FINAL

LA PLATA COUNTY IMPACT REPORT

La Plata County

October 2002

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ACRONYMS AND ABBREVIATIONS

AADT	Average annual daily traffic
ADP	Application for permit to drill
ADT	Average daily traffic
APD	Application for permit to drill
ATV	All-terrain vehicle
bhp	Brake horsepower
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOPE	Blowout Prevention Equipment
BOCC	Board of County Commissioners
C.R.S.	Colorado Revised Statutes
CBM	Coalbed methane
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CFR	Code of Federal Regulations
CGS	Colorado Geological Survey
CIR	County Impact Report
COGCC	Colorado Oil and Gas Conservation Commission
CR	County road
CUP	Conditional use permit
dBA	Decibels measured on the A-weighted scale
DEIS	Draft environmental impact statement
DOLA	(Colorado) Department of Local Affairs
EDD	Economic Development District
EIS	Environmental impact statement
EMS	Emergency medical services
EPA	U.S. Environmental Protection Agency
ESAL	Equivalent Single Axle Load
FAA	Federal Aviation Administration
FS	U.S. Forest Service
GIS	Geographic information system
L_{dn}	A measure of the average noise level for day and night
LOS	Level of service
LPEA	La Plata Electric Association
mcf	Million cubic feet
mg/L	Milligrams per liter
MMS	Minerals Management Service
MOA	Memorandum of agreement
MOU	Memorandum of understanding
mph	Miles per hour
MW	Megawatt
NOS	Notice of staking
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NSJB	Northern San Juan Basin
OSHA	Occupational Safety and Health Act
ppm	Parts per million
PUD	Public utilities distric

RMP	Resource management plan
ROW	Right of way
rpm	Revolutions per minute
SH	State highway
SPCC	Spill Prevention Control and Countermeasures (Plan)
SU	Single Unit Trucks
SUIT	Southern Ute Indian Tribe
SUP	Surface use program
TDS	Total dissolved solids
TSI	Transportation System Inventory
TST	Trailer semi-trailer
VMT	Vehicle miles traveled

EXECUTIVE SUMMARY

SUMMARY

This section provides an overall summary of the County Impact Report (CIR) that was prepared to identify the potential impacts to and mitigation measures for specific resources in La Plata County from the anticipated development of coal bed methane (CBM). The resources addressed were selected based on the goals and objectives defined by La Plata County. The CIR covers a study area defined by La Plata County and is based on the maximum number of Colorado Oil and Gas Conservation Commission (COGCC) established well windows within the study area. With these parameters, it is anticipated that about 318 additional CBM wells could be drilled in the study area. Of these 318 CBM wells, up to 194 could occur on private lands. These wells would be in addition to the 285 existing CBM, conventional gas, and disposal wells within the study area.

This summary provides a brief overview of the potential impacts of and mitigation measures for the resources addressed in the CIR. It briefly describes the goals and objectives of the CIR (Section 2.0), the existing conditions (Section 3.0), anticipated CBM development (Section 4.0), potential impacts from the anticipated CBM development (Section 5.0), options for minimizing or mitigating the primary impacts, and possible implementation methods for the options (Section 6.0).

LAND USE

The existing land use for most of the land area within the study area is agriculture/rangeland. The land use generally considered most sensitive to CBM development is residential. Currently, there is no countywide designation of future land uses for La Plata County and there are no defined countywide zoning districts.

The primary potential impacts to land use associated with CBM development include direct loss of agricultural land displaced by CBM facilities and the convergence of residential and CBM development over time.

Objectives defined by the county for mitigation related to land use impacts included development of quantitative measures for mitigating land use conflicts and impacts to property values, providing full disclosure of information on all relevant topics, providing information on precedents concerning ways to ease surface impacts through policy and code changes, defining legal and practical ways for surface interests to have more influence on the facility siting process, and defining options to mitigate impacts of well drilling and production on agricultural activities.

The key options identified for minimizing land use conflicts and impacts from CBM development include four primary methods. First, the county could designate future land use categories, including defining CBM development areas, in the Comprehensive Plan. Second, the county could add performance-based zoning to the La Plata County Land Use Code, with defined zoning districts and specified performance standards. In addition, the county could define an Overlay District for methane seepage hazard areas or CBM development areas, where residential development could be limited, setbacks increased, or both. Third, the county could develop and implement more detailed performance standards oil and gas development permits to include additional mitigation measures to minimize visual and noise impacts to adjacent properties. Finally, a Surface Use Program could be developed for CBM wells on private lands similar to the standards required for wells on federal lands. This option could be implemented using the well permitting process of either the county or the state.

SOCIOECONOMICS

The economy of La Plata County is well diversified. Currently, the oil and gas industry represents about 1 percent and tourism represents about 40 percent of the total basic employment in the county. From 1989 to 2000, revenues from oil and gas property tax have increased from approximately 12 to 45 percent of the total property tax revenues of the county. The population in the county has been growing over the last decade, and is expected to continue to grow with or without CBM development. Revenues in the county have continued to increase over time in proportion to population increases, while the oil and gas labor force has decreased in recent years.

The primary socioeconomic impacts associated with the anticipated CBM development are increased revenues to the county during the 30-year production period, primarily from property tax revenues from CBM well production sales. This impact is positive, but the property tax revenues from the CBM wells would decline gradually over time at the end of the production period. However, total revenues to the county, as well as expenses, are expected to continue to increase over time in proportion to population increases, with or without CBM development.

Because the small number of new jobs associated with the project would represent less than a 1 percent increase in either the total basic employment or total population of the county, there would little impact to employment, per capita income, population, or housing.

The anticipated CBM development could affect some property values because of the effects of the proximity of wells for the life of the project. Property sales data were used to determine the affect of well proximity on property values. The results from the modeling effort performed by BBC Research and Consulting indicated that in general, the proximity of 1 or more CBM wells to a residential property had a small effect on property sales values; on average, properties near wells may have a sales value less than 1 percent lower than properties that are not near wells. Although the overall property values in the study area have not been significantly (less than 1 percent) affected by CBM wells, the model indicates that properties with a CBM well located on them (12 of 754 properties studied) have had a net reduction in sales value of 22 percent. Based on increases in overall property values of almost 7 percent per year over the last decade, overall property values in the study area are likely to continue to increase over the life of the project.

One option to minimize the socioeconomic impacts from the decline of tax revenues from CBM development over time is to increase the mill levy. This option would be implemented by voter approval of an increase mill levy, and by law could not be increased by more than 5 percent from the previous year, not counting inflation. The county could also actively pursue continued diversification of the economy using tax incentives for new industry.

Impacts to property values could be minimized by including performance-based zoning in the Land Use Code to limit residential development near existing CBM facilities, well windows, or lease areas; by requiring disclosure of mineral ownership and proposed CBM development at the time a property is transferred; or by reducing tax assessments for properties affected by proximity to CBM wells to provide tax relief as compensation.

TRAFFIC AND TRANSPORTATION

Access to existing CBM well sites in the study area is primarily from county and Forest Service (FS) roads that connect with the highway system. Workers and vehicles that transport oil and gas equipment and supplies for CBM operations and maintenance in the study area use this network, sharing this

infrastructure with residential, business, or agricultural traffic and visitors to the area. County roads (CRs) in the study area used to access existing CBM well sites include roads with asphalt and gravel surfaces. CRs 200, 234, 501, 509, and 510 are most heavily traveled. The highest accident rates are CRs 228, 234, 501, and 509.

Maintenance vehicles account for an estimated 371 trips per year for daily maintenance, and an annual workover trip for each well. The roads with the highest level of maintenance vehicle trips for existing wells are CRs 223, 228, 501, 504, 505, and 527.

Five types of impacts would affect the ability of the county to maintain roads that would be used during maximum development of the new wells: (1) the impact of additional traffic volume on county roads; (2) the impact on existing roadway congestion; (3) the impact on the number of traffic accidents in the study area; (4) the potential cost increases related to road maintenance from truck traffic generated by anticipated CBM development, including maintenance related to invasions of noxious weeds; and (5) conflicts with public access to existing residential areas from CBM traffic on county roads, as well as from construction and operation of well access roads.

The maximum CBM maintenance traffic associated with the additional wells compared with existing traffic levels on study area roads from all vehicle types would generate less than 10 percent of additional vehicle daily trips on every affected county road, and less than 1 percent traffic on U.S. Highway 160.

The additional maximum CBM construction traffic for all vehicle types would generate increases in traffic . Heavy truck traffic would account for the majority of CBM construction vehicle trips. Construction vehicles would affect road surfaces to a greater degree than is indicated by the small increases in overall traffic volume. Heavy truck traffic would result in increased road maintenance costs because heavy trucks cause more damage to road surfaces of all types than do automobiles and light trucks.

One option for mitigating transportation impacts from CBM development would be to specify that a portion of tax revenue generated by CBM production be applied to maintain the roadways used by the industry.

Other options for minimizing impacts and conflicts of CBM development traffic on county roads include methods of providing additional revenue to the county from the establishment of additional fees for CBM-related vehicles using county roads or for developing new access roads. The county also could develop agreements with operators to construct improvements and maintenance on roads that are affected by oil and gas operations. This agreement would decrease county expenditures for road maintenance related to CBM development. All of these options would result in additional costs to operators.

The development of new fees or permits related to oil and gas industry use of county roads would require a revision of the following sections of the La Plata County Code: Oil and Gas Performance Standards for Roads and Access; Roads and Bridges, Development Standards and Specifications; and Roads and Bridges, Size, Weight and Load Limits. Implementation of additional fees and permits may temporarily increase expenditures by the county. If agreements are used, the county would need to develop road use agreements that would require operators to maintain roads and bridges to standards and specifications developed for the county code for oil and gas industry uses of county roads.

VISUAL RESOURCES

The visual sensitivity of an area is affected by the type of land use and the landscape type. The CIR study area generally consists of a scenic quality that tends to be common throughout the surrounding area and is not outstanding or unique. Visual impacts from oil and gas development consist of the introduction of solid geometric features, such as meter houses, pump jacks, condensate tanks, on-site storage tanks, and covered produced water pits on the landscape. Linear elements associated with oil and gas pipelines, roads, and well pads can involve clearing of dense vegetation and or construction on steep slopes that makes them more noticeable.

As the number of wells within the study area increase, more people and viewpoints will be visually affected. The impacts will be more prominent during the construction phase and less prominent during the operation phase. The level of visual sensitivity to new well facilities varies by land use type. Agricultural lands will have the fewest viewers, but the well characteristics are most apparent in this land use category as a result of the relatively flat topography and short vegetation of homogeneous color. Rural residential lands will have more viewers than on agricultural lands, but the topography and vegetation colors and heights will vary, possibly screening the well facilities in the middleground and background distance zones. High-density areas residential will have more viewers, but the wells are often screened from multiple viewers by the homes in these areas.

Visual impacts from wells and related facilities could be mitigated through the siting process so that they are strategically located to minimize visual impacts. This approach could minimize the number of receptors (persons that may view the facilities) and lessen the likelihood that the site will attract attention. Examples of this type of visual mitigation include locating facilities at the base of slopes instead of on ridges and designing roads to follow the contours of the land. Wells could also be visually mitigated using specific post-construction and operation measures. This approach could be used in addition to siting mitigation, or used when siting mitigation is not feasible. Examples of this type of mitigation include painting facilities, landscaping, feathering or rounding the edges of a surface location, and using low-profile equipment. Based on the impacts, the most extensive mitigation should occur in the immediate and foreground distance zones in all land uses.

To implement these mitigation measures, the review process for oil and gas development could include a checklist with a quantitative ranking system for visual impacts and mitigation measures. These measures could be incorporated into performance standards for specific zoning or overlay districts, and in the permitting process for CBM facilities.

NOISE

Existing noise levels in rural locations of La Plata County, with the exception of locations along highways and in large towns, are generally in the range of 42 to 45 A-weighted decibels (dBA). However, existing noise is higher near the existing 285 oil and gas wells plus ancillary facilities, such as compressor stations, that represent current activity. The COGCC noise standards state that CBM facilities should not produce a noise of more 55 dBA during the day and 50 dBA at night at residences. Construction-related noise can exceed 55 dBA at 1,500 feet from construction sites, but is short term at any one location and would occur only during daytime hours. On the other hand, noise from a typical compressor station generally occurs 24 hours per day and is approximately 50 dBA at 375 feet from the property boundary. The noise from pumping units at each well is approximately 50 dBA at 325 feet from the well pad and also occurs 24 hours per day.

Several options are available to reduce noise impacts from a CBM facility. Because noise decreases by approximately 6 dBA with every doubling of distance, the best, and most economic, option is a distance separation between a CBM facility and a noise-sensitive receptor. Compressor engines are often enclosed in buildings not only for noise suppression but also for climate protection and security measures. Noise mufflers could be installed on the compressor engine exhaust. Finally, placing obstacles such as walls and berms or using naturally occurring topographical features can be used to reduce noise impacts. A barrier can reduce noise at least 5 dBA if it breaks the line of sight between a CBM facility and a receptor. Generally, noise will be reduced by 1.5 dBA with each 3.5 feet of barrier height above the line of sight. These measures could be incorporated into performance standards for specific zoning or overlay districts and in the permitting process for CBM facilities.

HEALTH AND SAFETY

The Fruitland Formation is the geologic formation in the area that is the target of CBM development. Historical and existing public health risks associated with this formation and documented before CBM development began include methane and hydrogen sulfide gas seepage into domestic water wells and residences, dying vegetation, coal fires along the outcrop, and coal mine explosions. Within the study area, areas where the documented frequency of soil gas seeps is higher than background values are located near the outcrop area for the Fruitland Formation. Wildfires within the study area may ignite both naturally occurring methane gas seeps and potential methane gas leaks associated with CBM development. Fire management in the San Jan Basin is a coordinated interagency effort. Cooperative agreements among the federal, state, and local agencies are in place to facilitate rapid emergency response.

Several federal, state, and local health and safety regulations are applicable to oil and gas well drilling operations. As a result of poor isolation of the coal zones in older wells and potential methane seepage from additional development, increased public safety risks are anticipated to occur in proportion to the number of additional CBM-related facilities. There would be a potentially increased risk of methane seepage in soils and water wells, fires, and accidents with increased CBM development. Residential properties near the anticipated CBM facilities would be most sensitive to these risks.

The options to mitigate potential public health and safety impacts from CBM development include using performance-based zoning and adequate setbacks to provide buffer zones between methane seepage hazards areas, CBM facilities, and residential or other development to minimize public health and safety risks in the event of accidental releases of combustible gases. Additionally, when considering well site locations, areas within unventilated deep or narrow spaces where combustible gases may accumulate in the event of an accidental release should be avoided. The county could also enforce requirements for operators to submit annual updates for Emergency Preparedness Plans and require dust suppression and traffic control plans to minimize potential health and safety and traffic accidents as needed for access roads.

In permitting oil and gas facilities, the county could require geo-referenced spatial data for as-built locations of wells access road locations, flowlines, and other facilities to minimize incidents associated with accidental excavation within gas line locations and to facilitate emergency response, if needed. This option could be implemented using performance standards for new developments in the zoning code and the permitting process for CBM facilities. The county could establish cooperative agreements with federal and state agencies to facilitate information sharing and to defer the regulation and monitoring of health and safety-related issues associated with CBM development to other regulatory agencies.

1.0 INTRODUCTION

1.1 LA PLATA COUNTY AND COAL BED METHANE DEVELOPMENT

La Plata County, Colorado, has a long history of development of both subsurface minerals and surface resources within its unincorporated areas. The oil and gas industry contributes $20 million annually in property taxes to La Plata County, representing almost half of the county's tax base (BLM 2000a). The industry currently employs almost 300 people in the county, and many county residents receive royalty payments. Although La Plata County contains only about 10 percent of all natural gas wells in Colorado, more than half of the natural gas produced in Colorado during in 1998 came from La Plata County (BLM 2000a).

The area where energy development primarily occurs within La Plata County is known as the Northern San Juan Basin (NSJB) Field or Ignacio-Blanco Field, which is part of the San Juan Basin Gas Field that extends into northern New Mexico. The San Juan Basin contains one of the nation's richest deposits of natural gas in coalbeds (coalbed methane).

The Fruitland coal beds lie beneath the basin interior, but the coal seams tilt upwards and are exposed at the surface along the rim of the basin. The Fruitland coal beds contain a significant amount of gas reserves. Technology that is used allows the production of methane from the coal beds, which is termed coalbed methane (CBM). CBM is natural gas produced by decomposition of carbon-rich organic matter during the process of coal formation. The San Juan Basin's CBM production exceeds any other basin in the world, with almost 4 trillion cubic feet or 2 percent of the natural gas consumed in the U.S. annually (BLM 2000a). The amount of natural gas used in the U.S. is estimated to increase by almost 40 percent over the next decade.

Conventional gas exploration began in the early 1900's in the San Juan Basin. Development and exploration of these conventional resources continues through the 1970's with oversight by the COGCC. Drilling of conventional reservoirs continues until 1982 when an over supply of gas nation wide caused a decline in gas prices. Subsequent development of conventional reservoirs has been sporadic with drilling and development dictated by pipeline capacity and prices.

Colorado Oil and Gas Conservation Commission (COGCC) records on oil and gas development in La Plata County date back to the early 1900's. The first recorded production from coalbeds was in 1951, but extensive methane development did not flourish in the San Juan Basin until the mid 1980's.**Table 1-1** identifies the number of wells completed within La Plata County portion of the San Juan Basin, by mineral ownership. The COGCC does not have complete information regarding the surface ownership of these wells by year.

1.2 LA PLATA COUNTY'S CHALLENGE

La Plata County has experienced an expanding rural population and, with this growth, challenges between the private rural population and CBM development have occurred. Specifically, land use conflicts have increased, prompting concern by the county staff and residents of La Plata County. The challenge is to find a balance between future CBM development and an increasing rural population and to develop ways to mitigate potential conflicts between CBM development and other land uses.

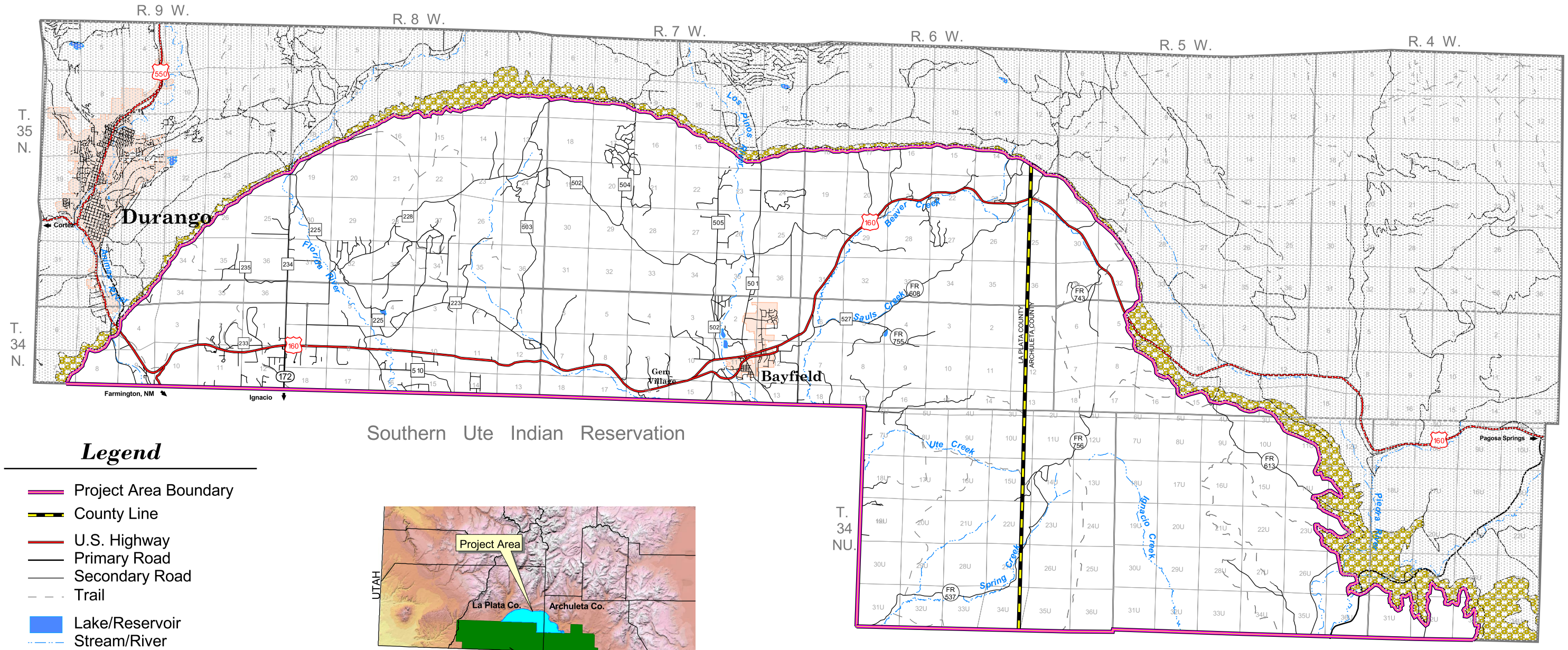
Therefore, the county has taken a proactive approach to meet this challenge and specifically addressed these issues by developing this County Impact Report (CIR).

Table 1-1 La Plata County Oil and Gas Wells by Completion Date Mineral Interest Ownership				
Year	**Federal**	**Fee**	**Indian**	**State**
1985	2	25	36	
1986	3	44	42	2
1987		20	14	
1988	9	107	84	5
1989	7	47	86	3
1990	8	97	74	2
1991	13	87	81	3
1992	11	55	25	0
1993	6	36	24	0
1994	2	18	12	0
1995	0	9	15	0
1996	0	9	6	0
1997	0	31	36	2
1998	0	29	37	0
1999	0	26	59	0
2000	0	50	48	0
2001	2	55	42	1
2002	3	16	5	0
Total	**66**	**761**	**726**	**18**

1.3 DESCRIPTION OF NORTHERN SAN JUAN BASIN COAL BED METHANE PROJECT

Currently, six companies have proposed to increase development of CBM gas associated with coals of the Fruitland Formation in the NSJB within La Plata and Archuleta Counties. This proposed project is referred to as the Northern San Juan Basin Coalbed Methane Project (NSJB CBM Project), and a federal Environmental Impact Statement (EIS) is also being prepared for the project. The companies have proposed to drill and operate 300 to 350 additional CBM wells on approximately 125,000 acres. As of 2001, an estimated 250 or more wells would be located in La Plata County associated with this proposal. The companies would construct and operate these wells and necessary ancillary facilities on 91,000 acres in La Plata County. The NSJB CBM EIS Project Area includes private (fee), state, and public (federal) lands. The federal lands within the EIS Project Area are administered by the Bureau of Land Management (BLM) (San Juan-San Miguel Field Office) and the U.S. Forest Service (FS) (San Juan National Forest). The EIS Project Area is made up of the portion of the NSJB located north of the Southern Ute Indian Tribe (SUIT) Reservation. The Project Area is bounded on the south by the reservation and on the west, north, and east by the arcing line of the outcrop of the base of the Pictured Cliffs Sandstone (**Figure 1-1**).

The proposed CBM development is proceeding under a new "well-spacing order" issued in July 2000 by the COGCC. The order allows for well drilling at a density of one well per 160 acres (one-quarter square mile), down from the previous density of one well per 320 acres (one-half square mile). The companies may drill perhaps as many as 120 to 130 wells on private lands and a few additional wells on state lands. The companies would drill the remainder of the wells on federal lands or on resources administered by one of two agencies, BLM or the FS (**Figure 1-2**).



Legend

- Project Area Boundary
- County Line
- U.S. Highway
- Primary Road
- Secondary Road
- Trail
- Lake/Reservoir
- Stream/River
- Municipal Area
- Fruitland Formation Outcrop

2 0 2 4 6 8 *Kilometers*

2 0 2 4 6 8 *Miles*

La Plata County transportation data provided by the La Plata County Transportation Study, 1998. Hydrologic and Archuleta County transportation features extracted from 1:100,000 USGS SDTS data.

Transverse Mercator Projection
1927 North American Datum
Zone 13

LA PLATA COUNTY IMPACT REPORT

FIGURE 1-1
PROJECT STUDY AREA

ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO

Date: 10/15/02 | ArcView File: C:\994-sanjuan\CIR.apr

Prepared By: JG

R. 9 W. R. 8 W. R. 7 W. R. 6 W. R. 5 W. R. 4 W.

T. 35 N.

T. 34 N.

Durango

Cortez

Farmington, NM

Ignacio

Bayfield

Gem Village

Pagosa Springs

Los Pinos River

Florida River

Animas River

Beaver Creek

Sauls Creek

Ute Creek

Spring Creek

Ignacio Creek

Piedra River

LA PLATA COUNTY
ARCHULETA COUNTY

Southern Ute Indian Reservation

T. 34 NU.

Southern Ute Indian Reservation

Legend

- Project Area Boundary
- Existing Compressor
- Existing Non-Fruitland Well
- Existing Fruitland Well
- Existing Disposal Well
- County Line
- U.S. Highway
- Primary Road
- Secondary Road
- Trail
- Lake/Reservoir
- Stream/River
- Municipal Area
- Fruitland Formation Outcrop

Land Ownership
- BLM
- PRIVATE
- STATE
- USFS

N W E S

2 0 2 4 6 8 *Kilometers*

2 0 2 4 6 8 *Miles*

La Plata County transportation data provided by the La Plata County Transportation Study, 1998. Hydrologic and Archuleta County transportation features extracted from 1:100,000 USGS SDTS data.
Existing wells extracted from COGCC well database and edited by BLM & USFS.
Surface ownership data provided by the USFS.

Transverse Mercator Projection
1927 North American Datum
Zone 13

LA PLATA COUNTY IMPACT REPORT

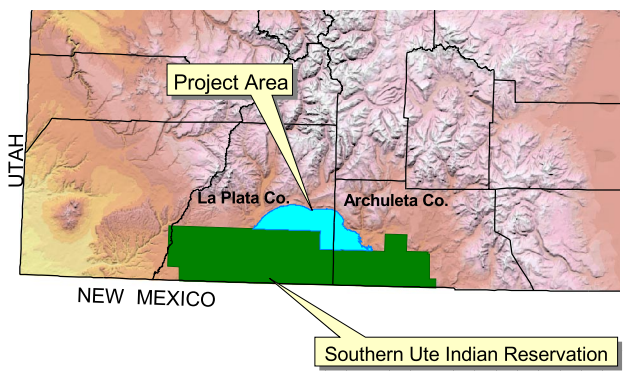
FIGURE 1-2
SURFACE OWNERSHIP

ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO

Date: 10/15/02 | ArcView File: C:\994-sanjuan\CIR.apr

Prepared By: JG

Durango
Bayfield
Ignacio
Pagosa Springs
LA PLATA COUNTY
ARCHULETA COUNTY
160
550
84



Transverse Mercator Projection
1927 North American Datum
Zone 13

6 0 6 12 18 24 *Kilometers*

6 0 6 12 18 24 *Miles*

Legend

NSJB CBM EIS Project Area Boundary

CIR Study Area

LA PLATA COUNTY IMPACT REPORT

FIGURE 1-3
EIS PROJECT AREA
& CIR STUDY AREA

ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO

Date: 06/17/02	ArcView File: C:\994-sanjuan\CIR.apr
	Prepared By: JG

1.4 COUNTY IMPACT REPORT

La Plata County has responded to the potential challenges in CBM development and land use conflicts facing county residents by using the development of the federal EIS Project Area as a means to facilitate assessment of the potential impacts that result from and appropriate mitigation measures for CBM development in La Plata County. The purpose of the CIR is to evaluate and identify possible amendments to the La Plata County Land Use Code that could be employed to minimize conflicts between residential land use and development of natural gas. This document is a planning document used to collect information and identify potential impacts. The recommendations produced in this report are only recommendations. This document is not a policy document and is not to subject adoption by the Board of County Commissioner (BOCC) as a legally binding land use code. The staff will write a report that will be distributed to the public that makes suggestions of which recommendations to follow. The public will have an opportunity to submit comments on that report and testify at the BOCC public hearing. The CIR is being developed by La Plata County with grant funding from the Colorado Department of Local Affairs.

For the CIR analysis, La Plata County carved out the portion of the EIS Project Area identified above. This CIR was prepared as a stand-alone document to analyze potential impacts of CBM development specific to La Plata County to serve as a technical support document for county planning, and was prepared independently of the federal EIS. The EIS Project Area in relation to the boundary of the La Plata County CIR Study Area is shown in **Figure 1-3.** The CIR Study Area is the portion of the EIS Project Area that is within La Plata County (91,000 of the 125,000 acres is in La Plata County), as shown on **Figure 1-3**. Although the CIR Study Area (study area) is smaller than the entire county, the results of the CIR may apply to the entire county.

This report used Geographic Information System (GIS) technology to develop a detailed database that identifies the opportunities and constraints on county land use. These data are used to compare existing and maximum CBM development that could occur within the study area.

2.0 LA PLATA COUNTY GOALS AND OBJECTIVES

La Plata County identified specific goals for the CIR, which included evaluating a number of social and economic impacts of proposed CBM development, identifying mitigation measures to address identified impacts, and producing an analysis in the form of an impact report. La Plata County developed the "La Plata CIR Goals and Objectives for the Impact Process," which is provided as **Appendix A.**

The CIR addressed these goals by developing a database of information and framework for analyzing existing conditions in relation to the maximum impacts of potential CBM development, and more importantly for proposing mitigation measures the county can incorporate into its planning and regulatory system.

2.1 IMPACT TOPICS FOR LA PLATA COUNTY

The county specifically identified impact topics that would be addressed and that may have relationships to CBM development in the goals of the CIR (**Appendix A**). The impact topics to be addressed are listed in the following:

- Road,
- Property Value,
- Economics,
- Public Safety,
- Fire and Emergency Response,
- Noise,
- Visual,
- Subdivision/Residential Land Use, and
- Agriculture

2.2 ORGANIZATION OF REPORT

This document assesses the existing environmental polices and current conditions for the resources pertinent to the impact topic goals defined by La Plata County to assess potential impacts associated with CBM development, and to develop options to minimize or mitigate them. The CIR Report analyzed the following resources:

- Land use,
- Social and economic environment,
- Traffic and transportation,
- Visual resources,
- Noise, and
- Health and safety.

The report is divided into four main sections:

- Describe the current policies, regulations, and existing environmental conditions for the pertinent resource topics in the study area (Section 3.0)
- Define the maximum anticipated CBM development that could occur within the study area (Section 4.0).
- Analyze and assess the potential impacts to La Plata County from the anticipated CBM development (Section 5.0).
- Identify options for minimizing or mitigating the primary potential impacts from the anticipated CBM development (Section 6.0).

3.0 CURRENT POLICIES AND ENVIRONMENTAL CONDITIONS

The following section discusses of the existing policies and environmental conditions within the study area. Existing conditions are presented as a comparison with potential CBM development. Background or existing information is needed to compare and present impacts, and ultimately, mitigation measures for CBM development.

3.1 PLANNING AND LAND USE CONTROLS

The existing and historical planning and land use controls over CBM development for La Plata County, as well as for the state and federal government, are presented in this section to compare potential land use impacts and mitigation measures.

3.1.1 History of Planning in La Plata County

Substantial growth of residential land use in the study area, as in much of La Plata County, dates from the early 1970s. Subdivision rules have existed countywide since 1971. During this period, variances, rezoning, exemptions, and amendments to regulations created residential lots in many of the county's historically rural and agricultural areas. Beginning in the late 1970s, development-related activities were characterized by a few large subdivisions, creation of lots by exemption, and platting of small subdivisions using a short procedure enacted in 1977.

La Plata County adopted a model zoning ordinance in 1972 and developed zoning rules for the Animas Valley and Junction Creek Planning Districts. In 1980, La Plata County adopted the La Plata County Permit System, which was a hybrid of land use and planning regulations. In 1994, La Plata County adopted a land use system, which was incorporated into the La Plata County Land Use Code in 1998.

A county planning commission was established in January 1983 to replace the Animas Regional Planning Commission. An open space committee was established in May 1983 and was dissolved in November 1992. In January 1988, the planning commission was authorized to certify land use plans and regulations for the county.

In 1988, the county added oil and gas regulations to its land use system. In the mid-1990s, La Plata County began preparing plans for planning districts within the county. To date, the county has drafted land use plans or mission statements for nine of the 10 districts created. These plans and statements are advisory only. The La Plata County Planning Commission adopted a draft Comprehensive Plan in December 2001 (La Plata County 2001a).

The two major communities in the study area also have established plans and regulations to control development. The City of Durango adopted its first comprehensive plan in 1984 and has had zoning regulations and subdivision regulations in place since 1969. The Town of Bayfield has had subdivision and zoning regulations in place since the 1970s.

3.1.2 Current Planning and Land Use Controls

The following section identifies the current planning and land use controls in La Plata County, the La Plata County Planning Districts within the study area, and federal and state controls. Specific information about controls for oil and gas development has been included in a separate section (Section 3.1.3).

3.1.2.1 La Plata County

The La Plata County Land Use Code, adopted in 1998 (La Plata County 1998a), provides a permitting system to regulate development. Development standards, specifications, and performance standards, including setbacks for CBM facilities, are included in the code. Currently, land use planning as addressed by the code is accomplished using a performance-based permitting system, generally allowing one single-family dwelling and agricultural uses on a given parcel of land. A land use permit must be obtained to develop a property for other land uses. This performance-based code is similar to a zoning code or land development regulations; however, La Plata County does not currently have a zoning code or defined zoning districts.

La Plata County also does not currently have countywide land use districts. The county has drafted land use plans for 10 planning districts (**Figure 3-1**). The City of Durango and Town of Bayfield have used comprehensive plans, which include land use and transportation elements, for growth areas that overlap onto lands regulated by La Plata County. These plans are advisory only.

Long-range planning in the county uses the land use classification maps developed for these planning districts. The county has adopted advisory land use plans or mission statements for nine of the 10 districts. Portions of the Bayfield, Florida Mesa, Southeast La Plata and Florida Road Planning Districts are located within the study area (La Plata County 1997a, 1997b, 1998b, 1999a). In addition, a small portion of the study area is within the City of Durango Planning Area.

Natural and demographic features to each planning district are unique. A land use classification map accompanies each planning district within the study area that depicts the designated long-range land use goals. An innovative, performance-based land use permit system and development review criteria are used to assure that proposed development is compatible with adjacent land uses. Mitigating measures may be required for potential impacts associated with proposed land uses.

The county developed a draft La Plata County Comprehensive Plan (La Plata County 2001a). The goal of the comprehensive planning process is to provide a countywide guide to growth, using the land use plans established by the planning districts.

The county completed a Comprehensive Transportation Study (Bechtolt 1999). This study evaluates the county road system in terms of existing development, and projections for population and land use to the year 2020. The county is anticipating adopting this study as the transportation element of the comprehensive plan. Portions of this study are discussed in detail in the transportation and the future land use sections of this document.

3.1.2.2 Planning Districts

The planning districts in the study area are discussed in the following subsections.

The Bayfield Planning District

The eastern portion of the study area within La Plata County is designated as the Bayfield Planning District. The Bayfield Planning District extends west from the Archuleta County line to the Florida Mesa Planning District and includes the Pine River Valley area. The Town of Bayfield and the unincorporated community of Gem Village, located west of Bayfield along U.S.

R. 9 W. R. 8 W. R. 7 W. R. 6 W. R. 5 W. R. 4 W.

T. 35 N.

T. 34 N.

T. 34 NU.

Durango

Bayfield

Gem Village

Cortez

Farmington, NM

Ignacio

Pagosa Springs

Florida River

Animas River

Los Pinos River

Beaver Creek

Sauls Creek

Ute Creek

Ignacio Creek

Spring Creek

Piedra River

LA PLATA COUNTY
ARCHULETA COUNTY

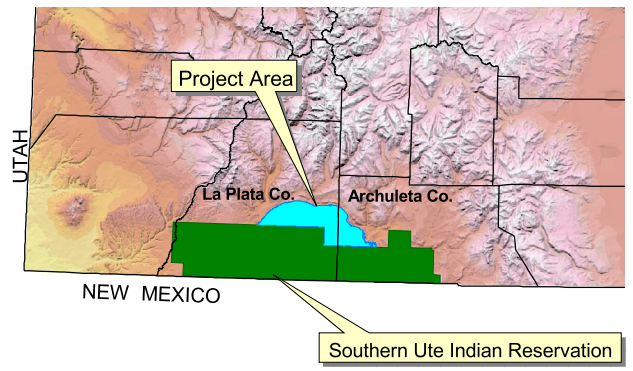
160 550 172 233 234 235 225 228 223 502 504 503 505 501 527 FR 608 FR 755 FR 743 FR 756 FR 613 FR 537

Southern Ute Indian Reservation

Southern Ute Indian Reservation

Legend

- Project Area Boundary
- Existing Compressor
- Existing Non-Fruitland Well
- Existing Fruitland Well
- Existing Disposal Well
- County Line
- U.S. Highway
- Primary Road
- Secondary Road
- Trail
- Lake/Reservoir
- Stream/River
- Fruitland Formation Outcrop
- Florida Road Planning District
- Southeast La Plata County Planning District
- Florida Mesa Planning District
- Durango Planning Area
- Bayfield Planning District



N W E S

2 0 2 4 6 8 Kilometers

2 0 2 4 6 8 Miles

La Plata County transportation data provided by the La Plata County Transportation Study, 1998. Hydrologic and Archuleta County transportation features extracted from 1:100,000 USGS SDTS data. Existing wells extracted from COGCC well database and edited by the BLM & USFS.

Transverse Mercator Projection 1927 North American Datum Zone 13

LA PLATA COUNTY IMPACT REPORT

FIGURE 3-1
PLANNING DISTRICTS

ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO

Date: 06/15/02 | ArcView File: C:\994-sanjuan\CIR.apr

Prepared By: JG

Highway 160, are located in the central portion of the Bayfield District. The Bayfield District was historically almost entirely a ranching/agricultural area. The land use map from the Bayfield Planning District is included as **Figure 3-2.**

Proposed projects that are not in conformance with the Bayfield District Land Use Plan (La Plata County 1997a) and classification map (La Plata County 1997b) require a plan amendment. Most of the private lands that are not subdivided within the Bayfield Planning District are classified as agricultural/residential.

The riverfront of the Pine River is identified as an important asset for riparian habitat and scenic qualities. The open lands adjacent to U.S. Highway 160 are generally designated as a scenic corridor based on the large open vistas, views to distant mountain peaks, or views of river corridors. Critical lands are defined as areas that create significant constraints on development. This land use category includes lands with slopes in excess of 30 percent, lands with unstable slopes or landslide potential, lands within the 100-year floodplain, and wetlands. The current uses for critical lands are primarily agricultural, recreational, timber harvesting, and wildlife habitat.

The Luter, Morgan, Greenfield, Leming, and Patton Protection Areas are located in the Bayfield District Planning Area within the study area. These sites are designated in the La Plata County Open Space Conservancy Protected Properties for the protection of wildlife resources (La Plata County 1999b).

Florida Mesa Planning District

The western portion of the study area is within the Florida Mesa Planning District of La Plata County (La Plata County 1998b). The Florida Mesa Planning District was historically the largest and most productive agricultural area in La Plata County. The Animas and Florida Rivers are located within this district and are identified as important areas for riparian habitat and scenic qualities. The proposed Arertesian Valley Ranch Master Plan, which involved a planned development for the construction of 244 lots on 953 acres, lost its vesting and has reverted to agricultural/rural residential in the Florida Mesa Plan. The proposed development was located just east of the City of Durango Planning District.

Proposed projects that are not consistent with the Florida Mesa District Land Use Plan (La Plata County 1998b) and classification map (La Plata County 1999a) require a plan amendment. Most of the private lands that are not subdivided within the Florida Mesa Planning District are classified as agricultural/rural residential (**Figure 3-3**). Critical lands are defined as areas that create significant constraints on development. This land use category includes lands with slopes in excess of 30 percent, lands with unstable slopes or landslide potential, lands within the 100-year floodplain, and wetlands.

Southeast La Plata Planning District

A portion of the study area is within the Southeast La Plata Planning District, located south of the Florida Mesa Planning District and adjacent to Archuleta County. A land use plan or land use classification map has not yet been developed for this planning district.

Florida Road Planning District

A small portion of the study area is within the Florida Road Planning District, located just northwest of the Florida Mesa Planning District. The land use goals for this area are similar to those described for the Florida Mesa Planning District.

City of Durango Planning Area

The westernmost portion of the study area is within the City of Durango Planning Area. Land use goals are for this area addressed in the Comprehensive Plan for the City of Durango (City of Durango 1997). Within the study area, "Potential Urban Areas" are identified along U.S. Highway 160, just south of Durango, and west and south of the intersection between U.S. Highways 160 and 550. The U.S. 160/550 Corridor Plan, adopted in 1996, provides for primarily commercial uses, some residential development set back from the highway, and recreational areas along the Animas River (**Figure 3-4**). The Animas River Corridor Plan, adopted in 1994, is an amendment to the comprehensive plan. The goals of the plan include the preservation of the visual quality and natural ecology of the riparian environment and development of recreational opportunities and accessibility along the river.

The City of Durango specifies requirements for facilities within the city limits. The minimum setbacks and permitted uses within the districts designated on the zoning district map (City of Durango 1989) are defined in the Land Use and Development Code (City of Durango 1994). Facilities that require heavy truck traffic generally require a Conditional Use Permit (CUP) and are limited to the Industrial District.

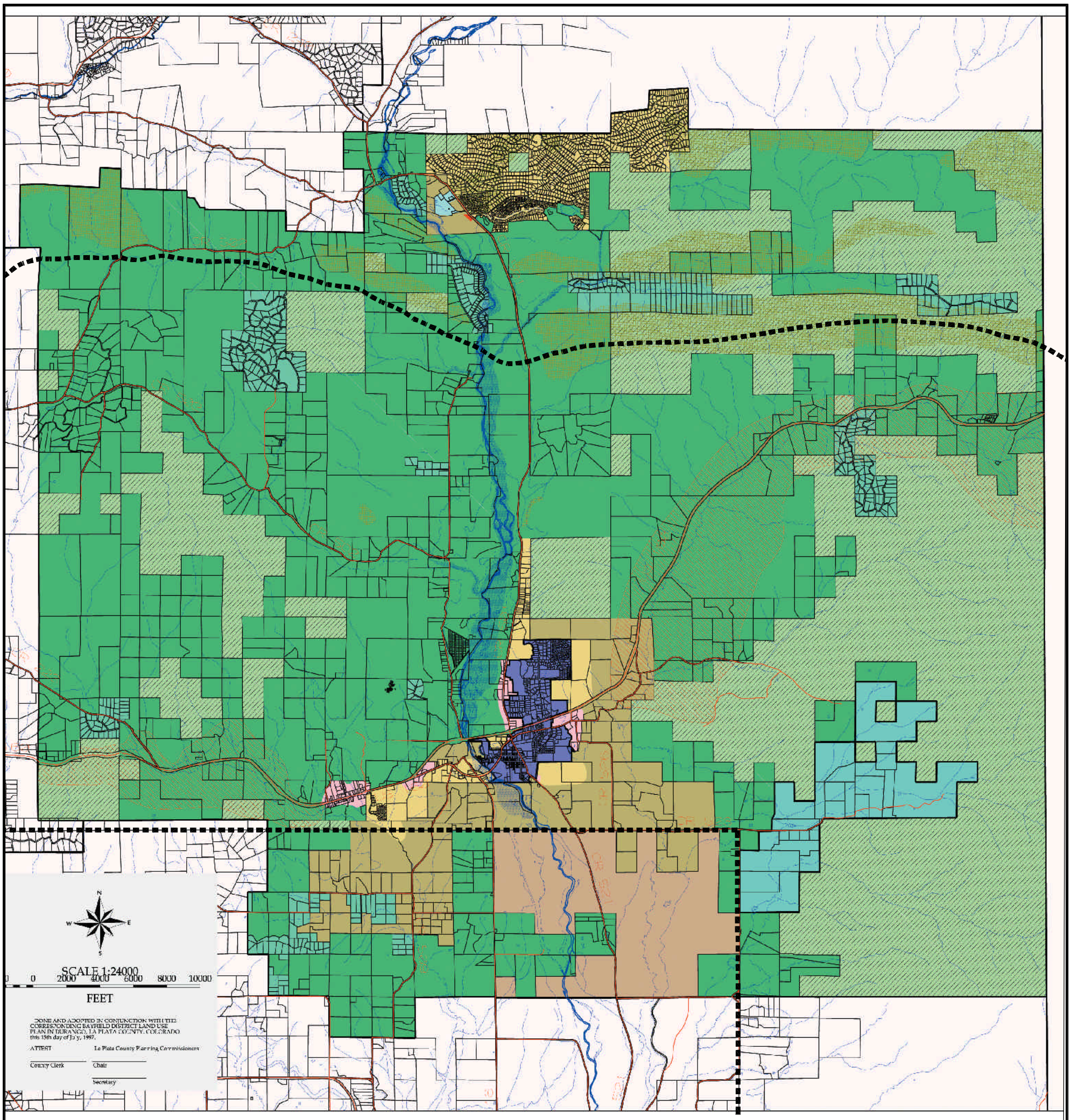
Town of Bayfield

The Town of Bayfield has adopted a comprehensive plan (Town of Bayfield 1996) and a land use permitting system (La Plata County 1997a). Expansion of the boundaries of the Town of Bayfield (through annexation) is anticipated. It generally would occur within the Bayfield Area of Influence, as designated on the Bayfield Planning District Land Use Classification Map (La Plata County 1997b). Bayfield completed a transportation study (1997) and a trails plan (1998, amended in 2000)

3.1.3 Oil and Gas Development Land Use Controls

The Colorado Supreme Court addressed the conflict between state and county authority over regulation of land use for oil and gas development. In *County Commissioners v. Bowen/Edwards Assoc.* (1992), the court ruled that La Plata County has the authority to regulate land use pertaining to oil and gas development, including enforcement of codes that call for mitigation of adverse impacts from oil and gas development.

The Colorado Supreme Court wrote that the "broad authority" granted to counties to regulate land use, through the county planning code (30-28-101 et seq. C.R.S.) and the Local Government Land Use Control Enabling Act (29-20-101 et seq. C.R.S), is not necessarily preempted by the state authority, under the Oil and Gas Conservation Act, to regulate all oil and gas development throughout Colorado. State law could preempt local regulatory authority under three distinct circumstances: (a) where the statutory language of the Oil and Gas Conservation Act expressly preempts local law; (b) where statutory or legislative intent to "occupy all aspects of oil and gas development and operation" implied the preemption of state authority over local authority; and (c) if in trying to enforce its rules, the county creates an "operational conflict" that "would materially impede or destroy the state interest." The court found none of these conditions sufficiently satisfied; therefore, the authority of the county to maintain its land use regulations was upheld. However, the last condition for preemption implies that the COGCC can override the county by proving that an operational conflict exists in specific cases. The court also stated that the future determination of operational conflicts between county and state regulations "must be resolved on an ad-hoc basis under a fully developed evidentiary record."



Legend

Project Area Boundary

- Local Commercial
- Mixed Use
- Suburban Density Residential
- Large Lot Residential
- Perimeter Residential
- Agricultural Residential
- Tribal Lands
- Public and Community Facilities
- Agricultural/Timber/Public Recreation/ Wildlife
- Crowbar Planning District
- Town of Bayfield
- Bayfield Area of Influence
- Critical Lands
- Public Lands
- Scenic Corridor
- 100 Year Flood Plain

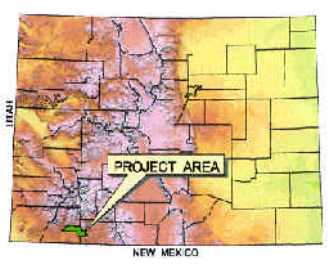
Note: 100 Year Flood Plain as shown on this map has been digitized from the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM) having an effective date of December 15, 1981.

Note: All geologic hazards may not be shown in the "Critical Lands" land use classification. See La Plata County's Geologic Hazard and Constraint Maps and its accompanying explanatory text for more information.

Note: Some source data provided by Harrison DATASITE. Fort Collins, Colorado.

No warranties, expressed or implied, are made as to the fitness and accuracy of this data. It should only be used for general planning purposes

La Plata County Planning Department



Source: La Plata County GIS

LA PLATA COUNTY IMPACT REPORT

FIGURE 3-2
BAYFIELD PLANNING DISTRICT
LAND USE CLASSIFICATION

ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO

DATE: 11/20/01	AUTOCAD FILE: 1023 LAND USE.dwg
SCALE: NTS	PREPARED BY: ETC