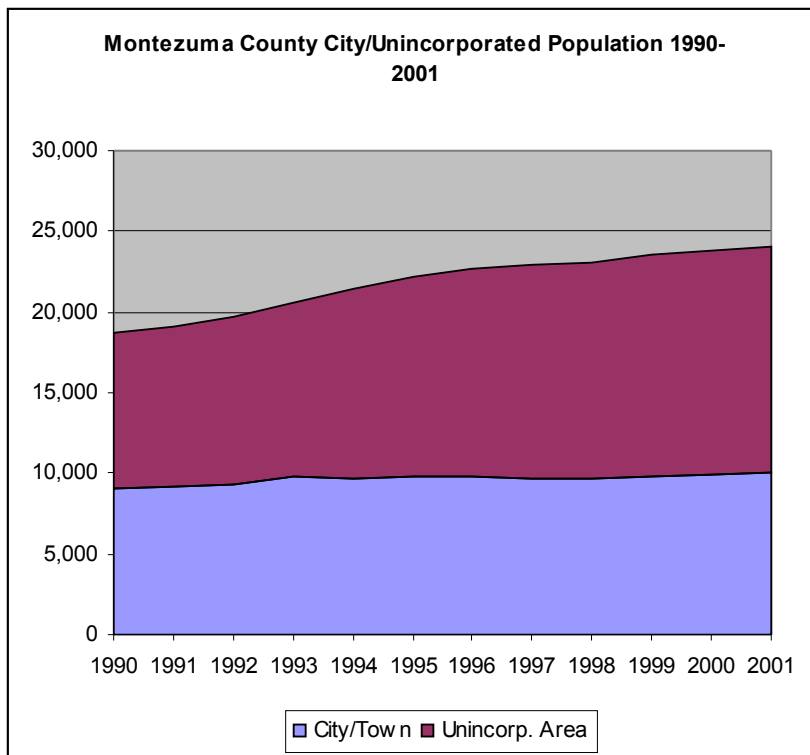
Montezuma County Population Trend 1980-2001

The population decline in the mid-1980s from 19,826 in 1984 to 18,110 in 1988 reflects the wind-down in construction of McPhee Reservoir and the Shell CO₂ gas field.

The population grew to reach previous levels and began to escalate in 1992. Between 1990 and 2001 the population increased 29% or 5,327 people for a total of 24,000.

While the growth and decline of the 1980s was related to natural resource development, growth during the 1990s was amenity driven.

Figure SP-9



Montezuma County Urban Rural Trend 1990-2001

Most (80%) of the amenity driven growth of the 1990s occurred in the unincorporated areas of the county.

Between 1990 and 2001, the unincorporated areas grew by 4,241 (44%) to 13,921. The population in Dolores began and ended at 866. Mancos grew by 289 people (34%) to 1,131, and Cortez grew by 797 (11%) to 8,081.

Key Population and Settlement Pattern Trends and Issues in Montezuma County:

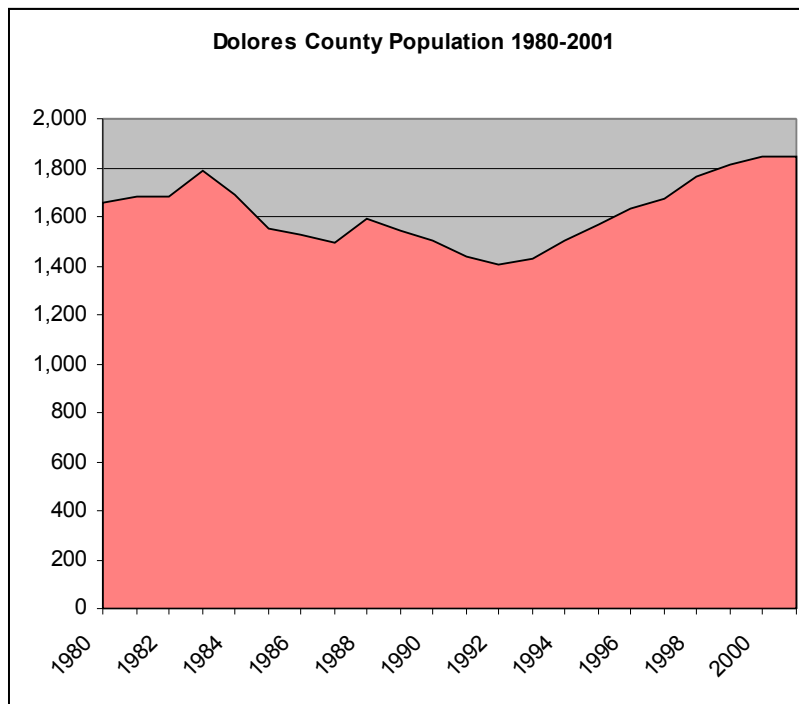
- **Low Density Rural Residential Subdivisions.** Most of the growth in Montezuma County during the 1990s was low density rural residential development. The availability of rural water in most parts of the County facilitated subdivisions of three acre lots, which could accommodate on lot septic systems. Much of the three acre lot land subdivision occurred in land dominated by pinyon juniper and ponderosa pine forests because of its limited agricultural value and the seclusion provided by wooded land. Montezuma County also continued to provide affordable land for people interested in 10 to 40 acre irrigated ranchettes.
- **Introduction of Comprehensive Planning and Zoning and the Future of Agriculture.** As growth picked up steam in the early 1990s the aesthetic and economic impacts of “rural sprawl” became increasingly apparent resulting in successful voter referendum in 1994 directing the County Commission to move forward with a comprehensive land use plan and code. With active participation by the agricultural community the plan and code resulted in a Landowner Initiated Zoning system which encouraged cluster development and facilitated the establishment of zoning to protect neighborhoods that wished to remain agricultural.
- **Escalating Land Values and the Future of the Valleys and Towns**
 - **Montezuma Valley/Cortez.** Much of the productive agricultural land in the Montezuma Valley has been moved into agricultural zoning. Recent subdivision has been primarily in the pinyon-juniper landscape. The open parcels in and around the City of Cortez, have not seen the establishment of a zoning pattern leaving a lot of unresolved questions about the future expansion of Cortez and the desire to retain openness and agricultural character of the landscape along highway corridors and surrounding future urban growth.
 - **Mancos Valley/Mancos.** Growth in the Town of Mancos and the Mancos Valley is in part driven by commuting proximity to both Durango and Cortez. The productive agricultural lands south of Highway 160, adjacent to BLM, Mesa Verde National Park and Tribal land has remained primarily in agricultural use, with the caveat that ownership is beginning to move from traditional ranching families to affluent buyers who pursue ranching or horse breeding and training as an amenity lifestyle. Much of this land has been placed in agricultural zoning. The Mancos Valley from Highway 160 North to Summit Ridge is less productive agriculturally and has been subject to more subdivision. A major attraction in the North part of the Mancos Valley is proximity to the boundary of the San Juan National Forest. The other harbinger of change in the Mancos Valley is the approval of a golf course at Echo Basin Ranch and a proposed 95 residential unit resort development. Impact on water resources, traffic the rural character of the neighborhood have prompted intensive citizen involvement in the land use review process.
 - **Dolores Valley/Dolores.** The construction of McPhee Reservoir has limited the expansion of the Town of Dolores down-river and to the west. The narrowness of the Dolores River Valley upriver and to the east of Dolores, it’s scenic appeal and its location along the Highway 145 corridor connecting Dolores to Telluride has resulted in escalation of land values in the Valley. The combination of a newly permitted gravel mine and a proposed golf course and resort lead to the appointment by the County Commission of the Dolores River Valley Citizen Working Group early in 2002. In addition to water quality and gravel mining recommendations, the Group recommended capping density in the Valley and establishing a Transfer of Development Rights (TDR) System that will require development beyond a base density of one unit per 10 acres, including resorts, to purchase development rights from other property owners in the Valley. These recommendations were adopted into the Montezuma County land use plan and code in 1994 and 1995 and the administrative framework for managing TDR transfers is in place.
- **Montezuma Land Conservancy.** The Montezuma land conservancy was established in the late 1990s and has conserved approximately 5,000 acres of primarily agricultural land via

conservation easements. The land conservancy has also been active in an effort to conserve scenic areas along the San Juan Skyway. In 1995 the County received \$4.6 million in matching funds for Great Outdoors Colorado and is working on the purchase of scenic easements in the Mancos and Dolores River Valleys.

- **Pipeline Corridors.** A major source of controversy involving the interface between public and private land use has been pipeline corridors. Long time property owners have built up grievances over the development of past pipelines, while property owners driven by amenity values, often owning smaller pieces of property, feel strongly impacted.

Dolores County Population and Settlement Trends and Patterns

Figure SP-10

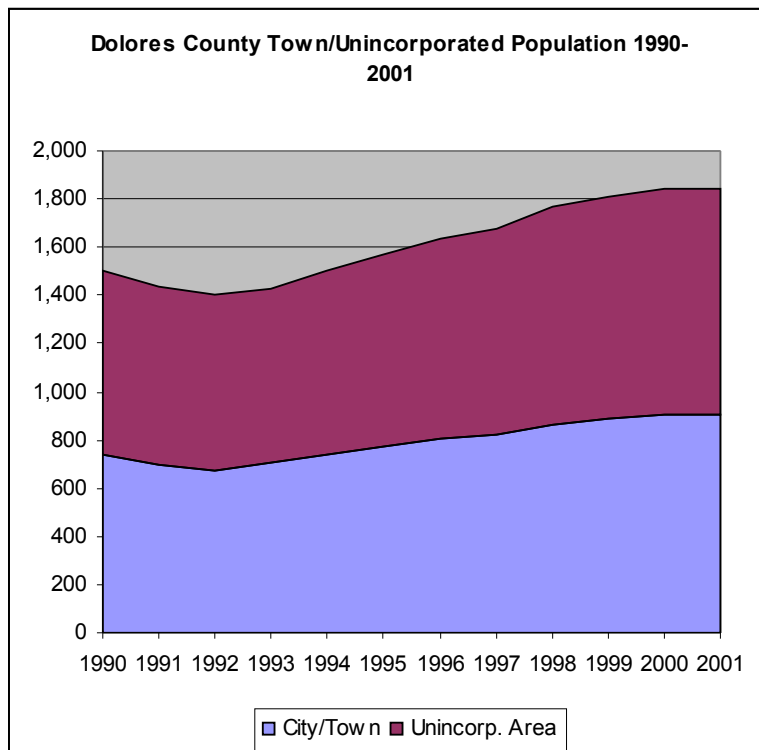


Dolores County Population Trend 1980-2001

The Dolores County population of 1,884 in 2000 was at the highest level since 1940-1960 when Rico was an active mining town, dry land bean farming was at its most prosperous and the economy of Dove Creek was underwritten by mining.

The 1980s peak of 1,789 in 1983 reflects employment from uranium mining in Southeast Utah, and construction of the CO2 and Dolores irrigation projects. The energy bust and agricultural recession drew population levels down to 1,403 in 1992. The recovery to 1,884 in 2001 most likely reflects Dolores County realizing its share of the amenity migration boom of the 1990s.

Figure SP-11



Dolores County Urban Rural Trend 1990-2001

During the 1990s County population grew by 340 (23%) equally split between town growth 171 and rural growth of 169 people leaving that total County population of 1,884 almost evenly split between the Towns (906) and the rural county (938).

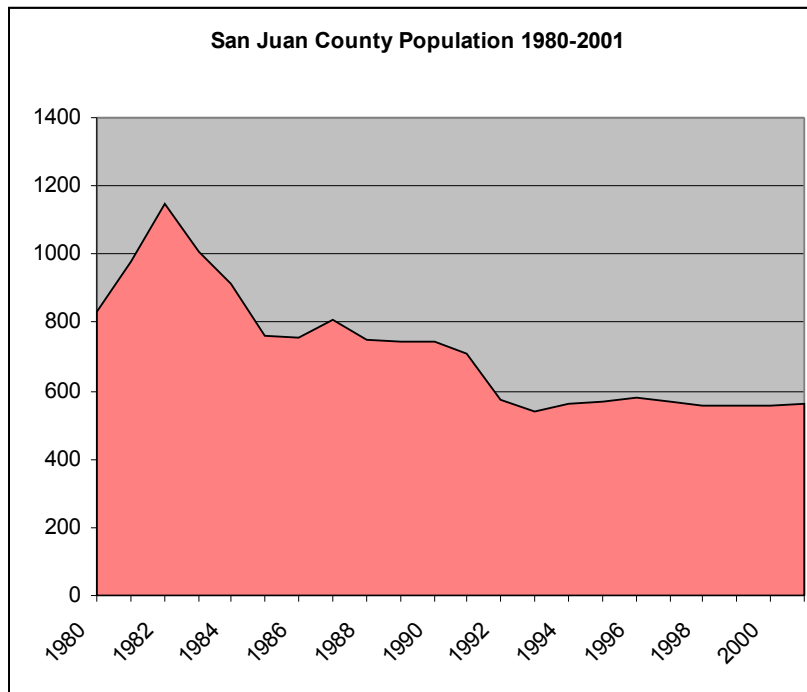
A trend of note is that the population of Rico grew by 129% from 92 in 1990 to 211 in 2001 while Dove Creek started at 643 in 1990 (down from 826 in 1980) fell to 589 in 1993 and expanded to 695 in 2001 for growth of 8% during the 1990s. During the previous high of the 1940s-60s Dolores County population was 2,196 with 966 in Dove Creek and 353 in Rico.

Key Population and Settlement Pattern Trends and Issues in Dolores County:

- **Two Distinct Physical and Human Geographic Units.** The east and west sides of Dolores County are very distinct both in geographic and cultural terms.
 - The **Western or Dove Creek side of Dolores County** was settled around dry land farming, which has been supplemented by the availability of irrigation water from the Dolores Project. Historically farmers and rural residents outside of Dove Creek had to haul water for domestic use. Beginning in the 1990s, rural domestic water supplied by Montezuma Water Company has been extended into rural Dolores County prompting increasing non-agricultural settlement, much of it in the form of 35 acre parcels. A primary appeal of western Dolores County is its wide open vistas.
 - The **Eastern or Rico/West Fork** side of Dolores County is characterized by a forested, mountainous landscape which is the watershed into the west fork and main stem of the Dolores River. Limited private land is confined to river valley floor for the most part, with the upland watershed in predominately National Forest ownership. Property in the West Fork has become high value with both seasonal and year round homes being developed. Once mining phased out, Rico began to regain population largely as a home to commuters working in Telluride. In recent years, Rico has an increasing seasonal and retiree population. The Town does not have a centralized sewer system, but new development (both existing and planned) is predicated on getting centralized sewer in place. The Town has been working with developers and property owners to address the protection of the river corridor from development and address the checkerboard of public and private land ownership resulting from a long history of mining claims.
 - **Mining and Energy Development.** Rico was settled as a hard rock mining community. The presumption is that the mining era is over and the primary focus with regard to mining involves preservation of historic structures and the clean up of mine contamination, particularly with regard to the Dolores River and tributaries. Much of the private land owned by large mining companies has or is being sold off for residential development. There are, however, significant mine clean-up issues in the process of being worked out. A related land use concern is the degree of disturbance that will result from clean up activities. The west end of Dolores County has a history of uranium mining employment in western San Miguel County. Given rising energy costs, it is possible that uranium mining could resume, and that the milling operations contemplated in the energy boom of the 1980s could be reconsidered.
- **Challenges of Supporting Infrastructure and Services.** A population base of less than 2,000 people, makes it challenging for Dolores County and the Towns of Dove Creek and Rico to maintain, physical infrastructure, services and schools both in terms of limited users and limited revenues. For example, Dolores County has an extensive road system to maintain and the onset of rural residential development is putting more pressure on the infrastructure. Likewise the Town of Rico is at a point where centralized sewer is becoming critical, but the small customer base makes supporting a system problematic. These communities also face the challenge of keeping their school systems viable.

San Juan County Population and Settlement Trends and Patterns

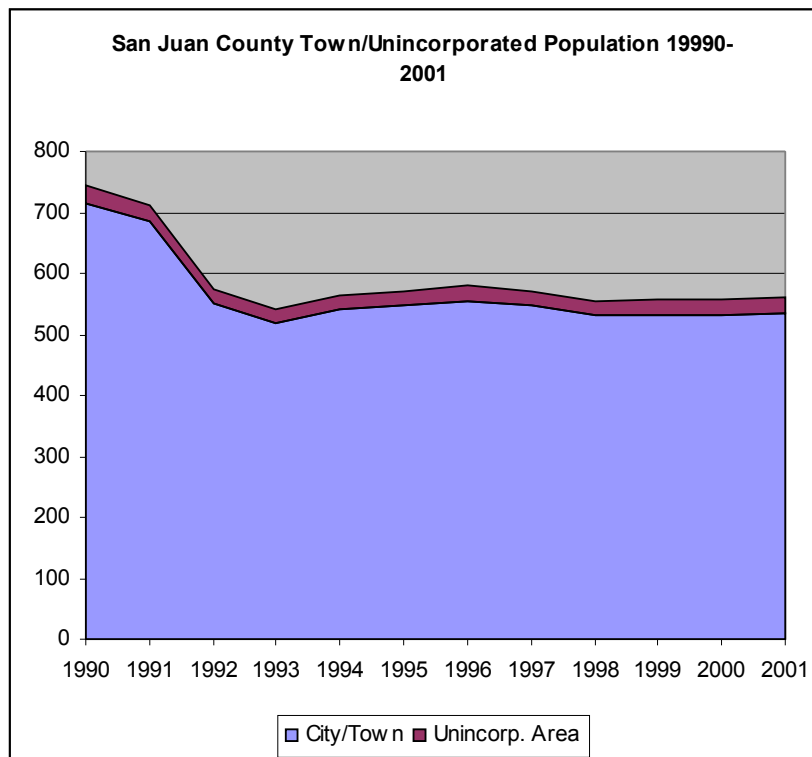
Figure SP-12



San Juan County Population Trend 1980-2001

San Juan County's population peak of 1,170 in 1982 was the highest since the 1940s and 50s when it was around 1,400 people. From 1982 on as mining began to wind down the population dropped to the 750 range, dropping to 540 in 1993 and staying below 600 for the rest of the decade. It is likely that the population that depended on mining continued to migrate out or to shift to amenity based occupations during the remainder of the 1990s. This was made possible by the amenity based economic foundation contributed by tourism from the Durango brought in by the Silverton narrow gauge railroad.

Figure SP-13



Montezuma County Urban Rural Trend 1990-2001

Most of the buildable private land in San Juan County is within the Town of Silverton, so population growth in unincorporated areas has never been a major factor. This reality relative to opportunities for population growth presents a challenge in that Silverton has a very finite land base for residential and commercial expansion. There are opportunities under exploration for consolidating patented mining claims and exchanges for San Juan Public Lands.

Key Population and Settlement Pattern Trends and Issues in San Juan County:

- **Seasonal Tourism Supplemented by Vacation Home Development.** The intensity of high altitude winters coupled with the seasonal nature of tourism generated by the Durango to Silverton narrow gauge train and people driving the “Million Dollar Highway”, has resulted in a significant number of seasonal residents. In recent years Silverton has been discovered by people interested seasonal homes to enjoy the pleasant summer weather and recreational opportunities. Property values have been rising steadily based on these trends. Assessed valuation in San Juan County increased for \$28.6 million in 2003 to \$40.5 million in July of 2005, an increase of over 40% increase in two years. (“Silverton Turns the Corner” Durango Herald, July 30, 2005).
- **Skiing and Year Round Economics.** From the time of the Sunnyside Mine closing in 1991, there was talk about the potential to create a year round attraction to capitalize on challenging ski opportunities the Mountains around Silverton. This vision is coming to fruition with the development of Silverton Mountain Ski Area which offers unique and challenging opportunities known as Extreme Skiing. A 2005 Record of Decision increased the Silverton Mountain capacity from 80 skiers per day to as many as 475 per day on a 1,300 acre 40 year lease of BLM land, which will likely support winter employment and business opportunities that could help to expand the current 600 year round residential population, which is expected to double in the foreseeable future. Another advance is the opening of Kendall Mountain to more localized family skiing which is an amenity for year round family residents. (Durango Herald, July 30, 2005)
- **Limited Private Land Base in the Silverton Area.** Silverton is bounded by public land with very limited additional private land available for development. This limitation is compounded by the patchwork of patented mining claims that are a significant part of the undeveloped private land base. Careful land use planning including exploring the balance between commercial and residential land uses is an important consideration. Some of the increase in assessed value referenced above results from homes recently built on purchased patented mining claims. By the summer of 2006 there are expected to be 45 to 92 additional buildable parcels in Silverton’s West Side Improvement District. (Durango Herald, July 30, 2005)
- **Building on Mine Heritage/High Altitude Setting.** Silverton has long been the home of and avalanche school. Efforts to position Silverton as a center for mine reclamation and high altitude ecological studies resulted in the formation of the Mountain Studies Institute, a non-profit corporation focused on research and education related to high altitude physical and social ecology.
- **Cost of Living and Affordable Housing.** As the year round economy begins to rebound, employment opportunities that are taking the place of the old mining economy pose cost of living and affordable housing challenges. Colorado Housing Inc. plans to add 6 houses and 24 affordable apartments to the existing 12 self-help housing units on Green Street. An additional 20 acres on Highway 550 has been purchased for workforce housing. (Durango Herald, July 30, 2005)

Contemporary Southwest Colorado Settlement Pattern Issues Requiring Intergovernmental/Citizen Collaboration

An assessment of settlement patterns in Southwest Colorado makes it clear that one of the “vastly different circumstances” in the planning and management of public lands is that most of the key issues require federal, state and local involvement, supported by active citizen engagement. Another key circumstance is the extent to which land use patterns from all of the settlement eras summarized in Matrix SP-1 come into play. By extension, effective citizen engagement will need to integrate the land attachments, knowledge and values that persist from the composite of settlement eras that are integral components of the New West.

Agricultural land use patterns past, present and future are a keystone to the virtually all of the land use and land health issues that are driving governmental decision making and citizen action. The list of current settlement and land use issues below, carry forward from every settlement era. The keystone to virtually all of these issues is the changes in the agricultural landscape, past present and future:

- **Agricultural lands are being subdivided at an alarming rate**, fragmenting the natural systems and covering the landscape with houses and roads.
- **Working farms and ranches are being squeezed by the rapid expansion of rural residential development**, marginal economic returns, coupled with debt and property values that are escalating far beyond the agricultural worth of the land.
- **Wildlife habitat is being diminished and wildlife impacts are being concentrated** on the remaining large parcels. The valley part of the system is particularly important as winter range for wildlife that summer on National Forest Land.
- **Noxious weeds are epidemic** of both private and public land.
- **Wildfire hazards** threaten the growing number of subdivisions and homes being developed in wooded areas, often adjacent to public land boundaries. Wildfire also represents a potential threat to the health of watersheds that are integral to community water supplies.
- **Water quality and quantity** call for a watershed approach to address the interrelationships between vegetation, wildlife, livestock and the quality and quantity of water available for farms and ranches, towns and fish. Abandoned mines, as well as coal bed methane drilling, sewer and septic discharge are key water quality issues.
- **Oil and gas drilling** in the past tended to occur on farm and ranch scale properties where it could usually be worked around, and where a single landowner often derived substantial benefits from royalties and/or damages. The current controversy over coal bed methane drilling is intensified in rural residential subdivisions where nuisance and property value impacts are greater and benefits are marginal or non-existent.
- **The scenic qualities of the valleys and highway corridors** are being eroded. In a visual inventory of the San Juan Skyway remaining pasturelands interspersed with National Forest Land are among the most highly rated scenic areas on the Skyway.
- **Heritage resources** from all of the settlement eras summarized in Matrix SP-1 need to be inventoried and protected as cultural and economic assets.
- **Historic access points to public lands** are being shut off as ranches are sold or subdivided and no trespassing signs appear.
- **Large scale resort developments** are being proposed and developed in areas that have been in private agricultural ownership or accessible for public use on public land.

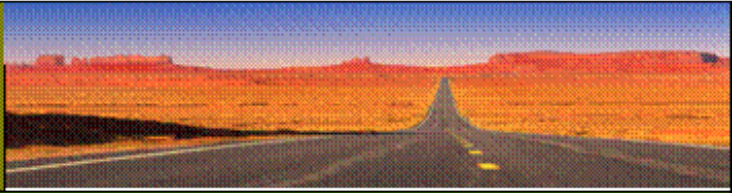
- **County and rural infrastructure, services and budgets** are being strained as distances and volume of demand increase for road maintenance, school bus routes, law enforcement and emergency services.
- **County land use decisions become ever more complex and contentious** with the increasing number of small parcels, surrounded by desirable and developable agricultural parcels. Land use hearings to consider large-scale rural subdivisions and municipal annexations fill the hearing room, regardless of open space, wildlife or traffic mitigation features.
- **Major land use issues increasingly involve both county and federal jurisdiction.** Every one of the above issues is likely to involve local, federal, and often state authorities, responsibilities, policies, and decisions.
- **Government needs citizen engagement to effectively address land use issues.** It has become increasingly clear that government can no longer presume to address these issues alone, at a time when citizens are demanding meaningful participation in governmental decisions, and forming a wide range of non-governmental citizen based organizations to address issues of community and landscape health.

While this list of issues is daunting, a variety of assets exist, and are being developed, to address many of these issues. The last two issues on the above list local/state/federal collaboration and citizen engagement are key to effectively addressing all of the other issues on the list. The concept of “Community Based Stewardship” brings together intergovernmental collaboration, citizen engagement, ecosystem stewardship and community health.

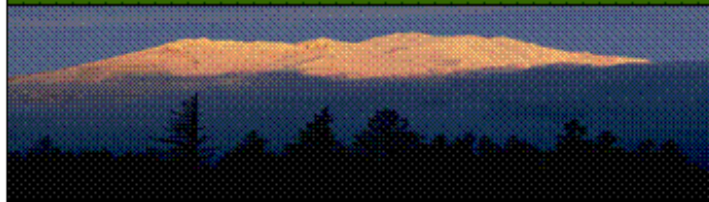
The social capacity to make Community Based Stewardship a reality will be carried forward into the Publics, Networks and Supporting Organization Descriptors. But first the “Work Routine” and “Recreational Activities” Descriptors need to be developed.

San Juan Plan Revision Applications: Settlement Patterns

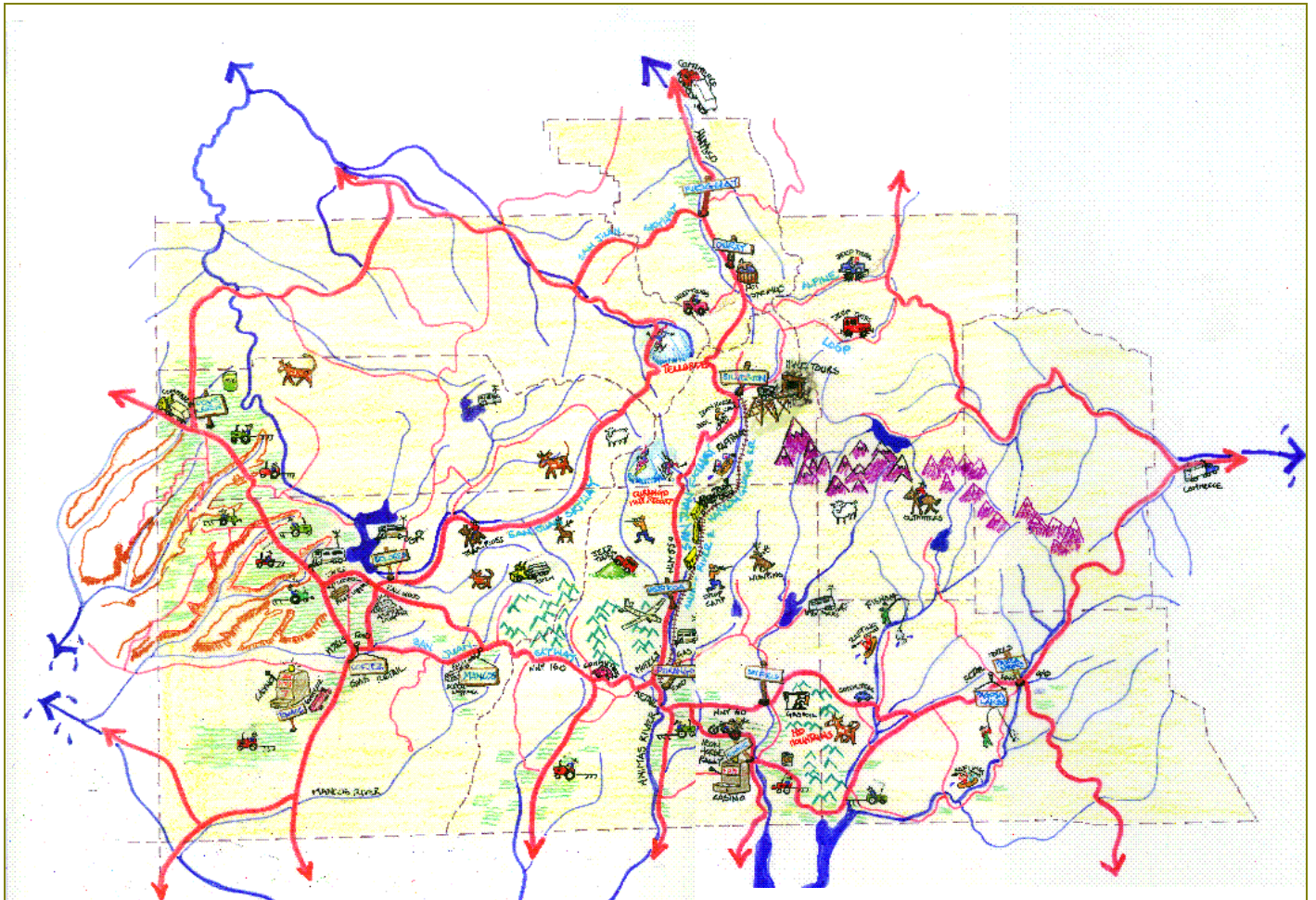
1. Organizing the Study Groups by human geographic units allows for the interaction between settlement patterns, public land uses and associated values. Each of the three District Study Groups is reflective of the three HRUs which represent distinct elements in the historic, cultural, economic and land use mosaic of Southwest Colorado.
2. The diversity of participants in each of the Study Groups provides perspectives grounded in all of the settlement eras, economic dimensions, land attachments and cultural values relevant to the settlement patterns in Southwest Colorado. This diversity includes longevity, livelihood, and land stewardship perspectives.
3. The use of Management Themes by Study Group members and Agency staff as an interactive tool used to shape land management strategies to be considered in San Juan Plan Alternatives, serves as a link between community settlement patterns and the public land uses.
4. Theme 7 which deals with “Residential Forest Intermix” has prompted site specific discussions about the interface between private and public land uses in areas such as fire hazard reduction, recreational access, and wildlife habitat.
5. Theme 8, “Permanently Developed Areas” also prompts consideration of congruent development, both current and expanded on public and private land, such as plans for extensive development of Durango Mountain Resort.
6. There are also larger scale thematic decisions that are directly related to settlement patterns such as watershed health, water quality and the scenic backdrop that the San Juan Public lands provide for communities.



Cultural Descriptor



Work Routines



Cultural Descriptor: Work Routines

A work routine is a predictable way in which people earn a living, including where and how. The types of employment, the skills needed, the wage levels and the natural resources required . . . the opportunities for advancement, the business ownership patterns, and stability of employment activities . . . can be used to evaluate how alternative uses of natural resources will affect the ways people earn a living and how changes in work routines, in turn will impact future natural resource uses.

The evaluation of “how alternative uses of natural resources will affect the ways people earn a living and how changes in work routines, in turn impact the future natural resource uses,” brings the social, economic and ecological dimensions of land use planning together. The close connection between the natural features in the San Juan and Dolores River Basins, and the emerging settlement patterns, have been and will continued to be significantly shaped by livelihood opportunities and work routines.

As described in detail in the Settlement Patterns descriptor, it was mining and high altitude mining towns that provided the initial export base to establish an economy in Southwest Colorado. Today, mining is pretty much defunct, but many of the mining towns survive and in some cases flourish as ski resort and/or tourism oriented economies. The resource extraction of mining has been replaced by the extraction of oil, natural gas, coal bed methane and CO₂ energy products.

The tourism industry, which has always been around to supplement the natural resource industries, ascended beginning in the 1960s to become a dominant force. If current trends are sustained, what has been called tourism is being overshadowed by the combination of resort development and “amenity migration” (defined on page 18).

The farms, ranches and sawmills, that were initially developed to support the mines and supply towns grew to become the mainstay of the Southwest Colorado’s export economy during the first half of the 20th Century. As tourism expanded and amenity migration emerged as a major economic force, the natural resource sectors didn’t initially contract but were overshadowed by growth the “new west” sectors. By the early 1990s, however, the timber industry was in decline, and agriculture came under increasing pressure from development, high land values, and input costs that were growing much more rapidly than commodity prices, compounded by crippling drought cycles.

The ascendance of tourism strengthened and expanded the customer base for local small businesses. This benefit has been coupled with challenges of growth in lower pay, seasonal “service sector” jobs at the same time that higher paying natural resources jobs have declined in number. Growth on the lower wage end of service sector jobs has been accompanied by growth of higher end service sector jobs as well. These high-end service jobs (e.g. consulting, business services and health jobs) are a result of structural changes in the national economy, and the resulting opportunities for amenity migrants to make a living outside of urban areas.

While the economic influence of natural resource or commodity sectors of the regional economy have been diluted, they continue to play an important, though changing role in the “new west” economy. The agricultural landscape has become perhaps the most prized asset in the region by developers and conservationists alike. The timber industry, which once was a backbone industry of many of the region’s towns, has declined steeply. And yet, as efforts get underway to restore forests to more natural conditions, and reduce the growing threat of catastrophic wildfire, businesses skilled in removal and processing of trees are an essential, and in many places, missing resource.

Economic Base Analysis and Trends During the 1990s:

The purpose of economic base analysis is to understand what economic “exports” are bringing “new” or “outside” dollars into the local economy. The Settlement Patterns Descriptor described mining as the original export in Southwest Colorado, with money brought in from mining products used to purchase local timber products for mine props and houses, and local agricultural products to feed miners and those that supplied miners. In short mining was the “base industry.” Making mine props was an “indirect base industry” which existed to supply a key component to the mining process. And farming, ranching, making house lumber, and retail outlets were “residential services,” to supply the needs of miners, suppliers and their families.

The reason that mining towns like Rico, and Silverton went from peak populations of 4,000 to 5,000 down to a few hundred is because mining played out and there was no “base industry” to support “indirect base” and “residential services” employment. Telluride is an example of a mining Town that busted, and came back on a new “base industry”, i.e. skiing, tourism and resort development. Even though these amenity-based industries do not export a physical product, visitors bring in outside dollars, which have a “direct base export effect.”

The other stage described in Settlement Patterns Descriptor was the emergence of the River Valley Towns, which evolved from supplying the mining towns and processing mined products to becoming exporters in their own right. Once mining waned, transportation networks were utilized and developed to export farm products, cattle, and timber products creating a new “economic base” to bring in “outside dollars.” Over time, these same transportation networks served to import tourists, which had the “export effect” of bringing in new dollars. Another growing source of outside dollars has been the federal government in the form of federal employee wages, federal public works projects (e.g. Bureau of Reclamation Dams) and transfer payments (e.g. Social Security and Medicare).

An additional source of outside dollars has been the role that the major towns in Southwest Colorado play as regional trade centers. For example, the goods and services that people from the Navajo Nation purchase when they shop in Durango or Cortez are dollars that are earned elsewhere and spent locally, producing another variation on the “export effect.” The most recent “export effect” to bring new dollars into Southwest Colorado is what was described in the Settlement Patterns Descriptor as “amenity migration.” Some of these amenity migrants are retirees, and some are second home owners. Both of these aspects of amenity migration have provided “direct base income and employment” in the construction sectors. A portion of all of these direct base/outside dollar/export effect earnings and employment generate spending in the “residential services” sectors where locals purchase their goods and services.

Data to determine the make up of the economic base (i.e. source of outside dollars) in any given County, relies in large measure on the reporting of employment and earnings within the framework of the SIC. The SIC (Standard Industrial Classification) has categories within which employment and earnings by County are reported by the BEA (Bureau of Economic Analysis). The SIC categories were set up in an era when the export economy was dominated by industrial and extractive industries. Hence, the SIC categories make it easy to identify jobs and earnings in the mining, manufacturing sectors. Agriculture, the other traditional export sector, is more problematic, because the basis of BEA earning and employment numbers is what businesses report when they file unemployment compensation reports, which family farms are not required to report.

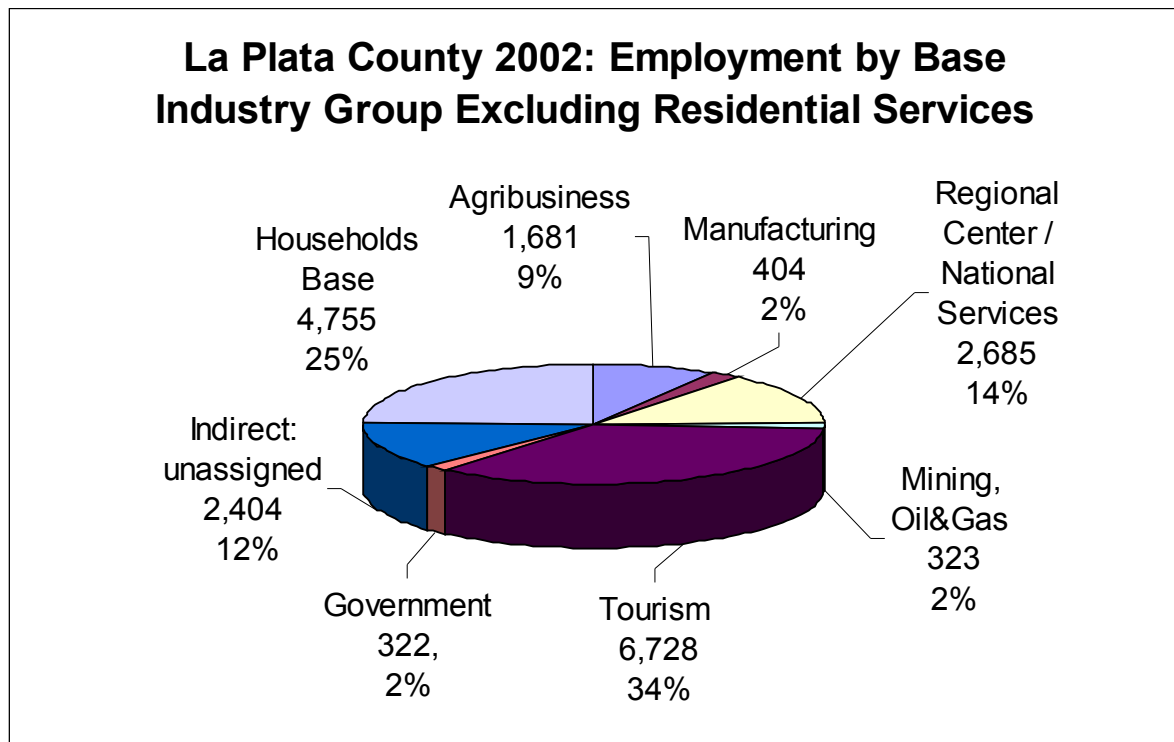
The challenge is to understand the growing importance in the economic base of Southwest Colorado of “industries” that do not fit neatly into a particular SIC category. A clear example of this challenge is the “tourism industry.” Some SIC sectors such as “Hotels and Lodging Places” are dominated by

tourism and business travel. Other SIC sectors such as “Eating and Drinking Places,” “Specialty Retail”, and “Amusements” are a mix of tourism base industry and local “resident services” earnings. In short there is no clean SIC category called “tourism.” The same can be said about Regional Goods and Services, and Retirees. Yet in recent times these have been the “growth industries” in Southwest Colorado. In 1994, the Colorado State Demographer entered into a partnership with the Office of Community Services at Fort Lewis College, and the San Juan Public Lands Center to create an economic base analysis that rectified this problem. This “Economic Base Analysis” has since been expanded to all 63 counties in Colorado.

The Economic Base Analysis looks at each SIC sector to determine which sectors, and what proportion of each sector are exports. These export sectors are clustered into a set of “Base Industry Groups.” The “La Plata County 2002 Employment and Income Summary by Base Industry Group” appears as Table WR-1 on the following page. Figure WR-1 below presents employment by Base Industry Group.

La Plata County Base Industry and Trend Analysis

Figure WR-1



Employment in the Mining, Oil and Gas (2%), Agribusiness including ranching (9%, which includes ranching) and Manufacturing (3% which includes saw mills) are in part related to public land resources, and will be dealt with later in this section under La Plata County natural resources.

The larger pieces of the pie are Tourism (34% including resorts, second homes, tourist services and transportation) and Households (25% including retirees, commuters as well as dividends, interest and rental income) and are related to the “Amenity Migration” trends described under the “Settlement Patterns” descriptor. The Base Industry Group analysis will provide the most currently available

snapshot in time followed by employment trends in related SIC categories over the past 10 years. The base industry analysis is presented in a more detailed table format in Table WR 1 below:

Table WR 1
La Plata County 2002 Employment and Income Summary
by Base Industry Group

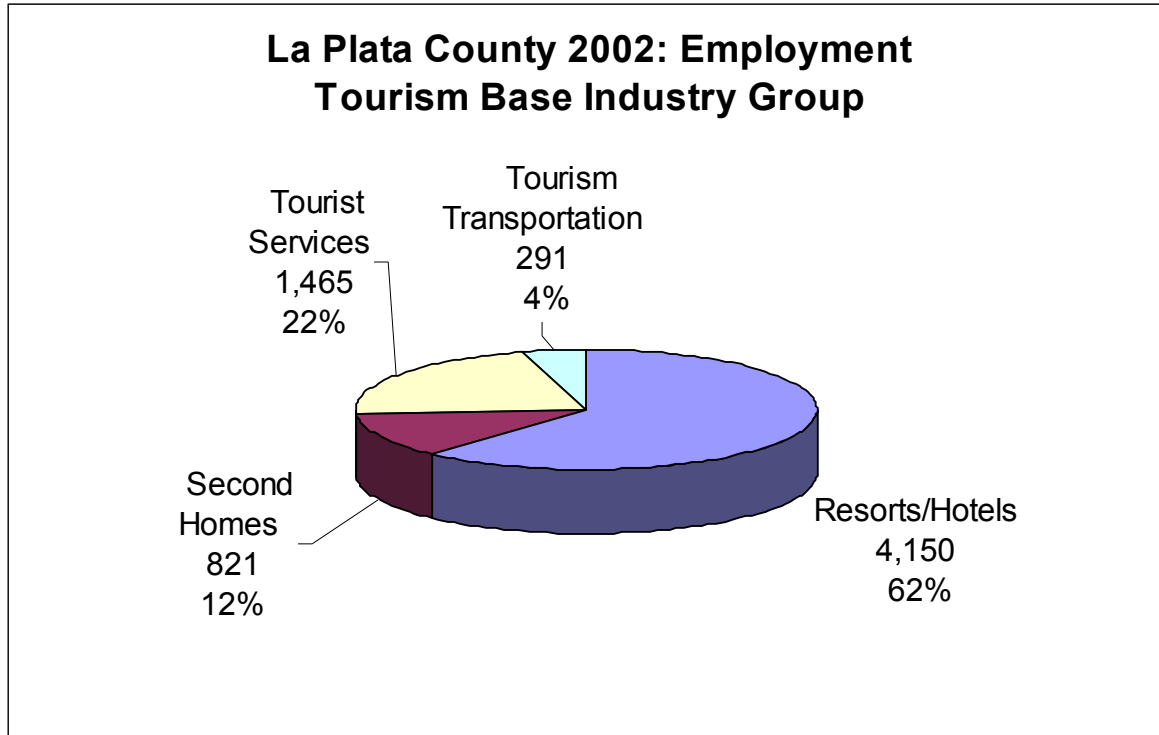
	Jobs		Income (\$000)		Average Wage
	Amount	Pct. of Basic	Amount	Pct. of Basic	
Agribusiness	1,681	8.7	\$24,590	4.1	\$14,624
Mining	323	1.7	\$20,324	3.4	\$62,889
Manufacturing	404	2.1	\$12,019	2.0	\$29,731
Regional Center / National Services	2,685	13.9	\$96,380	16.0	\$35,897
Tourism	6,728	34.8	\$148,097	24.6	\$22,013
Resorts	4,150	21.4	\$69,182	11.5	\$16,669
Second Homes	821	4.2	\$31,206	5.2	\$37,994
Tourist Services	1,465	7.6	\$35,634	5.9	\$24,316
Tourism Transportation	291	1.5	\$12,075	2.0	\$41,535
Government	322	1.7	\$24,638	4.1	\$76,462
Indirect: unassigned	2,404	12.4	\$103,913	17.3	\$43,218
Households	4,755	24.6	\$169,938	28.3	\$35,740
Retirees	3,116	16.1	\$111,355	18.5	
Commuters	157	0.8	\$5,613	0.9	
Households with public assistance income (excluding retirees)	347	1.8	\$12,402	2.1	
Households: dividends, interest and rental income (excluding retirees)	1,135	5.9	\$40,568	6.7	
Total Basic	19,357	100.0	\$ 601,336	100.0	\$31,065
Worker Local Res. Services	7,983		\$285,296		
Total All Industries	27,340		\$828,953		
Total Personal Income				\$1,372,169.07	
Ratio: Total / Basic	1.41			1.38	

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/leifa1.cfm>

Tourism and Amenity Migration Driven Employment in La Plata County

The 35% of employment in the Tourism Base Industry Group is broken out in Chart WR-2 below:

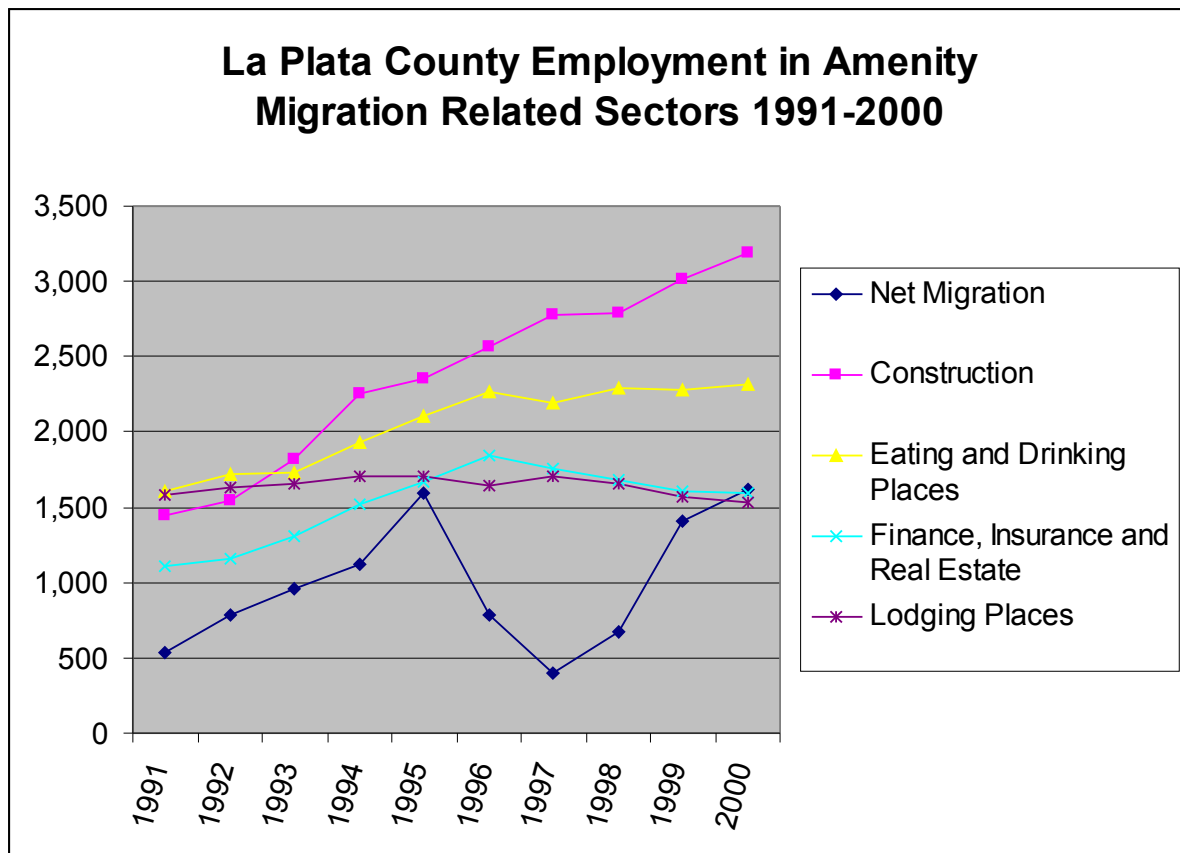
Figure WR-2



While 62% of the employment within the tourism base industry group is in resorts, which include hotels and lodging places, 12% of employment in this group is in second homes. The amenity migration boom in La Plata County in the 1990s stimulated a great deal of construction employment. The Colorado Demographer's Base Industry Analysis classifies second homes as "Tourism" since they are occupied by visitors. The other dimensions to the construction stimulus generated by the amenity migration are homes built by retirees and by "early retirees" who sell a home and/or business and move to Southwest Colorado as amenity migrants. The employment stimulated by these migrants shows up in the "Households" base industry group broken out in Chart WR-1 above. The Households Base Industry Group reflects, in part, employment generated by retirees as well as employment generated by the expenditure of dividends and interest flowing in with amenity migrants.

To move from the 2001 snapshot provided by the 2001 Base Industry Group Analysis to an analysis of employment trends during the 1990s it is useful to look at Bureau of Economic Analysis (BEA) employment data in key sectors. Figure WR-4 provides a starting point for such analysis.

Figure WR-4



Annual Migration into La Plata County climbed to a peak in 1995 at over 1,500 people, dipped back to the 500-750 range in 1996-98, and was back over 1,500 by 2000.

Employment in lodging places shows a slight decline during the 1990s. At the same time employment in the construction sectors doubled from 1,500 to over 3,000 jobs. Employment in Eating and Drinking Places also grew fairly steadily from just over 1,500 to about 2,300 jobs. Employment Finance Insurance and Real Estate began at slightly over 1,000 peaked in 1996 at about 1,800 and leveled off to just over 1,500.

This combination of growth in the construction (121% for the decade) eating and drinking places (44% for the decade) and Finance, Insurance and Real Estate (44% for the decade) sectors and stagnation in the lodging sector (-4% for the decade) indicates that economic growth in the 1990s was driven by “amenity migration” while “tourism” remained relatively flat.

La Plata County Employment Trends All Sectors

Having focused on indicators of tourism and amenity growth, it is worth evaluating employment trends in the economy as a whole starting with the primary SIC (Standard Industrial Classification) sectors. In 2001 the Bureau of Economic Analysis switched from the SIC to the NAICS classification which uses a different set of accounts. Therefore, the trend analysis is focused on 1991-2000 to allow for consistent analysis based on SIC classifications.

Table WR-2
La Plata County Employment by Major SIC Category 1991-2000

Economic Sector	1991	2000	% Total 2000	% Change 91-00
Population	33,411	44,566		33%
Total Employment	19,718	29,797	100%	51%
Agriculture	1,038	1,311	4%	26%
Mining, Oil and Gas	414	315	1%	-24%
Construction	1,439	3,186	11%	121%
Manufacturing	644	1,023	3%	59%
Transportation, Communications and Utilities	715	969	3%	36%
Wholesale and Retail Trade	4,420	6,834	23%	55%
Finance, Insurance and Real Estate	1,108	1,591	5%	44%
Services	6,628	10,653	36%	61%
Government	3,312	3,915	13%	18%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The highlighted sectors in Table WR-2 are those that grew at a faster rate than total employment. Construction which showed the highest rate of growth (121%) is detailed in Table WR-3:

Table WR-3
La Plata Construction Employment Trends 1991-2000

Economic Sector	1991	2000	% Total 2000	% Change 91-00
Construction	1,439	3,186	100%	121%
Building Construction	296	703	22%	138%
Maintenance and Special Trades	823	2,349	74%	185%
Heavy Construction, other	320	133	4%	-58%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Construction employment detail reinforces the base industry and amenity migration analysis above. The fast growing “Building Construction” and “Maintenance and Special Trades” involve housing and commercial construction. The only construction category to decline was “Heavy Construction” which involves heavy equipment and road construction, which is increasingly headquartered in Montezuma County.

The second highest rate of employment growth was in “Services” (61%), which, as in any economy, is the largest sector (36% in La Plata County). Growth in the services sector is generally perceived has growth in “low paying service jobs.” Table WR-4 below corrects this misperception by displaying the wide range of employment types in the SIC “Services” category.

Table WR-4
La Plata County Services Sector Employment Trends 1991-2000

Economic Sector	1991	2000	% Total 2000	% Change 91-00
Services	6,628	10,653	100%	61%
Lodging Places	1,587	1,530	14%	-4%
Personal Services	504	485	5%	-4%
Business Services	513	1,349	13%	163%
Repair Services, parking	300	616	6%	105%
Amusement and Recreation Services	717	1,638	15%	128%
Health Services	1,279	2,048	19%	60%
Legal Services	172	172	2%	0%
Private Education Services	102	184	2%	80%
Social Services, Including Day Care	405	645	6%	59%
Membership Organizations (including tribal)	205	733	7%	258%
Engineering and Management Services	333	591	6%	77%
Private Household Services	615	663	6%	8%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The growth in Business Services (163%) and Engineering and Management Services (77%) are likely reflective of the increase in the general complexity of the La Plata County economy and growth in consulting services based in La Plata County by people able to operate from an amenity based community in a mobile information age economy.

The biggest component of the Services Sector is Health Care (19% of services), which kept pace with the overall 60% employment growth in services over the decade. Durango has long been a focal point for health services, which is an asset in attracting retirees and other amenity migrants. As of 2003 the health care system in La Plata County is undergoing a period of change and uncertainty.

The largest employment jump in "Membership Organizations" (258%) reflects the fact that a substantial portion of Southern Ute Tribal employment is placed in this category. The Tribe is also very likely the source of growth in Amusement and Recreational Services (128%) primarily related to employment resulting from the opening of the Sky Ute Casino. Southern Ute Tribal enterprise employment is also reflected in energy, management and engineering employment figures. The growing economic clout of the Tribe is reflected in a recent article in the Durango Herald.

October 1, 2003

Tribe builds Growth Fund office

By Brian Newsome

Herald Day City Editor

With a population of about 1,000, Ignacio is hardly the place one would expect to find a multistory office building where multimillion dollar deals are made.

The Southern Ute Indian Tribe would disagree.

The tribe is building a 51,000-square-foot, three-story office building to house its Growth Fund and energy ventures, which together have elevated the tribe to billionaire status in less than a decade. Construction is scheduled for completion in fall of 2004.

About 150 employees from the tribe's business-management office, Energy Department and the tribally owned Red Willow Production Co. will work in the new building. It will also include "incubator" space for newly formed or acquired companies until those businesses add employees and need to find space of their own.

Employees of Red Willow will occupy most of the new offices. Started in 1993, the company has gone from five employees to more than 50. It is worth about \$500 million.

"(The Growth Fund) has properties from the Gulf of Mexico all the way to Canada," said Robert Santistevan, director of the Growth Fund, "and this is the world headquarters here."

Across the highway, the tribe is completing construction on a new Tribal Affairs Building, where governmental departments and services will be located. It's part of a two-phase capital-improvement plan for a tribal campus.

The Growth Fund is charged with making money to benefit the tribe. It oversees the tribe's most lucrative assets, including Red Willow.

In a few years, the tribe has become worth more than \$1.5 billion, mostly from coal-bed methane gas managed by the Growth Fund.

Bob Zahradnik, director of operations for the Growth Fund, said the rapid growth of the tribe's operations has outpaced its workspace. He notes "several hundred million dollars in acquisitions" this year alone.

"That's why we need the staff," he said. "That's why we need the space."

For Zahradnik, Santistevan and others, the new building will mean a move from Durango to Ignacio, where almost all of the tribe's services and departments are already located.

The site for the new office, located across from the Sky Ute Casino in what is known as the Show Me Farm, may also someday include a new museum and retail space, though the Tribal Council has not yet approved those projects.

La Plata County Wholesale and Retail Trade:

Table WR-5
La Plata County Wholesale and Retail Trade 1991-2000

Economic Sector	1991	2000	% Total 2000	% Change 91-00
Wholesale and Retail Trade	4,420	6,834	100%	55%
Wholesale Trade	494	772	11%	56%
Building Materials, Hardware, Garden	182	330	5%	81%
Furniture, Apparel and General Merchandise	476	1,096	16%	130%
Food Stores	570	686	10%	20%
Automotive Dealers and Service Stat	404	626	9%	55%
Eating and Drinking Places	1,609	2,314	34%	44%
Miscellaneous Retail Trade	684	1,011	15%	48%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The fast growing retail sectors i.e. Building Materials, Hardware and Garden (81%) and Furniture, Apparel and General Merchandise (130%) reflect a convergence of three trends.

- The expansion and establishment of super stores such as WalMart and Home Depot in these sectors.
- Increased demand for building materials and furnishings stimulated by the amenity migration and related construction booms, which are also supporting higher end home furnishing and fixture outlets.
- Durango as a regional trade center for growing rural and Navajo Nation populations.


La Plata County Mining (includes oil and gas):


As the La Plata County Base Industry Group Employment Table WR1 and Figure WR-1 indicate, Mining (including Oil and Gas) represents only 2% of Base Industry Employment in La Plata County. The employment trend between 1991 and 2001 is presented in Table WR-6 below

Table WR-6
La Plata County Employment Trends in Mining and Extractive Industries 1991-2000

Economic Sector	1991	2000	% Total 2000	% Change 91-00
Mining and Extractive Industries	414	315	100%	-24%
Oil and Gas Extraction	353	232	74%	-34%

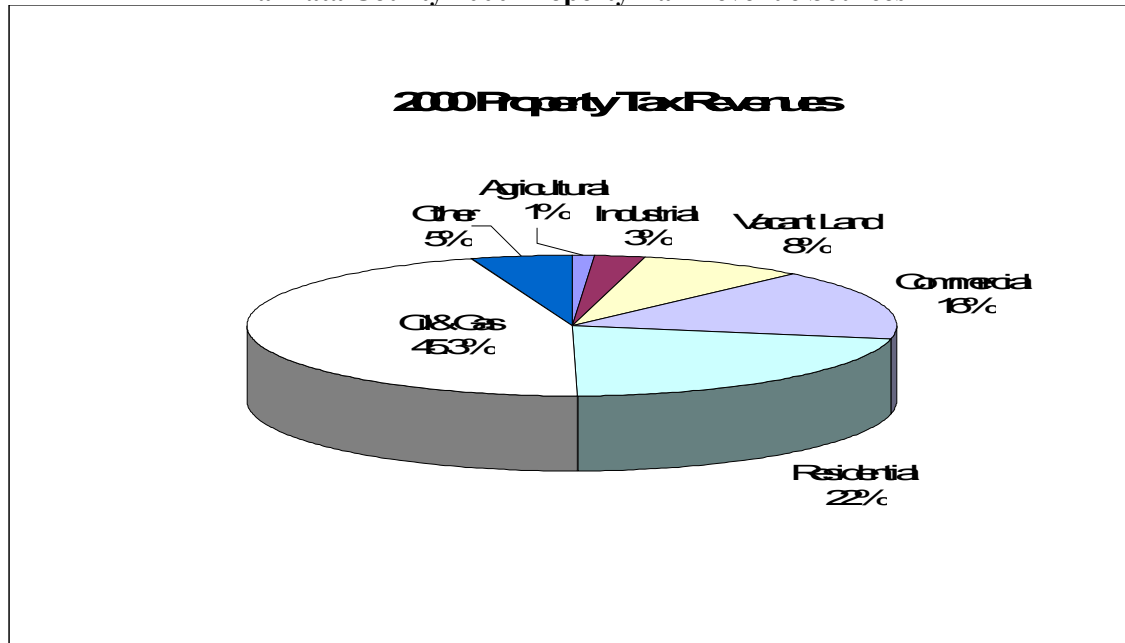
Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

 Employment in this sector rose from 104 in 1980 to 414 in 1991, largely due to coal-bed methane development. As the employment trends table indicates, employment dropped by 135 jobs between 1991 and 2001, as the coal bed methane well field moved from the development to the operational phase. A 2001 “spacing order” by the Colorado Oil and Gas Conservation Commission increasing potential well density from one well per 320 acres to one well per 160 acres and a 2005 order reducing spacing to 80 acres, coupled with the emerging National Energy Plan, could touch off another round of well development.

 While oil and gas jobs are high paying, (averaging nearly \$69,000 per job in 2001) the number of jobs is a small fraction of total employment in the County.

What is significant is the 45% contribution oil and gas production make to property tax revenues which in 2000, was more than double the contribution of commercial or residential revenues:

Figure WR-5
La Plata County 2000 Property Tax Revenue Sources



Source: Region 9 Comprehensive Economic Development Strategy, March 2001

4. In spite of the dominant contribution of oil and gas to the local tax base, coal bed methane production has been extremely controversial in La Plata County due to concerns about impacts on the value, aesthetics and safety of residential parcels.
5. There are also concerns about the impact of coal bed methane on surface and groundwater quality, and flammability.

The economic dimensions of coal bed methane development in La Plata County (market demand for gas, employment, tax revenues and property values) intersect with safety concerns as well as environmental and social values. This clash between economic, social and environmental values is manifest in the political and institutional arena. La Plata County has been engaged in a dispute with the Colorado Oil and Gas Conservation Commission and the oil and gas industry over the prerogatives of the County to regulate surface impacts drilling, vs. those areas in which the COGCC has regulatory authority. As of 2005, the COGCC has expanded the range of environmental issues considered, and provided for more local government input in the well permit and spacing order review process. One energy company is negotiating an MOU with La Plata County addressing the impacts on private property and public infrastructure of gas drilling. In addition to drilling on private land there is coal bed methane drilling in the HD Mountain portion of the SJNF, which has raised concerns about aesthetic, environmental and recreational impacts on public land. The San Juan Public Lands Office is conducting a San Juan Basin EIS on coal bed methane drilling on public and private land.

Issues related to coal bed methane drilling in La Plata County are reflective of a variety of trends identified in this assessment including:

The interaction of changes in the economic structure, settlement patterns and social mosaic. In the past much of the oil and gas drilling was on farm and ranch scale parcels. As farms and ranches

have been subdivided into smaller parcels, the economic and aesthetic impact on property values are much greater. As the agricultural economy has become more difficult, equity and opportunity in the potential for future residential use has become more important to the farmer and rancher.

Dilution of the employment contribution of natural resource industries. Even though employment in the mining, oil and gas sectors has increased in recent years, employment expansion in other amenity-oriented sectors has been much greater. Since oil and gas production has very high revenue to employment ratios, the primary economic impact is on the property tax base.

The complexity of institutional interrelationships: local, state, federal and private sector. The clash among local, state and federal planning and regulatory prerogatives surrounding private sector economic decisions is apparent. The basin wide EIS is an attempt to address this complexity, a significant departure from the well by well permitting response that had characterized drilling on private land. Private landowners and La Plata County are seeking some of the programmatic protections that have been in place on federal lands for some time.

La Plata County: Agricultural Products and Services

A comparison of the Census of Agriculture for 1992 and 2002 suggests a trend towards smaller, less commercially oriented farm and ranch units. The comparison shows a higher number of farms (the term “farm” includes ranches) with less total land in farms, less acres harvested and smaller average size of farm units. In large measure the trends these numbers reflect is the subdivision of commercial scale farms and ranchers into smaller parcels, some of which that are kept in agricultural use on a more part time or “hobby farm” basis. There is however another trend involving more intensive small scale agricultural production. The resulting products can be seen at farmers markets, in retail greenhouse outlets and in the marketing of non-traditional or “exotic” animals.

Table WR-7
La Plata County Census of Agriculture 1992-2002 Compared

Measure	1992	1997	2002	%92-02
# of Farms	508	561	923	82%
Land in Farms	587,339	580,135	562,664	-4%
Cropland Acres Harvested	44,460	41,955	34,820	-22%
Average Size of Farms (acres)	828	743	610	-26%
Median Size Farm	NA	NA	100	
Average Age of Farmer	53.5	54.2	NA	

The La Plata County employment trends table indicate employment levels in the agricultural products and services sector at the same level as 20 years ago. However the composition of this sector includes much larger greenhouse, nursery and ag services employment, offsetting fewer commercial farmers and ranchers. The shift in employment during the 1990s is illustrated in the sub-sector table below:

Table WR-8
La Plata Agricultural Employment Trends Comparing 1991-2000

Economic Sector	1991	2000	% Change 91-00
Agriculture	1,038	1,311	26%
Crops And Livestock	844	829	-2%
Agricultural Services	194	482	148%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Table WR 8 indicates a slight decline in employment in Crop and Livestock employment (-2%), but an increase in employment in the Agriculture Sector as a whole which is the result of a 148% increase in Agricultural Services. In 2001 the Region 9 Economic Development District worked with the Colorado Demographer to assemble a more complete picture of the contribution of agriculture which is presented in Table WR-9 below, which includes farm and livestock veterinary services which account for 311 agricultural services jobs, with another 447 jobs in landscaping and “small animal” veterinary services. WR-9 also presents “Indirect Base” Manufacturing, Wholesale Trade and Finance jobs with agricultural dependent income, bringing total agribusiness employment to 2,358 which generating \$27.6 million in job income.

Table WR-9
La Plata County Agribusiness Components 2001

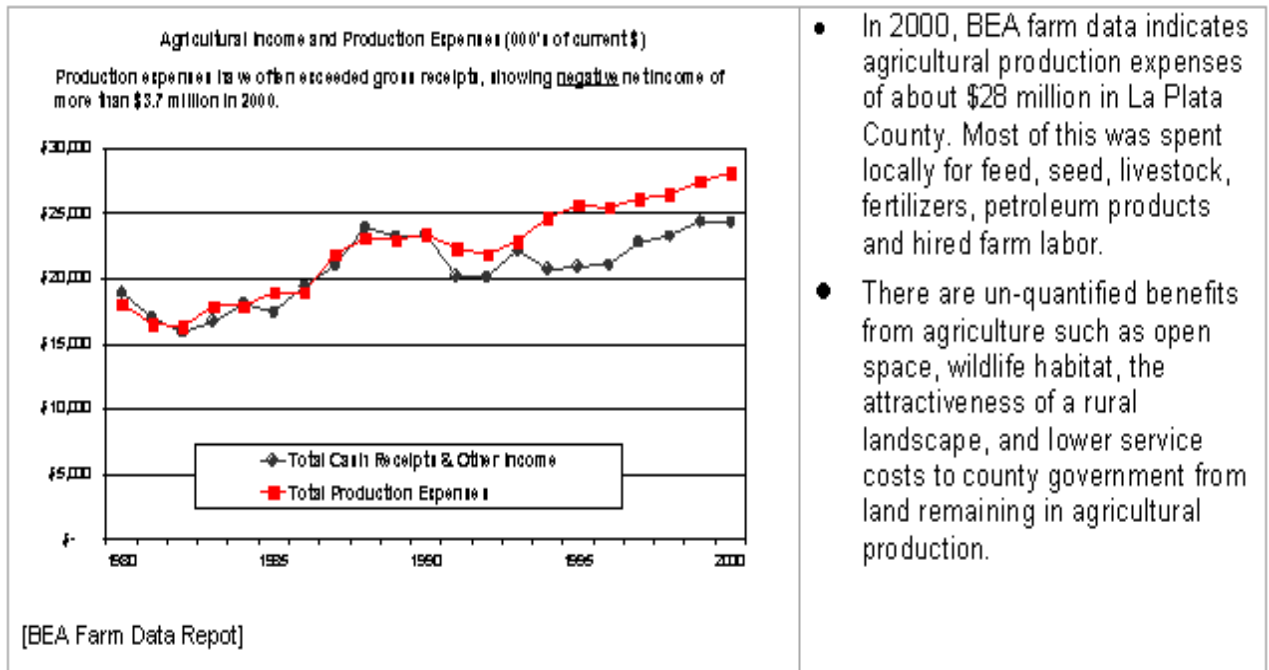
Components of Agribusiness 2001	Number of Jobs	Job Income \$(000)	
Agriculture-Crops & Livestock	1099	\$ (1,510)	<ul style="list-style-type: none"> Efforts are being made to refine our view of the contributions of agriculture to the local economy by looking at jobs in other sectors that support, or are supported by, agriculture. This is known as agribusiness.
Agriculture-Farm Services	35	\$ 951	
Agriculture-Veterinary Services	135	\$ 3,335	
Agriculture-Veterinary Services (livestock)	276	\$ 5,358	
Agriculture-Landscaping	311	\$ 5,835	
Manufacturing-Food & Kindred Products	211	\$ 5,996	
Wholesale Trade-Agricultural Inputs	118	\$ 2,792	
Wholesale Trade-Agricultural Processing	159	\$ 4,311	
Finance	14	\$ 562	
Total	2,358	\$ 27,630	

Source: Colo. Demography Section

Source: Region 9 Comprehensive Economic Development Strategy, Update 2004

The challenges faced by farmers and ranchers are reflected in a long term trend of input costs rising much faster than revenues as reflected in the BEA Farm Data report presented in the Region 9 CEDS:

Figure WR-6
La Plata County Agricultural Income and Expenses: 1980-2000



Source: Region 9 Comprehensive Economic Development Strategy, Update 2004

The negative net income picture presented in the above graph is compounded by weather conditions, with 2002 being the third drought year running. In spite of these statistics, a social and economic assessment cannot ignore the incredible resilience of the agricultural sector in Southwest Colorado.

Some key factors that contribute to this resilience include:

- **The deep cultural roots in agriculture as a way of life.** People persist in agriculture against all odds. Focus groups with ranch families in La Plata, Montezuma and Archuleta Counties in 1995, during a period of drought, low prices and uncertainty about public land grazing policy revealed a commitment to ranching as “a way of life,” that involved the entire family, frequently with multi-generational roots, a wide diversity of challenges, independence and closeness to the land. Some focus group participants had no other occupational background. Others had tried other occupations and found them unfulfilling. Some participants had mobile professional skills, and were only staying in the area to be part of a family ranching operation.
- **Rising land values.** This is a double-edged sword. On one hand, rising land prices make it difficult to for existing agricultural operations to expand and for a new generation of farmers and ranchers to get established. On the other hand those who have land equity have seen it grow, providing forbearance and credit to ride out rough times, and the opportunity to sell off pieces of land when the need for cash dictates.
- **Diversification of agricultural products and revenue sources.** As the net return to traditional ranching has declined, ranchers have sought other means of supplementing income. An increasingly common example is to sell hunting rights and in come cases provide outfitting and guide services. A growing number of farmers and ranchers are developing products to sell into niche markets. La Plata County has a growing number of farms and ranches evolving

“sustainable agricultural” practices which combine care of the land with new product and market approaches. Hay has proved to be the most consistently profitable farm crop. Navajo family sheep herds continue to be an important culturally based market, along with quality hay tailored to the horse and dairy markets. A La Plata County example of a new niche is an iris and flower seed farm that, with a small number of acres, has expanded from multi-weekend iris sales from their farm to the La Plata County Fairgrounds.

- **Growing recognition of non-product services.** Growth pressures have spawned a growing recognition of previously “taken-for-granted” non-product benefits that farms and ranches provide. Open space, aesthetics, wildlife habitat, and low public cost to public revenue ratios are among the most obvious. As the La Plata Open Space Conservancy, Colorado Cattleman’s Association Land Trust, Montezuma Land Conservancy and other land trusts have become more active, farms and ranches have been a major land conservation priority. It is becoming clear that irrigated fields and managed lands are best sustained by competent, hard working private owners.
- **Open space benefits are largely contingent on the economic viability of agriculture.** The other growing recognition is that no regulatory scheme can preserve agriculture and agricultural open space, absent economic viability. As this awareness grows there is a search for means of compensating people in agriculture for non-product services. The 2002 La Plata County Summit set in motion an effort to explore transfer of development rights (TRS), purchase of easements and other tools to supplement donated conservation easements as the currently available tool. TDRs are also being implemented in Montezuma County as part of the Dolores River Valley Plan.

One of the challenges relative to growth, identified in the 1995 ranch family focus groups is the subdivision of privately owned mid-elevation “transitional pasture”, and reduced stocking levels on ranch lands with non-agriculturally oriented owners. The availability and allocation of this scarce commodity is an important issue to the future of ranching.

Public land grazing permits play a key role in the on-going viability of many ranches. Grazing and hay production on privately owned land in the valleys is for many ranchers part of a rotation that involves summer grazing on the National Forest land and winter/spring grazing on lower elevation BLM land. With increasing pressure to improve public rangeland conditions, ranchers are challenged with practices that improve land stewardship within the parameters of economic viability. The viability of public land grazing will be enhanced to the extent that support services and informal networks that serve ranchers can provide good information to the ranching community about developing the stewardship/economic viability balance. Networks and support services can also play an important role in providing information to the general public about the benefits, challenges, and stewardship commitments of ranchers.

La Plata County Manufacturing Employment (including wood products)

Manufacturing employment has grown faster (59%) than population (33%) between 1991 and 2000. The same held true during 1980s. Three factors have contributed to this trend:

- The development and promotion of Bodo industrial park has provided a setting for manufacturing businesses.
- The attraction of living in La Plata County has resulted in business start-ups and relocations on the part of people with entrepreneurial experience.
- The Navajo Nation has provided a pool of people skilled in the hand-work involved in many of the local manufacturing businesses.
- Trends in the manufacturing sub-sectors in between 1993 and 2000 (best span in the 1990s with unsuppressed data in sub-sectors with 100 or more jobs) are presented in the table below:

Table WR-10
La Plata County Employment in Primary Manufacturing Sectors 1993-2000

Economic Sector	1993	2000	% Increase 91-00
Manufacturing	721	1,023	42%
Food and Kindred Products	113	215	90%
Textile Mill Products and Apparel	213	56	-74%
Lumber and Wood Products incl. Furniture	33	331	903%
Printing and Publishing	138	223	62%

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

Between 1993 and 2000 textile and apparel lost 157 jobs, while lumber and wood products expanded by 298 jobs and food products gained 102 jobs. Further analysis needs to be done on how much of the food and wood products jobs are related to natural resources produced locally. Food products are relevant to the interest in adding value to local agricultural production.

A relevant consideration in the wood products sector is the extent to which the raw materials come from the SJNF. The assumption is that in La Plata County many of these jobs involve finished products from imported raw materials, but this question is worthy of verification. There is also an emerging forestry related business niche, i.e. businesses that provide fire hazard reduction services. Some of these businesses involve heavy equipment (e.g. hydro-axe machines) and others combine selective thinning, in some cases coupled with chipping equipment. Many of these businesses got established after extreme drought conditions became apparent 2001 and the Missionary Ridge Fire of 2003. Determining how these businesses are classified within the NAICS Code will allow for future tracking.

A constraint in the manufacturing sector is that wage levels are not adequate to housing costs in La Plata County. Much of the labor force commutes in from the Navajo Nation adding to pressures on the transportation system, which also carries tourism, goods movement and local commuter traffic.

La Plata County Government Employment

As Figure WR-1 indicates, Government Employment is only 2% of total direct base employment in La Plata County. The demographer counts "Federal Government Administration" as the source of direct base employment because incoming federal dollars have an export effect. The Government Employment Trends Table below shows Federal Civilian Employment as the one type of government employment that actually declined by -2% between 1991 and 2000, and represents only 10% of total government employment La Plata County.

Table WR-11
La Plata County Employment Trends: Government

Economic Sector	1991	2000	% Change 91-00
Government	3,312	3,915	18%
Federal Government, Civilian	402	394	-2%
Military	132	124	-6%
State Government	803	1,283	60%
Local Government	1,975	2,114	7%

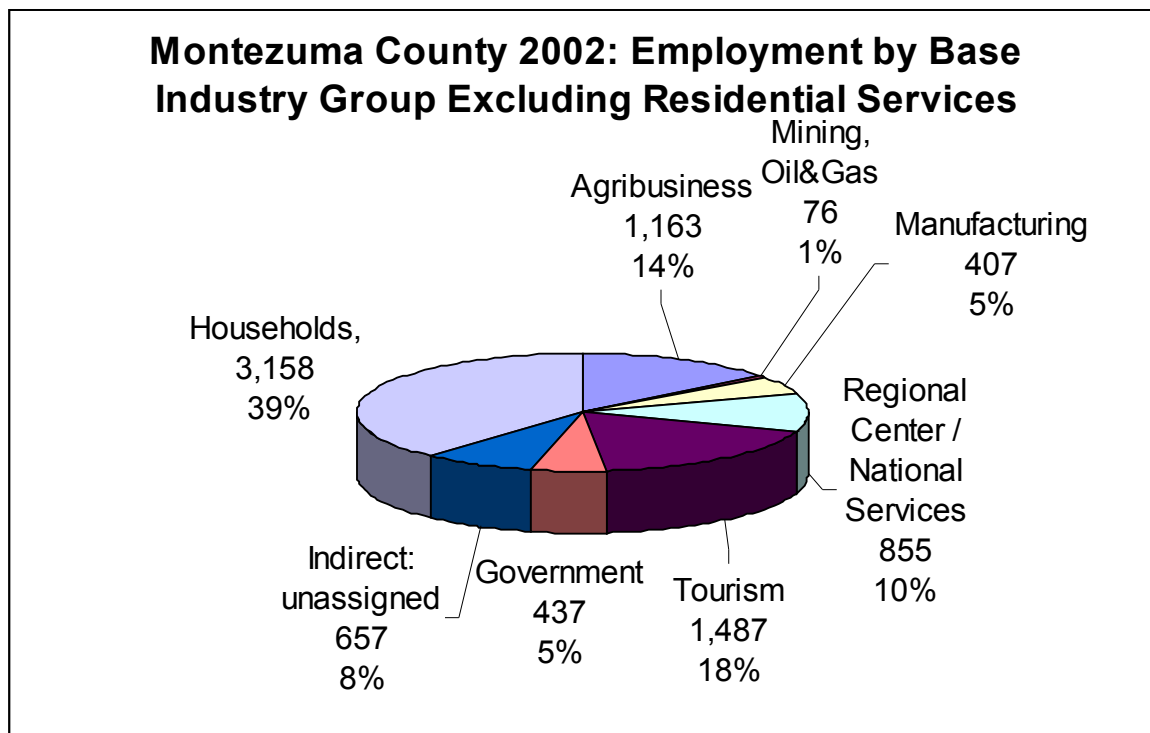
Federal Civilian Employment figures reflect the downsizing of federal employment that took place throughout the 1990s. These reductions in workforce occurred during the same period when federal land usage was growing and management issues were becoming increasingly, complex, contentious and litigious. This is a social and institutional reality that needs to be considered in land management planning, and policy development.

By contrast, local government grew 7% representing the largest share of the total government employment (54%). State government saw the most substantial growth (60%) representing 33% of total government employment. Growth in local and State employment reflects in part the growing demand for services as the population has increased, and amenity migrants have brought with them higher demand for governmental services. It should also be pointed out that this employment growth has occurred under the restraint of tax limitation amendments.

Montezuma County Base Industry and Trend Analysis

The Economic Base Analysis looks at each SIC sector to determine which sectors, and what proportion of each sector are exports. Base industries include both traditional exported products (e.g. logs and cattle) as well industries that have an “export effect” in that they bring new dollars into the local economy (e.g. tourism, regional trade, social security payments to retirees). These export sectors are clustered into a set of “Base Industry Groups.” The “Montezuma County 2002 Employment and Income Summary by Base Industry Group” appears as Table WR-12 on the following page. Figure WR-7 below presents employment by Base Industry Group.

Figure WR-7



Employment in the Mining, Oil and Gas (1%), Agribusiness (14%, which includes ranching) and Manufacturing (5% which includes saw mills) are in part related to public land resources, and will be dealt with later in this section under La Plata County natural resources.

The larger pieces of the pie are Tourism (18% including resorts, second homes, tourist services and transportation) and Households (39% including retirees, commuters as well as dividends, interest and rental income) are related to the “Amenity Migration” trends described under the “Settlement Patterns” descriptor. The Base Industry Group analysis will provide the most currently available snapshot in time followed by employment trends in related SIC categories over the past 10 years.

The base industry analysis is presented in a more detailed table format in Table WR 12 below:

Table WR 12
Montezuma County 2002 Employment and Income Summary
by Base Industry Group

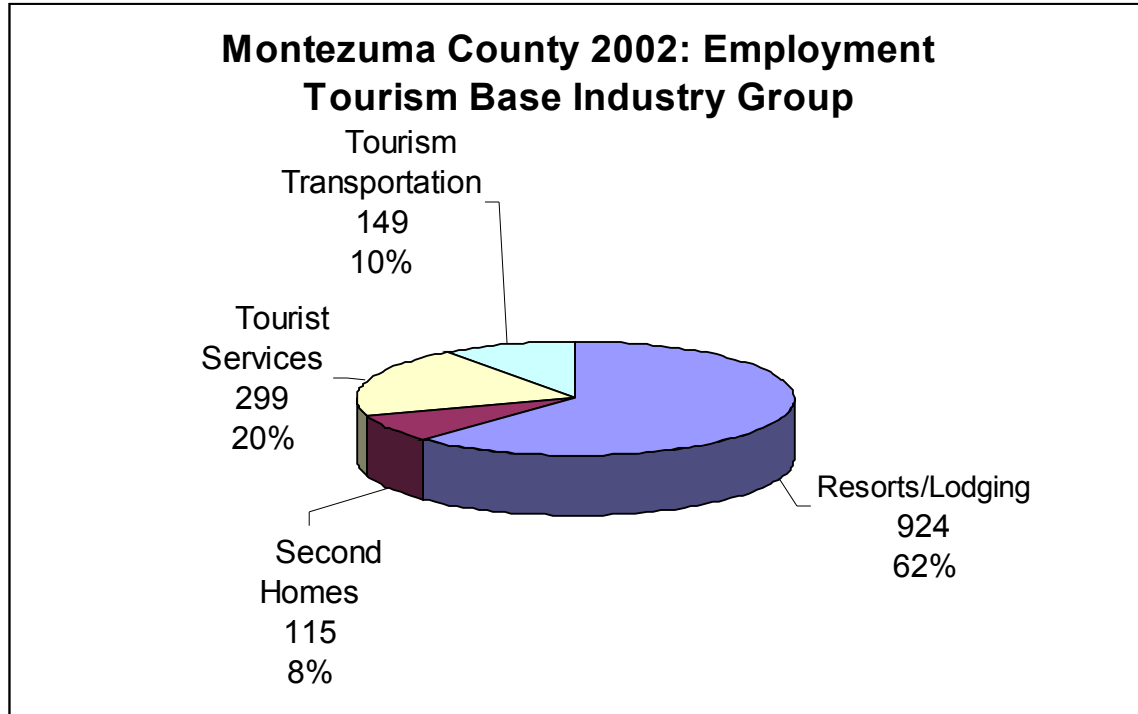
Basic Industry Groups	Jobs	% of Basic	Income (\$000)	% of Basic	Average Wage
Agribusiness	1,163	14.09	\$13,362.32	0	\$11,491
Agricultural Production	787	9.54	\$4,017.91	1.91	
Agricultural Processing	152	1.84	\$4,744.02	2.26	
Agricultural Inputs	224	2.71	\$4,600.40	2.19	
Mining	76	0.92	\$3,622.09	1.72	\$47,458
Manufacturing	407	4.93	\$9,305.60	4.43	\$22,846
Regional Center / National Services	855	10.36	\$26,415.90	12.57	\$30,884
Communications	12	0.15	\$691.64	0.33	
Construction	484	5.87	\$14,626.93	6.96	
Finance, Insurance and Real Estate	21	0.26	\$733.36	0.35	
Trade and Transportation	50	0.61	\$2,072.03	0.99	
Professional and Business Services	288	3.48	\$8,291.94	3.94	
Private Education and Health Services	0	0	\$0.00	0	
Tourism	1,487	18.01	\$26,326.46	12.52	\$17,709
Resorts	924	11.19	\$12,263.56	5.83	\$13,276
Second Homes	115	1.4	\$3,394.05	1.61	\$29,438
Tourist Services	299	3.62	\$6,923.54	3.29	\$23,181
Tourism Transportation	149	1.8	\$3,745.32	1.78	\$25,154
Government	437	5.29	\$21,307.94	10.14	\$48,771
Indirect: unassigned	657	7.96	\$22,973.98	10.93	\$34,954
Investment Construction	0	0	\$0.00	0	
Households	3,158	38.26	\$86,576.63	41.19	\$27,413
Retirees	1,934	23.42	\$53,004.96	25.22	
Commuters	386	4.68	\$10,581.17	5.03	
Households with public assistance income (excluding retirees)	320	3.88	\$8,772.87	4.17	
Households with dividends, interest and rental income (excluding retirees)	519	6.28	\$14,217.63	6.76	
Worker Local Res. Services	3,655		\$100,205.76		
	11,910				
Total All Industries			\$303,587.45		
Total Personal Income			\$557,763.83		
Ratio: Total / Basic	1.44		1.44		

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/leifa1.cfm>

Tourism & Amenity Migration Driven Employment in Montezuma County

The 18% of employment in the Tourism Base Industry Group is broken out in Figure WR-8 below:

Figure WR-8

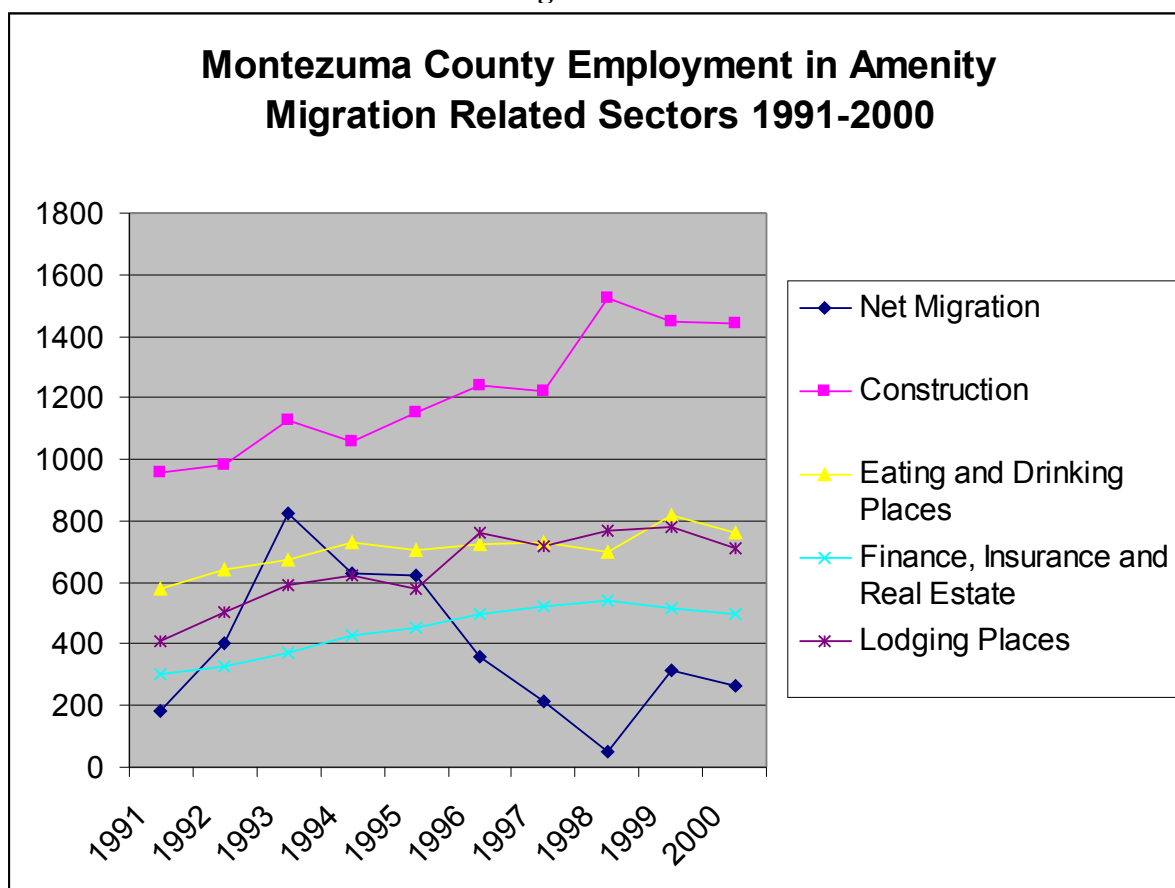


While 62% of the employment within the tourism base industry group is in resorts, which include hotels and lodging places, 8% of employment in this group is in second homes. The amenity migration boom in Montezuma County in the 1990s stimulated a great deal of construction employment. The Colorado Demographer's Base Industry Analysis classifies second homes as "Tourism" since they are occupied by visitors.

The other dimensions to the construction stimulus generated by the amenity migration are homes built by retirees and by "early retirees" who sell a home and/or business and move to Southwest Colorado as amenity migrants. The employment stimulated by these migrants shows up in the "Households" base industry group broken out in Chart WR-12 above. The Households Base Industry Group reflects, in part, employment generated by retirees as well as employment generated by the expenditure of dividends and interest flowing in with amenity migrants. In Montezuma County Base Employment generated by retirees (1,934 jobs) is larger than Base Employment generated by Tourism (1,487 jobs).

To move from the 2002 snapshot provided by the Base Industry Group Analysis to an analysis of employment trends during the 1990s it is useful to look at Bureau of Economic Analysis (BEA) employment data in key sectors. Figure WR-9 provides a starting point for such analysis.

Figure WR-9



Annual Net Migration into Montezuma County climbed to a peak in 1993 at over 800 people, dipped back to the 600 range in 1994-95, remaining in the 200-400 range since 1996 with the exception of 1998.

Finance, Insurance and Real Estate jobs grew during the 1990s by about 200 jobs representing (65%) which in combination with an increase of 481 jobs (50%) in the construction sector reflect employment growth from amenity migration. In contrast to La Plata County where lodging employment was relatively flat, employment in lodging places grew in Montezuma County by about 300 jobs a (74%) indicating that tourism was continuing to expand as part of the Montezuma County economic base. Employment in Eating and Drinking Places increased by just over 180 jobs (32%), slightly more than the 27% increase in population and less than the 41% increase in total employment from 1991-2000.

In summary, Montezuma County saw economic growth related to amenity migration while continuing to expand it's economic base in tourism related sectors.

Montezuma County Employment Trends in Major Sectors

Having focused on indicators of tourism and amenity growth, it is worth evaluating employment trends in the economy as a whole starting with the primary SIC (Standard Industrial Classification) sectors in 2001 the Bureau of Economic Analysis switched from the SIC to the NAICS classification

which uses a different set of accounts. There for the trend analysis is focused on 1991-2000 to allow for consistent analysis based on SIC classifications:

Table WR-13
Montezuma County Employment by Major SIC Category 1991-2000

Economic Sector	1991	2000	Increase 91-2000	% Change 91-2000	% Total 2000
Population	18,710	23,830	5,120	27%	
Total Employment	9,111	12,809	3,698	41%	
Agriculture	867	1,050	183	21%	8%
Mining and Extractive Industries	464	133	-331	-71%	1%
Construction	959	1,440	481	50%	11%
Manufacturing	408	601	193	47%	5%
Transportation, Communications and Utilities	293	426	133	45%	3%
Wholesale and Retail Trade	1,948	2,812	864	44%	22%
Finance, Insurance and Real Estate	301	496	195	65%	4%
Services	1,647	3,896	2,249	137%	30%
Government	2,224	1,955	-269	-12%	15%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The highlighted sectors in Table WR-13 are those that grew at a faster rate than total employment (41%). Services which showed the highest rate of growth (137%) is detailed in Table WR-14:

Table WR-14
Montezuma County Services Sector Employment Trends 1991-2000

Economic Sector	1991	2000	Increase 1991-2000	% Change 91-2000	% Total 2000
Services	1,647	3,896	2,249	137%	100%
Lodging Places	408	710	302	74%	18%
Personal Services	136	224	88	65%	6%
Business Services	72	129	57	79%	3%
Repair Services, parking	139	165	26	19%	4%
Amusement and Recreation Services	37	532	495	1338%	14%
Health Services	212	906	694	327%	23%
Legal Services	38	48	10	26%	1%
Private Education Services	18	1	-17	-94%	0%
Social Services, Including Day Care	40	171	131	328%	4%
Membership Organizations (Incl. Tribe)	134	508	374	279%	13%
Engineering and Management Services	181	255	74	41%	7%
Private Household Services	232	247	15	6%	6%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The largest increase in the number of service jobs was 694 jobs in Health Services a 327% increase, which was driven by the opening of a new nursing home in Mancos and expanded hospital and medical services in general. This is consistent with the high number of direct base employment jobs attributed to retirees in Table WR-12. The largest percentage increase (1338%) in service employment was in Amusement and Recreation Services. Most of the 495 new jobs resulted from the opening of the Ute Mountain Tribe Casino. The 374 new jobs (279% increase) in Membership Organizations are also primarily attributable to the Ute

Mountain Ute Tribe, since many Tribal government jobs are counted in this sector. As with the Southern Ute Tribe, employment in economic enterprises appears in other sectors, e.g. construction employees working for Weeminuche Construction Authority. Other expanded employment by Tribal Enterprises, such as their truck stop, hotel and convention facility are post 2000 and do not appear in this analysis. As mentioned previously the 74% increase in lodging places indicates continued expansion in the Montezuma County tourism sector.

The next highest percentage in Major SIC category employment was in the Finance, Insurance and Real Estate Sector. Detail in the Finance and Insurance sub-sectors is suppressed due to confidentiality, but as Table WR-15 illustrates most of in 159 of 165 new jobs in this sector were in Real Estate which grew by 237%.

Table WR-15
Montezuma County Finance, Insurance, Real Estate Employment Trends 1991-2000

Economic Sector	1991	2000	Increase 91-2000	% Change 91-2000	% Total 2000
Finance, Insurance and Real Estate	301	496	195	65%	100%
Real Estate	67	226	159	237%	46%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The growth in Real Estate employment appears to reflect business opportunities related to growth related to amenity migration which should also be reflected in construction employment which overall grew by 50% between 1991 and 2000. As Table WR-16 indicates, the largest growth in the number of jobs (295) and percentage (105%) was in Building Construction and Maintenance and Special Trades which along with Building Construction are the sub-sectors that involve the housing and new commercial development that were stimulated by the amenity migration trend. Employment in the Heavy Construction (primarily heavy equipment work) continued to expand, but at a slower rate (43%). Montezuma County is home to major earth moving contractors which export services to all of the Four Corners States.

Table WR-16
Montezuma County Construction Employment Trends 1991-2000

Economic Sector	1991	2000	Increase 91-2000	% Change 91-2000	% Total 2000
Construction	959	1,440	481	50%	100%
Building Construction	195	239	44	23%	17%
Maintenance and Special Trades	282	577	295	105%	40%
Heavy Construction, Other	482	624	142	29%	43%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

The fast growing employment retail sectors i.e. Building Materials, Hardware and Garden (84%) and Furniture, Apparel and General Merchandise (94%) depicted in Table WR-17 reflect a convergence of three trends.

- The expansion of Wal-Mart into a super store.
- Increased demand for building materials and furnishings stimulated by the amenity migration and related construction.
- Cortez as a regional trade center for growing rural (e.g. Dolores County and Southeastern Utah and Navajo Nation populations).

The 189 jobs (70% growth) in the Automotive Dealers and Service Stations warrants further investigation.

Table WR-17
Montezuma County Employment Wholesale and Retail Trade 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total 2000
Wholesale and Retail Trade	1,948	2,812	864	44%	100%
Wholesale Trade	210	242	32	15%	9%
Building Materials, Hardware, Garden	112	206	94	84%	7%
Furniture, Apparel and General Merch.	352	682	330	94%	24%
Food Stores	254	243	-11	-4%	9%
Automotive Dealers and Service Stations	271	460	189	70%	16%
Eating and Drinking Places	578	761	183	32%	27%
Miscellaneous Retail Trade	172	218	46	27%	8%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Montezuma County Mining (includes oil and gas):

As the Montezuma Base Industry Group Employment Figure WR-7 and Table WR12 indicate, Mining (including Oil and Gas) represents only 1% of Base Industry Employment in Montezuma County. The employment trend between 1991 and 2000 is presented in Table WR-6 below

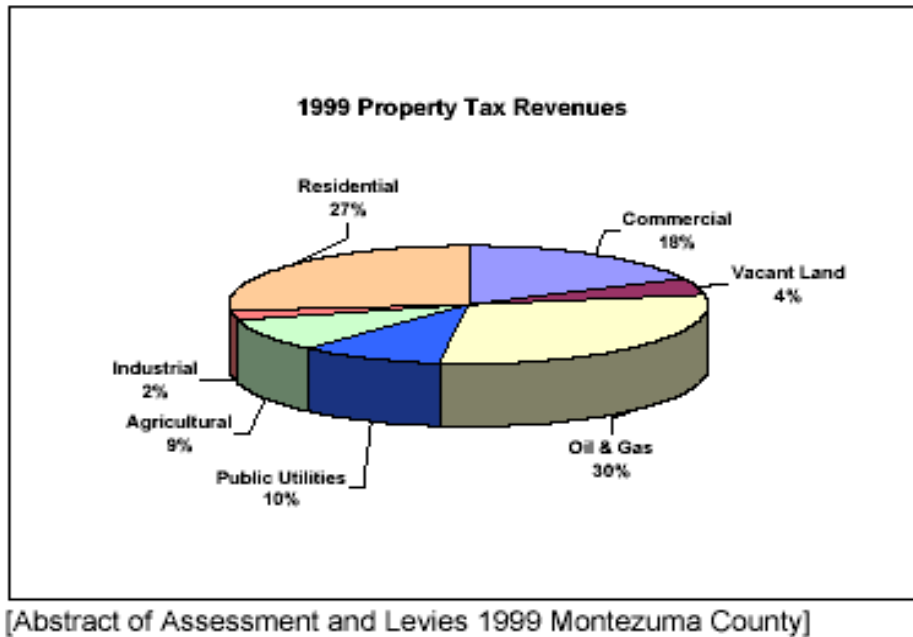
Table WR-18
Montezuma County Employment Trends: Mining and Extractive Industries 1991-2000

Economic Sector	1991	2000	Decrease 1991-2000	% Total 2000	% Change 91-00
Mining and Extractive Industries	464	133	-331	1%	-71%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

- Employment in this sector (primarily oil and gas) declined by 331 jobs between 1991 and 2000. This reflects the completion of the more intensive development of the CO2 gas field and the move to primarily operational activities with 3-6 new wells per year.
- While oil and gas jobs are high paying, (averaging nearly \$47,458 per job in 2001) the number of jobs is a small fraction (<1%) of total employment in the County.
- What is significant is the 30% contribution oil and gas production make to property tax revenues which in 1999, exceeded residential revenues:

Figure WR-10
Montezuma County 1999 Property Tax Revenue Sources



Source: Region 9 Comprehensive Economic Development Strategy, March 2001

- When compared to the controversy over coal bed methane drilling in La Plata, CO2 drilling in Montezuma County is relatively non-controversial. Much of the drilling is on public land and most of the private property owners that are affected own large agricultural parcels and receive royalty payments.
- There were, however, appeals and litigation concerning the impacts of exploration on archaeological resources in Canyons of the Ancients National Monument. The result was a settlement stipulating measures for monitoring and mitigating these impacts.

Montezuma County: Agricultural Products and Services

Table WR-19 indicates 21% growth in agricultural employment between 1991 and 2000. As of 2000, 17% of agricultural employment was in veterinary and ag support services.

Table WR-19
Montezuma County Agricultural Employment Trends Comparing 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total
Agriculture	867	1,050	183	21%	100%
Crops And Livestock	D	873	NA	NA	83%
Agricultural Services	D	177	NA	NA	17%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

In 2001 the Region 9 Economic Development District worked with the Colorado Demographer to assemble a more complete picture of the contribution of agriculture which is presented in Table WR-

20 below, which in addition to 799 crop and livestock includes veterinary services which account for 162 jobs, with additional ag related jobs in agricultural processing, inputs, freight and warehousing as well as food products, bringing agribusiness employment to 1,196 jobs

Table WR-20
Montezuma County Agribusiness Components 2001

Agribusiness 2001	Employment	Income
Crops and Livestock	799	\$ (626)
Farm Services	13	\$ 305
Veterinary Services	162	\$ 2,387
Landscaping	19	\$ 123
Food and Kindred Products	62	\$ 2,246
Motor Freight and Warehousing	12	\$ 956
Irrigation and Pipelines	1	\$ 1
Wholesale Trade - Agricultural Inputs	71	\$ 1,609
Wholesale Trade - Agricultural Processing	41	\$ 895
Finance	16	\$ 523
Total	1,196	\$ 8,419

Income is in \$000

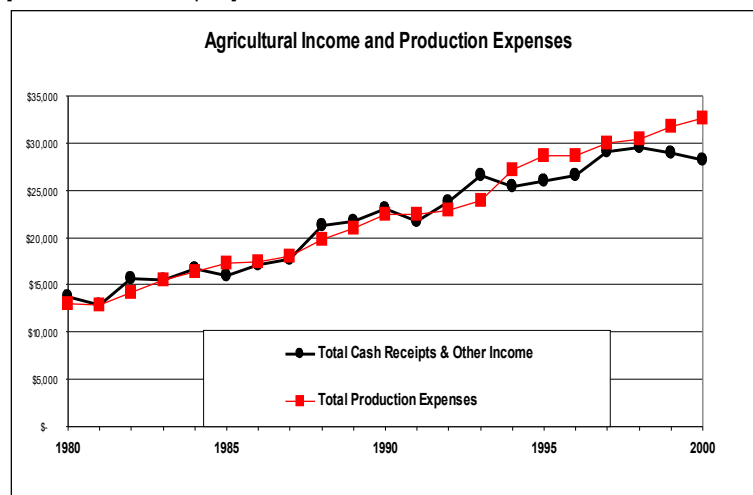
Source: Region 9 Comprehensive Economic Development Strategy, Update 2004

- Efforts are being made to refine our view of the contributions of agriculture to the local economy by looking at jobs in other sectors that support, or are supported by, agriculture. This is known as agribusiness.
- Ag inputs and processing are businesses (wholesale trade) that provide products and services to farmers, i.e. chemicals, seed, fertilizer, feed, fuel, machinery and crop processing or marketing.

The challenges faced by farmers and ranchers are reflected in a long term trend of input costs rising much faster than revenues as reflected in the BEA Farm Data report presented in the Region 9 CEDS:

Figure WR-11
Montezuma County Agricultural Income and Expenses: 1980-2000

[BEA Farm Data Report]



Source: Region 9 Comprehensive Economic Development Strategy, Update 2004

- According to available BEA data, production expenses have exceeded gross receipts since 1994, showing *negative* net income of about \$4.4 million in 2000. This can reflect a variety of factors such as weather, market prices, and the limitations of BEA farm data as described above.
- In 2000, BEA farm data indicates agricultural production expenses of about \$32.6 million in Montezuma County. Most of this was spent locally for feed, seed, livestock, fertilizers, petroleum products and hired farm labor.

The negative net income picture presented in the above graph is compounded by weather conditions, with 2002 being the third drought year running. In spite of these statistics, a social and economic assessment cannot ignore the incredible resilience of the agricultural sector in Southwest Colorado.

Some key factors that contribute to the resilience of agriculture include:

- **The deep cultural roots in agriculture as a way of life.** People persist in agriculture against all odds. Focus groups with ranch families in La Plata, Montezuma and Archuleta Counties in 1995, during a period of drought, low prices and uncertainty about public land grazing policy revealed a commitment to ranching as “a way of life,” that involved the entire family, frequently with multi-generational roots, a wide diversity of challenges, independence and closeness to the land. Some focus group participants had no other occupational background. Others had tried other occupations and found them unfulfilling. Some participants had mobile professional skills, and were only staying in the area to be part of a family ranching operation.
- **Rising land values.** This is a double-edged sword. On one hand, rising land prices make it difficult to for existing agricultural operations to expand and for a new generation of farmers and ranchers to get established. On the other hand those who have land equity have seen it grow, providing forbearance and credit to ride out rough times, and the opportunity to sell off pieces of land when the need for cash dictates.
- **Diversification of agricultural products and revenue sources.** As the net return to traditional ranching has declined, ranchers have sought other means of supplementing income. An increasingly common example is to sell hunting rights and in some cases provide outfitting and guide services. A growing number of farmers and ranchers are developing products to sell into niche markets. Hay has proved to be the most consistently profitable farm crop. Navajo family sheep herds continue to be an important culturally based market, along with quality hay tailored to the horse and dairy markets. A Montezuma County example of a new niche is the wineries that have developed in McElmo Canyon which in addition to income from export sales have provide a focal point for an October wine fest in Montezuma County. The Saturday farmer’s market in the County Courthouse parking lot draws more vendors with more locally grown products with each passing year. There are also a growing number of tree farms in Montezuma County.
- **Growing recognition of non-product services.** Growth pressures have spawned a growing recognition that the many previously “taken-for-granted” non-product benefits that farms and ranches provide. Open space, aesthetics, wildlife habitat, and low public cost to public revenue ratios are among the most obvious. As the La Plata Open Space Conservancy, Colorado Cattleman’s Association Land Trust, Montezuma Land Conservancy and other land trusts have become more active, farms and ranches have been a major land conservation priority. It is becoming clear that irrigated fields and managed lands are best sustained by competent, hard working private owners.
- **Open space benefits are largely contingent on the economic viability of agriculture.** The other growing recognition is that no regulatory scheme can preserve agriculture and agricultural open space, absent economic viability. As this awareness grows there is a search for means of compensating people in agriculture for non-product services. In addition to some 5,000 acres in conservation easements facilitated by the Montezuma Land Conservancy, a Transferable Development Right (TDR) system implemented in the Dolores River Valley as part of the Dolores River Valley Plan. The Montezuma Land Conservancy has also been instrumental in securing \$4.6 million in matching funds from Great Outdoors Colorado to purchase scenic easements along the San Juan Skyway in the Dolores and Mancos River Valleys.

As in La Plata County, one of the challenges relative to growth, identified in the 1995 ranch family focus groups is the subdivision of privately owned mid-elevation “transitional pasture”, and reduced stocking levels on ranch lands with non-agriculturally oriented owners. The availability and allocation of this scarce commodity is an important issue to the future of ranching.

Public land grazing permits play a key role in the on-going viability of many ranches. Grazing and hay production on privately owned land in the valleys is for many ranchers part of a rotation that involves summer grazing on the National Forest land and winter/spring grazing on lower elevation BLM land. With increasing pressure to improve public rangeland conditions, ranchers are challenged with practices that improve land stewardship within the parameters of economic viability. The viability of public land grazing will be enhanced to the extent that support services and informal networks that serve ranchers can provide good information to the ranching community about developing and monitoring the stewardship/economic viability balance. Networks and support services can also play an important role in providing information to the general public about the benefits, challenges, and stewardship commitments of ranchers.

Montezuma County Manufacturing Employment (including wood products)

Manufacturing employment has grown faster (47%) than population (27%) and jobs (41%) between 1991 and 2000. The same held true during 1980s. Three factors have contributed to this trend:

- The attraction of living in Montezuma County has resulted in business start-ups and relocations on the part of people with entrepreneurial experience.
- The Navajo Nation has provided a pool of people skilled in the hand-work involved in many of the local manufacturing businesses.

Trends in the manufacturing sub-sectors in between 1991 and 2000 are presented in Table WR-21 below:

Table WR-21
Montezuma County Employment in Primary Manufacturing Sectors 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total 2000
Manufacturing	408	601	193	47%	100%
Food and Kindred Products	35	64	29	83%	11%
Textile Mill Products and Apparel	49	106	57	116%	18%
Lumber and Wood Products including Furniture	186	207	21	11%	34%
Printing and Publishing	47	67	20	43%	11%
Stone, Clay and Glass Products	47	78	31	66%	13%

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

As Table WR-21 indicates, the lumber and wood products remain the major component of the manufacturing sector (34%), but the rate of growth between 1991 and 2000 was the slowest of any sub-sector (11%). It is also likely that the employment growth involves a shift to smaller furniture and craft firms. A relevant consideration in the wood products sector is the extent to which the raw materials come from the SJNF.

There is an emerging forestry related business niche, i.e. businesses that provide fire hazard reduction services. Some of these businesses involve heavy equipment (e.g. hydro-axe machines) and others combine selective thinning, in some cases coupled with chipping equipment. Many of these businesses got established after extreme drought conditions became apparent 2001 and the resulting large scale fires in Mesa Verde National Park. Determination of how these businesses are classified within the NAICS Code will allow for future tracking.

The most significant growth was in textile mill products and apparel manufacturing both in the increase in jobs (57) and percentage (116%). Much of this growth may be in Osprey outdoor equipment which is directly related to public land outdoor recreation opportunities. Unfortunately

much of Osprey's production has been moved overseas, but design and management jobs remain in Cortez.

A major industrial recruitment success in Montezuma County involves Tuffy Security which specializes in lockable accessories for Jeeps. The owner of this business is an amenity migrant that relocated to this business to enjoy an avid interest in outdoor recreation.

Montezuma County Government Employment

As Figure WR-22 indicates, Local Government, which makes up 75% of government employment, lost 247 jobs (-14%). This loss of jobs is attributable to the compound impact of the TABOR (tax limitation) amendment coupled with a ratcheting down of oil and gas revenues reflecting the decline in CO2 production values. This reduction in local government employment was particularly problematic during a period of population growth and increasing demand for services in the mid 1990s.

Table WR-22
Montezuma County Employment Trends: Government

Economic Sector	1991	2000	Increase 99-2000	% Change 91-2000	% Total 2000
Government	2,224	1,955	-269	-12%	100%
Federal Government, Civilian	380	354	-26	-7%	18%
Military	75	68	-7	-9%	3%
State Government	62	73	11	18%	4%
Local Government	1,707	1,460	-247	-14%	75%

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

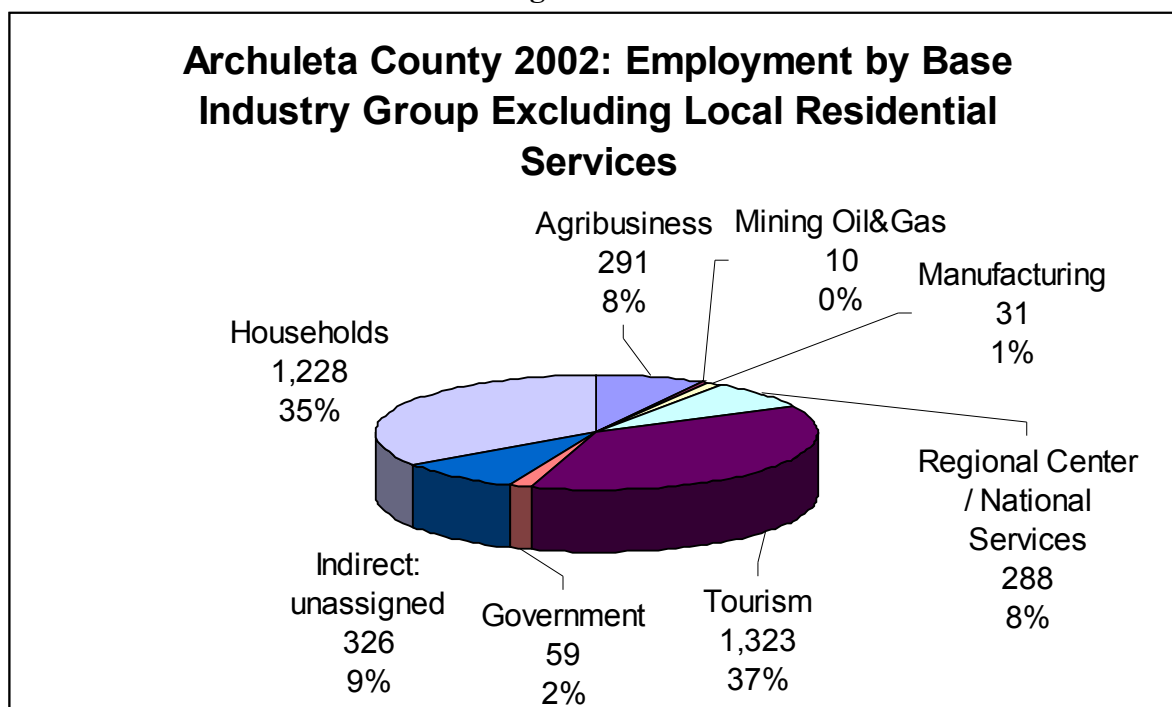
As Table WR-11 indicates, Government Employment is 5% of total direct base employment and 10% of direct base earnings in Montezuma County. The demographer counts "Federal Government Administration" as the source of direct base employment because incoming federal dollars have an export effect. The Government Employment Trends Table WR-22 shows Federal Civilian Employment declined by 26 jobs (-7%) between 1991 and 2000, representing 18% of total government employment Montezuma County.

Federal Civilian Employment figures reflect the downsizing of federal employment that took place throughout the 1990s. These reductions in workforce occurred during the same period when federal land usage was growing and management issues were becoming increasingly, complex, contentious and litigious. This is a social and institutional reality that needs to be considered in land management planning, and policy development.

Archuleta County Base Industry and Trend Analysis

The Economic Base Analysis looks at each SIC sector to determine which sectors, and what proportion of each sector are exports. Base industries include both traditional exported products (e.g. logs and cattle) as well industries that have an “export effect” in that they bring new dollars into the local economy (e.g. tourism, regional trade, social security payments to retirees). These export sectors are clustered into a set of “Base Industry Groups.” The “Archuleta County 2002 Employment and Income Summary by Base Industry Group” appears as Table WR-23 on the next page. Figure WR-11 below presents employment by Base Industry Group.

Figure WR-11



As Figure WR-11 indicates 72% of the base industry employment in Archuleta County is a combination of Tourism and Households (predominately jobs supported by direct base income to retirees). As Table WR-23 indicates, these two groups are the lowest paying base industry groups at \$21,000 and \$28,000 respectively. The other significant categories of employment are Regional/National Services and Agribusiness at 8% each. Most of the Regional and National Services Jobs are construction related resulting in an average wage of \$35,450. The 291 jobs in agribusiness show negative net income as will be discussed in the agriculture section below.

Table WR 23
Archuleta County 2002 Employment and Income Summary
by Base Industry Group

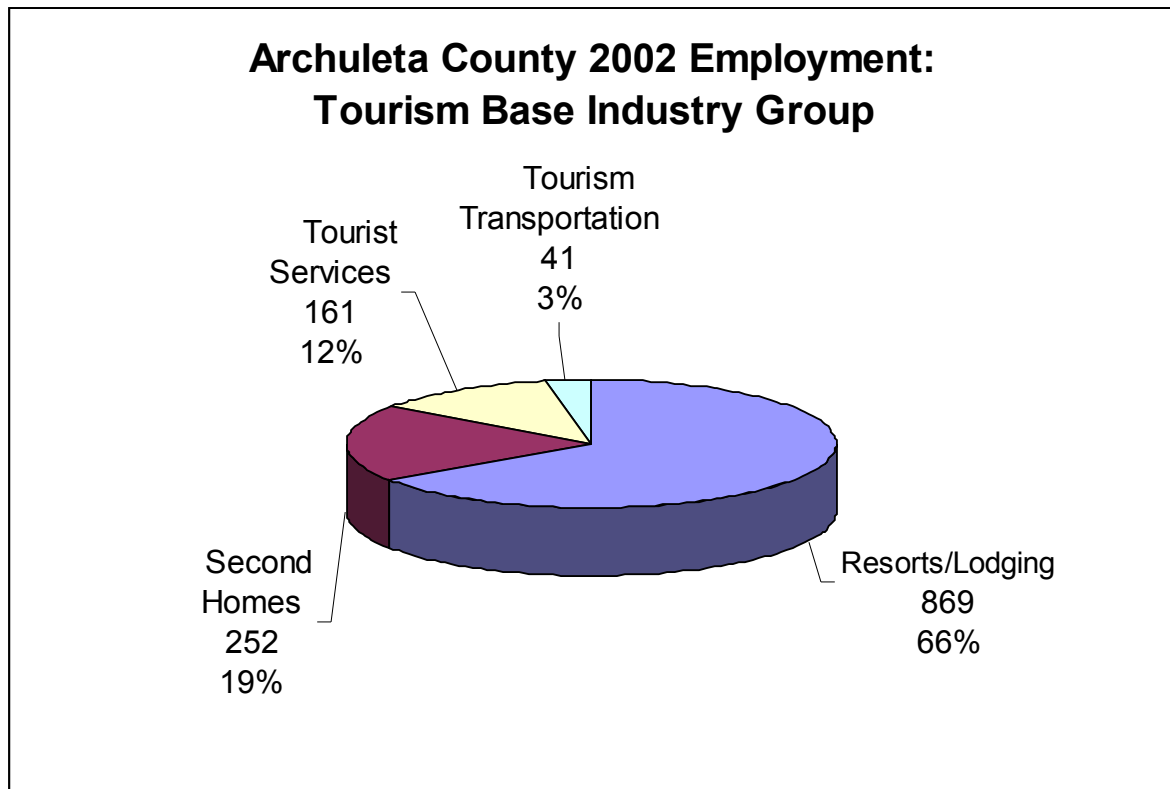
Basic Industry Groups	Jobs	% of Basic	Income (\$000)	% of Basic	Average Wage
Agribusiness	291	8.2	-\$5,910	0.0	(\$20,297)
Agricultural Production	249	7.0	-\$6,838	0.0	
Agricultural Processing	19	0.5	\$477	0.6	
Agricultural Inputs	23	0.7	\$451	0.5	
Mining including Oil and Gas	10	0.3	\$613	0.7	\$60,526
Manufacturing	31	0.9	\$1,121	1.3	\$35,625
Regional Center / National Services	288	8.1	\$10,206	12.0	\$35,450
Communications	3	0.1	\$181	0.2	
Construction	246	6.9	\$8,283	9.7	
Finance, Insurance and Real Estate	9	0.3	\$344	0.4	
Trade and Transportation	24	0.7	\$1,267	1.5	
Professional and Business Services	6	0.2	\$131	0.2	
Private Education and Health Services	0	0.0	\$0	0.0	
Tourism	1,323	37.2	\$27,831	32.7	\$21,035
Resorts/Lodging	869	24.4	\$13,749	16.1	\$15,819
Second Homes	252	7.1	\$9,336	11.0	\$37,064
Tourist Services	161	4.5	\$3,620	4.3	\$22,519
Tourism Transportation	41	1.2	\$1,127	1.3	\$27,242
Government	59	1.7	\$3,509	4.1	\$59,148
Indirect: unassigned	326	9.2	\$13,092	15.4	\$40,152
Investment Construction	0	0.0	\$0	0.0	
Households	1,228	34.5	\$34,661	40.7	\$28,229
Retirees	802	22.5	\$22,634	26.6	
Commuters	64	1.8	\$1,817	2.1	
Households with public assistance income (excluding retirees)	102	2.9	\$2,881	3.4	
Households with dividends, interest and rental income (excluding retirees)	260	7.3	\$7,329	8.6	
Total Basic	3,561	100.0	\$85,244	100.0	\$23,936
Worker Local Res. Services	919		\$25,941		
Total All Industries	4,480		\$115,545		
Total Personal Income			\$210,217		
Ratio: Total / Basic	1.26		1.36		

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/leifa1.cfm>

Tourism and Amenity Migration Driven Employment in Archuleta County

The 37% of employment in the Tourism Base Industry Group is broken out in Figure WR- 12 below:

Figure WR-12



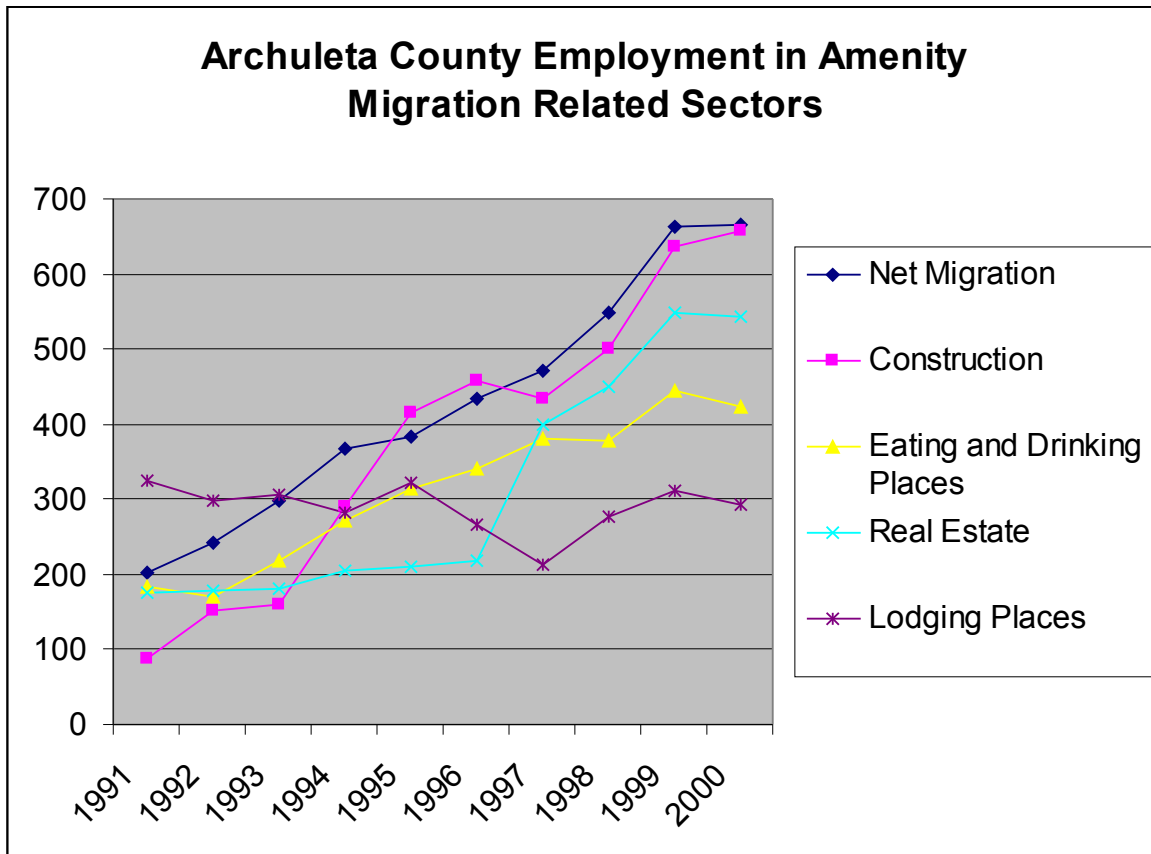
Of the 1,323 jobs in the Tourism Base Industry Group 2/3 are resort and lodging employment. The other components of this group are 252 jobs involving construction and maintenance of second homes (19%), and 161 jobs (12%) in tourist services which includes Wolf Creek Ski Area.

While 66% of the employment within the tourism base industry group is in resorts, which include hotels and lodging places, 19% of employment in this group is in second homes. The Colorado Demographer's Base Industry Analysis classifies second homes as "Tourism" since they are occupied by visitors.

The other dimensions to the construction stimulus generated by the amenity migration are homes built by retirees and by "early retirees" who sell a home and/or business and move to Southwest Colorado as amenity migrants. The employment stimulated by these migrants shows up in the "Households" base industry group and the Regional National Services Group broken out in Chart WR-12 above. The Households Base Industry Group reflects, in part, employment generated by retirees as well as employment generated by the expenditure of dividends and interest flowing in with amenity migrants.

To move from the 2002 snapshot provided by the Base Industry Group Analysis to an analysis of employment trends during the 1990s it is useful to look at Bureau of Economic Analysis (BEA) employment data in key sectors. Figure WR-13 provides a starting point for such analysis focusing on sectors that are relevant to the dominant economic influence of the Amenity Migration trend in Archuleta County.

Figure WR-13



As Figure WR-13 indicates Annual Net Migration into Archuleta County climbed to a peak in 1999 of nearly 700 people. It is also interesting to note that construction jobs which had been well below the rate of migration jumped in the mid-1990s to mimic migration levels. This indicates that construction services that were previously being imported from La Plata County took root in local Archuleta County businesses. Real Estate employment also began to rise in response to migration rates between 1996 and 1997. Employment in Eating and Drinking places also increased in proportion to migration, while employment in lodging places actually declined during this period.

As Table WR-24 below indicates, the 85% growth between 1991-2000 was accompanied by growth in the construction (639% for the decade) Finance, Insurance and Real Estate (209% for the decade) eating and drinking places (130% for the decade) and stagnation in the lodging sector (-10% for the decade) indicates that economic growth in the 1990s was driven by “amenity migration” while “tourism” remained relatively flat.

Archuleta County Employment Trends in Major Sectors

Having focused on indicators of tourism and amenity growth, it is worth evaluating employment trends in the economy as a whole starting with the primary SIC (Standard Industrial Classification) sectors. In 2001 the Bureau of Economic Analysis switched from the SIC to the NAICS classification which uses a different set of accounts. Therefore the trend analysis is focused on 1991-2000 to allow for consistent analysis based on SIC classifications:

Table WR-24
Archuleta County Employment by Major SIC Category 1991-2000

Economic Sector	1991	2000	Increase 91-2000	% Change 91-00	% Total 2000
Population	5,345	9,898	4,553	85%	
Total Employment	2,460	4,768	2,308	94%	
Agriculture	258	290	32	12%	6%
Mining and Extractive Industries	24	47	23	96%	1%
Construction	89	658	569	639%	14%
Manufacturing	67	109	42	63%	2%
Transportation Communications Utilities	77	97	20	26%	2%
Wholesale and Retail Trade	514	1,143	629	122%	24%
Finance, Insurance and Real Estate	248	667	419	169%	14%
Services	756	1,171	415	55%	25%
Government	428	586	158	37%	12%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Archuleta County Construction Employment Trends 1991-2000

The highlighted sectors in Table WR-24 are those that grew from 1991-200 at a faster rate than total employment (94%). Construction, which increased by 569 jobs, showed the highest percentage growth (638%) primarily due to the amenity migration trend described above. Table WR-25 shows relatively even rates of growth in the general contractor and trade sub-sectors, along with the establishment of heavy construction (primarily earth moving) jobs.

Table WR-25
Archuleta County Construction Employment Trends 1991-2000

Economic Sector	1991	2000	Increase 91-2000	% Change 91-2000	% Total 2000
Construction	89	658	569	639%	100%
Building Construction	37	252	215	581%	38%
Maintenance and Special Trades	45	324	279	620%	49%
Heavy Construction, Other	6	82	76	1267%	12%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Archuleta County Finance, Insurance, Real Estate Employment Trends 1991-2000

The second highest percentage increase in jobs (169%) was the 419 jobs in Finance, Insurance and Real Estate, primarily in Real Estate, as reflected in Table WR-26 below:

Table WR-26
Archuleta County Finance, Insurance, Real Estate Employment Trends 1991-2000

Economic Sector	1991	2000	Increase 91-2000	% Change 91-2000	% Total 2000
Finance, Insurance and Real Estate	248	667	419	169%	100%
Real Estate	176	544	368	209%	82%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Archuleta County Wholesale and Retail Trade Sector Employment Trends 1991-2000:

Another sector which saw above average job growth was Wholesale and Retail Trade which is presented in Table WR-27. This sector saw the largest numerical increase in jobs at 628 which represents at 122% increase. The biggest sub-sector within which this increase occurred was 424 new jobs in eating and drinking places. The largest percentage increase was in the Building Materials, Hardware and Garden sub-sector which grew by 300% or 126 jobs. A very visible manifestation of growth in the retail sector is all of the relatively new commercial development in the Pagosa Lakes area that was annexed into the City of Pagosa Springs.

Table WR-27**Archuleta County Wholesale and Retail Trade Sector Employment Trends 1991-2000**

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total 2000
Wholesale and Retail Trade	514	1,143	629	122%	100%
Wholesale Trade	17	33	16	94%	3%
Building Materials, Hardware, Garden	42	168	126	300%	15%
Furniture, Apparel and General Merch.	33	53	20	61%	5%
Food Stores	*87	154	67	77%	13%
Automotive Dealers and Service Stat	*51	97	46	90%	8%
Eating and Drinking Places	184	424	240	130%	37%
Miscellaneous Retail Trade	104	213	109	105%	19%

*1994-00

*1994-00

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Archuleta County Services Sector Employment Trends 1991-2000

Job growth in the services sector of 55% was a little over half of the rate of job growth overall. The other trend of note is that the Services sub-sectors that did grow were those that fit with the amenity migration sensitive sectors such as amusement and recreation, health services and engineering services (probably driven by the growth in construction).

Table WR-28**Archuleta County Services Sector Employment Trends 1991-2000**

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total 2000
Services	756	1,171	415	55%	100%
Lodging Places	324	293	-31	-10%	25%
Business Services	72	106	34	47%	9%
Repair Services, parking	*16	83	67	419%	7%
Amusement and Recreation Services	*29	121	92	317%	10%
Health Services	28	108	80	286%	9%
Legal Services	14	13	-1	-7%	1%
Engineering and Management Services	5	37	32	640%	3%
Private Household Services	199	202	3	2%	17%

*1992

*1994

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

Archuleta County Mining and Extractive Industries (includes oil and gas):

The 23 new jobs in the extractive industries most likely involved the establishment of local gravel production operations in Archuleta County in support of construction growth. However, there could be future growth in the oil and gas sector based on proposed coal-bed methane development under study in the San Juan Basin.

Table WR-29

Archuleta County Employment Trends: Mining and Extractive Industries 1991-2000

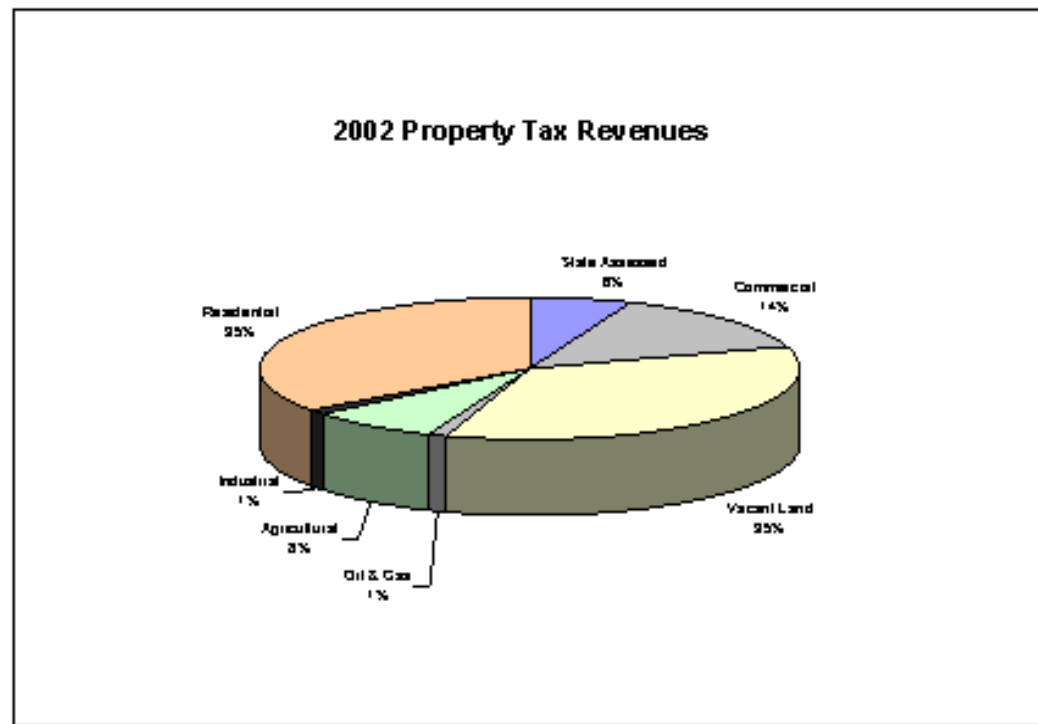
Economic Sector	1991	2000	Decrease 1991-2000	% Total 2000	% Change 91-00
Mining and Extractive Industries	24	47	23	96%	100%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

In contrast to La Plata and Montezuma Counties, oil and gas represents a very small portion (1%) of the local property tax revenues.

Figure WR-14

Archuleta County 2002 Property Tax Revenue Sources



Source: Region 9 Comprehensive Economic Development Strategy, March 2004

1991-2000 Employment Trends Reinforce Influence of Amenity Migration

A sectors and sub-sectors that show substantial growth in Tables WR-24 through WR-29 above all reinforce the economic dominance of sustained growth from amenity migration in Archuleta County. One of the biggest symptoms of this high rate of growth and economic change are the dramatic changes starting to occur in the agricultural economy.

Archuleta County: Agricultural Products and Services

Table WR-30 shows 12% growth in agricultural employment between 1991 and 2000.

Table WR-30
Archuleta County Agricultural Employment Trends Comparing 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total
Agriculture	258	290	32	12%	100%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

In 2001 the Region 9 Economic Development District worked with the Colorado Demographer to assemble a more complete picture of the contribution of agriculture which is presented in Table WR-31 below, which in addition to crops and livestock jobs (248) includes veterinary services (31), landscaping (20 jobs), and 4 agricultural processing jobs. The indication in Table WR-31 is a net loss of \$1 million in what is primarily livestock income.

Table WR-31
Archuleta County Agribusiness Components 2001

Agribusiness 2001	Employment	Income
Crops and Livestock	248	\$ (1,076)
Veterinary Services	31	\$ 682
Landscaping	20	\$ 494
Manufacturing-Farm Equipment	1	\$ 64
Wholesale Trade - Agricultural Processing	4	\$ 104
Total	304	\$ 268

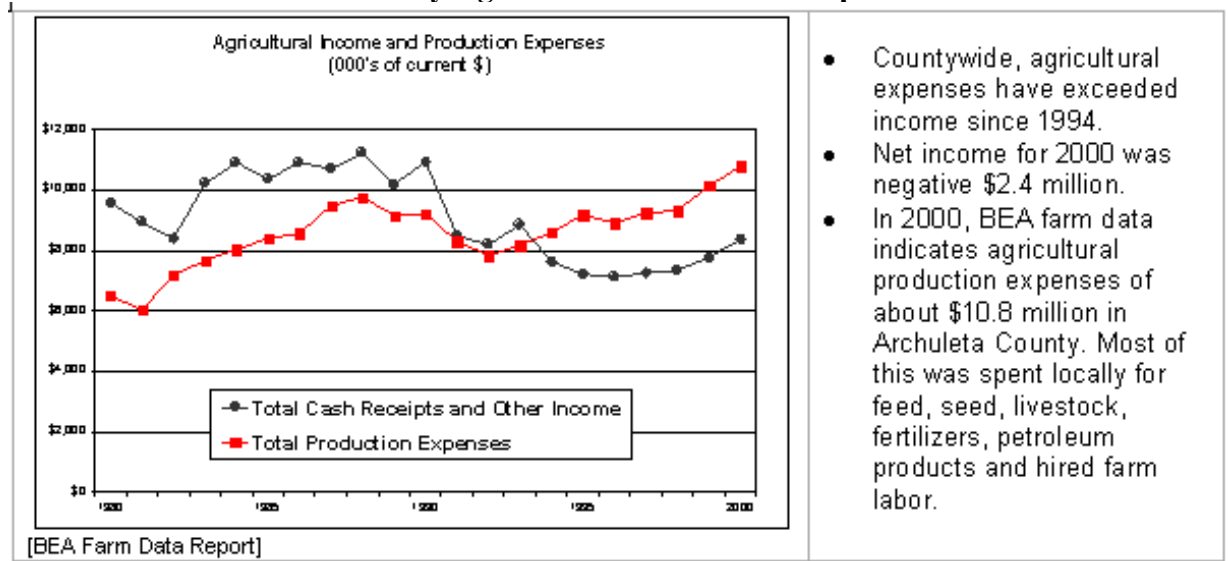
Income is in \$000

Source: Region 9 Comprehensive Economic Development Strategy, Update 2004

The challenges faced by farmers and ranchers are reflected in a long term trend of input costs rising much faster than revenues as reflected in the BEA Farm Data report presented below in Table WR-15. The negative net income picture presented in this graph is compounded by weather conditions, with 2002 the third drought year running. In spite of these statistics, a social and economic assessment cannot ignore the incredible resilience of the agricultural sector in Southwest Colorado.

Some key factors that contribute to this resilience are presented above in the La Plata County agricultural analysis on page 17. It should also be pointed out that in spite of the negative net income; \$10.2 million was spent in production expenses. Some of these expenditures went directly into the Archuleta County economy, with much of the balance going into the regional economy. It is also likely that some of the added employment indicated in Table WR-30 involves people that don't rely on ranching as a livelihood, but as a lifestyle amenity.

Figure WR-15
Archuleta County Agricultural Income and Expenses: 1980-2000



Source: Region 9 Comprehensive Economic Development Strategy, Update 2004

As in La Plata County, one of the challenges relative to growth, identified in the 1995 ranch family focus groups is the subdivision of privately owned mid-elevation “transitional pasture”, and reduced stocking levels on ranch lands with non-agriculturally oriented owners. The availability and allocation of this scarce commodity is an important issue to the future of ranching.

Public land grazing permits play a key role in the on-going viability of many ranches. Grazing on privately owned land in the valley is for some ranchers, part of a rotation that involves summer grazing on the National Forest land and winter/spring grazing on lower elevation BLM land. With increasing pressure to improve public rangeland conditions, ranchers are challenged with practices that improve land stewardship within the parameters of economic viability. The viability of public land grazing will be enhanced to the extent that support services and informal networks that serve ranchers can provide good information to the ranching community about developing the stewardship/economic viability balance. Networks and support services can also play an important role in providing information to the general public about the benefits, challenges, and stewardship commitments of ranchers.

Archuleta County Manufacturing Employment (including wood products)

As Table WR-32 indicates most of the jobs gained in the Manufacturing Sector are in publishing and printing. With the closure of the last major sawmill during the 1990s employment in the wood products sector declined by 90%. This decline limits the private sector infrastructure for fuel hazard mitigation that has become a priority since 2000.

Table WR-32
Archuleta County Employment in Primary Manufacturing Sectors 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total 2000
Manufacturing	67	109	42	63%	100%
Lumber & Wood Products	*71	7	-64	-90%	6%
Printing and Publishing	15	47	32	213%	43%

*1992

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

Archuleta County Government Employment

As Figure WR-33 indicates, Local Government, which makes up 80% of government employment, also showed the largest employment gain (136 jobs) between 1991 and 2000. This is reflective of the increasing demand for services resulting from the growth during the 1990s. There were also modest gains in employment in Federal and State government at a time when Federal employment declined in La Plata and Montezuma Counties.

Table WR-33
Archuleta County Employment Trends: Government

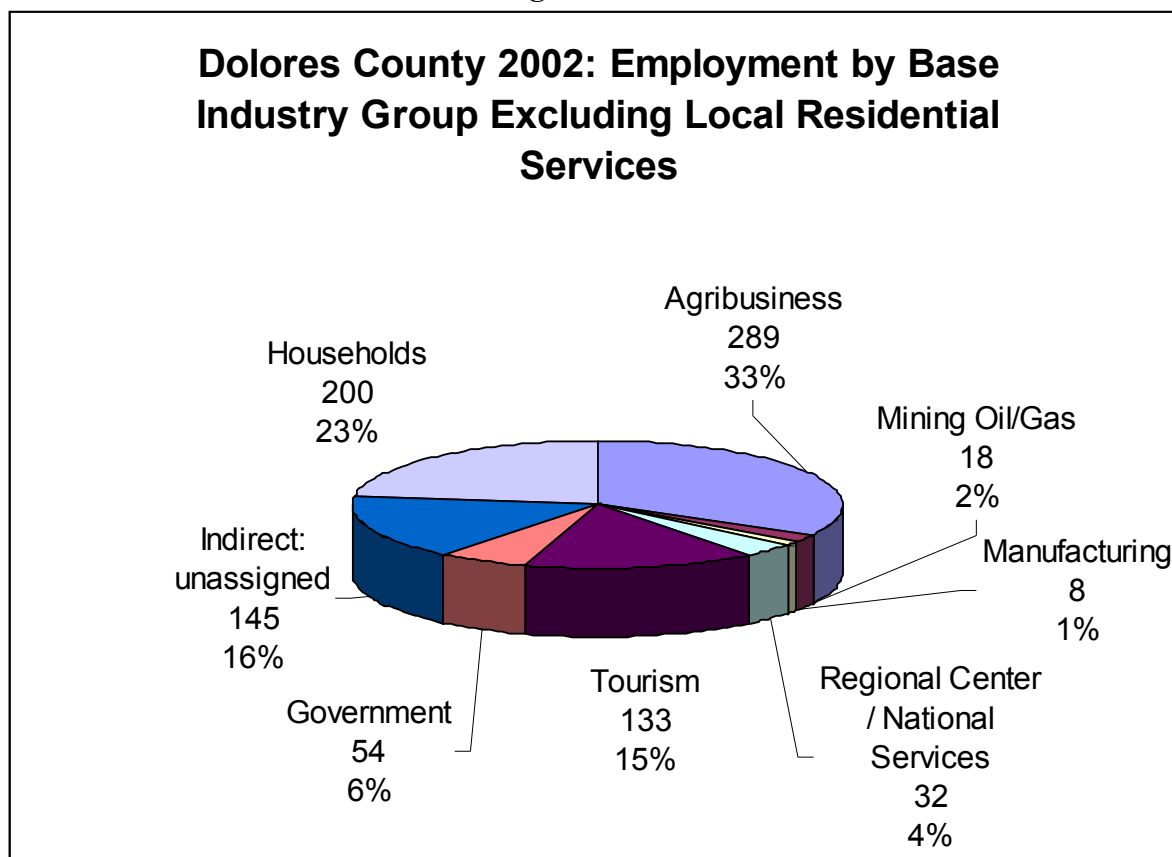
Economic Sector	1991	2000	Increase 99-2000	% Change 91-2000	% Total 2000
Government	428	586	158	37%	100%
Federal Government, Civilian	45	56	11	24%	10%
Military	22	29	7	32%	5%
State Government	29	33	4	14%	6%
Local Government	332	468	136	41%	80%

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

Dolores County Base Industry and Trend Analysis

The Economic Base Analysis looks at each SIC sector to determine which sectors, and what proportion of each sector are exports. Base industries include both traditional exported products (e.g. crops and cattle) as well industries that have an “export effect” in that they bring new dollars into the local economy (e.g. tourism, regional trade, social security payments to retirees). These export sectors are clustered into a set of “Base Industry Groups.” The “Dolores County 2002 Employment and Income Summary by Base Industry Group” appears as Table WR-16 on the next page. Figure WR-16 below presents employment by Base Industry Group.

Figure WR-16



As Figure WR 16 and Table WR 34 indicate 33% of the base industry employment in Dolores County is in agribusiness, followed by households which primarily results from expenditure of outside dollars by retirees and commuters who work outside of Dolores County. Tourism accounts for 15% of base industry employment which is primarily second home construction and resorts. Dolores County’s agricultural base is on the mesas in the West part of the County, while the second home/resort component of the economy is in the mountainous eastern part of the County.

Table WR-34
Dolores County 2002 Employment and Income Summary
by Base Industry Group

Basic Industry Groups	Jobs	% of Basic	Income (\$000)	% of Basic	Average Wage
Agribusiness	289	32.2	\$5,506	23.7	\$19,041
Agricultural Production	221	24.7	\$3,081	13.3	\$13,916
Agricultural Processing	46	5.1	\$1,851	8.0	\$40,451
Agricultural Inputs	22	2.5	\$573	2.5	\$26,106
Mining	18	2.0	\$1,047	4.5	\$57,814
Manufacturing	8	0.9	\$234	1.0	\$29,202
Regional Center / National Services	32	3.6	\$1,446	6.2	\$44,627
Communications	0	0.0	\$0	0.0	
Construction	25	2.8	\$679	2.9	
Finance, Insurance and Real Estate	0	0.0	\$0	0.0	
Trade and Transportation	0	0.0	\$68	0.3	
Professional and Business Services	7	0.8	\$699	3.0	
Private Education and Health Services	0	0.0	\$0	0.0	
Tourism	133	14.8	\$1,521	6.6	\$11,448
Resorts	32	3.6	\$757	3.3	
Second Homes	93	10.3	\$503	2.2	
Tourist Services	5	0.6	\$233	1.0	
Tourism Transportation	2	0.3	\$28	0.1	
Government	54	6.0	\$1,239	5.3	\$22,893
Indirect: unassigned	145	16.2	\$4,189	18.1	\$28,798
Investment Construction	0	0.0	\$0	0.0	
Households	200	22.3	\$7,316	31.5	\$36,528
Retirees	114	12.7	\$4,174	18.0	
Commuters	37	4.1	\$1,336	5.8	
Households with public assistance income (excluding retirees)	24	2.6	\$861	3.7	
Households with dividends, interest and rental income (excluding retirees)	26	2.9	\$945	4.1	
Total Basic	897	100	\$23,193	100	\$25,854
Worker Local Res. Services	33		\$1,217		
Total All Industries	930		\$27,460		\$25,854
Total Personal Income			\$45,314		
Ratio: Total / Basic	1.04		1.18		

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/leifa1.cfm>

Tourism and Amenity Migration Driven Employment in Dolores County

When the base industry tourism employment is broken out as in Figure WR-17, 70% of the jobs are supported by second home construction, and 24% are supported by resorts and hotels. This activity is primarily in the eastern part of Dolores County on the West Fork of the Dolores River and its tributaries. These resort developments and second homes are geared to seclusion, and limited clientele, for example the redevelopment of the Dunton Hot Springs into an exclusive rustic resort. The value placed on seclusion is reflected in the fact that West Fork residents fought and stopped completion of the paving of the West Fork Road and the return of allocated funds to the Federal Treasury.

Figure WR-17

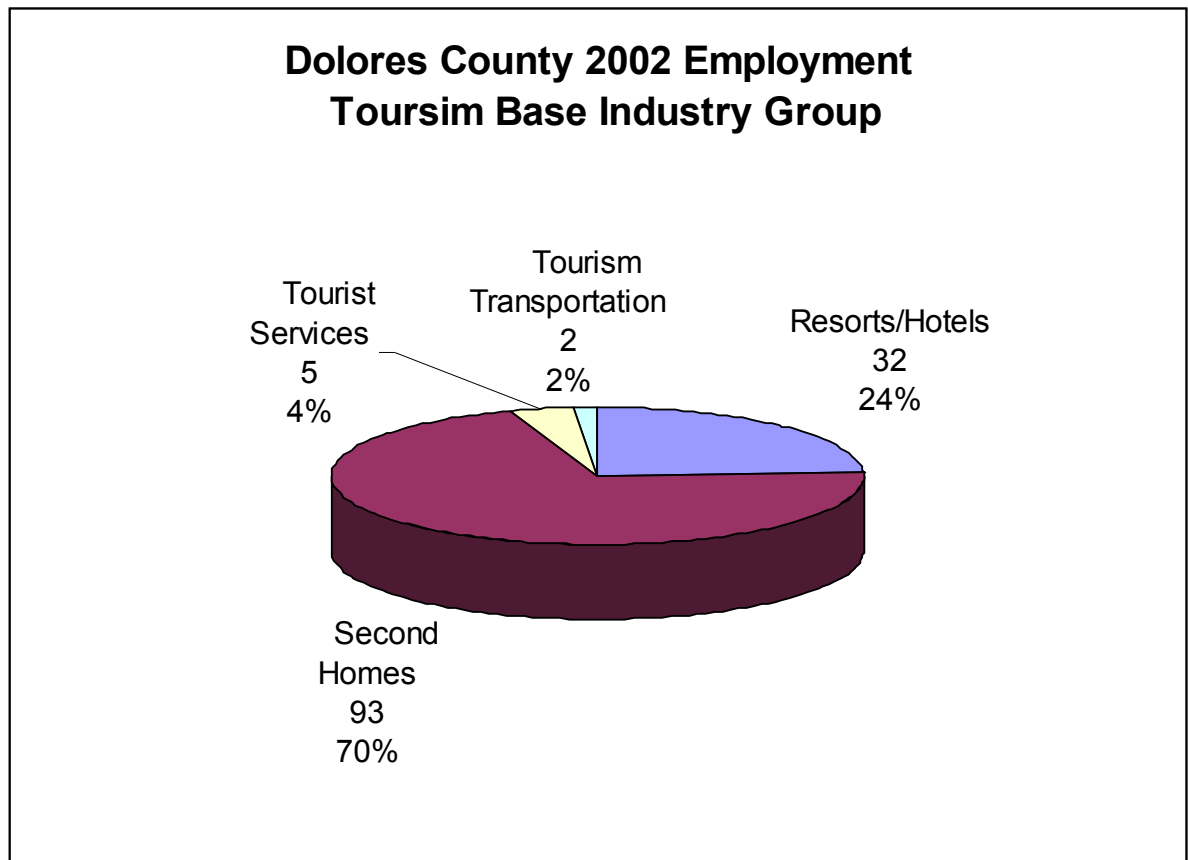
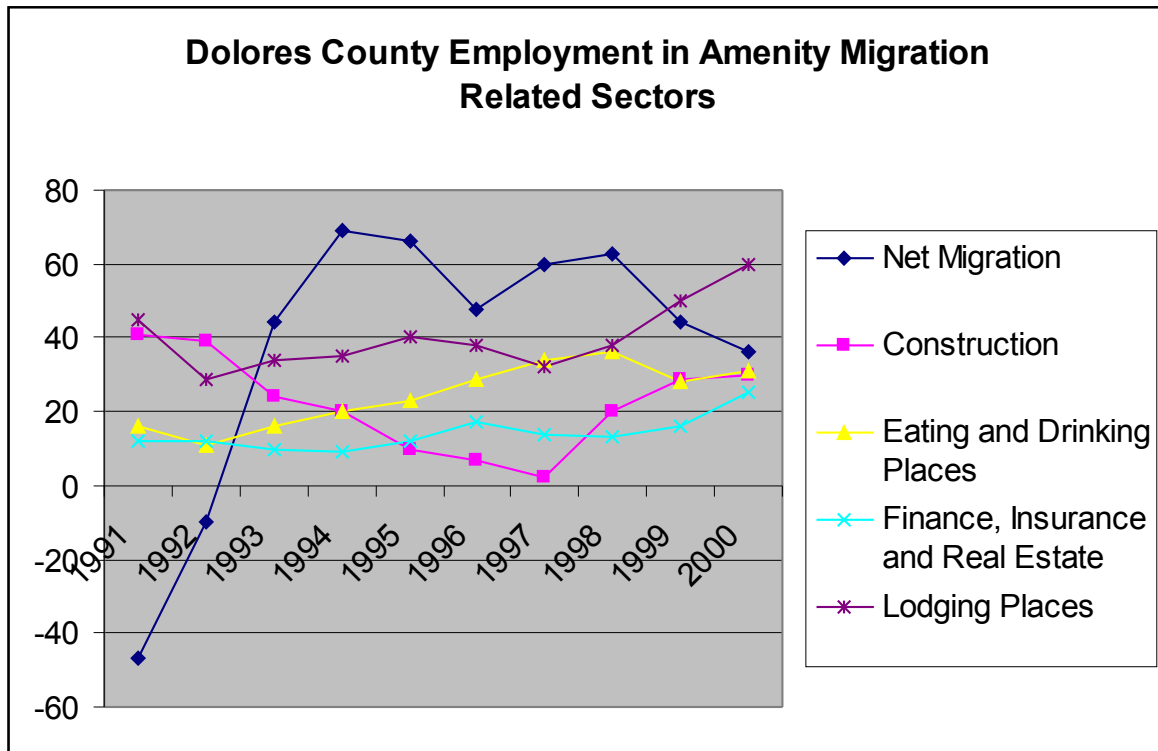


Figure WR-18



As Figure WR-18 indicates, net migration went from negative 40 in 1991 to the 40-60+ range in the period from 1994 on. This growth involves the gradual subdivision and residential development on the mesas in Western Dolores County encouraged in part by to provision of rural water to areas where water hauling had previously been required. This was coupled with higher end development in the West Fork area which again is reflected in a growing number of jobs in the lodging sector which includes resorts.

**Table WR-35
Dolores County Employment by Major SIC Category 1991-2000**

Economic Sector	1991	2000	Increase 91-2000	% Change 91-00	% Total 2000
Population	1,437	1,844	407	28%	
Total Employment	735	784	49	7%	100%
Agriculture	197	259	62	31%	33%
Mining and Extractive Industries	21	37	16	76%	5%
Construction	41	30	-11	-27%	4%
Manufacturing	0	8	8		1%
Transportation Communications Utilities	133	28	-105	-79%	4%
Wholesale and Retail Trade	106	133	27	25%	17%
Finance, Insurance and Real Estate	12	25	13	108%	3%
Services	45	60	15	33%	8%
Government	180	204	24	13%	26%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

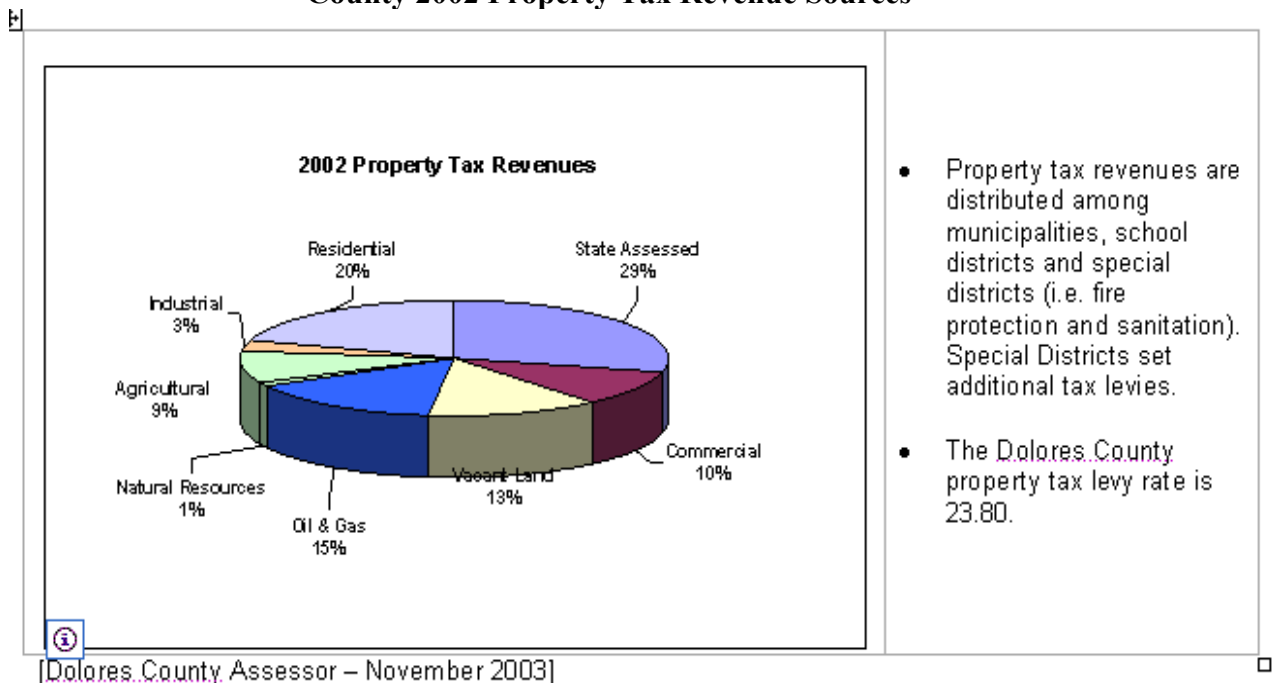
As WR-35 indicates, overall employment growth in Dolores County was only 7% as compared to population growth of 28%. This is most likely an indication that population growth involved primarily people that were retired or living in Dolores County and working in another County.

The largest growth in the number of jobs was Agriculture which added 62 jobs (31% growth). There was growth of 27 jobs in Wholesale and Retail Trade (half which were in Eating and Drinking Places), 24 jobs in government (10 Federal and 15 Local). The 108% growth rate in the Finance, Insurance and Real Estate reflects opportunities in these sectors to serve the new migrants.

Other sectors that showed job growth were Mining and Extractive Industries (16 jobs or 76%) most likely due to continued CO2 production and resumption of natural gas drilling, and an increase of 15 jobs (33%) in the services sector.

As figure WR-18 below indicates, Dolores County's dependence on oil and gas property is only 15%, a good deal lower than Montezuma or La Plata County.

Figure WR-18
County 2002 Property Tax Revenue Sources



Source: Region 9 Comprehensive Economic Development Strategy, March 2004

Dolores County: Agricultural Products and Services

Table WR-30 shows 12% growth in agricultural employment between 1991 and 2000.

Table WR-30
Dolores County Agricultural Employment Trends Comparing 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total
Agriculture	197	259	62	32%	100%

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/empgcod1.cfm>

In 2001 the Region 9 Economic Development District worked with the Colorado Demographer to assemble a more complete picture of the contribution of agriculture which is presented in Table WR-31 below, which in addition to crops and livestock jobs (225) includes farm services (33) landscaping (9 jobs), 11 warehousing jobs and 14 agricultural processing jobs. This brings total agribusiness employment to 300 jobs.

Table WR-31
Dolores County Agribusiness Components 2001

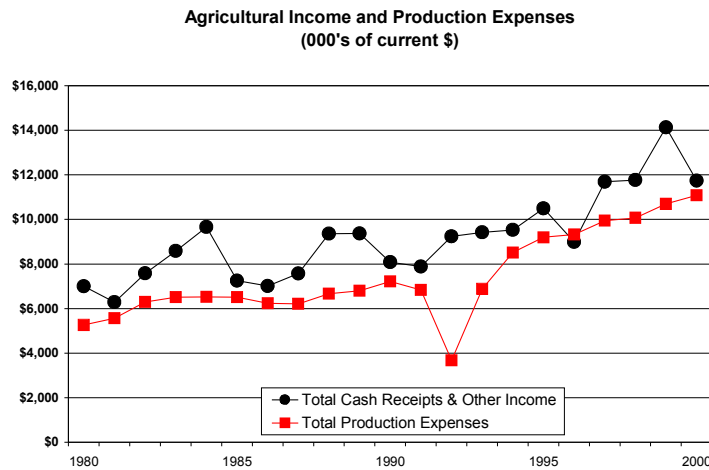
Agribusiness 2001	Employment	Income
Crops and Livestock	225	\$ 1,021
Farm Services	33	\$ 473
Landscaping	9	\$ 79
Motor Freight and Warehousing	11	\$ 2,095
Wholesale Trade - Agricultural Inputs	7	\$ 266
Wholesale Trade - Agricultural Processing	14	\$ 464
Finance	1	\$ 22
Total	300	\$ 4,420

Income is in \$000

- Efforts are being made to refine our view of the contributions of agriculture to the local economy by looking at jobs in other sectors that support, or are supported by, agriculture. This is known as agribusiness.
- There are un-quantified benefits from agriculture such as open space, wildlife habitat, the attractiveness of a rural landscape, and lower service costs to county government from land remaining in agricultural production.

Figure W-R 19 below tracks agricultural income and production expenses over a 20 year period between 1980 and 2000. With the exception of a drought period during the mid-1990s Dolores County showed net positive income over this entire period. This is in sharp contrast to Montezuma and Archuleta Counties which showed negative net income during much of the late 1990s. A significant factor in this growth in income is the added production under irrigation from the Dolores Project in what had previously been a non-irrigated agricultural economy.

Figure WR-19
Dolores County Agricultural Income and Expenses: 1980-2000



- Dolores is the only county in Region 9 that has consistently shown positive net agricultural income since 1980 (96' was a bad year)
- There is often a very slim margin between production expenses and income, in 2000 this was only \$655,000 in Dolores County.
- Much of the \$11.4 million in production expenses is spent locally.
- A full picture of the Dolores County agricultural economy would need to include NW Montezuma County.

[BEA Farm Data Report 2000]

Source: Region 9 Comprehensive Economic Development Strategy, Update 2003

Figure WR-32 indicates a sharp decrease in Motor Freight and Warehousing. This is a reflection of most of the major wheat and dry bean warehouses and cleaning facilities going out of business. As indicated above, the decline in wheat and bean production and processing has been made up for by increased production under irrigation, particularly alfalfa and other hay products.

Table WR-32
Dolores County Employment in Transportation Sectors 1991-2000

Economic Sector	1991	2000	Increase 99-2000	% Change 91-00	% Total 2000
Transportation, Communications and Utilities	133	28	-105	-79%	100%
Motor Freight and Warehousing	129	23	-106	-82%	82%

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

Dolores County Government Employment

Dolores County also bucked the regional trend in government employment with an increase in federal employment and a minor decrease in state employment.

Table WR-33
Dolores County Employment Trends: Government

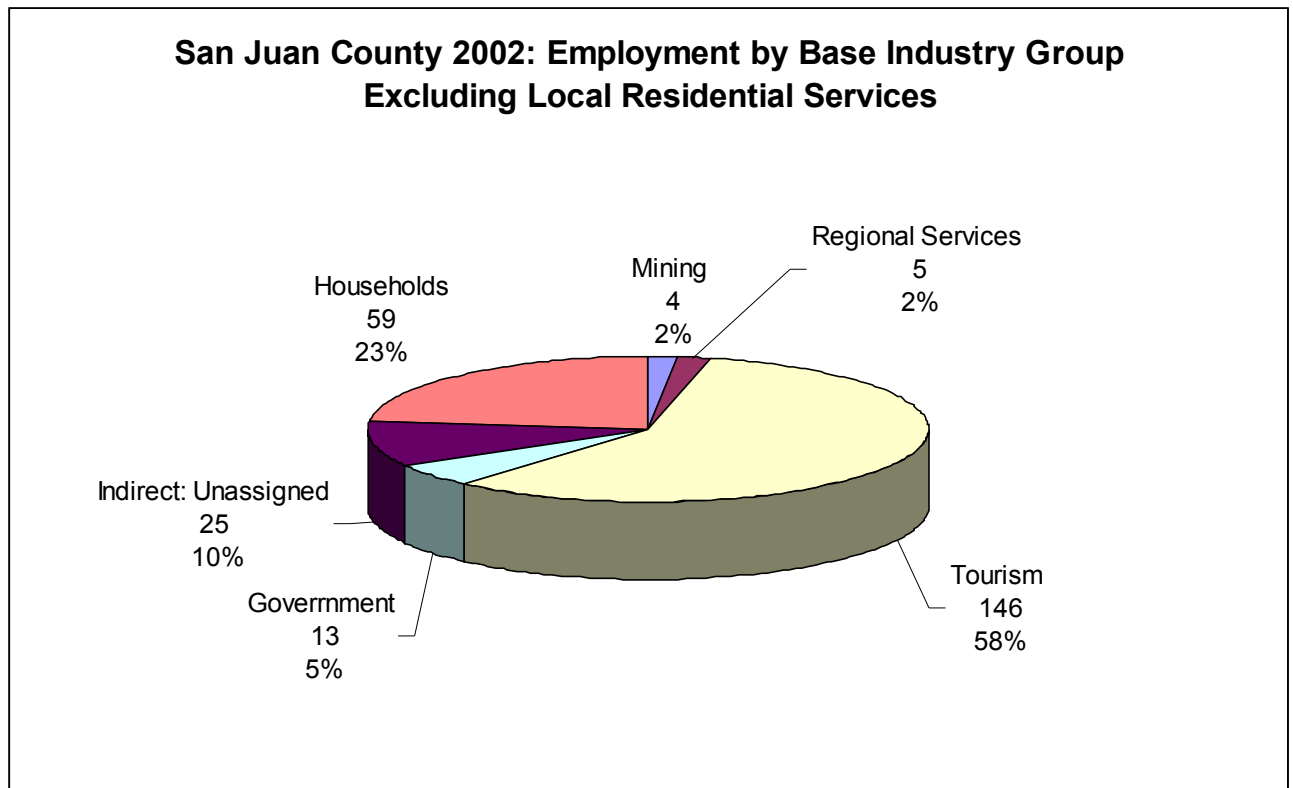
Economic Sector	1991	2000	Increase 99-2000	% Change 91-2000	% Total 2000
Government	180	204	24	13%	100%
Federal Government, Civilian	10	21	11	110%	10%
Military	6	6	0	0%	3%
State Government	8	6	-2	-25%	3%
Local Government	156	171	15	10%	84%

Colo. Demography Section Website <http://www.dola.state.co.us/Demog/Economy.htm>

San Juan County Base Industry and Trend Analysis

The Economic Base Analysis looks at each SIC sector to determine which sectors, and what proportion of each sector are exports. Base industries include both traditional exported products (e.g. crops and cattle) as well industries that have an “export effect” in that they bring new dollars into the local economy (e.g. tourism, regional trade, social security payments to retirees). These export sectors are clustered into a set of “Base Industry Groups.” The “San Juan County 2002 Employment and Income Summary by Base Industry Group” appears as Table WR-34 on the next page. Figure WR-21 below presents employment by Base Industry Group.

Figure WR-21



As Figure WR 21 and WR 34 indicate 58% of the direct base employment in San Juan County is in the Tourism sector with another 23% in Households, representing primarily funds coming in to retirees, i.e. over 70% of base industry employment in the San Juan County economy come from tourism and retirees.

Table WR 34
San Juan County 2002 Employment and Income Summary
by Base Industry Group

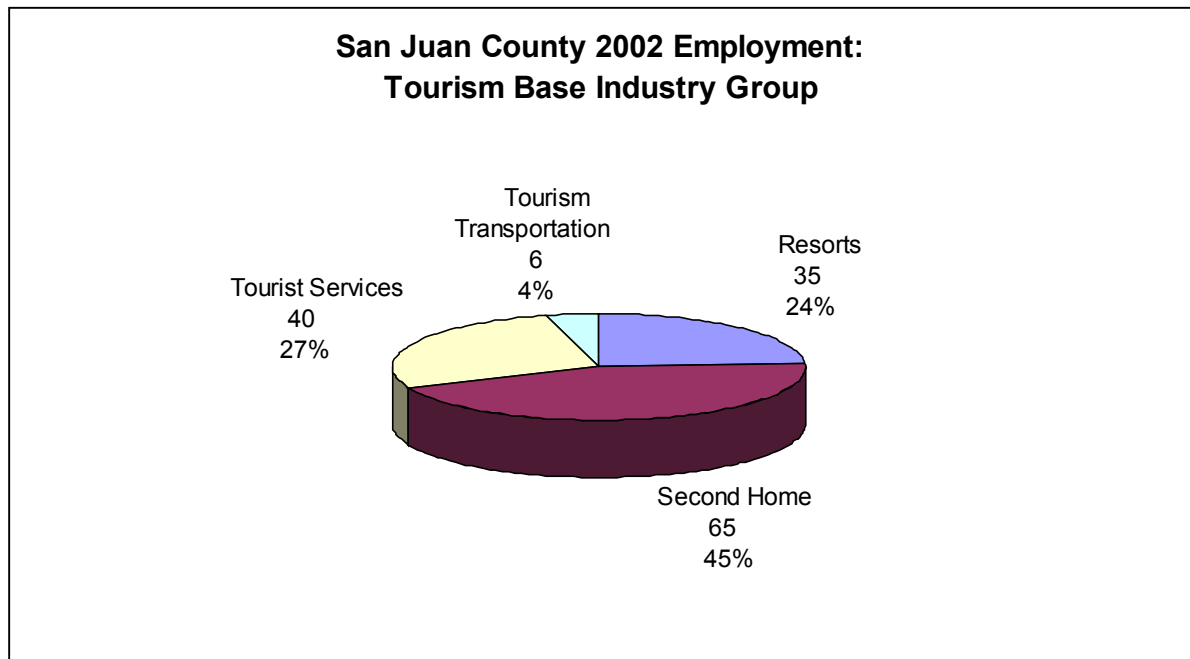
Basic Industry Groups	Jobs	% of Basic	Income (\$000)	% of Basic	Average Wage
Agribusiness	0	0	\$10.05	0.14	
Agricultural Production	0	0	\$0.00	0	
Agricultural Processing	0	0	\$9.00	0.12	
Agricultural Inputs	0	0	\$1.05	0.01	
Mining	4	1.72	\$133.61	1.85	
Manufacturing	0	0	\$0.00	0	
Regional Center / National Services	5	1.98	\$234.13	3.23	
Communications	0	0	\$0.00	0	
Construction	5	1.83	\$227.60	3.14	
Finance, Insurance and Real Estate	0	0.15	\$6.03	0.08	
Trade and Transportation	0	0	\$0.00	0	
Professional and Business Services	0	0	\$0.50	0.01	
Private Education and Health Services	0	0	\$0.00	0	
Tourism	146	57.18	\$3,761.97	51.97	
Resorts	35	13.69	\$914.32	12.63	
Second Homes	65	25.4	\$1,766.90	24.41	
Tourist Services	40	15.77	\$919.36	12.7	
Tourism Transportation	6	2.31	\$161.39	2.23	
Government	13	5.08	\$468.06	6.47	
Indirect: unassigned	25	9.83	\$860.45	11.89	
Investment Construction	0	0	\$0.00	0	
Households	59	23	\$1,614.48	22.3	
Retirees	44	17.1	\$1,200.48	16.58	
Commuters	-9	-3.42	(\$239.82)	-3.31	
Households with public assistance income (excluding retirees)	11	4.18	\$293.39	4.05	
Households with dividends, interest and rental income (excluding retirees)	13	5.13	\$360.44	4.98	
Total Basic	119		\$3,263.94		
Worker Local Res. Services	374		\$9,678.03		
Total All Industries			\$15,115.57		
Total Personal Income	1.46		1.34		
Ratio: Total / Basic					

Source: Colorado Demography Section at <http://dola.colorado.gov/demog/leifa1.cfm>

As indicated in Figure WR 22, 27% of tourism base industry employment is in tourist services reflecting the retail jobs supported by visitors arriving on the train and highway tourists. The 24% of the employment in this sector attributed to Resorts, is reflective of a growing number of Silverton residents that commute to work at Durango Mountain Resort as well as the gradual re-emergence of lodging services in Silverton. The 6 jobs in the Tourism Transportation Sector most like reflects businesses offering motorized tours of the mining road loops around Silverton. This number is probably low, and is growing in the post 2002 period as transportation is being sold into remote winter areas for a from of back country recreation known as “extreme skiing.”

It is noteworthy that 45% of the tourism related employment involves the construction and support of second homes. Since the mines closed for the last time in the early 1990s, many people reside in Silverton on a seasonal basis. Silverton has reached the point where the existing housing stock has been bought up and remodeled and new construction is occurring, both in town and on some of the many patented mining claims in and around Silverton. Property values have been steadily rising and the second home trend, which has been primarily for summer use, will likely accelerate and get some additional stimulus as Silverton continues to develop winter recreation options.

Figure WR-22



San Juan County Employment Trends

The number of businesses and the number of employees in each of the SIC categories in San Juan County is so limited that data in virtually every category is suppressed to conform with confidentiality rules. This allows for very little quantitative analysis beyond what is presented above in the base industry analysis.

One exception is mining which supported 152 jobs in 1991 and 0 jobs in 2000. These figures are a key element in the transformation that Silverton has been undergoing since the early 1990s. Prior to the closure of the last of the mines in the early 1990s, mining jobs provided a year round, high wage employment which in turn provided some measure of stability for local businesses.

Once the mines closed, most businesses became much more reliant on tourism, which was predominately stimulated by the daily arrival of the narrow gauge train from Durango. As a result many businesses close and business owners and their families leave once the train stops running.

From the time of the Sunnyside Mine closing in 1991, there was talk about the potential to create a year round attraction to capitalize on challenging ski opportunities in the Mountains around Silverton. This vision is coming to fruition with the development of Silverton Mountain Ski Area which offers unique and challenging opportunities known as Extreme Skiing. A recent decision on the part of the BLM increased the Silverton Mountain capacity from 80 skiers per day to as many as 475, which will eventually support winter employment and business opportunities that could help to expand the











current 600 year round residential population, which is expected to double in the foreseeable future. Another advance is the opening of Kendall Mountain to more localized family skiing which is an amenity for year round family residents. (Durango Herald, July 30, 2005)

In addition to expanded economic opportunities related to skiing, Silverton is developing other opportunities to build on its mining heritage and high altitude setting. Silverton has long been the home of an avalanche school. Efforts to position Silverton as a center for mine reclamation and high altitude ecological studies resulted in the formation of the Mountain Studies Institute (MSI), a non-profit corporation focused on research and education in high altitude physical and social ecology. Silverton has also established an annual music festival which is drawing increasing numbers each summer.

As San Juan County gradually builds diversity back in to its economy the role of construction and second home development (described above in the base analysis) has become an increasingly important economic driver. One concern that arises from this trend is the impact of escalating housing costs for the working Silverton residents that have held on through thick and thin. Property values have been rising steadily based on these trends. One indicator of increasing housing costs is that assessed valuation in San Juan County increased from \$28.6 million in 2003 to \$40.5 million in July of 2005, an increase of over 40% increase in two years. To begin meeting the affordable housing challenge, Colorado Housing Inc. plans to add 6 houses and 24 affordable apartments to the existing 12 self-help housing units on Green Street. An additional 20 acres on Highway 550 has been purchased for workforce housing. ("Silverton Turns the Corner" Durango Herald, July 30, 2005).

Another major accomplishment on the part of the community is the historic renovation of the Town Hall after it was gutted by fire. The renovation of the Town Hall, is reflective of the resilience of the Silverton community. Silverton's economic future is geared to applying this resilience to making a virtue of its high altitude setting and heritage. Even the closure of the mines has leveraged active water restoration efforts as well as active participation in regional efforts to preserve and in some cases acquire historic mining sites, accessible by the road infrastructure developed during the mining era. This combination of high altitude recreation and mining heritage provide an expanded foundation for San Juan County's economic future.

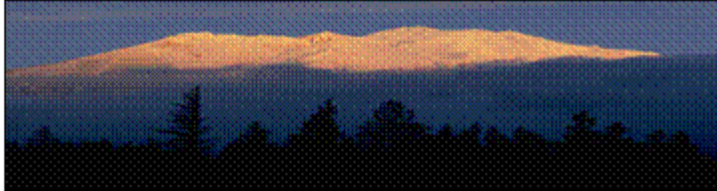
San Juan Plan Revision Applications: Work Routines

-   Virtually every sector of the economy in Southwest Colorado is in some way involves the public lands as a source of raw materials, water, scenery, recreational opportunities and the enjoyment of nature and solitude.
-   The economic analysis presented under the Work Routines descriptor reinforces the critical dynamic between renewable and non-renewable commodity uses, the exponential expansion of recreational uses, and the continuing evolution of economic activity related to tourism and amenity migration.
-   As Community Study Groups have worked their way across all of the landscapes on each of the three districts this dynamic has been expressed in the placement and articulation of uses, outstanding features, concerns and opportunities. The same dynamic is obvious in reviewing the desired future statements produced by each Study Group.
-   Traditional users don't want to be crowded out of the public lands and the viability of their livelihood. Recreational users don't want to see the outstanding features that draw them to the public lands degraded.
-   It is not a simple matter of expanding recreational uses, and amenity based economies prevailing over traditional uses.

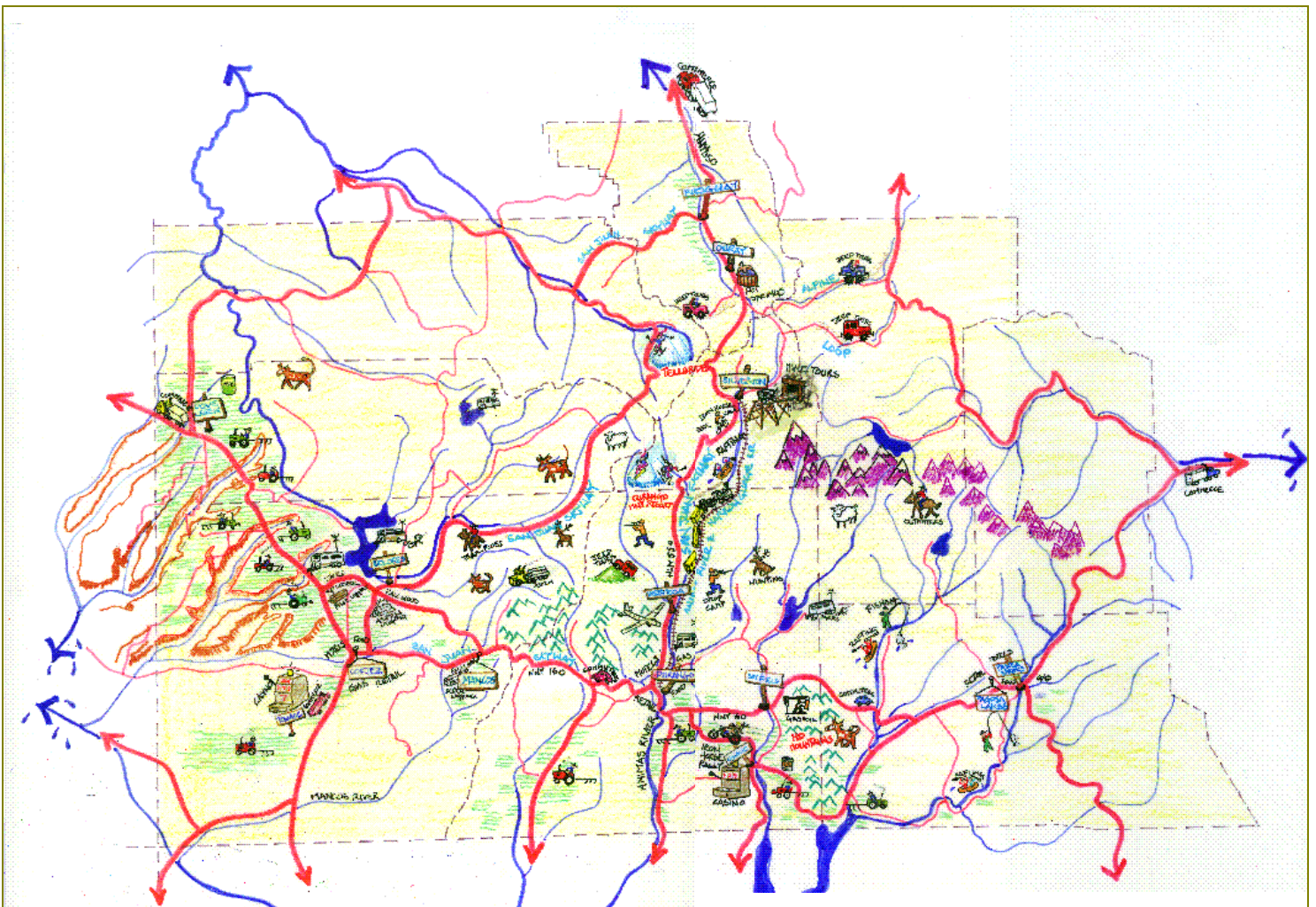
- ⌚👉 There is recognition that the remaining “timber operators” have an important role to play in the widely agreed upon need for forest restoration, forest health, and fire hazard reduction, and that the economic viability of these businesses is a concern.
- 📁👉 There is recognition that the viability of the remaining ranches is a critical component in the privately owned open spaces, wildlife habitat, and riparian corridors, and that the loss of ranches hastens the fragmentation and development of the sensitive lands within and adjacent to the public land boundary.
- 🖱️👉 There is recognition that much of the infrastructure that is being used and adapted by recreational and wildlife populations such as roads, trails and ponds were originally developed and in many cases continue to be maintained by traditional commodity users.
- 📺👉 There is recognition that recreation itself can become an extractive industry with substantial impacts on the natural landscape and many challenges with regard to the stability of businesses and recreation based jobs.
- 📁👉 While there appears to be acceptance of continued commodity uses predicated on continued improvement in stewardship practices, oil and gas development tends to be much more controversial. While the contribution of oil and gas to the local tax base is generally understood, there is a great deal of controversy on the Columbine District/La Plata HRU where coal bed methane is impacting privately owned land, and the execution of large scale leases in valued areas such as the HDs landscape have generated substantial and persistent opposition.
- 📁👉 On the Dolores District/Montelores HRU CO2 development generates minimal controversy as it is mostly on public land and private surface owners are receiving royalties. However, on the BLM lands to the north drilling in areas such as Dry Creek Basin are prompting concern with regard to the wildlife habitat, grazing, and solitude that characterize the use of these areas. There is also concern about the possibility of renewed uranium mining.
- 📁👉 While recreational conflicts will be discussed under the Recreational Activities Cultural Descriptor, an economic dimension of this issue has to do with the relative priorities placed on commercial and non-commercial recreation.
- 📁👉 Virtually all of the economic uses in the region, on an off public lands, in Southwest Colorado depend on water which in turn depends on the health of the watersheds which originate on the Public Lands.
- 📁👉 While the public land agencies employ a significant number of people the demands on these agencies are increasing at a time when budgets are static or declining. For the public land agencies to do more with less, communities will need to provide stewardship functions that have historically been performed by the agencies. The agencies will need to target their resources to maximize the effectiveness of voluntary contributions.
- 📁👉 Agency/community relations will need to be driven by collaboration and cooperation to avoid wasting precious resources in conflict.



Cultural Descriptor



Recreation



Cultural Descriptor: Recreational Activities

A recreational activity is a predictable way in which people spend their leisure time. Recreational opportunities available, seasonality of activities, technologies involved and money and time required are aspects of the recreational descriptor. The frequency of local/non local uses . . . the preferences of local/non local users, and the location of the activities are also included.

Trends in Recreational Activities and Technologies

The recreational activities that the geography of the San Juan and Dolores River Basins support are fundamental to the evolution of the local economy, work routines and settlement patterns in the region. There is a long history of traditional recreational activities including hunting, fishing, camping, hiking, horseback riding and driving. The 1960s saw changes in recreational technology (innovations in backpacking, skiing and climbing equipment) and land designations (the Wilderness Act) that facilitated new forms of “back-country recreation”. The 1970s, 80s and 90s saw a steady increase in the in the types and sophistication of mechanized and motorized recreational technologies such as RVs, mountain bikes, water craft, four-wheelers, snowmobiles, and other off-road vehicles.

Downhill Skiing: Downhill skiing has also undergone major transformation and development. There are three major categories of ski areas in Southwest Colorado: local (e.g. Hesperus, Chapman Hill, and Kendall Mountain), commercial without a resort component (Wolf Creek Ski Area), and ski area/resort complex (Durango Mountain Resort). Silverton Mountain represents a fourth category known as “Extreme Skiing” which involves challenging high speed skiing in remote backcountry areas.

Socially, local ski hills provide access to skiing that is convenient and affordable for all segments of the community. Strong cultural attachments can develop to these areas by people who “grew up learning to ski there.” People struggled for years to try and keep Stoner Ski Area operating, but were unable to generate enough revenue to meet ski lift safety standards. Wolf Creek Ski Area is commercially viable as a free standing ski area with secondary benefits accruing to Pagosa Springs. Recently Wolf Creek is the subject of ambitious and controversial plans for large scale adjacent resort development.

The social issues raised by the evolution of Durango Mountain Resort are related to the perception that it is a social and commercial enclave, and the effects of this emerging reality will have on Durango. Long range plans to develop much more extensive resort and residential facilities on the La Plata County/ San Juan County line raise land use, visual, environmental and affordable housing issues that have been the subject of intense community engagement. There is also concern about large scale resort development encroaching on public access to popular public land recreation areas. The proposed development adjacent to Wolf Creek Ski Area raises similar issues (See Settlement Patterns, Key Trends and Issues in La Plata County, Resort Development)

Competition Resulting from Growth in Diversity/Volume of Recreations Use: The ski industry in Southwest Colorado is an indicator of larger changes in the spectrum of evolution of traditional outdoor recreation, overlaid by tourism development, overlaid by destination resort development, overlaid by large scale amenity migration. All of these stages in the evolution in recreational use persist on the social and physical landscape. The dramatic increase in the types of recreational activities and technologies, combined with exponential increases in the volume of recreation on public lands present wide-ranging social, economic and land use challenges for public land managers and local communities. In addition to competition among the growing number recreation users for

the use of public lands, additional challenges arise in integrating recreational uses and values with traditional natural resource economies.

Dispersed Recreation Challenges:

Recreational activities that are highly concentrated (such as ski areas) and/or commercially organized (such as outfitter guides) and/or occur in specified locations (such as campgrounds) can be managed by the San Juan Public Lands Center through various forms of permitting. While working through these management structures can be difficult, addressing issues related to seemingly unstructured “dispersed recreation” present an ever-increasing challenge. Dispersed recreation is initiated by the user and can be pursued virtually anywhere on the public landscape subject to a fairly loose framework of signs, maps and posted instructions and/or restrictions.

Descriptive Analysis of Recreational Activities

This descriptive analysis begins with a look at the economic dynamics surrounding recreation on public lands by revisiting some of the economic inputs related to recreation. A cataloguing of recreation lifestyles follows that highlights some of the different ways that people have integrated public lands recreation into their lifestyles and priorities.

Recent interviewing efforts and the 2005 Community Study Groups yielded a solid base of information regarding the activities and nature of organized recreation groups. These groups are a key component of the recreation community and to help land managers employ these groups effectively, this assessment provides some insights into the key functions of local recreation groups.

Land managers agree that user stewardship is key to a successful future on public lands, so recreation related stewardship efforts are summarized as well as future opportunities for stewardship from the perspective of local recreationists (2004 Recreation Interviews, 2005 Community Study Groups).

Each District in the San Juan Forest has unique characteristics and the qualitative character analysis near the end of this chapter provides some basic insights about fundamental strengths and differences. Playing on the strengths of each district will contribute to the success and efficiency of Forest management.

Finally, a list of the major recreation issues garnered from 2 years of interviews and Community Study Groups is provided to focus planning efforts.

Recreation on Public Lands and Regional Commerce

Outdoor Recreation Industry: The outdoor recreation industry has gained momentum in recent years. While tourists compose the majority of the market for guided outdoor recreation on public lands, skiing and the outdoor equipment industry are also fueled by local dollars. These industries are important to the regional economy and the fiscal well-being of the sales tax dependent local governments. In addition to providing raw economic input, the outdoor recreation industry allows some entrepreneurs and their employees to have a clear connection between the land and their livelihoods.

One hunting and pack trip owner/operator summed his appreciation of his profession as follows:

“I have a job for myself, my wife, and my kids where we can stay healthy and live well in the mountains all summer and fall.”

During the 2004 recreation interviews, an owner of a local motor sports retail store said

“I have to be the happiest man alive; my passion is my work and my work is my passion. I have fun myself and make a living facilitating other people’s fun.”

Skiing: The Silverton Mountain, Durango Mountain Resort, and Wolf Creek Ski Areas are big employers in this region. In winter 2003 Skiing (actual ski area operations and mountain related services) accounted for 3.4% of the total winter employment in La Plata County, ranking as the number one private sector job provider.

Skiing is not only a major industry offering jobs and fueling local businesses during otherwise lean winter months, but it is an important amenity to locals. For many families, a day or vacation trip to a ski area provides a chance to enjoy spending time together, an increasingly scarce opportunity given the increasingly rapid pace of family life. Skiing at a ski area can be an important introduction to the mountains for children. Going skiing in a ski town is somewhat equivalent to going golfing in other regions in that it offers an informal setting to visit with friends, colleagues, and clients.

Backdrop for developed, organized outdoor recreation: People play golf everywhere in the U.S., but golf with a view of the San Juans carries extra appeal because the courses have outstanding views of the mountains. The importance of public land as a back-drop to developed recreation is nicely encapsulated by the following excerpt from a local golf course’s marketing materials:

“Anyone can offer you a golf course. [This] golf club offers you the most scenic and rewarding nines you’ve ever played. Each nine is thoughtfully integrated into its environment ...”

Tourism: Outdoor recreation including skiing accounted for 31% of all travel into Colorado, including business travel¹, so it is clear that public lands play a major role in attracting tourist dollars.

According to the 2003 report entitled *America’s Scenic Byways, The Colorado Report*², the total vehicle miles traveled on the San Juan Skyway increased from around 700,000 daily vehicle miles traveled in 1990 to over 1.2 million daily vehicle miles traveled in 2002, a near doubling of traffic. The same report concludes that 54% of all travelers on the Skyway are traveling the highways just to drive the Skyway with no particular destination. While similar statistics are not available for other sections of scenic highway not designated as a Scenic Byway, like Wolf Creek Pass, these stretches of highway are experiencing the same surge in scenic driving. The survey found that “sightseeing” was the most common primary reason for driving the Skyway.

The San Juans fuel the tourist economy regardless of whether visitors actively engage in Forest recreation. For many, proximity and views are enough of a draw to bring them to our Towns to spend their vacation dollars.

Public Lands and Image Marketing

Most communities in the U.S. have some form of recreation that contributes to their identity:

- Minneapolis is a die-hard hockey town.
- Oceanside, CA is a quintessential surf town.
- Moab, UT and Fruita, CO have both become mountain biking destinations.

¹ Colorado Visitors Study 2003, Longwoods International <http://www.state.co.us/oed/visitorstudy/Market.html>

² <http://www.santafetrailsenicandhistoricbyway.org/corcontents.html>

Just as the economy and history of a place forms the image of a place, so do recreational activities. Colorado as a whole attracts visitors with its image as a place for adventure and recreation. The 2003 Colorado Visitor Study by Longwoods International concludes that 70% of prospective visitors to Colorado agree that it is an exciting place and nearly 2 out of 3 say that Colorado has great recreation [See Figure RA-2].

Pull-Factor for Migration

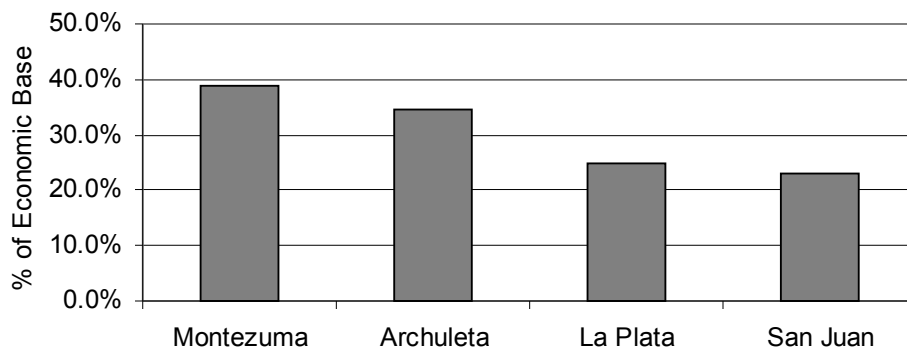
Many of the same attributes that attract people to visit the San Juans prompts some to move here altogether or to buy a vacation home.

As discussed in the *Work Routines* section of this document, vacation homes or second homes act are an economic driver, fueling regional economies with outside dollars both while they are built (construction, development, real estate, finance) and after they are built (maintenance, local spending of occupants).

Some migrate full time either as retirees or with the intent of earning income in Southwest Colorado. These permanent residents often funnel money into the community through their mailboxes by spending retirement savings, investment dividends, and other wealth accumulated previous to moving to Southwest Colorado. This spending contributes significantly to the base economy in view of the fact that the 3 most populated counties encompassed by the San Juan Forest and BLM lands are at least 25% fueled by income originating from households [See Figure RA-1]. The Colorado Demography Section's base economic analyses title this basic income as "Households" which should not be confused with Household Income as used by the Bureau of Economic Analysis and the U.S. Census Bureau.

Figure RA-1

% of Economic Base from Households

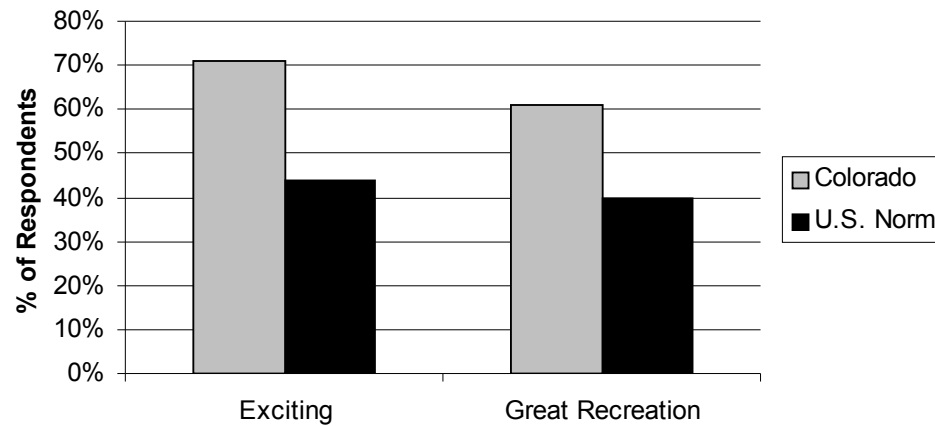


Realtors long ago recognized the importance of public lands in people's decision to move and buy property and often market properties directly with appeal to public lands. This quote from a San Juan region realtor's home page actually sites the acreage of the San Juan National Forest with specific reference to wilderness areas:

"Serene beauty, majestic mountain views and clean, sweet air. This is Pagosa Springs, Colorado. Pagosa Springs is a quaint Southwest Colorado mountain community surrounded by 3 million acres of National Forest and Wilderness.."

Figure RA-2

Visitor Perceptions of Colorado



Public Lands Recreation and Local Lifestyles:

The prior section *Recreation on Public Lands and Regional Commerce* describes a range of economic influences that San Juan public lands have upon the region, including the opening of relatively new markets (e.g. second homes, retirees, amenity migrants). This section qualitatively describes the way that recreation on public lands interfaces with everyday life in the San Juans.

In the same way that stories of adventure on the open seas dominate dinner table and beer hall conversation in a port town, adventure and natural events in the mountains and desert provide Southwestern Colorado residents and visitors an endless variety of topics for discussion. The appeal of outdoor adventure is contagious, and even those who do not recreate on the forest themselves are drawn into the excitement and interest surrounding the experience of others.

As cited above in Figure RA-2, over 2/3 of a random sample of prospective visitors to Colorado view it as an “Exciting” place. This excitement is real, and recreationists are mining this excitement and adventure out of the San Juans everyday of the week, 4 seasons out of the year. Nearly all residents identify themselves with some element of this excitement and adventure surrounding recreation on Public Lands.

There are many different ways that people interface public lands with their lifestyles in Southwest Colorado. Regardless of the intensity or frequency of participation in recreation on public lands, the importance of identifying the mountains or the desert with life in Southwest Colorado is almost universal. The Recreation Lifestyle Typology summarized in Matrix RA-1 lists some of the most common recreation lifestyles. The 2004 Forest-Wide Recreation Interviews are the data foundation for this typology.

Matrix RA-1 San Juan Recreation Lifestyle Typology

Recreation Lifestyle	Description
People who live to play	Whether they have lived in Southwest CO for decades or moved here recently, many people organize their lives and their resources to make recreating on public lands their #1 priority. Although this is not always the case, this hearty and generally young crowd tends to simplify their working and domestic lives to leave time, energy, and money to recreate in the mountains and desert. Many of these people work in the outdoor services and sales industry.
Outdoor Entrepreneurs	Public lands are an amazing catalyst for entrepreneurial efforts. In most towns in the San Juan region, there is an identifiable core community of recreation enthusiasts who have learned how to make a living by providing recreation services to visitors and selling vehicles, equipment, maps, and guides to locals and visitors alike. Even restaurants like The Explorers Club in Silverton have defined their business around outdoor recreation.
Weekenders	Weekenders are by far the most commonly encountered folks on the back-roads and trails of the San Juans and the desert. Some weekenders camp, but most local weekenders prefer day trips. Activities span the gamete from paragliding to gold panning. This group values the contrast to the hectic nature of working life.
Fitness people	For some, public lands are the ideal setting for a workout. Most people in the fitness crowd recreate in the most convenient locations that offer the right conditions for their fitness activities. The majority of fitness recreation happens near population centers and major roads.
Western lifestyle recreationists	People who take their own horses or other pack animals on public land have committed to a unique lifestyle. Keeping livestock requires land and a significant time investment. For western lifestyle recreationists, taking livestock into the mountains is part of a larger lifestyle to which they have committed. "Horse properties" are highly marketable on the Southwest CO real estate scene. This lifestyle embodies the deep historic connection of agricultural roots and public lands.
Sunday drivers	The vast majority of people driving Missionary Ridge, Boggy Draw, or First Fork roads on a Saturday or Sunday are likely on a family outing. This set of recreationists does not purchase thousands of dollars worth of specialized gear or engage in advanced planning. They want a simple outing into the forest with family and friends and have uncomplicated expectations relative to most enthusiasts.
Conservation-minded recreationists	This set of recreationists tends to be less focused on a particular activity (mountain biking, skiing, etc.) and more focused on conservation ethics. Their presence in public discourse is probably more noticeable than their presence on forest roads or trails. This set is more identified by how they see the forest and desert than by what they do on it.
Armchair recreationists	Some people identify themselves with and have an interest in a certain type of recreation (e.g. extreme skiing) without spending much time actually doing the activity. For some, the proximity to the place where the activity is happening is enough to identify with the activity and maintain interest in it. Recreation on public lands adds to the excitement and allure of the entire community, including those that do not actually participate.
Mountain and Scenic Desert homeowners	Property buyers pay a premium for mountain and desert vistas, and even more for adjacency to public lands. While these homeowners may or may not actively engage in recreation on public lands, they are clearly inspired by the proximity to recreation possibilities. The potential for developing houses on the patchwork of mining claims throughout the San Juans has just recently come to light and will likely yield somewhat of a high altitude building boom.

Recreation Networks and Information Flow

Organized Recreation Groups

During the 2004 recreation interviews Rural Planning Institute and two other Office of Community Services interviewers contacted and interviewed representatives of all of the functioning outdoor recreation organized groups. The 83 interviews included groups from all three districts spanning the full spectrum of recreational activities on the San Juan.

Even though the groups represent the full diversity of recreational activities, they often serve similar functions to their members and to the recreation community as a whole. Matrix RA-2 summarizes the various functions served by organized recreation groups in the San Juans.

Matrix RA-2 Recreation Group Functions

Recreation Group Functions	Description
Trail/road maintenance	Many local recreation groups maintain trails and/or roads by adopting them through the San Juan Mountains Association
Snow grooming	While snowmobile clubs and cross country ski clubs serve other functions as well, grooming winter trails is generally top priority.
Organizing to ensure future of recreational activities on public lands	One of the functions served by recreation groups is to provide a central source of information regarding the influence of public lands policy and regulations on the type of recreation the group advocates. Groups also take pride in advocating and teaching environmental ethics and user etiquette to promote a good image of their user group.
Organize group activities	Using websites, email, and U.S. mail, several area recreation groups organize multiple events annually. The Seniors Outdoors group in the Durango area has several organized activities per week.
Provide recreation information	Some recreation groups provide specific insights and maps to help their members decide when and where to go recreate, and the level of difficulty that should be expected.
Communication liaison between public lands agencies and forest users	The leadership in area recreation groups tends to keep in touch with key agency contacts and can provide an efficient conduit for communication between land managers and recreationists.

Information Flow

Knowing how information is exchanged is an important component of understanding how to communicate with recreation users. Several insights into the basic flow of information emerged from the 2004 Recreation Interviews and the 2005 Study Groups:

- **Organized recreation groups:** These groups are formed to provide one or more of the functions outlined in Matrix RA-2, which includes providing a range of information concerning where and when to recreate, the difficulty of various routes, Forest Service and BLM policies and activities, and even safety. They also organize events and regular meetings so that members can visit and plan outings.
- **Outdoor sports retail and service establishments:** For many, the first place to go when seeking information about where to recreate in an unfamiliar area are local equipment supply shops. Whether backpacking or snowmobiling, when looking for information, a retailer is a good place to start. The shopkeepers recreate, so they know where to go and are highly accustomed to being asked for information.
- **Public Lands Websites and Offices:** Area recreationists took note of recent improvements in the tracking of road openings and closures on the SJPLC website. Many interviewees (2004 Recreation Interviews) suggested that an improved or interactive online map system would be used widely if developed. Many people go directly to the public lands center, but some interviewees suggested that a downtown kiosk or public presence would be good for visitors (2004 Recreation Interviews).
- **Word of Mouth:** By far, the most pervasive and powerful form of communication is word of mouth among acquaintances. Because recreation is so important to San Juan area residents, and outdoor experiences are common topic of conversation, most people get their ideas about where to go and what to do from other recreationists.
- **Tourist Marketing:** As discussed above, public lands is a big seller for vacation destinations. Local chambers of commerce and even local governments market public lands scenery, attractions, and amenities by website, flyer, and mailing list.
- **Guidebooks and Maps:** Even the most veteran outdoor enthusiasts use guidebooks from time to time. Several map companies have emerged in recent years as well offering trail ratings and other information beyond what a USGS Quad or USFS/BLM Maps offer. Several interviewees (2004 Recreation Interviews) noted specific errors on commercial maps regarding public-private ownership, and allowed uses.
- **Commercial Outfitters:** In some outdoor sports, like river running and hunting, the outfitters who are in the forest day in and day out year after year are an important source of knowledge for other locals and agency staff. Outfitters also introduce new users to the Forest and educate their clients about ethics and etiquette.
- **Directional and Information Signs:** Last but not least, signage is probably the most frequently used mode of communication about public lands. Most people want more signage of all types on the Forest ranging from ethics information and interpretive placards at trailheads to allowed uses signs on routes. A smaller set of interviewees (2004 Study Group) and study group members (2005 Study Groups) prefer no expansion of forest signage and an even more limited group would prefer less signage than is currently on the forest.

Stewardship and Recreation

Public land stewardship is alive and well in Southwestern Colorado and a tremendous amount of enthusiasm and expectations exist for further developing stewardship efforts. This section discusses recreation oriented stewardship today and opportunities for the future.

Existing Recreation Stewardship

Who: Recreation groups are composed of many stewards and facilitate a variety of stewardship activities. Commercial outfitters care a great deal about keeping the forest litter free and keeping the roads and trails in tact, and the river channels open and are important stewards on the Forest. Individuals also contribute by picking up litter, trail repair, and communicating with other users about user etiquette and land ethics. Local governments can also be active stewards, providing access, information, meeting venues, and other resources.

What: Most of the organized stewardship activity is focused on route repair and maintenance, route creation, clean-up, and resource restoration. Local groups like Trails 2000, Back Country Horsemen, Four Corners Trail Riders, Kokopelli Bike Club, Seniors Outdoors, Creepers Jeepers, San Juan Trail Riders and others do summer trail maintenance and many routes and trails have been formally adopted. The San Juan Sledders, Silverton Snowmobile Club, and Wolf Creek Trailblazers have grooming programs, while Pine River Nordic Club and Friends of Chicken Creek groom trails specifically for cross country skiing. Anyone who has participated in a day of trail maintenance knows of the gratification garnered from this tangible public service that keeps volunteers showing up early on Saturday mornings ready to work all day.

Communication and education are an important form of stewardship. Recreation groups, outfitters, and other outdoor oriented businesses generally try to promote good land ethics and user etiquette to their members or customers. One on one or group to group confrontations or communication about land ethics or etiquette are rare and isolated on the Forest. Usually, if an individual disagrees with the way an individual or group is behaving, they quietly resent it but choose to avoid confrontation.

Where: The Dolores and the Columbine seem to have more organized stewardship involvement than the Pagosa District, where outfitters play a significant role in trail maintenance. Most stewardship efforts are aimed at popular, particularly important or desirable routes that are in obvious need of maintenance, but volunteer efforts have created several new routes as well. Even stream clean-up efforts tend to be along travel routes, like Lime Creek. The highest concentration of stewardship efforts are on single track trails near Durango organized by Trails 2000 and in groomed areas during the winter months.

Opportunities for Expanding Stewardship

The 2005 Study Groups and the 2004 Recreation Interviews indicated that the willingness to volunteer far exceeds the organized opportunities to do so. People value their recreation very highly and care deeply about the places they frequent and this motivates them to want to help care for these places. Several ideas for future stewardship emerged in the 2004 Recreation Interviews and 2005 Study Groups:

- Use volunteers to educate users about land ethics and user etiquette.
- As long as there are trails, there will be trail maintenance. Most users recognize that agencies lack resources to maintain all of the trails. This type of stewardship has already resulted in successes, has momentum, and has tremendous potential for expansion given the right leadership.
- Several interviewees in the 2004 Recreation Interviews believed that to avoid unintentional disincentives, the process of obtaining permission to maintain trails should be quick and easy.

- In the 2005 Study Groups, participants repeatedly cited the possibility for employing volunteer power to restore areas damaged by recreation and other activities in the past.
- While many Study Group members and interviewees (2004 Recreation Interviews) cited the need for enforcement, few expressed willingness to engage in stewardship enforcement. People generally feel awkward about confronting other users about federal land use regulations.

Characterizing Recreation: Dolores, Pagosa, and Columbine Districts

Summarizing the strengths and major recreation characteristics of the 3 districts in the San Juan can help managers develop strategies to maximize the recreation resources and play on the strengths of each district. Five characteristics were used to conduct a recreation character assessment each of the 3 districts in the San Juan. The characteristics are best defined in question form:

Terrain and Access: What are the major features in each district for recreation on the forest and how is the terrain accessed?

Local Preferences: While preferences are as diverse as the people in Southwest Colorado, what local recreation preferences are uniquely identifiable to each district?

Strongest Recreation Asset: Looking at the San Juan Forest and BLM lands in each district, what is the strongest asset?

Recreation Economy: What is the most obvious way in which recreation on public lands interacts with the local economies in each district?

#1 Challenge: Given the recreation patterns in each district, what is the #1 recreation management challenge for land managers?

Matrix RA-3: Recreation Profile-Dolores District

Recreation Profile of Dolores District

Terrain and Access: The Dolores District has the widest variety of terrain and climate zones of all 3 districts ranging from the high peaks in the La Platas to the desert country down river of McPhee reservoir. The most extensive and signature country in the Dolores District is the foothills and mesas terrain stepping off of the La Plata, Rico, and Wilson mountains. Due to the long history of grazing and logging on these relatively flat mesas and foothills, road access to this area is extensive and well-developed.

Local Preferences: Because of the recent roots in traditional uses of the forest and the long established and extensive network of access roads on the Dolores District, people on the west end of the San Juan forest have a noticeably strong multiple use ethic. "There's something for everyone out there" was a commonly stated phrase in the 2005 Dolores District Study Groups. While many recognized current and future problems with multiple use, most would prefer to avoid a high degree use segregation. Most people favor limiting motorized travel to established routes. With the exception of fairly wide spread concern about gas well development, the vast majority of Dolores District residents are tolerant and even supportive of traditional uses on the Forest.

Strongest Recreation Asset: Diversity of terrain and access offers a wide variety of opportunities and disperses uses to many different areas.

Recreation Economy: Mesa Verde and hunting season are the largest attractors of visitors to the area. The proximity to the mountains goes hand in hand with the agricultural lifestyles that many recent immigrants have come to Cortez, Mancos Dolores, and other places on the Dolores District to enjoy. Since the Dolores District includes the edge of the desert extending for hundreds of miles to the South and West, many people drive from the desert to the mountains and higher ground in the Dolores District to enjoy trails, rivers, streams, lakes and other features not as common in the desert.

#1 Challenge Because of the vast number of travel routes in the Dolores District, designating routes and defining travel access will be a major challenge in future years.

Matrix RA-4: Recreation Profile-Pagosa District

Recreation Profile of Pagosa District

Terrain and Access: The Pagosa District is the only district to have 2 wilderness areas in addition to the Piedra Area, which is managed like a wilderness area. The access opportunities to the Wilderness in the Pagosa district are more numerous and geographically dispersed than in the Columbine District where access is limited to a few key roads, trailheads, and the narrow gauge train. Urban interface BLM and Forest land are close to Town, but are not highly developed for recreation.

Local Preferences: Agricultural roots are important in Pagosa and many elements of the agricultural lifestyle relate to living near public lands. While some opportunities exist for recreation right near Pagosa, many residents expressed the desire for more urban interface recreational opportunities. Scenery is very important to locals and to the local economy. Pagosa residents like to recreate in the wintertime, but tend to concentrate in the Wolf Creek Pass area where the access is easy and snow conditions are good.

Strongest Recreation Asset: Diverse opportunities for wilderness access; wildlife habitat.

Recreation Economy: Full, unobstructed views of the San Juans is not uncommon from any of the thousands of home sites already platted around Pagosa Springs. With up to 200 building permits per year, the Archuleta County development industry is alive and well. Wolf Creek ski area plays an important role in the otherwise quiet winter months while hunting season gets area cash registers ringing in the fall.

#1 Challenge: Because of the diverse wilderness access and outstanding wildlife habitat in general, hunting season gets a large turnout in Pagosa. Managing hunting season impacts is the #1 concern.

Matrix RA-5: Recreation Profile-Columbine District

Recreation Profile of Columbine District

Terrain and Access: The Columbine offers vehicle access to more high elevation terrain than either of the other two districts via mining roads, timber roads, and highways. The Columbine offers almost limitless possibilities for Highway access recreation along Hwy 550. The Columbine is also known for its wild country and big peaks. The scenery and the strong presence of mountain adventurers of all types reflects the proximity of some of the highest, most impressive, rugged mountains in Colorado.

Local Preferences: The most dominant preferences in the Columbine are for high quality recreation opportunities in the urban interface and spectacular mountain day trip opportunities. The easily accessible features of the Forest Service and BLM lands near Durango, Bayfield, Vallecito and other population centers are used frequently by the fitness minded population in La Plata County. However, easy access to high elevation entices recreationists out of the foothills and into the mountains for alpine day trips.

Strongest Recreation Asset: Easy road access to high elevation trailheads and road-heads offering an almost limitless range of recreational opportunities.

Recreation Economy: Durango has the longest history and most experience with tourism of any town in the region. Public lands use reflects this commitment to tourism with the narrow gauge train, two ski areas, well-promoted world class mountain biking trails, and the designation of The San Juan Skyway and Alpine Loop as scenic byways.

#1 Challenge: Because the Columbine and the communities within it are increasingly popular for visitors and recent or future migrants, managing dispersed recreation areas has become increasingly important.

San Juan Plan Revision Applications: Recreational Activities

This section consists of a descriptive list of recreation related issues for consideration in the Plan Revisions as cited by interviewees in the 2004 Recreation Interviews and participants in the 2005 Community Study Groups:

Underserved User Groups

For a variety of reasons, many user groups feel that opportunities for their preferred form of recreation are too few or declining. Some of the user groups that expressed concern for the availability of opportunities include:

- Motorcyclists in the Columbine Districts say that their opportunities for single-track motorcycle touring are too limited and that they either have to drive an hour West into the Dolores district or head south into New Mexico.
- Wintertime skiers, hikers, snowshoers who seek easy access wintertime solitude in safe terrain feel that their opportunities are threatened by the continual expansion of snowmobiling on the Forest.
- Horse packers also stated that because of the inadequacy of trailhead parking for trailers, trail conditions, and the presence of pets or mountain bikers, their options for easier access day trips are limited to just a few trailheads.
- Recreationists in Pagosa Springs pointed to the need to develop more trail and river based recreation opportunities near town.

Motorized vs. Non-motorized Conflict

Conflict arising from the disruption of user experience has been reported in three main contexts:

1. Busy multi-use trail systems (like the Hermosa drainage and the complex of trails throughout it).
2. Mountain passes during winter are the site of the most commonly cited conflict in both the 2004 Recreation Interviews and the 2005 Study Groups. The conflict, reported mostly by skiers and snowshoers, is based on the noise, pollution, speed of snowmobiles. Other conflict is based on the amount of fresh snow consumed by snowmobiles that would otherwise be available for backcountry skiing.
3. Many other users cited motorized use related resource damage as disrupting their experience on public lands.

Overcrowding

Overcrowding is not widespread in the San Juan Forest, but it does occur in certain popular, easily accessible areas during busy times of year. Places where participants frequently cited overcrowding as a problem in the 2005 Study Groups include:

- Hermosa Creek Area
- Molas Pass
- Wolf Creek Pass
- Boggy Draw
- La Plata Canyon
- Williams Reservoir Area
- First Fork Road, Piedra River (during hunting season)
- Junction Creek / Colorado Trail
- Various high use areas in Weminuche Wilderness (Chicago Basin in summer and several other areas during hunting season)

Two important considerations should be employed when evaluating overcrowding:

1. Overcrowding is subjective. One person who has expectations to see others or is more tolerant of encounters with other users might not experience overcrowding while another person on the same trail at the same time may feel that there are too many users.
2. Overcrowding and user conflict can be difficult to distinguish. Motorcycles have always been allowed on the Hermosa Creek trail, but only recently have there been enough motorcycles for many people to begin perceiving motorized use as potentially incompatible with hiking or biking. This suggests that some user conflict could be eliminated by managing to reduce overcrowding.

Stressful Trailheads

Many of the conflicts specifically cited by interviewees (2004 Recreation Interviews) and 2005 Study Group participants occurred at a busy trailhead or within a short distance of the trailhead. Reports of loud snowmobiles emitting pollution, aggressive dogs, and unfriendly people at trailheads have disrupted many users' experience. Many reports of problems at trailheads occur in the wintertime, when snow limits parking to just a handful of pull-outs along paved, plowed roads. Several interviewees and Study Group participants suggested that in the wintertime there should be separate trailheads for snowmobilers and non-motorized users.

Multi-Use vs. Segregated Uses

In all three districts, interviewees (2004 Recreation Interviews) and 2005 Study Group participants had a whole range of opinions regarding whether to segregate uses or to try to make multi-use work for everyone. Some people are 100% multiple use proponents and feel that multi-use is the only feasible management strategy. Some multi-use advocates say that, as a society, we need to learn to work together and be courteous and there is no better place to practice than on public lands, owned equally by all. Others have a vision for a forest where uses are segregated from one another based on user compatibility, terrain, and resource protection.

Most people fall somewhere in the middle, identifying a few key areas where use segregation would solve problems. Because of the limited terrain available in snowy months, further segregation of snowmobiling from other non-motorized uses was the most common plea for segregation. Many non-motorized winter users suggested identifying "snowmobile play areas" where snowmobiles can go anywhere and other areas where snowmobiles are not allowed off roads or are not allowed at all.

Trail and Road Maintenance

It is difficult to discern whether expectations for trail conditions are rising or trails and roads are deteriorating, but many complaints about the conditions of trails and roads permeate the comments from the 2005 Study Groups and the 2004 Recreation Interview notes. While many individuals see trail maintenance as the job of Forest Service and BLM, others recognize the importance of volunteer efforts in maintaining trails.

Signage

Most people want more signage of all types on the Forest ranging from ethics information and interpretive placards at trailheads to allowed uses signs on routes. A smaller set of interviewees (2004 Study Group) and study group members (2005 Study Groups) prefer no expansion of forest signage and an even more limited group would prefer less signage than is currently on the forest.

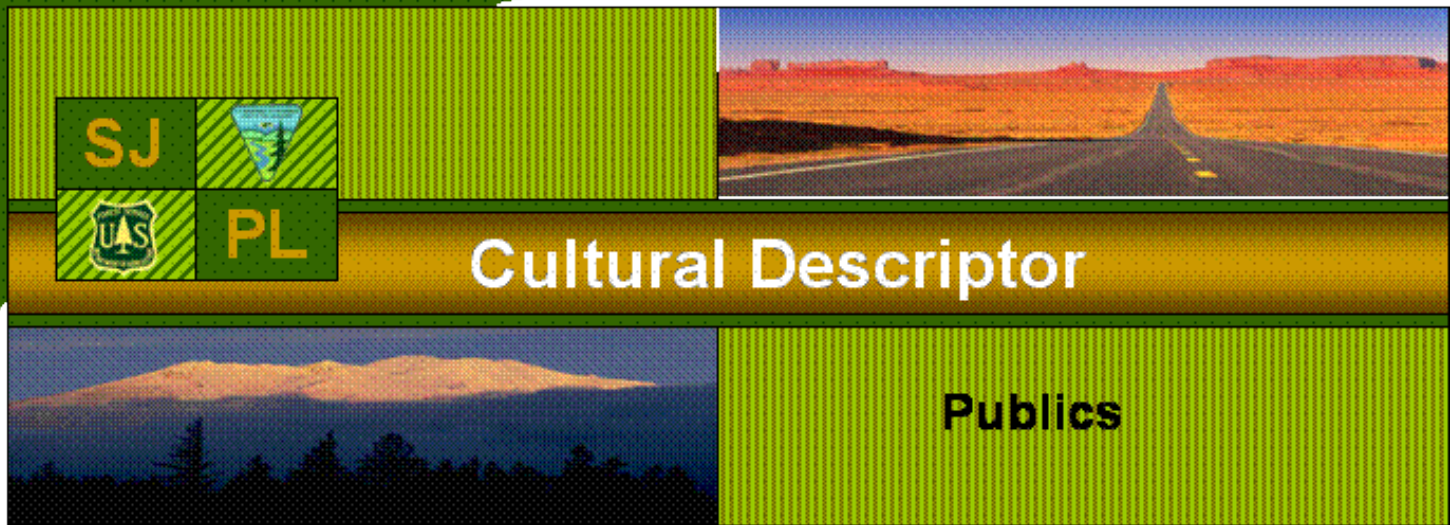
Interface of Traditional Uses with Recreation Use

Recreation users in the San Juan National Forest are generally tolerant of interfacing with traditional uses, with the exception of gas drilling.

- **Grazing:** Many longtime recreationists that participated in the 2005 Study Groups have noticed improvement in grazing management and practices over the past couple decades. A handful of recreationists still resent encounters with cows and fences on the forest, but most users are willing to encounter grazing activities on the Forest so long as resource damage is minimized.
- **Timbering:** Recent wildfires and improved science have peaked awareness of the need for some level timber removal in the forest. Cautious recreationists and conservationists maintain that timber removal must be for restorative purposes and should not result in additional roads.
- **Mineral Development:** Concern for and opposition of additional drilling was prevalent in the 2005 Study Groups and 2004 Recreation Interviews. Those that understand the legal framework surrounding mineral development say that there should not be any additional leases in most areas. Most of the comments relating to gas drilling focus on La Plata County with specific emphasis on the roadless area in the HD mountains, Urban interface areas, areas containing archeological resources, and important wildlife areas. Rural property owners in La Plata County have joined with wildlife habitat advocates to formally oppose oil and gas development in some parts of the San Juan National Forest. While some on the Dolores District advocated a policy of no additional gas drilling, there was relatively less concern voiced about gas drilling, probably due to the fact that there are fewer instances of drilling occurring on private property and a generally higher tolerance for multiple use management.

Information Gaps

Since public land planning processes occur locally, input from the visiting population is very limited. This will likely require some form of surveying. Secondary sources such as the CO State Parks SCORP and other state level visitor studies may be helpful as well.



Cultural Descriptor: Publics

A public is any segment of the population that can be grouped together because of some recognized demographic feature or common set of interests . . . it may reside permanently in the geographic area, or may live elsewhere and have an interest in the management of the natural resources.

Over the past three decades public land planning and decision-making processes have become more formalized and accessible. During this same period, the number and intensity of sharply defined interests and interest groups have increased steadily, with considerably more engagement by interests not residing in communities adjacent to the public lands in question. In response to these trends, public land agencies have adopted the term “publics” to encompass these wide-ranging interests.

From a social standpoint, one of the most fundamental differences in perspective is between those who frame their input in a national perspective (“Every taxpayer in the United States is an owner of every acre of the public lands.”), and the local perspective (“The public lands are in our backyard. We depend on them, and we know best how to take care of them.”) While these perspectives are stereotypical, they drive a great deal of the conflict and debate surrounding public land management. The public land manager is required to consider and attempt to reconcile both of these perspectives.

To compound matters, the local mosaic of settlement patterns, recreational activities, and work routines, described under previous descriptors has created an increasingly diverse array of land relationships and values within local communities. This local diversity is reflected in the membership and association of local residents in regional and national interest groups.

The problem for the land manager in dealing with this diversity of interests as isolated “publics” is that each “public” attempts to persuade, pressure and compel the agency to manage according to their particular interest. In some cases, the agency is able to reconcile these disputes by producing evidence of an ecological imperative for a given management approach that transcends social values. In most cases, however, the complexities of an ecosystem health approach requires the constructive engagement of a wide range of actors local and non-local, particularly with the acknowledgement that “people are part of the ecosystem.”

The emerging legal framework for public land management, reviewed briefly below, reinforces the reality that public land management is an inherently social process. While good biological

information is essential, what is accomplished (or not accomplished) with regard to improved land health is largely driven by social dynamics.

Until the 1970s the “publics” interested and engaged in the management of the San Juan National Forest lived primarily within the three Human Resource Units (HRUs) adjacent to the Forest (i.e. the Montelores, La Plata and Pagosa HRUs). These localized publics tended to be economically related to natural resource production activities such as livestock grazing, logging and oil and gas development as well as emerging tourism oriented businesses. There were also local and non-local publics interested in hunting, fishing, hiking, and camping, as well as wider interests associated with the archaeological resources, which became internationally known through visitation to Mesa Verde National Park.

In the 1970s several “change forces” began to converge. The levels of recreational activity began to accelerate through growth in tourism, “amenity migration” (defined on page 15) and emerging economic opportunities created by these trends. At the same time that people were “discovering” Southwest Colorado, National environmental laws were being put in place including the Multiple-Use Sustained Yield Act (1960), the Wilderness Act (1964) Endangered Species Act (ESA, 1968) National Environmental Policy Act (NEPA, 1969), the National Forest Management Act (NFMA, 1976), and the Federal Land Policy and Management Act (FLPMA, 1976). These laws gave “publics” residing within and outside of the area legal standing which substantially increased their influence over public land management and decision making.

Throughout the 1980s the impact of these change forces accelerated as the population make-up of the Montelores, La Plata and Pagosa HRUs continued to diversify, and as regional and national environmental and recreational publics increased their level of organization and clout in public land decision making. The traditional natural resource oriented people responded by increasing their level of organization to deal with the resulting pressures and constraints on their activities. This reaction took a variety of forms, but were most dramatically reflected in local and regional efforts characterized as “the Sage Brush Rebellion” and the “Wise Use Movement.” The exponential growth in motorized recreational technologies and use levels resulted in a push for restrictions on motorized recreation that have resulted in advocacy organizations advocating for motorized use.

Clashes among various “Publics” has been intensified and nationalized by a series of top down initiatives including but not limited to: Rangeland Reform, the Roadless Initiative, the creation of a series of National Monuments and the Healthy Forests Initiative. The result tends to be a clash at the local level by those who strongly support or oppose any given action initiated at levels above local communities.

While these clashes involve important and strongly held beliefs and interests, they tend to drain energy and resources away from landscape specific stewardship needs and opportunities. By contrast,

there have been experiments in what has come to be called “Community Based Stewardship”, which attempt to incorporate local land stewardship ethics in a context of open citizen participation, inclusion of all interested publics and the integration of ecological, social and economic knowledge building. A well documented example within Southwest Colorado is Ponderosa Pine Forest Partnership in which local environmental and timber industry publics, which were in total gridlock in the early 1990s, began cooperating in science based efforts to restore ecological health to local ponderosa pine forests while sustaining small, local wood products businesses. To date ecological restoration has been accomplished or is in process on approximately 8,000 acres.

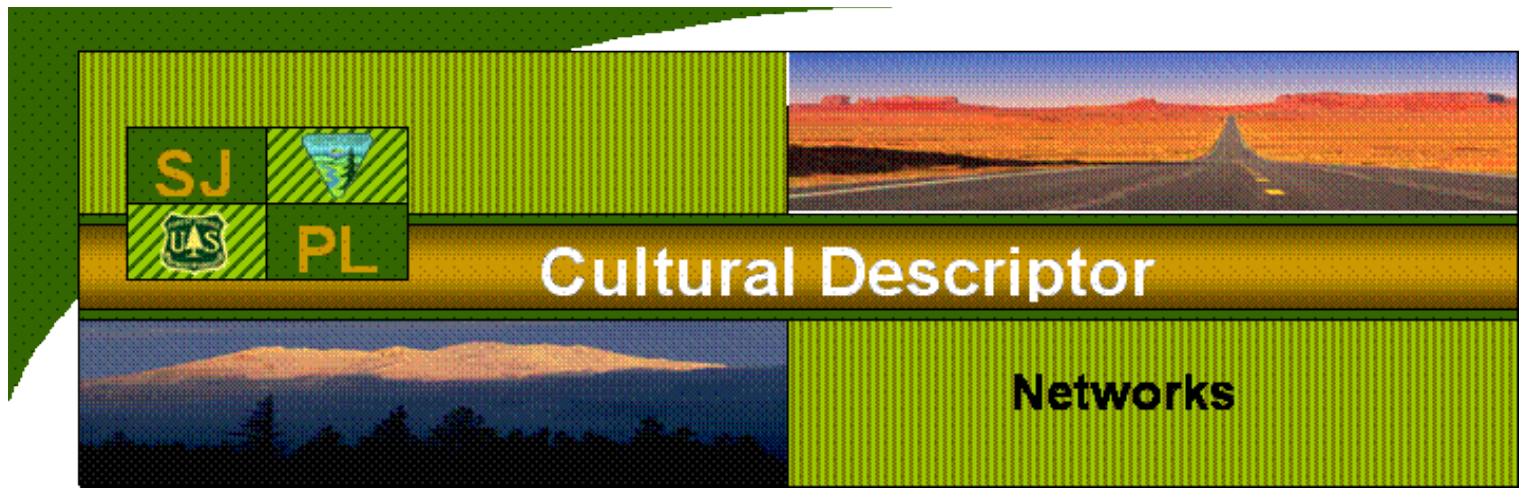
While the Ponderosa Pine Restoration effort was locally initiated, the broad base of community support it enjoyed was externalized through the support of outside interest groups such as

environmental groups and timber associations thereby insulating the effort from an ideological clash of “Publics.” This capacity was extended to a National Initiative known as the National Fire Plan which has been localized in five County level Community Wildfire Protections Plans which involve strategic collaboration in addressing widely recognized wildfire hazards, made more urgent by the emergency response and the ongoing recovery from the Missionary Ridge Fire of 2002.

The successes of the Pine Restoration and Community Fire Plan efforts has been the ability to align these efforts with local community Networks and Support Organizations which were able to absorb the interests of Publics into a community driven, landscape based, effort..

San Juan Plan Revision Applications: Publics

1. A major effort is being made in the San Juan Plan Revision process to take a collaborative community based approach to identifying issues and exploring alternatives. It is also important that “communities of interest” including San Juan users and advocates who don’t reside in the community, have access to the process. The San Juan Plan Revision web site supported by extensive e-mail and mailing lists are intended to provide transparency concerning community and landscape level deliberations. In addition to input into community and landscape level deliberations, publics can still exercise all the rights of input under the laws outlined above.
2. Alignments that can be discovered and developed in the course of the plan revision process between community based perspectives and those of external publics can result in a more comprehensive, cohesive, and effective strategic and policy framework to guide public land management with in the purview of the plans.
3. Plan Revision communication strategies should include exploring linkages between those engaged in local stewardship Networks and Support Organizations with regional and national interest group publics, establishing lines of communication with external interest groups and their local chapters, and engaging them as actively as possible in the community based planning and knowledge building process.



Cultural Descriptor: Networks

A network is comprised of individuals who support each other in predictable ways and have a shared commitment to some common purpose. Networks may be informal arrangements of people tied together for cultural, survival, or caretaking reasons. Networks may also be formal arrangements of people who belong to an organization, club or association, which have has a specific charter or organizational goals. Networks may function in a local geographic area or may influence resource management activities from regional or national levels.

Information in rural communities flows primarily through informal networks that involve work routines, recreational activities, kinship, neighborhoods, civic organizations and gathering places. By example, informal social networks have been in place in the farming and ranching community over a very long time. The Tuesday livestock auction in Breen (La Plata HRU) and the Wednesday auction in Cortez (Montelores HRU) are as much about exchanging information and formulating opinions as they are about selling livestock. Likewise, a great deal of information is exchanged about children, the schools, and sports standing around the edge of youth soccer games on Saturday. Bars and restaurants can also serve as “gathering places,” for informal networks of people that tend to frequent certain places at certain times of the day. Some gatherings may be even less formal (stopping on the side of the road to visit with neighbors, or running into people on Main Street, the feed store, the bike shop or at the post office). Other gathering places are more formal, such as regularly scheduled civic clubs, church or association meetings. Informal networks may also function at a regional and national level. For example, people that stay in touch on the pow-wow circuit, at car shows, or environmental gatherings.

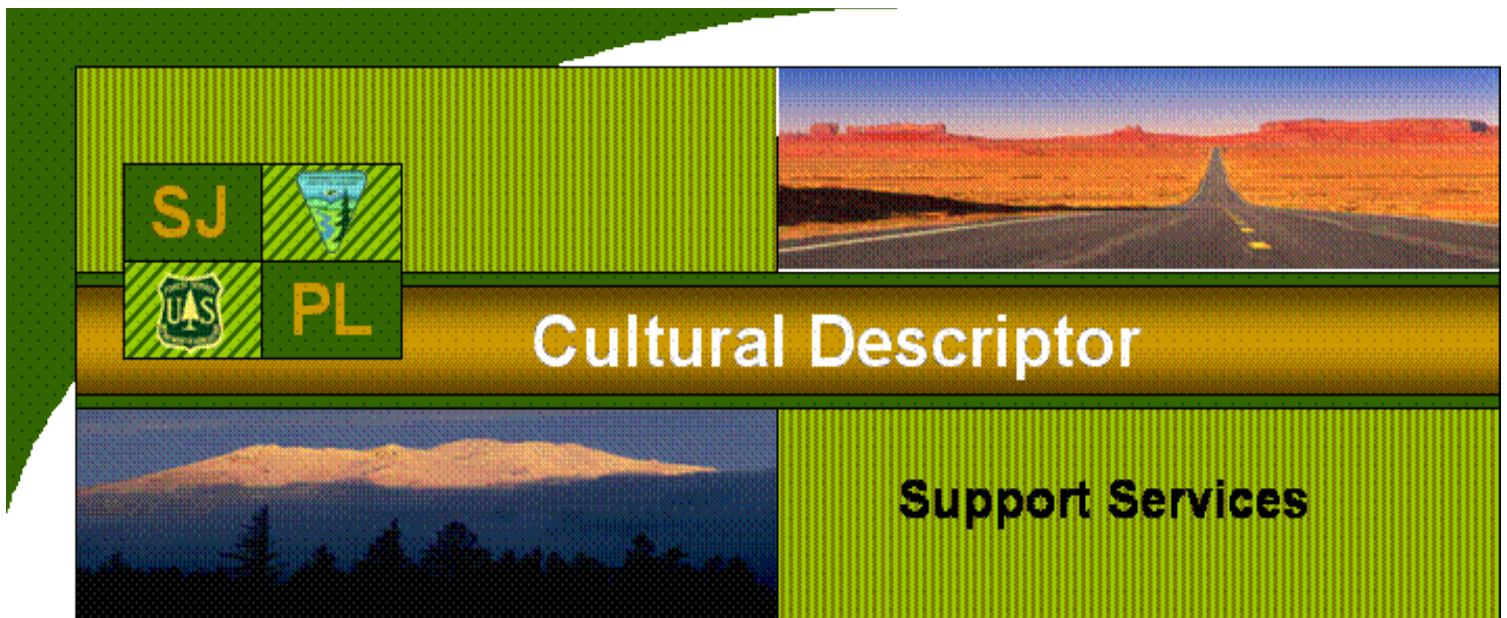
The importance of these networks and the gathering places where interaction takes place is the frequency with which information is exchanged, and the rapidity with which information (and in some cases misinformation) travels. Community networks operate in “real time” and offer a sense of the current and emergent issues and perspectives within the community. While informal networks are relatively egalitarian, there are “caretakers” who people turn to for advice and information in times stress, change and opportunity. Caretakers are not necessarily part of the formal power system, and may be relatively low profile.

By contrast, formal organizations tend to be more hierarchical with processes that must move slowly in deference to formal procedures and the chain of command. The more hierarchical the organization or agency, the less likely it is to be able to operate in real time. Formal processes tend to be drawn out and slow moving. The mismatch between the way information moves, opinions are shaped and caretaking occurs within informal networks, and the way information, policy and issue resolution occur within formal systems is a major source of disconnect between formal and informal systems. This disconnect is a source of discord, miscommunication and misunderstanding that tends to crop up in public land planning and management.

People that are most effective in bridging the gap between formal land management systems, and between communities of place and communities of interest tend to be those that are connected to informal networks. Such people are able to take information off of the informal networks that is useful in the agency process. Such people are also able to put timely and accurate information onto the informal networks, and correct misinformation promptly.

San Juan Plan Revision Applications: Networks

1. Informal networks have played a very critical role in getting people engaged in the SJRP Study Group process. Information announcing the process went out through formal media announcements as well as written and electronic invitations. Many people decided whether or not to participate based on perceptions circulating through their informal and caretaker networks.
2. Since it was anticipated that recreation would be a major topic of consideration a series of informal interviews were conducted within recreation networks with caretakers identified by District recreation staff, and by referral once the interviews commenced.
3. As the Study Group process has unfolded, people have used informal networks to digest information, share opinions and keep others up to date, who were not at the meetings.
4. A potentially significant outcome of the Study Group process is a cross-over in communication among people in what had previously been in communication networks with no or very few inter-connections. After the conclusion of formal Study Group activities, people, who very likely have never communicated before, can be seen informally visiting, getting to know one another and sharing perspectives, often discovering common understandings that are unexpected.
5. This cross-over informal communication is also very apparent between Study Group participants and those participating from the public land agencies. The relationships being built in these informal exchanges are likely to have residual of increased mutual comfort and trust, resulting in increased capacity to problem, solve and explore opportunities.
6. The cross over among communication networks that can occur through the Study Group process is supported by an environment which is egalitarian, respectful of all opinions, and accepting of differing opinions. Ultimately, plan decisions will be made that won't please everyone, but they are more to be accepted or tolerated if all perspectives have been expressed, listened to and taken onto account.



Cultural Descriptor: Support Services

A supporting service is any arrangement people use for taking care of each other. Support services occur in an area in both formal and informal ways.

This discussion of Support Services will focus on formal organizations, but it needs to be emphasized from the outset, that a key element of the effectiveness of community-based formal organizations, hinges on the flow of information between formal and informal networks. Effective formal organizations are able to pick up issues and concerns circulating on informal networks and use their formal resources to gather accurate information, develop effective action strategies and place information back onto the informal networks concerning opportunities for support, participation and individual and community empowerment.

By example, public land livestock permittees have a variety of support services which include livestock associations, Farm Bureau, soil conservation districts, water conservancy districts, extension service, property rights organizations, sustainable agriculture organizations etc. The combination of advocacy and information on improved range stewardship practices are essential to the future of public land grazing permits, and the viability of many ranches, and the open space and habitat supported by ranching. To the extent that these support organizations can provide accurate and useful information to their ranching constituencies, they will help to maximize opportunities for the future. Such information must flow through informal networks to reach the people that need it. If, on the other hand, supporting organizations feed polarization and misinformation they can have a negative affect.

The same dynamics apply to recreationally oriented Supporting Services. Back Country Horsemen, the San Juan Mountain Association, Trails 2000, the Jeepers Creepers Gang etc. can provide a valuable interface for their members and the networks that their members are part of, to address public land access and improved stewardship. Likewise the San Juan Citizens Alliance and affiliated conservation groups can provide an interface between environmental networks and public land planning and management. Similarly there are supporting organizations that are related to timber products, the oil and gas industry, wildlife and the full range of public land values and interests.

Beyond effective communication within the various public land user networks and supporting organizations is the need for communication among these groups. Given the multiple use mission of the public land agencies and the mosaic of public land interests within communities of place

and communities of interest, advocacy for any given interest can only be achieved by reconciliation with the full range of interests.

Historically, the public land agencies have taken it upon themselves to reconcile competing interests, ending up in a cross fire of interest groups, none of which are satisfied with decisions involving complex issues. Growing experience with collaborative problem solving indicates that groups with differing interests can get more of what they want by collaborating and by working with each other, rather than by pressuring decision makers and letting the managing agency, “cut the cake.”

The opportunity for people from a variety of supporting organizations to be part of a stewardship approach to public land planning and management creates the opportunity for people to develop insight and empathy for one another's positions, find highest common denominator solutions and mobilize both their organizational resources and informal networks to promote same. Implementation of plans and policies can best be achieved with the active participation of supporting organizations and informal networks that are bought into the solution, and prepared to share their portion of the responsibility.

San Juan Plan Revision Applications: Supporting Organizations

1. The recently adopted Forest Planning rules emphasize more collaborative and strategic planning. Supporting organizations can play a key role in implementing this planning philosophy.
2. Organizations whose members have values and interests associated with the Public Lands have helped to mobilize and support involvement of their members in the Study Groups and other opportunities to participate in the Plan Revisions.
3. In the course of Study Group discussions, participants have identified roles that supporting organizations can and should play in public land stewardship. Indeed user stewardship has been raised throughout the process in conjunction with organizational participation.
4. There has also been an emergence of organizations whose explicit mission involves the Public Lands such as the San Juan Mountain Association.
5. Another trend that can contribute in a major way to collaborative, strategic planning is the collaborative groups that are increasingly being organized.
6. Some collaborative groups involve structured memberships such as the Governmental Water Roundtable made up of appointed representatives of Federal, State, Tribal and local water management entities, and local governments. The Water Roundtable is working to explore opportunities in the Plan Revisions to use Federal, State and local water management tools and authorities in a complementary fashion and avoid, where possible, unilateral action and conflict. The governmental structure of the Roundtable improves on a patch-work of cooperating agency agreements with a comprehensive interactive process of information building and dialogue. The challenge of the Roundtable is keeping the dialogue open to non-governmental perspectives to enhance and broaden Roundtable outcomes.
7. Another collaborative model at work is the stakeholder approach which is possible when no single organization is responsible for convening and acting on the outcomes of the group. The Dolores River Dialogue was convened by invitation from the Dolores Water Conservancy District and the San Juan Citizens Alliance to address the ecological and social needs of the Dolores River below McPhee Reservoir. The Dialogue is organizing and developing information about the hydrology, geomorphology, and ecology of the Dolores River to find opportunities which can be pursued jointly by water managers, public land managers, private property owners, boaters and fisheries advocates to maximize the health

and human benefits of the Dolores River. Each entity involved in the DRD will be required to contribute their part of agreed upon opportunities through their respective organizations. In the Community Study Group process this stretch of the Dolores River got some of the most concentrated input during the landscape exercises. The management of the lower Dolores River is also relevant to discussions in the Water Roundtable.

8. Another collaborative model that is relevant to the Plan Revisions are loose knit and pragmatic efforts between the Agencies and community level organizations. A good example of this is the collaborative relationships that have been applied to the development of Community Wildfire Protection Plans in conformance with the Healthy Forest Initiative and Act. Federal and State forestry and fire managers are working with local Fire Protection Districts, Counties, and private property owners to reduce wildfire hazards across the private/public land boundary. Reducing wildfire hazard was a much discussed topic in Study Group discussions. Fire planning will remain a collaborative challenge well into the future.
9. Efforts to coordinate Federal and local land use planning represent another collaborative challenge that is receiving increasing attention. The relationships between watershed health, wildfire, residential development and community water supplies became very apparent in the Missionary Ridge Fire of 2002 and its aftermath. Large scale development proposals such as the plans for resort development around Durango Mountain Resort provide another example. The other issue that came up in Study Group discussions involved community access to recreational trails and areas, and concern about loss of access both from the community and through areas of expanding resort development.