

Moffat County Land Use and Planning Survey Results: Private Lands

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The research results provided here appear courtesy of the University of Wyoming, Colorado State University Cooperative Extension and Moffat County. Much appreciation to USDA National Research Initiative Competitive Grants Program “Rural Development,” grant 99-35401-7742, for project funding. Questions or Comments should be directed to Don McLeod at (307) 766-3116 or dmcleod@uwyo.edu

Introduction

The Moffat County Land Use and Planning survey (Appendix 1) is the result of extensive discussion between the Moffat County Commissioners, Moffat County and Colorado State University Cooperative Extension and the Department of Agricultural and Applied Economics, University of Wyoming. The objective of this research project is to provide Moffat County officials with information on land use issues that are useful in decision-making processes or to suggest further, more specific information gathering. The information presented in this report is the result of a survey administered to Moffat County residents (whether they own land or otherwise) and non-resident landowners in Moffat County. The survey was developed with input from a series of six local focus groups. The groups met twice each with the following composition: the general public; large landowners; and County officials. The focus group participants, identified by the County Commissioners to represent the broadest array of local perspectives, provided input into developing a survey addressing Moffat County's land use planning needs. The focus groups were conducted in September/October 2000 and focus group participants reviewed the survey instrument in November 2000.

The Moffat County Land Use and Planning survey is the core of this project, addressing numerous local land use issues, and is an important contribution to the comprehensive planning process (Figure 1). Individuals were asked their preferences for avoiding unplanned rural sprawl; what they appreciated about agricultural lands; what they would be willing to do in order to avoid the problems associated with increased rural development; and if they were willing to pay or aid in preserving agricultural areas. One goal of the survey is to determine if potential support existed for particular land use policies such as development impact fees, land use districts (LUDS), and purchase of agricultural conservation easements (PACE) programs. Two measures for market based approaches were assessed: willingness to pay (WTP) for a PACE program; and, willingness to accept (WTA) compensation by landowners to participate in a PACE program. Results of these measures may help to determine whether or not there is a basis to create a PACE program in Moffat County, for example.

The survey was administered from February through May of 2001. Preliminary findings were presented to a professional audience in July 2001 and to citizens of Moffat County in December of 2001. A preliminary final report was issued for local comment and formal review among faculty of the University of Wyoming in April of 2002. This document has benefited from input gleaned from these public reviews.

Part I of this final report provides a brief overview of the participatory planning process and of the role of this research in that process. Part II discusses the survey and data collection procedures. Part III considers how well the derived sample represents the target population. Part IV provides an overview of the results of the study, grouped by section as they appear in the survey, and Part V concludes by discussing the relevance and usefulness of the survey results.

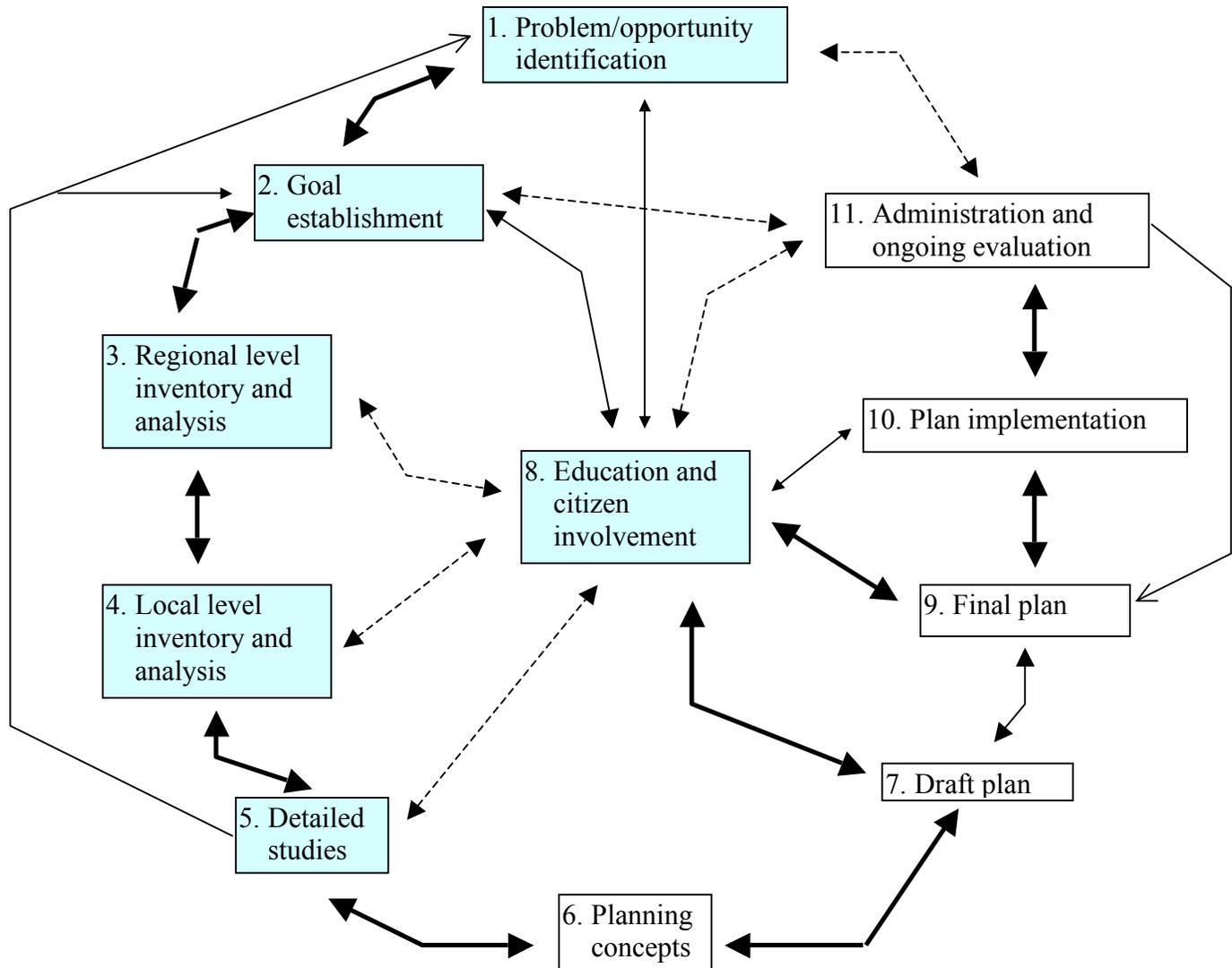
Part I: The planning process

Emphasis on participatory planning brings residents and landowners into the planning process. Public participation informs planners and government officials of citizens' views and preferences for a variety of land use management options. Participation, in turn, gives residents information about, and direct access to, the planning process and particular planning issues and experts' knowledge.

Appropriate analytical methods are needed to develop effective rural land use policy. Planning in rural areas has historically been more informal, relying on personal relationships in which peer and third party pressure affects decisions in face-to-face encounters (Rudel 1989). Growth trends in much of the Rocky Mountain West have resulted in an influx of new residents to rural areas. Long-term residents in these areas now encounter new neighbors and untested relationships. Trust, which has in the past been built on long association, is yet to be established. This, in turn, inhibits cooperative efforts and makes more formal planning efforts necessary.

The planning process has traditionally been presented as a linear progression of steps planners take to develop a comprehensive community plan (see, for instance, Brower et al. 1984, Daniels et al. 1995, Zube 1980). These steps generally include problem identification, determination of goals and objectives, inventory of existing conditions, planning and design, and plan implementation (adapted from Brower 1984 and Zube 1980). This process follows a model of planning that depends largely on professional expertise. The planning process has changed, however, as planners have realized a greater need for community input. A continuously evolving framework, with feedback from later segments of the process to adapt and refine earlier steps, is better suited to include citizen participation and input (see Figure 1). Citizen education and involvement become a central focus in this model of the planning process. Residents inform, and in turn are informed by, all steps of the process.

Figure 1. Planning Process Model (adapted from Steiner 1991:10).



Note: Shaded areas indicate where the University of Wyoming Land Use Planning Project fits into the planning process. Darker arrows indicate flow from step 1 through step 11. Lighter arrows suggest feedback between earlier and later steps. Dashed arrows indicate other potential modifications in the planning process.

The outcomes reported here support land use planning efforts in 6 of the 11 areas listed in Figure 1. Focus groups, including city officials and County residents from all backgrounds and areas of the County, aided in the process of identifying problems and opportunities (1). Both focus group and survey results contribute to formation of goals and objectives in planning (2). Population comparisons provide regional level inventory and analysis (3). Detailed studies (5), such as cost of services assessment, GIS mapping, and the survey of preferences, provide information for local inventory and analysis (4) of existing social, economic, and physical

conditions in the area. The focus groups and the citizen survey provide citizen education, feedback, and involvement (8).

The data and information gathered in this process play a vital role in county planning. Planners and government officials can design specific land use management strategies compatible with resident preferences for the future of their county. Such strategies can be shaped to deal with the type and location of natural resources, as well as existing land uses, currently found in the County. Involving citizens throughout the planning process ensures development of issues and goals that are tied to and grounded in real life experiences of county residents. Such a process is likely to result in development of a land use plan that will be supported by the citizens most affected by it.

Part II: Survey process/response rates

A survey was created and distributed to residents and non-residents of Moffat County, Colorado in order to elicit preferences for agricultural land preservation. Investigative research was conducted before the surveys were mailed. Researchers from the University of Wyoming met with county officials to determine important land-use issues in the County and to organize focus group meetings.

Focus groups are a preliminary step to developing and distributing a survey. The focus groups consisted of three groups of residents, agricultural landowners, public officials, and all other residents. These groups met twice during the introductory stages of survey design and then once more to pre-test the survey before it was distributed. The first focus group meeting determined how residents felt about land use in their county, which included population growth expectations, agricultural land preservation, and property rights. The next focus group meeting specifically targeted mechanisms to control land use such as PACE's, LUD's, and managed residential development aides.

Two surveys were devised for this project. A shorter survey was devised to collect information on how residents and non-residents felt about issues concerning public lands in Moffat County (See Todres et al., 2003). The public lands preferences survey was included as an insert to the main survey at the request of Moffat County officials. The primary survey was designed to elicit responses concerning private land issues.

The private lands preferences survey was divided into five sections: 1) Moffat County Rural Growth; 2) Future Expectations; 3) Planning for Growth and Development; 4) Land Ownership; and, 5) Demographics. Respondents were asked first about the potential benefits and concerns associated with increased rural residential growth. Section 2 queried respondents regarding their future plans in the county (e.g., work, recreate, raise a family). This section also posed questions to determine preferences and attitudes toward private property rights and the importance of agriculture in the County. Section 3 was the longest section in the survey. Questions were posed concerning the respondents' attitudes toward land use controls such as conservation easements, residential development restrictions, and land use districts. Respondents told researchers whether they were willing to participate in a conservation easement program and what type of benefits they would like to incur from such participation. The final sections of the survey were designed to give researchers a demographic profile of the survey respondents: how much land they owned in Moffat County, how long they have lived in the area, their occupation, education level achieved, and income level. These last questions help establish whether the respondent sample is representative of the entire population of Moffat County landowners and residents.

The public's perspective on private lands management is important. However, the public does not necessarily speak with one voice on this issue. In addition to an overall public perspective, we hypothesize that there may be at least four distinct groups of opinions on these matters: 1) Moffat County residents who own significant amounts of land; 2) Residents who do not own substantial acreages; 3) Nonresidents with acreage; and 4) Nonresident non-landowners. Landowners are defined as owning 100 acres or more. Residency is based upon the mailing address for the property owners.

The survey was distributed to a total of 2,800 residents and non-residents of Moffat County in order to elicit preferences for private lands management within the county. County landowners were identified through the county assessor’s office. A list was purchased from a survey sampling company that listed addresses and telephone number of county residents. A master list was created that contained a total of more than 6,000 names once duplicates were removed. Non-landowners were randomly sampled. All landowners who own 100 acres or more (700 individuals) were included in the survey distribution, because they are such a small population in general and are stewards of a large proportion of private lands in Moffat County. Table 1 shows how many surveys were distributed to each group of respondents.

Table 1 – Distribution of Survey Group Types

	Resident Landowners	Non- Resident Landowners	Residents owning <100 acres or renters	Non-Residents owning <100 acres
Sample size	299	401	1,659	441

The response rate of a survey is important to establish the likelihood that the sample represents the broader population. The higher the response rate, the more likely the sample of households’ responses is representative of all Moffat County landowner and resident households. A total of three mailings were conducted, with the final mailing being sent certified mail. Returned surveys were then classified into a variety of groups based upon whether or not they were completed. All surveys that were completed are listed as answered surveys (A). Surveys that were returned due to improper addresses or the individuals had moved were determined to be undeliverable (U). Some individuals returned incomplete surveys with notes attached indicating that survey recipient felt unqualified to fill out the survey for whatever reasons. A small group of survey participants refused to complete the survey. Two other classifications were created for a group of surveys returned from the certified mailing, unclaimed or simply certified returned. A total response rate of 55% was achieved, after all three mailings (Table 2). This number was calculated by subtracting the number of surveys deemed undeliverable (U) from the total number sent (2800) and then dividing this difference into the total number of answered surveys (A) as shown below.

$$\text{Percent Response rate} = \frac{A}{2800-U} * 100\%$$

Table 2. – Percent Response Rate by Group

	Resident Landowners	Non- Resident Landowners	Residents owning <100 acres or renters	Non-Residents owning <100 acres	Total Response Rate
Response rate	69%	62%	52%	52%	55%

Part III: Adequacy of the sample

Two concerns arise when assessing the response rate of a mail survey: validity and accuracy. Accuracy (precision) of the survey results is related to the total number of responses. Validity of the responses is important because it indicates how representative the survey answers are of the targeted population (all Moffat County residents AND nonresident owners of land in the county). Resident respondents’ age, education, and income need to be compared with US Census statistics for Moffat County, to determine how well the sample of households represents the targeted population as a whole. Approximately 40% of the sample was nonresidents to whom Moffat County Census statistics would not apply.

Accuracy (precision) of the survey results is related to the total number of responses. An example will illustrate this concept. Question 9 asks whether respondents may support (yes or maybe) or not (no) a Conservation Easement (CE) program in Moffat County.

The formula for determining the standard error is

$$se(p) = 2 * \sqrt{\frac{(\text{fraction of yes}) * (\text{fraction of no})}{n}}$$

where $se(p)$ = the standard error of a sample proportion,
fraction of “yes/maybe” the proportions of our sample that may support a PACE,
fraction of “no” = as those who do not support a CE, and
 n = the number of elements in the sample or number of respondents
(Salant and Dillman, 1994: 73).

The returned surveys indicated that seventy-six percent may support the program and 24 percent did not support it, of 1243 who replied; this produces a standard error of +/- 2.4 percent. This means that between 73.6 and 78.4 percent of *all households* who live in or own land in Moffat County may support a Moffat County CE program. If the number of respondents on this question had been 2486 (twice as much), then the standard error would have been +/- 1.7 percent. The error would have been smaller or the outcome more accurate with more responses. It also would have been smaller if the percent no or yes responses were more decisive: 90% instead of 60% for example. Accuracy measures are based on the assumption that the responses are valid.

The 2000 US Census reports age, education and income statistics for Moffat County. The median age from the US Census for Moffat County is approximately 45 years old, while the median age for the resident survey respondents is somewhat higher at 51 (see Table 36). This may be due to the likelihood that a head of household completed the survey who was generally not among the younger members of a household. The 2000 Census indicates 79.6% of the county population has a high school diploma, compared to 86.9% of the statewide population. Twelve and a half percent of the county has a bachelor's degree or higher, while 32.7% of the state's population has earned a bachelor's degree. The percent with high school diploma or beyond reported for survey respondents is 94% regardless of place of residence (see Table 38). It may be that survey respondents residing outside of the region and in other states, or the propensity of heads of household to complete such surveys, who are more highly educated on average than other household members, are responsible for the high respondents' average education level. The 2000 US Census reports mean annual 2000 household income for the state of Colorado as just over \$59,000 annually. Survey respondents indicated their mean level of 2000 annual household income at approximately \$54,000 (see Table 39). Rural counties traditionally demonstrate about 80% of the household income observed in urban counties in Colorado, so this is fairly consistent with expectations.

It appears that the respondents' reported characteristics for income, education and age are roughly approximate to census statistics for Moffat County and the state of Colorado, given available data. We have no reason to believe that the sample is systematically unrepresentative of the target population.

Part IV: Survey Results

Survey results are reported for selected land use policy questions. For many of the survey questions, respondents were asked to provide their opinion using a 5-point Likert scale. This approach provides a ranking of response such as Strongly Agree (5), Agree (4), Neutral (3), Disagree (2) and Strongly Disagree (1). A general interpretation of the Likert scale is that an average response of 1.5 or less must be considered “strongly disagree,” 1.5 to 2.5 is “disagree,” 2.5 to 3.5 is “neutral,” 3.5 to 4.5 is interpreted as “agree” and mean responses greater than 4.5 are viewed as “strongly agree.”

Results are reported by group of survey respondents: **Res Land** is the group representing landowners who live in the County and own 100 acres or more; **NR Land** are those individuals who own 100 acres or more but do not reside in Moffat County; **Resident** is the group of Moffat County citizens who tend to own fewer than 100 acres or may not own land at all in the County; Finally, the group **Non-Res** are those individuals living outside the County but who own fewer than 100 acres of land in the County.

The **All** category is the weighted sum of all survey respondents and indicates how the general population would be predicted to feel about this question. Since it is also useful to consider whether a local referendum or ballot measure on the survey question would be likely to meet with local support and whether different stakeholder groups would react differently to such a policy. A population survey of landowners (all landowners were surveyed) was conducted and the responses verified as representative of local demographics. Mean responses of landowners can be directly extrapolated to the general landowner population and the two landowner groups can be compared directly. The non-landowner groups, however, were surveyed by representative sample. In this case, about 35% of non-landowners were surveyed. As a result, in constructing an overall mean response to the survey, non-landowners will receive a weight of 2.85 while landowners will receive a weight of 1.

The **All** category is then tested for percent standard error of the mean value as shown in Part III. This calculation provides confirmation that the mean value of **All** is actually greater or less than 50%, given the level of error for the decisiveness and number of responses.

Section 1: Moffat County Rural Growth

The questions in this section are meant to determine the respondents’ opinions or perceptions of the benefits and disadvantages associated with rural residential growth. Table 3 corresponds to what respondents felt were the most important benefits of rural residential growth in the County and Table 4 corresponds with their opinion of the least important features of rural residential growth. The scale for this question was from “least important” to “most important”.

Table 3: Section 1, Question 1: What are the most important benefits associated with rural residential growth in Moffat County?							
% of those who responded “important,” or “most important”							
	Number Of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Increase property tax base	1265	32	33	37	35	35	2.68
Business opportunity	1270	41	38	55	45	47	2.80
Improved schools	1269	53	50	64	50	56*	2.79
More jobs	1271	47	49	62	55	56*	2.78
Tele-communication	1257	38	40	46	48	45	2.81
Higher incomes	1266	51	43	58	48	51	2.81
Higher quality of life	1261	36	40	58	54	51	2.82
Improved health care	1267	56	56	70	67	65*	2.68
Better county services	1260	40	43	53	54	50	2.82
Increased property values	1259	46	54	52	60	54*	2.81

* Indicates value exceeds 50 % given the margin of percent error.

A majority of respondents indicated that improved schools, availability of work, improved health care and increased property values would result from increased rural residential growth. The landowners groups were

less convinced of the importance of the potential benefits of rural residential growth than were the non-landowner groups, in general. Logically, nonresidents tended to see “fewer benefits” from school quality, business opportunities and increased income levels due to rural growth (Table 3). Nonresidents also tended to perceive increased property values as important outcomes of rural residential growth. A majority of all respondents also felt that friends and neighbors were a rather unimportant result of rural residential development (Table 4).

Table 4: Section 1, Question 1: What are the most important benefits associated with rural residential growth in Moffat County?

% of those who responded “less important,” or “least important”

	Number Of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Neighbors & Friends	1273	71	61	58	49	57*	2.78
Diverse county population	1261	50	44	42	40	43	2.79
Shopping opportunities.	1264	47	39	31	38	37	2.72

* Indicates value exceeds 50 % given the margin of percent error.

Table 5 attempts to prioritize these concerns using a scale ranging from “most urgent” to “least urgent”. It is apparent that practically all of the concerns listed in the survey were important to the respondents. The resident landowners expressed stronger opinions across almost all categories, while nonresident landowners expressed the weakest support for the urgency of almost all categories across the four focal groups. Water quality and quantity, solitude, rural lifestyle and land use conflicts were the most urgent issues for resident landowners. Wildlife habitat and water quality were the greatest concerns for nonresident landowners.

Table 5: Section 1, Question 2: What are the most urgent concerns associated with rural residential growth in Moffat County?

% of those who responded “urgent,” or “most urgent”

	Number Of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Loss of open space	1285	76	61	69	67	68*	2.60
Loss wildlife habitat	1288	72	66	74	79	75*	2.41
Increased taxes for service	1281	66	54	49	49	52	2.79
Land use conflicts	1288	78	59	64	64	65*	2.66
Access to pub land	1291	65	57	77	72	71*	2.53
Increased traffic	1284	73	49	63	56	60*	2.73
Increased property values	1281	54	40	47	46	47	2.79
Weed problems	1271	72	43	44	31	43	2.78
Decrease quality of life	1282	69	48	54	52	54*	2.78
Loss of rural lifestyle	1288	79	61	57	50	58*	2.75
Loss of solitude	1284	79	60	62	59	63*	2.69
Reduce water quality	1278	80	66	75	79	76*	2.39
Reduce water availability	1282	83	72	80	80	79*	2.28

* Indicates value exceeds 50 % given the margin of percent error.

Access to public land and wildlife habitat were of greater concerns to both types of small landowners, in comparison to large landowning respondents. Increased property values and the spread of weeds were generally the least pressing issue across all groups, although resident landowners were fairly concerned about weeds.

Weeds can impact the quality of native range forage and represent management costs to owners of large landholdings.

A near majority of respondents indicated that rural residential growth was associated with an increased quality of life (Question 1). A majority were also concerned about decreased quality of life due to such growth (Question 2). This issue may indicate the complex relationship between rural growth and the quality of life. These responses may be interpreted more thoroughly when one considers the concerns about rural growth and responses to access to public lands, increased traffic, weed problems, loss of rural lifestyle, and loss of solitude. Each of these concerns resonates differently between respondent groups. It may be that how and where growth occurs as well as how much growth takes place are additional issues that affect respondents' outlook on quality of life.

Section 2: Future Expectations

Section 2 queries respondents regarding their future plans regarding Moffat County over the next decade. In addition, this section gauges respondent's perceptions of private property rights. These outlooks may have important implications for the types of land use policy instruments that are potentially acceptable locally.

Table 6: Section 2, Question 3. Do you expect the following will occur in Moffat County over the next 10 years?
 % of those who responded "increase," or "greatly increase"

	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
County popn. increase	1312	82	71	78	80	78*	2.29
Cost of living	1303	85	74	85	75	80*	2.22

* Indicates value exceeds 50 % given the margin of percent error.

Respondents, across all stakeholder groups, strongly suspect that both the population and cost of living will increase over the next 10 years in Moffat County (Table 6). However, quality of life and the amount of economic opportunity in Moffat County are expected to remain relatively the same over the next 10 years for all stakeholder groups (Table 7).

Table 7: Section 2, Question 3. Do you expect the following will occur in Moffat County over the next 10 years?
 % of those who responded "stay the same"

	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Quality of life	1308	47	58	48	49	50	2.77
Economic opportunity	1303	53	55	49	48	50	2.77

* Indicates value exceeds 50 % given the margin of percent error.

Predictions regarding future activities in Moffat County fell largely along residency lines. Those who currently live in the county tend to believe that they will continue to live, work, and recreate in the county in ten years time. Those who do not have significant land holdings are somewhat less positive about their future plans in the county. Nonresidents were substantially less likely to predict substantial activity in the county other than recreation. Nonresidents with substantial landholdings were highly unlikely to retire to the county (Table 8).

Table 8: Section 2, Question 4. Given your answers in (#3), what are you likely to do in 10 years?

% of those who responded “agree,” or “strongly agree”

	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Live in Moffat Co.	1290	71	28	66	20	45	2.77
Work in Moffat Co.	1254	66	19	53	8	34	2.68
Retire in Moffat Co	1271	60	25	47	31	40	2.75
Recreate in Moffat	1266	57	45	59	56	56*	2.79

* Indicates value exceeds 50 % given the margin of percent error.

Table 9: Section 2, Question 4. Given your answers in (#3), what are you likely to do in 10 years?

% of those who responded “disagree,” or “strongly disagree”

	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Start a family	1249	56	77	60	76	68*	2.64
Develop property	1265	36	40	43	43	42	2.78
Start a business	1258	40	61	54	67	58*	2.78

* Indicates value exceeds 50 % given the margin of percent error.

It is important to note that the results found in Table 9 indicate the percent of those who responded “disagree,” or “strongly disagree.” The likelihood of developing a property is substantially greater than starting a business or starting a family. All groups are similarly unlikely to start a family with resident landowners slightly more likely than the rest (Table 9). Outcomes from Table 8 and 9 are important as they reflect that fewer current residents or landowner may start families, businesses or retire but more may still recreate in the county. These answers must also be reconciled with the average age of the respondent which is 55 years (Table 41). It would seem unlikely that families would be started at this stage in life.

Table 10: Section 2, Question 5. Property ownership involves rights (freedom, choices) and responsibilities (duties, limits). How do you feel about the following....?

% of those who responded “agree,” or “strongly agree”

	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
I can do anything w/ my land	1325	72	66	60	50	59*	2.70
Neighbors can do anything w/ their land	1324	69	61	57	44	54*	2.74
My property values depend on neighbor’s land management	1328	83	83	83	84	83*	2.06
Neighbors need to consider each other’s property values	1333	84	82	84	88	85*	1.96

* Indicates value exceeds 50 % given the margin of percent error.

The property rights and the management of private lands were deemed to be important issues with regard to future land use planning and county resource management.

Respondents indicated that property values are interconnected and land should be managed accordingly. Landowners also feel fairly strongly that private property rights are exclusive. Local non-landowners are less supportive of this notion, and nonresident non-landowners are somewhat unsupportive of the sanctity of individual private property rights. Interestingly, egocentrism was in evidence across all stakeholder groups, wherein people felt more strongly about their own property rights than about the same rights of their neighbors. It is an interesting, though not entirely unexpected, that landowners almost universally recognize their interdependence, but strongly maintain their claim to independence at the same time (Tables 10 and 11).

Table 11: Section 2, Question 6. The management of private land is.....?

% of those who indicated that.....

(N=1321)	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Management of private land is mostly/entirely private matter	85	75	65	61	67*	2.59

* Indicates value exceeds 50 % given the margin of percent error.

Maintaining land use by type in the county was investigated to understand better preferences for county land use planning goals and objectives. A subset of the land use classes utilized in the survey is provided in Table 12.

Table 12: Section 2, Question 7. How important to you is keeping the following kinds and uses of rural land in Moffat County?

% of those who responded to “important,” or “very important,” or “extremely important”

	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Working farms	1326	97	96	96	96	96*	1.08
Land w/ hunting, fishing	1326	95	94	98	95	96*	1.08
Land w/ residential develop potential	1313	53	63	66	64	63*	2.66
Land w/ wildlife habitat	1320	94	94	80	96	90*	1.65
Open space lands	1315	91	92	94	92	93*	1.41
Historical, cultural sites	1310	88	90	90	87	89*	1.73

* Indicates value exceeds 50 % given the margin of percent error.

Respondents indicated overwhelming support for the importance of many uses of rural lands in Moffat County. Residential development was considered less important kind and use of rural land, particularly by those with the largest holdings (Table 12).

Section 3: Planning for Growth and Development

Section 3 is probably the most complex part of the survey. The main thrust of this section was to determine how survey respondents thought about land use management tools. A brief definition of a conservation easement and associated questions were provided to determine what people's perceptions of conservation easements are.

Table 13: Section 3, Question 8. In general, how do you feel about conservation easements (CEs)?							
% of those who responded "agree," or "strongly agree"							
	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Market for open space	1222	46	45	39	51	45	2.85
Help preserve wildlife habitat	1222	60	52	57	66	60*	2.80
Reduce economic opportunity for landowner	1215	43	40	28	32	33	2.70
Will slow residential growth	1211	50	48	42	47	46	2.86
Reduce landowners control of property	1217	64	58	46	50	51	2.87
Opportunity for income	1211	48	41	43	47	45	2.86
Provide public access	1211	34	33	58	62	53*	2.87

* Indicates value exceeds 50 % given the margin of percent error.

Overall responses indicated support for the use of conservation easements to help preserve wildlife habitat, but there is also a shared recognition that the tool reduces landowner control of private property. The former opinion may be due to familiarity with federal wildlife habitat protection programs that involve the leasing or purchase of development rights on targeted lands. Respondents split along landownership lines on the question of public access and on the effect of conservation easements on landowner economic opportunity. Those who have land are against public access and those who do not have land are in favor of access. Non-landowners do not believe that conservation easements limit the economic opportunities of landowners, while landowners are less convinced (Table 13).

Table 14: Section 3, Question 8. In general, how do you feel about conservation easements (CEs)?							
% of those who responded "neutral"							
	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Difficult to enforce	1209	55	57	55	52	54*	2.87
Improve quality of life	1214	45	43	43	44	44	2.85
Don't understand	1077	36	39	40	38	39	2.97

* Indicates value exceeds 50 % given the margin of percent error.

Respondents were fairly uncertain whether conservation easements would be difficult to enforce or had any effect on the local quality of life. More than 1/3 of respondents were less informed about conservation easements than they would like to be (Table 14).

Once it was known how stakeholders perceived conservation easements, they were asked about the potential implementation of a CE program in Moffat County. Overall, survey results predict that people might be willing to consider the implementation of such a program, but that they are not convinced that a CE program is the

appropriate path. About 20% of nonresidents (who likely would not vote in a local referendum) are supportive of a local CE program, a somewhat greater proportion than residents. About 25 to 35% of local residents are opposed to the notion, about two to three times as many as are definitively in support. As a result, it can be predicted that the potential introduction of a CE program would face significant educational barriers and a relatively weak base of support at this time (Table 15).

(N=1243)	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All
% No	31	28	26	15	23
% Maybe	56	51	59	65	60
% Yes	13	21	15	20	17

% of those who responded with following choice					
(N=1141)	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All
County board of elected citizens	39	37	44	35	39

Survey participants tended to favor a county board of elected citizens operating a CE program (41%) in comparison to other groups such a state or federal agency or local, regional, or national non-profit, private organizations. Note that this is a plurality, not a majority of preference, thus some significant negotiation should be anticipated in working out the details of any locally implemented program. This preference tends to mirror the manner in which a Purchase of Development Rights program is commonly operated in the state of Colorado (Table 16).

% of those who responded “no”						
Q12, N=1263 Q14, N=1269	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Q12: Donate \$ to CE program	61	61	52	49	53*	2.81
Q14: Volunteer time for CE program	55	69	56	71	63*	2.71

* Indicates value exceeds 50 % given the margin of percent error.

A majority of respondents would neither donate money nor volunteer time for a CE program in Moffat County. Landowners are least likely to support the program financially and nonresidents are least likely to commit time to any potential CE program (Table 17). Individuals that answered “yes” or “maybe” to volunteering their time to a CE program would most likely volunteer for land evaluation and fact finding (28%) or an advisory committee (28%) rather than for an expenditure committee, contract/legal aid work, a monitoring committee, for administering the CE program, or for fundraising (Table 19).

Table 18: Section 3, Question 13. What is the maximum amount you would donate per year for the CE program?					
N=472	Res Land	NR Land	Resident	Non-Res	All
Average \$/year	104	206	75	101	105

Of those who are willing to contribute financially to a local CE program, nonresident landowners pledge approximately double the other groups are each willing to pay (Table 18). Our results indicate that about 1/3 of Moffat County resident and nonresident stakeholders would contribute financially to a CE program and that their maximum average contribution would be about \$105 per year. Such contributions from 1/3 of the target populations would result in an annual budget of approximately \$210,000.

Table 19: Section 3, Question 15. How would you most like to volunteer your time?					
% indicating the following option					
N=465	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All
Land Evaluation/ Fact Finding	38	29	28	16	25
Advisory committee	32	41	22	35	31

Of those who pledge to contribute their time to a local CE program, group responses vary by as much as 1/3 and average 9 hrs per month (Table 20). Extrapolated to the entire population who are likely to contribute to the program results in an estimated 19,000 volunteer hours per year or the equivalent of about 10 full time employees, which would be more than adequate to manage such a program were the individuals appropriately skilled.

Table 20: Section 3, Question 16. What is the maximum amount of time you would volunteer?					
N = 437	Res Land	NR Land	Resident	Non-Res	All
Average hours/month	12	10	9	8	9

Tables 18-20 provide evidence that financial and human/staffing resources for a conservation easement program are available.

Individuals who own large tracts of land (100+ acres) may or may not be willing to place their land, or portions of their land, into a conservation easement program. The survey gauged landowners' preferences with regard to participation in a local CE program.

Table 21: Section 3, Question 17. Would you consider placing your land into any type of CE program?			
N=400	% of Res Land Group	% of NR Land Group	% of All Large Landowners
% No	54	49	52
% Maybe	40	42	41
% Yes	6	9	7

More than ½ of all Moffat County landowners would not participate in a local CE program. A small minority of landowners would participate in a CE and a large proportion would consider participation (Table 21). Of those who would participate in a local CE program, the average amount of land people are willing to enter into the program is about 500 acres, with nonresidents weighing in at about 150 acres higher than residents (Table 22). Total willingness to enter land into a local CE program is on the order of 50,000 acres. However, these averages mask the pledge of a few individuals interested in obligating as much as 5,000 acres into such a program.

Table 22: Section 3, Question 18. If YES, how many acres of your land would you consider putting into any type of CE program?		
N=105	Res Land	NR Land
Average # of acres	433	585

Landowners demonstrate little preference for the type of compensation that they would prefer for entering lands into a local CE program with about ½ of respondents considering each option unacceptable. However, resident landowners are very unlikely to participate in a program that offers payment for public access (Table 23). This is interesting considering public access was shown previously (Table 13) to be an important feature of a local CE program to non-landowners. Just under half of respondents were interested in entering into a local CE program that featured compensation for the preservation of wildlife habitat (Table 24).

Table 23: Section 3, Question 19. How likely would you be to put your land into any type of CE program for the listed rewards?					
% of those who responded to “unlikely”, “very unlikely”					
Reference	# of Responses	% of Res Land Group	% of NR Land Group	% of All Large Landowners	% Error +/-
For payment of development rights	275	50	42	46	6.01
Reduce property taxes	271	52	51	51.5	6.07
Reduce estate tax	271	42	49	45.5	6.05
Reduce federal income tax	271	48	49	48.5	6.07
Payment for public access	263	71	51	61*	6.02

* Indicates value exceeds 50 % given the margin of percent error.

Table 24: Section 3, Question 19. How likely would you be to put your land into any type of CE program for the listed rewards?			
% of those who responded to “likely,” or “very likely”			
Reference (N=269)	% of Res Land Group	% of NR Land Group	% of All Large Landowners
Payment for wildlife habitat	41	48	45

There appears to be some resistance to the longer term commitments of a CE contract (Table 25). It can be argued that a permanent easement should be the only alternative, primarily because anything else amounts to subsidized real estate speculation for the landowner and does not result in preservation. In terms of policy efficiency, there is little financial difference between a longer term easement and a permanent easement payment (Table 26). Note here that the number of responses is small and representative of a limited number of landowners.

Tax relief usually is only afforded to permanent easements. However, many government programs (federal conservation, wetlands, and grasslands reserve programs, for example) feature less than permanent easements for somewhat reduced payments other than tax breaks. The principal argument here is that there will be less participation in a program that features only permanent easements and, therefore, very little chance at preservation of locally desired or valued intact rural lands.

Table 25: Section 3, Question 20. If both permanent and limited term CEs were available in Moffat County, how likely would you be to put your land into a CE of the following type?
% of those who responded to “unlikely”, “very unlikely”

Reference	# of Responses	% of Res Land Group	% of NR Land Group	% of All Large Landowners	% Error +/-
Permanent CE	278	67	71	69*	5.55
10 year term lease	277	43	39	41	5.91
20 year term lease	268	59	62	60*	5.99
30 year term lease	267	68	64	66*	5.80
40 year term lease	265	72	67	69*	5.68

* Indicates value exceeds 50 % given the margin of percent error.

Table 26: Section 3, Question 21. What is the minimum one-time price you would accept for the development rights to your land if it were in...?

Reference	# of Responses	Average \$ per acre		
		Res Land	NR Land	All Large Landowners
Permanent CE	81	6440	1990	4426
10 year term lease	82	6644	918	3990
20 year term lease	69	5156	1505	3516
30 year term lease	68	5678	2212	4149
40 year term lease	67	7050	2977	5165

The amount of compensation considered adequate by respondents indicates that some degree of educational programming would be useful in the implementation of a local CE program. Resident landowners apparently gauge the conservation value of their land at some 2-5 times the value of nonresident landowners and at rates seen only in urban areas on the East Coast of the United States (Table 26). Nonresident landowners state minimum compensation values roughly in line with those received in programs around the state of Colorado (Loomis, et al., 2004). Historically, landowners typically have received 20-80% of the market value of their land in compensation for their development rights (Marshall et al., 2003).

The final questions of Section 3 relate to other types of land use controls besides CEs. Tables 27–30 reveal what respondents thought about impact fees, increased taxes, and the creation of land use districts (LUDs) as ways to manage rural residential development.

Table 27: Section 3, Question 22. How do you feel about the following ways to manage the county costs of rural residential development?

% of those who responded “agree,” or “strongly agree”

Reference (N=1209)	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Developers pay impact fee	74	76	77	85	79*	2.34

* Indicates value exceeds 50 % given the margin of percent error.

All groups of respondents indicated that developers should pay an impact fee to cover the additional costs of rural residential development borne by the county (Table 27).

Table 28: Section 3, Question 22. How do you feel about the following ways to manage the county costs of rural residential development?

% of those who responded “disagree,” or “strongly disagree”

Reference	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Rural residents pay increase fees	1194	68	65	49	61	58*	2.86
Increase sales taxes	1183	66	61	66	53	61*	2.84
Increase property tax	1186	80	75	72	66	71*	2.64

* Indicates value exceeds 50 % given the margin of percent error.

All groups of respondents were opposed to an increase in fees to rural residents, sales or property taxes to cover increased county costs due to rural residential development. Large acreage landholders tended to have stronger objections to increased fees and taxes to support rural residential development (Table 28).

Table 29: Section 3, Question 23. How do you feel about the following Land Use District options for Moffat County?

% of those who responded “agree,” or “strongly agree”

Reference	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All	% Error +/-
Ag districts	1124	40	46	44	53	47	2.98
Wildlife corridors	1136	43	52	57	68	59*	2.92
Residential districts	1105	34	36	44	55	46	3.00
Public access to recreation corridors	1123	32	37	55	65	53*	2.98
Need more info	918	64	55	51	48	52	3.30

* Indicates value exceeds 50 % given the margin of percent error.

Landowners were unsupportive of any sort of land use districting in Moffat County, except for nonresident landowners favoring wildlife habitat or migration corridors. Nonresident non-landowners were supportive of all types of land use districts, while resident non-landowners supported districts only for wildlife corridors or public access to recreation corridors, such as rivers. More information was needed across all local stakeholder groups (Table 29), generating a large proportion of “maybe” responses to the potential policy option (Table 30).

Table 30: Section 3, Question 24. Would you like to see a Land Use District program operating in Moffat County?

N=1217	Res Land	NR Land	Resident	Non-Res	All
% No	36	32	23	15	23
% Maybe	56	57	60	65	61
% Yes	8	11	17	20	16

Sections 4 & 5: Landownership and Demographics

The final sections of the survey were developed to create a profile of the survey respondent. These responses help researchers determine the validity of the respondent sub-sample. Answers to these questions aids researchers in understanding what motivated the respondent to answer survey questions in the manner they did. It also helps create a picture of the type of people who live in Moffat County and their reasons for owning land in the area.

A vast majority of respondents own land in Moffat County (Table 31). A majority of residents live on the land they own while a vast majority of nonresident respondents do not (Table 32). People tend to be longtime Moffat County residents and property owners, especially the large landowners (Tables 38 and 33). Land parcels in Moffat County tend to be quite large (Table 34). Interestingly land holdings by residents tend to be in the relatively less remote eastern half of the county, while nonresident landholdings tend to be in the public lands dominated western half of the county (Table 35).

Table 31: Section 4, Question 26. Do you own land in Moffat County?					
N=1313	Res Land	NR Land	Resident	Non-Res	All
% Yes	98	98	66	98	86

Table 32 : Section 4, Question 27. Do you live on the land you own?					
N=1093	Res Land	NR Land	Resident	Non-Res	All
% Yes	76	21	82	9	46

Table 33: Section 4, Question 28. How long have you owned property in Moffat County?					
N=1053	Res Land	NR Land	Resident	Non-Res	All
Average # years	29	33	17	16	20

Table 34: Section 4, Question 29. How many acres do you own in Moffat County?					
N=980	Res Land	NR Land	Resident	Non-Res	All
Average # acres	1612	1192	159	40	438

Table 35: Section 4, Question 30. In which half of the County is your land?					
N=960	Res Land	NR Land	Resident	Non-Res	All
% East	63	31	66	52	56
% West	37	69	34	48	44

Table 36: Section 4, Question 31. About what percent of your income comes from the following sources:						
Reference	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All
Ag Operations	764	38	26	7	5	13
Hunt, fish, recreate	670	11	9	5	4	6
Off-farm work	770	54	37	54	38	46

Although agricultural lands are the dominant private land use in the county, the majority of the money fueling the Moffat County economy comes from other sources. Like many rural and traditionally agricultural communities, landowning residents currently depend on off-farm income even more than the income from their farm operations, on average (Table 36).

Table 37: Section 4, Question 32. Would you consider developing part of your land for the income it would provide?					
N=1042	Res Land	NR Land	Resident	Non-Res	All
No	47	43	70	57	59
Yes	18	14	8	13	12
Maybe	35	43	22	29	29

More residents and non-residents owning relatively smaller amounts of land on average stated that they would not develop their land, 70% and 57% respectively. A less certain majority (“maybe” + “no” responses) of large landowners would not consider developing their land for financial reasons (Table 37).

Table 38: Section 4, Question 33. How long have you lived in Moffat County?					
N=1239	Res Land	NR Land	Resident	Non-Res	All
Average # of years	40	11	25	6	18

Table 39: Section 4, Question 34. How many months per year do you live in Moffat County?					
N=1257	Res Land	NR Land	Resident	Non-Res	All
Average # months	11	3	12	1	7

Moffat county residents live in the county year round regardless of their ties to the land. Nonresidents tend to spend relatively little time in the county, although large landowners spend approximately ¼ of the year in Moffat County.

The majority of large landowners live outside of the county’s incorporated areas and the overwhelming majority of non-landowner residents live in Craig. However, a relatively large proportion of resident large landowners live within the Craig city limits as well (Table 40).

Table 40: Section 4, Question 35. Do you live within an incorporated area?					
N=1194	Res Land	NR Land	Resident	Non-Res	All
Craig	44	9	78	21	44
Dinosaur	1	0.5	3	3	2
Neither	55	90	18	76	54

Americans are living longer, which increases the average age of most communities. However, rural communities are aging more rapidly than urban areas because young people tend to move to the cities. Moffat County follows this nationwide trend. Here, nonresidents are about 4 yrs senior to residents of the same category and landowners are about 7 yrs older than non-landowners controlling for residency on average (Table 41). Nearly all of the respondents have at a least a high school education (Table 43); a majority are male (Table 42) and tend to be middle-aged.

Table 41 : Section 4, Question 36. What is your age?					
N=1308	Res Land	NR Land	Resident	Non-Res	All
Average age in years	58	62	51	55	55

The results in Table 41 give some rationale to the responses found in Tables 8 and 9. If respondents tend to be older than 50, then it seems reasonable they would not be starting a family in Moffat County.

N=1305	Res Land	NR Land	Resident	Non-Res	All
% Female	28	28	32	26	29
% Male	72	72	68	74	71

N=1288	Res Land	NR Land	Resident	Non-Res	All
H.S. Diploma or more	91	96	94	98	95

A majority of respondents reported 2000 gross annual incomes exceeding \$40,000; nonresidents tended to have higher incomes (Table 44). Residents tend to rely more on wage income sources, whereas nonresidents are more likely than residents to derive income from dividends, interest and rent. Non-landowners are more highly dependent on wages and salaries relative to landowners (Table 45).

N=1163	Res Land	NR Land	Resident	Non-Res	All
% < \$40,000	37	27	31	18	26
% ≥ \$40,000 - \$99,999	46	43	60	53	53
% ≥ \$100,000	17	31	10	29	21

Reference	# of Responses	% of Res Land Group	% of NR Land Group	% of Resident Group	% of Non-Res Group	% of All
Wages, salaries, tips, commissions	1017	56	50	83	69	70
Interest, dividends, rent, investment	851	29	39	18	29	26
Social security, other gov't assistance	720	20	26	21	17	20

N = 1122	Res Land	NR Land	Resident	Non-Res	All
% White collar	13	27	33	39	32
% Blue collar	11	10	31	18	21
% Service	0.5	2	2	2	2
% Other (student, house spouse, retired, disabled)	27	45	24	35	31
% Government	2	0.5	3	0.5	2
% Ranch/Farm	42	14	4	2	9
% Self-employed	5	1	4	2	3

These occupational groupings are derived from the categories in the Colorado occupational employment statistics (BLS, 1999). White collar refers to 12 categories including the following: Management; Business and Financial Operations; Computer and Mathematical; Architecture and Engineering; Life, Physical, and Social Sciences; Community and Social Services; Legal; Education Training, and Library; Art, Design, Entertainment, Sports, and Media; Healthcare Practitioners and Technical; Healthcare Support; and Office and Administrative Support. Blue collar refers to the following: Protective Service; Food Preparation and Service; Building and Grounds Cleaning and Maintenance; Personal Care and Service; Construction and Extraction; Installation,

Maintenance and Repair; Production; and Transportation and Material Moving. Service refers to Sales and related occupations. Nonresidents are more likely to have white collar occupations or be part of the “Other” category (student, house spouse, retired, disabled) than resident respondents.

Non-residents tend to be more in the white collar occupational category or other (retired) than their resident counterparts.

Part V: Conclusions

We can derive the following summary information from the Moffat County Private Lands Preferences Survey:

- Over 50% of each of the four sub-samples responded to the survey.
- Respondents tended to own large amounts of land; residents lived on their land; and all groups tended to have owned their land for over 15 years AND not be immediately interested in developing their land.
- Resident respondents tended to have lived in Moffat County for over 25 years and non-residents about half as long.
- Most residents who own less than 100 acres or no land at all live in Craig while the majority of the other groups tended to reside in unincorporated areas.
- Respondents typically are male, over 50 years in age, possess a high school diploma, reside in a household that grossed over \$40,000 in 2000 and derive a majority of their income from wages, salaries, tips and commissions.
- Non-residents usually earned a bit more income, more so from investment sources, and were more likely to be white collar or retired occupationally, relative to resident respondents.
- Benefits of rural residential development are considered to be improved health care, schools, jobs and higher incomes. Urgent concerns associated with such development are loss of wildlife habitat, open space, and access to public lands as well as reduced water availability and quality.
- Respondents believe rural residential growth offers urban/community services to the detriment of rural and resource amenities.
- Respondents believe the future will bring population growth and increased cost of living. People will continue to live and recreate in Moffat County, but are unlikely to start families or new businesses there. This must be reconciled with the average respondent age being in excess of 50 years.
- Rural resources are greatly valued, particularly access to public lands, water availability/quality, and the continued existence of wildlife habitat.
- A large majority of respondents believe that individual and community property values are interdependent. A smaller majority believe that private property rights are extremely important, though they also indicate that their neighbor’s property rights should be less exclusive. These beliefs, while consistent with expectations, are at cross purposes and will need to be addressed in order for any public policy on land use to be successful.
- A large majority indicates that rural lands of many types should be maintained in Moffat County.
- A majority of respondents were undecided about having a conservation easement (CE) program in the County: there were more “No” than “Yes” responses.
- Those that did support the program offered sufficient financial and volunteer resources to run a local (non profit) land trust.
- A short term lease program, with compensation for wildlife habitat and that is run locally, may be a CE option for the future.
- Landowners interested in CEs require compensation that substantially exceeds the standard offer for Colorado CEs.

- A majority of respondents are undecided about a Land Use District program in Moffat County, there were more “No” than “Yes” responses. Support may exist if the purpose is to protect wildlife migration corridors and crucial winter range.
- A voluntary, market based solution (CEs) to rural growth management is not supported outright, although the maybe response is in the majority. There is currently a need for information about such programs in order for local people to make informed choices about their land use policy alternatives.
- A regulatory approach (LUDs) to rural growth management is not supported outright, although the “maybe” response is in the majority. Again, more information is desired to make informed choices.
- Tax/fee increases are not acceptable to pay for additional county services and infrastructure necessary because of rural residential development. Impact fees paid by developers to offset cost of community services due to development are preferred.
- Finally, there were notable differences in responses between residents and non residents, as well as between large landholders and other respondents. In terms of public policy implications, particular attention must be paid to the relationship between landowners and non-landowners. Landowners control the private land resources in the county and arguably have the most to gain or lose financially from policies affecting land use. Non-landowners constitute the vast majority of local taxpayers and, probably, voters. As a result, local policy is likely to be driven by non-landowners. When the preferences of these two groups are at cross purposes, local public policy concerns can be expected. It would be wise to take the stances of the various stakeholder groups into consideration when evaluating the efficacy of potential incentive based or regulatory measures to guide local land use and economic development.

Resources

- Brower, D., C. Carraway, T. Pollard, and C. L. Propst. 1984. *Managing Development in Small Towns*. Washington and Chicago: American Planning Association, Planners Press.
- Bastian, C., D. McLeod, M. Germino, W. Reiners and B. Blasko. 2002. “The Contribution of Environmental Amenities to Agricultural Land Values: Hedonic Modelling Using Geographic Information Systems Data.” *Ecological Economics*. 40:337-349.
- Census of Agriculture (1997). “Agriculture Census for Moffat County, Colorado and Colorado.” Website: <http://govinfo.library.orst.edu/cgi-bin/ag-list> (Sept. 2000).
- Colorado Department of Local Affairs. Website: <http://www.colorado.edu/libraries/govpubs/colonumb/cbncontents.htm> (Jun 2000).
- Coupal, R., D. McLeod, and D. Taylor. 2002. “The Fiscal Impacts of Rural Residential Development: An Econometric Analysis of the Cost of Community Services.” *Planning and Markets*. 5(1): 24-31. <http://www-pam.usc.edu/>
- Coupal, R. and A. Seidl 2003. *Rural Land Use and Your Taxes: The Fiscal Impact of Rural Residential Development in Colorado*. Agricultural and Resource Policy Report, Department of Agricultural and Resource Economics, Colorado State University, March 2003, APR03-02. <http://dare.agsci.colostate.edu/csusagecon/extension/pubstools.htm#LandUse>. 25 pp.
- Daniels, T., J. Keller, M. Lapping. 1995. *The Small Town Planning Handbook*. Chicago: American Planning Association.
- Economic Profile – Craig, Colorado (Moffat County Fact Sheet 1). Craig Chamber of Commerce-mail: info@craig-chamber.com
- Kline, J. and R. Alig. “Does land use planning slow the conversion of forest and farm lands?” *Growth and Change*. 30 (Winter 1999): 3-5.
- Long, M.. “Colorado’s Front Range.” *National Geographic*. 190 n. 5 (Nov. 1996): 80-103.
- Loomis, J.B, V. Rameker, and A. Seidl. 2004. “A hedonic model of public market transactions for open space protection.” *Journal of Environmental Planning and Management*. January 2004. 47(1): 83-96.
- Marshall, A., D. Hoag, and A. Seidl. 2003. *Landowner expectations and experiences with conservation easements. Compensatory programs for conserving agricultural land*. Agricultural Issues Center, University of California, Davis. 262 pp, Pp 91-106. www.aic.ucdavis.edu

- Marshall, A., D. Hoag, A. Seidl, and C.J. Mucklow. 2002. *What landowners should know when considering conservation easements*. CSU-AES Technical Paper #02-03, Colorado State University, November 2002. <http://dare.agsci.colostate.edu/csusagecon/extension/pubstools.htm#LandUse>
- Marshall, A., D. Hoag, and A. Seidl. 2002. *Colorado Conservation Easement Survey*. CSU-CE Technical Bulletin #02-03, Colorado State University, November 2002.
- McLeod, D., K. Inman, R. Coupal, J. Woirhaye, J. Gates, A. Bittner and A. Seidl. 2002. *Results From Four Rocky Mountain Land Use And Planning Surveys*. Reflections. 12(1): 41. College of Agriculture, University of Wyoming, Laramie, WY.
<http://www.uwyo.edu/Agexpstn/Reflections/2002/reflections2002.pdf>
- McLeod, D., R. Coupal, A. Seidl, K. Inman and D. Taylor. 2003. "Opportunities and Challenges for Land Use Planning in the Intermountain West." *Journal of Extension* 41(5): article 5.
<http://www.joe.org/joe/2003october/a5.shtml>
- Rudel, T. 1989. *Situations and Strategies in American Land-Use Planning Handbook*. Chicago: American Planning Association.
- Rudzitis, G. and H. Johansen. "Migration into Western Wilderness Counties: Causes and Consequences." *Western Wildlands*. 14-15 (Spring 1989): 19-23.
- Salant P. and D. Dillman. 1994 *How to Conduct Your Own Survey*. New York: John Wiley & Sons.
- Seidl, A. 2001. "Colorado professionals' concerns, abilities, and needs for land use planning." *Journal of Extension*. 39(4), August 2001. <http://www.joe.org/joe/2001august/rb5.html>.
- Seidl, A., J. Freedgood. and F. Hunt. 2005. *Agriculture and Land Use Planning*. *The Encyclopaedia of Water*. John Wiley and Sons: Ohio. <http://www.wileywater.com/> Forthcoming.
- Seidl, A. and P. Watson. 2004. *Understanding your economy through secondary data: Moffat County, Colorado*. Economic Development Report, Department of Agricultural and Resource Economics, Colorado State University, April 2004, EDR04-09.
<http://dare.agsci.colostate.edu/csusagecon/extension/pubstools.htm#EconDev>
- Shumway, J. and J. Davis. "Nonmetropolitan Population Change in the Mountain West: 1970-1995." *Rural Sociology*. 61 n. 3 (1996): 513-529.
- Steiner, F. 1991. *The Living Landscape: An Ecological Approach to Landscape Planning*. New York: McGraw Hill.
- Todres, T., A. Seidl, D. McLeod, A. Bittner, R. Coupal. and K. Inman. 2003. *Preferred public land use and policy in Moffat County: Final report of a countywide opinion survey*. Agricultural and Resource Policy Report, Department of Agricultural and Resource Economics, Colorado State University, December 2003, APR03-11. 56 pp. <http://dare.agsci.colostate.edu/csusagecon/extension/pubstools.htm#LandUse>
- United States Bureau of Census. 2000. "Profile of Selected Social Characteristics (Colorado), Profile of General Demographic Characteristics (Moffat County and Colorado), and Profile of Selected Economic Characteristics (Colorado)." Website: <http://factfinder.census.gov> (Nov. 2001).
- U.S. Department of Commerce, Bureau of Economic Analysis. "Regional Accounts Data: Local Area Personal Income. Personal Income by Major Source and Earnings by Industry, Colorado." Website: http://www.bea.doc.gov/bea/regional/reis/ca05/08/ca05_08000.htm (Sept. 2000).
- Zube, E.. 1980. *Environmental Evaluation: Perception and Public Policy*. Cambridge: Cambridge University Press.

Appendix 1: Questions from the Moffat County Private Land Use Preferences Survey

MOFFAT COUNTY LAND USE SURVEY

Thank you for participating in this survey. You are part of a random sample of Moffat County residents and/or landowners. Please take the time to read and respond to your County's request for input. All answers are voluntary and confidential and will be summarized for analysis. None of your responses will be individually reported.

LOGO GOES HERE

Any questions??

Please contact:

Dr. Donald McLeod or Dr. Kate Inman, Survey Administrators
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PO Box 3354, University of Wyoming
Laramie, WY 82071-3354
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SECTION 1. MOFFAT COUNTY: Rural residential growth may provide benefits and/or raise concerns.

1. What are the most important benefits associated with rural residential growth in Moffat County?

(Circle one for each. 1=least important, 2= less important, 3=neutral, 4= important, 5= most important.)

	Least			Most	
	Important	Neutral		Important	
a. More neighbors and friends...	1	2	3	4	5
b. Increased property tax base...	1	2	3	4	5
c. Business opportunities...	1	2	3	4	5
d. Improved schools...	1	2	3	4	5
e. More diverse County population...	1	2	3	4	5
f. More jobs...	1	2	3	4	5
g. Better telecommunications...	1	2	3	4	5
h. Higher incomes...	1	2	3	4	5
i. Increased quality of life...	1	2	3	4	5
j. More shopping opportunities...	1	2	3	4	5
k. Improved health care...	1	2	3	4	5
l. Improved county services/infrastructure...	1	2	3	4	5
m. Increased property values...	1	2	3	4	5
n. Other _____	1	2	3	4	5

2. What are the most urgent concerns associated with rural residential growth in Moffat County?

(Circle one for each. 1=least urgent, 2= less urgent, 3=neutral, 4= urgent, 5= most urgent.)

	Least			Most	
	Urgent	Neutral		Urgent	
a. Loss of open space...	1	2	3	4	5
b. Loss of wildlife habitat and migration corridors...	1	2	3	4	5
c. Increased taxes to pay for county services/infrastructure...	1	2	3	4	5
d. Increased land use conflicts...	1	2	3	4	5
e. Loss of access to public lands...	1	2	3	4	5
f. Increased congestion (traffic)...	1	2	3	4	5
g. Increased property values...	1	2	3	4	5
h. Increased weed problems...	1	2	3	4	5
i. Decreased quality of life...	1	2	3	4	5
j. Loss of Western rural livestock culture...	1	2	3	4	5
k. Loss of solitude...	1	2	3	4	5
l. Reduced water quality...	1	2	3	4	5
m. Reduced water availability ...	1	2	3	4	5
n. Other _____	1	2	3	4	5

SECTION 2. FUTURE EXPECTATIONS.

3. Do you expect the following will occur in Moffat County over the next 10 years?

(Circle one for each. 1=greatly decrease, 2=decrease, 3=stay same, 4=increase, 5=greatly increase.)

	Greatly		Stay		Greatly
	decrease		Same		increase
a. County population will...	1	2	3	4	5
b. Your quality of life will...	1	2	3	4	5
c. Your cost of living will...	1	2	3	4	5
d. Your economic opportunity will...	1	2	3	4	5

4. **Given your answers in question 3, what are you likely to do in 10 years?**

(Circle one for each. 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.)

	Strongly disagree		Neutral		Strongly agree
a. Live in Moffat County	1	2	3	4	5
b. Start a family in Moffat County	1	2	3	4	5
c. Develop property in Moffat County	1	2	3	4	5
d. Work in Moffat County	1	2	3	4	5
e. Retire in Moffat County	1	2	3	4	5
f. Start a business in Moffat County	1	2	3	4	5
g. Recreate in Moffat County	1	2	3	4	5

5. **Property ownership** involves **rights** (freedom, choices) and **responsibilities** (duties, limits).

How do you feel about the following.....?

(Circle one for each. 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.)

	Strongly disagree		Neutral		Strongly agree
a. I should be able to do anything I want with my land	1	2	3	4	5
b. My neighbors should be able to do anything they want with their land	1	2	3	4	5
c. My property values depend in part on my neighbor's property management	1	2	3	4	5
d. Neighbors need to consider each other's property values when managing their property	1	2	3	4	5

6. **The management of private land is** (Please circle one of the following)

- a. entirely a public matter.
- b. mostly a public matter.
- c. equally a public and private matter.
- d. mostly a private matter.
- e. entirely a private matter.

Importance Of Rural And Agricultural Lands: Moffat County rural lands that are available and most likely to be developed are ranch and farm lands. These lands are located out of town, and may or may not have wildlife, scenic views, streams, historical sites or other such qualities.

7. **How important is keeping the following kinds and uses of rural land in Moffat County to you?**

(Circle one for each. 1=not important, 2=barely important, 3=important, 4=very important, 5=extremely important.)

	Not at all important		Important		Extremely important
a. Owner operated working farms and ranches	1	2	3	4	5
b. Lands with hunting and fishing opportunities	1	2	3	4	5
c. Lands with residential development potential	1	2	3	4	5
d. Lands with wildlife habitat	1	2	3	4	5
e. Lands providing open space	1	2	3	4	5
f. Lands with historic/cultural sites	1	2	3	4	5
g. Other _____	1	2	3	4	5

SECTION 3. PLANNING FOR GROWTH AND DEVELOPMENT

General Features of Conservation Easements Programs (CEs): Conservation easements are voluntary but enforceable contracts made between a landowner and another person or organization. They are made to protect natural, scenic, agricultural, or open space features of land parcels by limiting the type and amount of development permitted on the property. The landowner keeps the title and use of the land and may receive tax breaks or monetary payment in return. The terms of the easement are negotiable and made by agreement with both the landowner and easement holder. They do not usually call for public access on the land. Private or public organizations can operate conservation easement programs. Land trusts are an example of CEs.

8. In general, how do you feel about conservation easement programs (CEs)?

(Circle one for each. 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.)

	Strongly disagree		Neutral		Strongly agree
a. CEs are a market for open space (willing buyers and sellers):					
Ranchers gain income and County residents gain open space	1	2	3	4	5
b. CEs help to preserve wildlife habitat from development	1	2	3	4	5
c. CEs reduce economic opportunity for landowners	1	2	3	4	5
d. CEs are a means of slowing residential growth	1	2	3	4	5
e. CEs reduce landowners' control of their property	1	2	3	4	5
f. CEs are an opportunity to provide landowner income	1	2	3	4	5
g. CEs are too difficult to enforce	1	2	3	4	5
h. CEs can improve quality of life for all County residents	1	2	3	4	5
i. CEs should provide public access if publicly funded	1	2	3	4	5
j. I don't understand CEs – need more information	1	2	3	4	5
k. Other _____	1	2	3	4	5

9. Would you like to see a CE program operating in Moffat County? (Circle one please)

YES / MAYBE / NO

10. If NO, why not?

Consider large parcels of land (at least 100 acre parcels) that are good for farming or ranching, that have wildlife habitat, scenic views, streams and/or other valuable qualities. These parcels could be along streams, ridge tops or next to public lands. Suppose some owners of such land were willing to participate in a **conservation easement (CE) program**. Please answer the following questions as if this were the case.

11. If a CE program were started in Moffat County, who would you like to see operate it?

*(Please circle the one you would **MOST** like.)*

- | | |
|-------------------------------------------------------------------------|--------------------------|
| a. Local private organization (like Yampa Valley Land Trust) | e. County Planning Board |
| b. Regional private organization (like Colorado Cattleman's Land Trust) | f. State Agency |
| c. National non-profit organization (like American Farmland Trust) | g. Federal Agency |
| d. County board of Elected Citizens | h. Other _____ |

12. Given your answer above, would you donate money to the organization or agency of your choice for the administration of the CE program? (Circle one).

YES / MAYBE / NO

(IF NO, GO TO QUESTION 14)

13. What is the maximum amount you would donate per year for the CE program?

\$ _____ per year, maximum

14. Would you volunteer your time to work for the CE program? (Circle one please)

YES / MAYBE / NO (IF NO, GO TO QUESTION 17)

15. How would you most like to volunteer your time? (Circle one please)

- a. Expenditure committee
- b. Land evaluation/fact finding
- c. Contract development/legal aid
- d. Monitoring committee
- e. Administering the CE program
- f. Fundraising to obtain money for CE program
- g. Advisory committee
- h. Other _____

16. What is the maximum amount of time you would volunteer? _____ most hours per month

17. If you own at least 100 acres of rural land in Moffat County, would you consider putting your land into any type of CE program? (Please circle one.)

YES / MAYBE / NO / DON'T OWN LAND (IF NO or DON'T OWN LAND, GO TO QUESTION 27)

18. If YES, how many acres of your land would you consider putting into any type of CE program?

_____ acres

19. How likely would you be to put your land into any type of CE program for the listed rewards? (Circle one for each. 1=very unlikely, 2=unlikely, 3=neutral, 4=likely 5=very likely.)

	Very unlikely		Neutral		Very likely
a. For payment for the development rights only	1	2	3	4	5
b. For reduced property taxes only	1	2	3	4	5
c. For reduction of estate inheritance taxes only	1	2	3	4	5
d. For reduction of Federal income taxes only	1	2	3	4	5
e. For payment for providing wildlife habitat only	1	2	3	4	5
f. For payment for providing recreational access only	1	2	3	4	5
g. Other _____	1	2	3	4	5

CE programs can be negotiated for different lengths of time (term easement) or on a permanent basis.

20. If both permanent and limited term CEs were available in Moffat County, how likely are you to put your land into a CE of the following type...?

(Please circle one for each 1=very unlikely, 2=unlikely, 3=neutral, 4=likely 5=very likely.)

	Very unlikely		Neutral		Very likely
a. a permanent CE program	1	2	3	4	5
b. a 10 yr term (lease) CE program	1	2	3	4	5
c. a 20 yr term (lease) CE program	1	2	3	4	5
d. a 30 yr term (lease) CE program	1	2	3	4	5
e. a 40 yr term (lease) CE program	1	2	3	4	5

21. What is the minimum one time price you would accept for the development rights to your land if it were in ...?

- a. a permanent CE \$ _____ per acre, minimum
- b. a 10 yr lease CE agreement \$ _____ per acre, minimum
- c. a 20 yr lease CE agreement \$ _____ per acre, minimum
- d. a 30 yr lease CE agreement \$ _____ per acre, minimum
- e. a 40 yr lease CE agreement \$ _____ per acre, minimum
- f. Other _____ \$ _____ per acre, minimum

22. Rural residential development *often requires additional County services and infrastructure.*

How do you feel about the following ways to manage the County costs of rural residential development?

(Circle one for each. 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.)

	Strongly disagree		Neutral		Strongly agree
a. Developers pay an Impact Fee to cover additional costs	1	2	3	4	5
b. Landowners pay a Transaction Fee to cover additional costs	1	2	3	4	5
c. Rural residents living further from town pay increased taxes/fees to cover County costs	1	2	3	4	5
d. Increased sales taxes	1	2	3	4	5
e. Increased property taxes	1	2	3	4	5

Land Use Districts: Land use districts (**LUDs**) are the separation of a county into areas by land use.

LUD rules give the preferred customary use by district. Other uses in a district are not prevented but must recognize the priority of preferred uses within that district. Individuals who live in an agricultural district cannot complain about customary agricultural practices.

23. **How do you feel about the following Land Use District options for Moffat County?**

(Circle one for each. 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.)

Do you think the County should:	Strongly disagree		Neutral		Strongly agree
a. Create commercial districts	1	2	3	4	5
b. Create industrial districts	1	2	3	4	5
c. Create agricultural districts	1	2	3	4	5
d. Create wildlife migration corridors/crucial winter range	1	2	3	4	5
e. Create residential districts	1	2	3	4	5
f. Create public access/recreational corridors	1	2	3	4	5
g. I need more information about Land Use Districts	1	2	3	4	5
h. Create mixed use districts	1	2	3	4	5
i. Other _____	1	2	3	4	5

24. **Would you like to see a Land Use District program operating in Moffat County?** (Please *circle one*)

YES / MAYBE / NO

25. *If NO, why not?*

SECTION 4. LAND OWNERSHIP

26. Do you own land in Moffat County? YES / NO (Circle one please)

(IF NO, GO TO SECTION 5, QUESTION 33)

27. Do you live on the land you own? YES / NO (Please circle one)

28. How long have you owned property in Moffat County? _____ years (Oldest property)

29. How many acres do you own in Moffat County? _____ acres

30. In which half of the County is your land? (Please circle one) EAST / WEST

31. About what percent of your income comes from the following sources:

- a. agricultural operations _____ % income
- b. hunting, fishing or recreation _____ % income
- c. off-farm work/activities _____ % income

32. Would you consider developing part of your land for the income it would provide?

NO / MAYBE / YES (Please circle one)

SECTION 5. DEMOGRAPHICS: A little about you to determine fairness/completeness of results.

33. How long have you lived in Moffat County? _____ (Years)

34. How many months per year do you live in Moffat County? _____ (Months)

35. Do you live within an incorporated area (like Craig or Dinosaur)? (Please circle one) YES / NO

36. What is your age? _____ (Age in years)

37. What is your gender? (circle one please) Female Male

38. What is your highest level of education? (Please circle one)

- a. less than 12 years
- b. high school diploma
- c. some college
- d. Associate degree (2 years)
- e. Bachelor's degree (4 years)
- f. some graduate school
- g. post-graduate degree (i.e., MA, PhD, DDS)

39. About how much was your 1999 household gross annual income? (Circle one please)

- a. less than \$10,000
- b. \$10,000 – \$19,999
- c. \$20,000 – \$29,999
- d. \$30,000 – \$39,999
- e. \$40,000 – \$49,999
- f. \$50,000 – \$59,999
- g. \$60,000 – \$69,999
- h. \$70,000 – \$79,999
- i. \$80,000 – \$89,999
- j. \$90,000 – \$99,999
- k. \$100,000 -- \$109,999
- l. \$110,000 -- \$119,999
- m. \$120,000 -- \$129,999
- n. \$130,000 and above

40. **About what percent of your income comes from the following sources:**

wages, salaries, tips, commissions?	_____	%
interest, dividends, rent, investments, private pensions?	_____	%
Social Security, other government assistance?	_____	%

41. **What is your current occupation?** _____

If you have any comments about land use and planning in Moffat County please write them here.