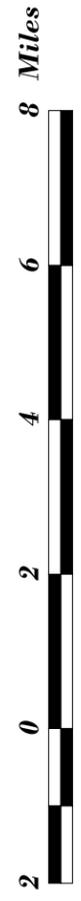
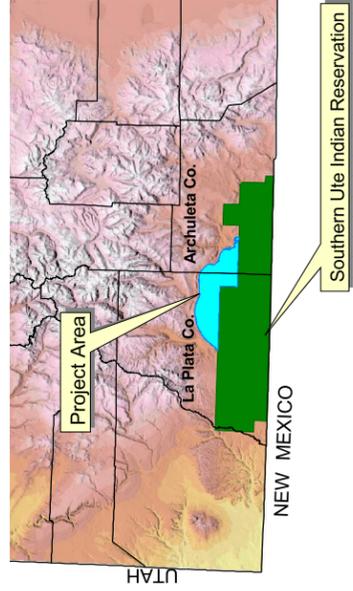


Legend

- 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
- Fire District Boundary



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 3-18	
FIRE DISTRICTS	
ANALYSIS AREA:	LA PLATA & ARCHULETA COUNTIES, COLORADO
Date:	06/17/02
ArcView File:	C:\994-sanjuan\CIF.apr
Prepared By:	JG

4.0 ANTICIPATED CBM DEVELOPMENT

4.1 ANTICIPATED CBM WELLS

As previously discussed, the existing CBM development is based on the NSJB CBM Project description. The existing CBM development in the study area was presented in Section 3.0; and the anticipated CBM development within the study area is discussed in this section.

The numbers and locations of wells and facilities within the study area will be approximate. **Figure 4-1** illustrates the approximate locations of anticipated CBM development and facilities. Wells are illustrated on the figure in their anticipated location on federal and state lands. Conversely, windows are illustrated on private lands where the anticipated well location is unknown.

La Plata County has identified the anticipated CBM development in the study area based on a maximum development scenario. La Plata County has chosen to analyze the potential effects of this maximum development scenario because the county expects that, ultimately, this level of development will occur in spite of fluctuations in gas prices. However, the current development companies (industry) do not propose this level of CBM development at this time based on the current gas prices. Industry's proposal is for 300 to 350 additional CBM wells, of which 250 are to be located in La Plata County.

In spite of fluctuation in the price of gas, La Plata County is anticipating new CBM development over a longer period. It is anticipated that about 318 CBM wells would be drilled in the study area. Of these 318 CBM wells, up to 194 could be on private lands in the study area. Some windows were split between La Plata County and Archuleta County and were considered in the study area, so that the highest level of potential development could be considered. Based on National Forest Service land use controls, there would be limited development in the Spring Creek area of the San Juan National Forest.

Additional industry-related infrastructure includes gathering lines, compressor stations, roads, and disposal wells. It is anticipated that gathering lines will generally be within road rights of way. Seven compressor stations are proposed within the CIR Study area; however, as the field develops, additional compression may be necessary, particularly in the central portion of the study area. Booster stations, which compress gas from a pod of wells that typically consists of 8 to 12 wells, may be built in the CIR study area, but their locations and frequency are unknown at this time. Roads, ranging in length and width depending on surface jurisdiction, will be constructed for a portion of the proposed wells. The locations and extent of these roads are also undetermined because the specific well locations have not been identified. One disposal well is anticipated; however, additional disposal wells may be drilled within the study area.

The timing of development is uncertain as it typically depends on gas prices, company economics, decline in productions, technology, and other factors. However, to quantify social impacts, the overall life of the Project over the entire study area — including drilling, production and reclamation — is expected to be 30 years. Most of the initial construction and installation, including well drilling and construction of access roads and installation of gathering lines and flowlines, is anticipated to occur in the next 10 years over the entire study area. It is estimated that the entire drilling process (clearing the pad, drilling, completion, etc.) for each well will be approximately two months. Final reclamation of the wells would occur within 2 or 3 years after the end of production. After the anticipated CBM development facilities, the pre-existing land uses would be re-established.

Theoretically, well pads would not be located in all windows. On Forest Service lands in La Plata County, specifically in the HD Mountains, some windows may be drilled from pads on separate locations, or directionally drilled because of the topography of the area. However, this analysis assumed one pad per each undrilled window because directional wells in the extreme eastern portion of La Plata County are speculative.

In this development scenario, windows are either entirely on private mineral estates, or they are split between private and federal mineral jurisdictions. In instances where a window straddles private and federal minerals, the location of the well cannot be determined by jurisdiction until the companies identify the location, which typically does not occur until they are prepared to file an Application for Permit to Drill (APD).

The number of CBM wells on private surface will be analyzed because La Plata County is interested in analyzing the potential impacts from the maximum number of wells that could affect private surface within the study area.

Assuming all split windows result in a well located on private surface, 61 percent of the anticipated CBM development in La Plata County would occur on the private surface.

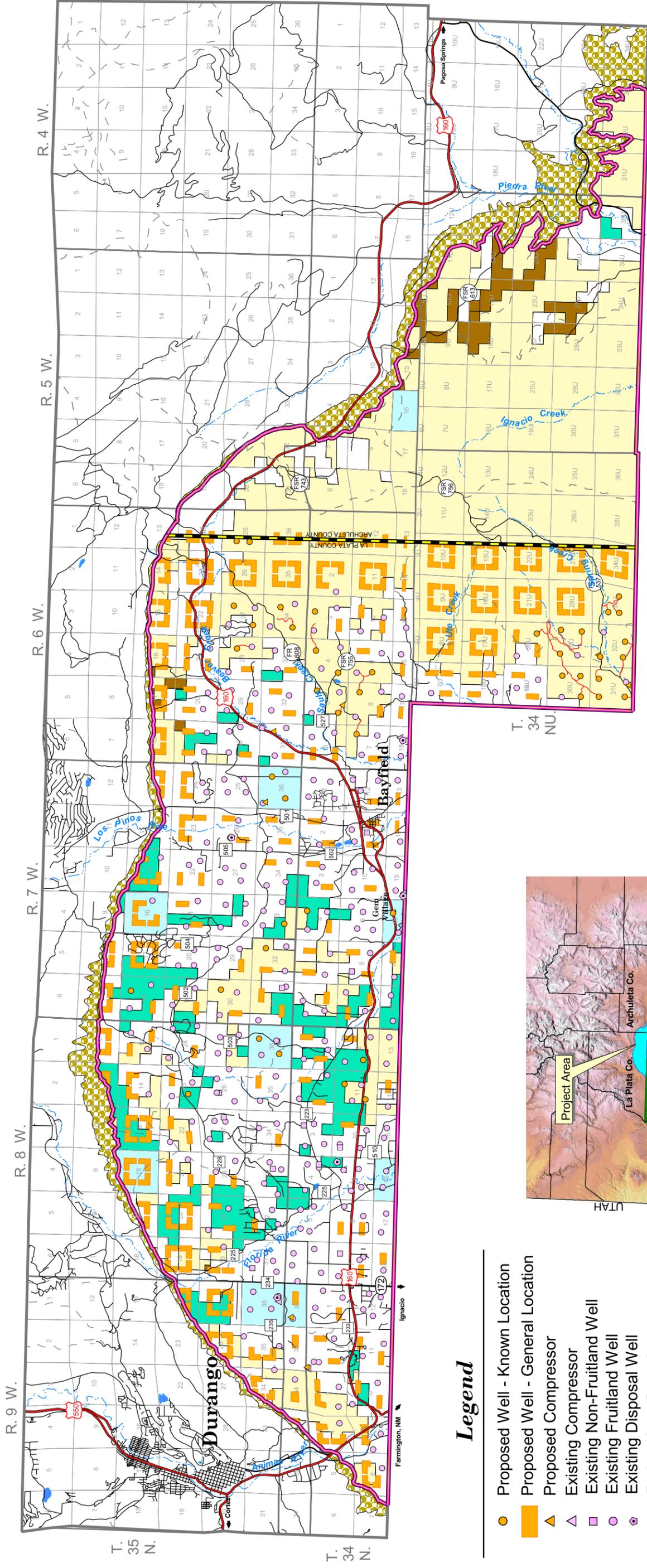
4.2 SURFACE DISTURBANCE FROM THE ANTICIPATED CBM DEVELOPMENT

The level of surface disturbance also was incorporated into this analysis. Surface disturbance corresponds to human impacts such as visual resources, noise, land use, traffic, and property value. These human impacts can be quantified by calculating the surface disturbance associated with the anticipated CBM development. The surface disturbance for each activity is illustrated in **Table 4-1**.

Table 4-1 Anticipated Surface Disturbance Associated with the NSJB CBM Project in La Plata County			
Surface Ownership	Percentage of CBM wells if well is located on private surface within the window	Long-Term Acreage Disturbed (assumes 1.0-acre disturbance)	Short-Term Acreage Disturbed (assumes 1.4-acre disturbance)
BLM	2%	6	8.4
National Forest Service	32%	103	144.2
Private	62%	196	285.4
State	4%	13	18.2
Total	100%	318	445.2

Sources: Typical long-term and short-term disturbance based on historical disturbances, provided by R. Bell, San Juan National Forest. Number of surface locations based on undrilled windows created by 160-acre well spacing order issued July 2000 by COGCC.

Short-term disturbances include the total area associated with the construction of the well pad, whereas long-term disturbance will be visible for the life of the well. For instance, the driving surface and areas where facilities are located would constitute the area of long-term disturbance. The difference between the long-term and short-term disturbance is typically a result of interim reclamation, particularly cuts and fills that may be revegetated after construction.



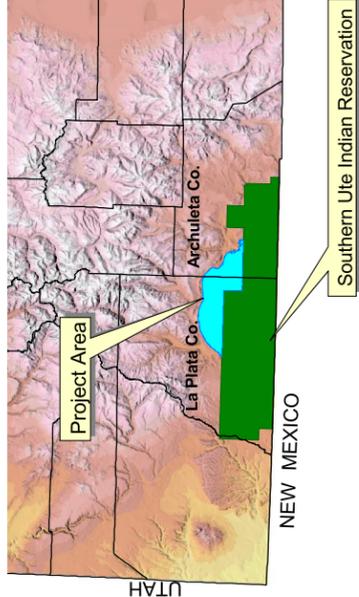
Legend

- Proposed Well - Known Location
- Proposed Well - General Location
- ▲ Proposed Compressor
- △ Existing Compressor
- Existing Non-Fruitland Well
- ◇ Existing Fruitland Well
- Existing Disposal Well
- ⊙ Existing Disposal Well
- Project Area Boundary
- County Line
- Proposed Access Road/Flowline
- U.S. Highway
- Primary Road
- Secondary Road
- River/Stream

Mineral Ownership

- Federal
- Fed Surface Pvt Mineral
- Private
- Pvt Surface Fed Mineral
- State

Fruitland 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.

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 4-1 ANTICIPATED CBM DEVELOPMENT	
ANALYSIS AREA:	LA PLATA & ARCHULETA COUNTIES, COLORADO
Date:	06/15/02
	ArcView File: C:\994-sam\lan\cbr.apr
	Prepared By: JG

Based on historical pad dimensions as well as common lifespans for surface disturbances, it is anticipated that well pads will result in an average of 1.0 acre of long-term disturbance and 1.4 acres of short-term disturbance. Interim reclamation is assumed to represent 0.4 acres per well pad location.

As illustrated in **Table 4-1**, about 285 acres of the long-term surface disturbance could occur on private lands, including lands with private surface and private minerals and private surface but federal minerals.

4.3 ANTICIPATED CBM ROADS, PIPELINES, COMPRESSORS, AND DISPOSAL WELLS

Based on the level of CBM development anticipated under this scenario, it is estimated that the companies may construct 106 miles of access roads and flowlines, one disposal well, and up to seven additional compressors to facilitate production. Ancillary facilities by jurisdiction and surface disturbance for this alternative are illustrated in **Table 4-2**.

As illustrated on **Table 4-2**, it is estimated that no disposal wells will be located on private lands, 46 percent (49 miles) of roads and pipelines may occur on private surface, and 28 percent (two compressors), may occur on private surface.

Table 4-2 Anticipated CBM Facilities within the CIR Study Area			
Facility Type	Quantity		Surface Disturbance
Disposal Wells	Number of Disposal Wells		Long-Term Acreage Disturbed¹
BLM Surface	0		0
FS Surface	1		1.6
Private	0		0
State	0		0
Undetermined Locations	3		4.8
Total	3		6.4
Access Roads/Flowlines	Surface Locations	Miles of Road²	Acreage Disturbed³
BLM Surface	6.0	2	9.6
FS Surface	103.0	52	247.2
Private	196.0	49	235.2
State	13.0	3	15.6
Total	318.0	106	507.6
Compression	Numbers of Compressors		Acreage Disturbed
BLM Surface	0		0.0
FS Surface	3		20.3
Private	2		13.5
State	2		13.5
Total	7		47.3

Note: Roads, Pipelines, Disposal Wells, and Compressors are estimates and are subject to change.

¹assumes 1.6 acre disturbance

².5 miles on FS, 0.33 miles on BLM, 0.25 miles on private

³Assumes 40-ft Right of Way 1.2 acres/State and Private well, 1.6 acres/BLM well, 2.4 acres/FS well

5.0 IMPACT ANALYSIS FOR THE ANTICIPATED CBM DEVELOPMENT

This section describes the potential impacts of the anticipated CBM development (an additional 318 CBM wells) on each resource area presented in Chapter 3.0 to develop mitigation measures (Chapter 6.0 of the CIR). Specifically, this section describes the impacts to each resource from maximum well development. It focuses on the objectives described in the *La Plata County Impact Report, Northern San Juan Basin CBM Project, County Goals and Objectives for the Impact Analysis Process* (see **Appendix A**). The specific objectives for the focus of the impact analyses, and the approaches used to meet these objectives, are described in the following subsections for each resource. The mitigation measures developed for each resource were based on the impact analysis and are provided in Chapter 6.0. The existing policies and environmental conditions within the study area are discussed in Chapter 3.0, and the anticipated CBM development within the study area is described in Chapter 4.0. The information on environmental conditions in Chapter 3.0 includes the existing impacts from the 285 CBM-related wells currently within the study area.

5.1 LAND USE

This section describes the potential impacts to land use associated with implementation of the anticipated CBM development.

5.1.1 Objectives

This section addresses the land use impacts associated with maximum well development and focuses on the objectives defined in the *La Plata County Impact Report, Northern San Juan Basin CBM Project, County Goals and Objectives for the Impact Analysis Process*. Objective B states:

2. *“Develops as quantitative a basis as possible for measures to mitigate land use conflicts and impacts to property values.”*

Impacts to land use associated with the anticipated CBM development will be quantified in this section to develop mitigation measures.

5. *“Acknowledge convergence of residential and CBM development.”*

Residential land use impacts from anticipated CBM development will be quantified to address this objective.

7h. *“Subdivision/residential land use:*

- i. *Where will land use conflict potentially occur in the future, if not on a site-by-site basis then at some 'useful' level of detail?*
- ii. *How can risk to future buyers/developers be disclosed or mitigated without devaluing property unnecessarily?*
- iii. *Where residential development is projected in the future, what residential densities would be compatible with other surrounding uses, both residential and industrial?*
- iv. *What legal/practical basis is there for surface interests to have more influence in the APD process and on facilities siting?*

Impacts to land use in the projected growth areas from the anticipated CBM development will be quantified to address this objective.

7i. Agriculture:

- i. How much existing agricultural activity potentially would be lost because of well drilling because of CBM development?*
- iii. What opportunities are there to mitigate the impacts of well drilling and production on agricultural activities?*

The anticipated development of CBM on agricultural lands will be quantified to assess impacts in this section and proposed mitigation measures in Chapter 6.0.

5.1.2 Land Use Impacts

Both direct and indirect impacts from development of CBM on land uses in the study area are anticipated to occur. Direct impacts to land uses would result from the removal or loss of existing land uses through direct disturbances caused by anticipated CBM development and would occur at the same time and place as the anticipated development of CBM. Indirect impacts include potential conflicts with adjacent land uses, such as industrial land uses that are near agricultural or residential land uses. Indirect impacts to land uses are reasonably foreseeable results of the anticipated CBM development that occur later, or are removed in distance. For example, anticipated development of CBM activities may generate noise, dust, visual and aesthetic effects, and increased traffic from the anticipated facilities or activities, or could add new access roads into limited use areas, indirectly affecting land uses for nearby properties and in the region.

In addition to direct and indirect impacts, there are both short-term and long-term direct impacts to land uses. These impacts occur for the three primary phases of the anticipated CBM development: drilling and construction of facilities (short-term disturbances); production and maintenance (long-term disturbances); and decommissioning and reclamation. The overall life of the project is expected to be 30 years over the entire study area. Most of the initial construction and installation are anticipated to occur in the next 10 years over the entire study area. For an individual well, drilling (dirt work, drilling, completion) in specific area would be limited to about a 2-month period. Final reclamation would occur within 2 or 3 years after the end of production of a CBM well. The entire phase of decommissioning/reclamation would last over a 10-15 year time frame, however, the actual time spent conducting these activities will collectively take 5 years. The pre-existing land uses would be re-established after decommissioning, reclamation, and final closure of the anticipated CBM development facilities.

Short-term direct impacts to existing land uses would primarily occur during the construction and installation phase for the well pads and access roads associated with CBM development. Short-term direct impacts to land uses would result from clearing areas or damage to vegetation and disturbance of soils while drilling and constructing well pads and access roads.

Long-term direct impacts would result from displacement of existing land uses for the life of the project, primarily for the well pads and access roads associated with the anticipated CBM development. The pre-existing land uses would be re-established after the proposed facilities have been decommissioned, reclaimed, and closed.

Both short-term and long-term indirect impacts would occur to the land uses on properties adjacent to the anticipated CBM development facilities as a result of the generation of noise, dust, visual and aesthetic effects of the proposed facilities and activities, increased traffic levels from vehicles related to development of CBM, and increased public access as a result of the development of new and upgraded access roads for the life of the project. These impacts are discussed in the sections of the CIR on noise, visual resources, and transportation and are not addressed in this section.

The locations of the existing and proposed CBM wells are shown by land use category on **Figure 5-1**, and the acres of each existing land use category within the study area are provided in **Table 5-1**. Approximately 40 percent of the study area is agricultural, and 14 percent is residential. Approximately 30 percent of the study area is open land, and most of this land use category is composed of federal and state land.

Under the anticipated development, about 318 new CBM wells would be drilled in the study area within various existing land use categories. Most of the new wells would be located somewhere within the areas defined as CBM well “windows” and shown on **Figure 5-1**. These “windows” are 20 to 30 acres in size, some being smaller and some larger, depending on the size and dimension of the specific section of land and the distances of setback from the section lines required by COGCC.

Acres of surface disturbances were estimated on a per-well basis. It is assumed that there would be one well per well pad. The estimated short-term disturbance associated with each well pad for the anticipated CBM development is 1.4 acres. Access roads would disturb an additional 1.2 acres per well. The total short-term disturbance on a per-well basis, including well pads and access roads, would be 2.6 acres. Disposal wells would disturb 6.4 acres, and compressor stations would disturb 47.3 acres. Within the entire study area, the total short-term disturbance for the 318 new CBM wells associated with the anticipated CBM development would be 827 acres.

After each well pad is constructed, approximately 0.4 acres of the disturbance would be reclaimed on an interim basis, reducing the long-term disturbance to 1.0 acre for each well pad. Impacts associated with the access roads would be long term and would be approximately 1.2 acres per well. Including well pads and roads, the total long-term disturbance associated with each well would be about 2.2 acres. After a portion of the well pads had been reclaimed, long-term disturbance associated with the new CBM wells would be about 700 acres. In addition, there two compressor stations are proposed, which would each cause 3 acres of long-term disturbance, or a total of 6 acres of long-term disturbance on private lands. The acreage for long-term disturbance is approximately 84 percent of the short-term disturbance.

Table 5-1 Acres of Each Land Use Category in CIR Study Area	
Existing Land Use	Total Acres of Each Land Use in the CIR Study Area
Agriculture	36,632
Residential (single- and multi-family)	12,316
Commercial	177
Industrial	253
Open Lands	27,099
Public/Institutional Facilities	283
Undeveloped	13,014
Not Designated (roads)	1,308
Total	91,083

5.1.2.1 Private Lands

The focus of this impact analysis is directed toward private lands within the study area based on the objectives of La Plata County. Specifically, approximately 60,492 total acres of private land are within the study area. For private lands, the acres of each existing land use category and the number of existing CBM wells in each are shown in **Table 5-2**.

Table 5-2 CBM Wells by Land Use Category on Private Lands in CIR Study Area

Existing Land Use	Acres of Land in CIR Study Area	Number of Existing CBM Wells	Long Term Acreage – Disturbance from CBM Wells (percent)
Agriculture	34,353	159	0.5
Residential (single- and multi-family)	11,968	47	0.4
Commercial	161	0	0
Industrial	169	1	0.6
Open Lands	1,756	42	2.4
Public/Institutional Facilities	179	1	0.6
Undeveloped	10,537	34	0.3
Not Designated (roads)	1,269	1	0.08
Total	60,492	285	0.5

*Does not include road disturbance

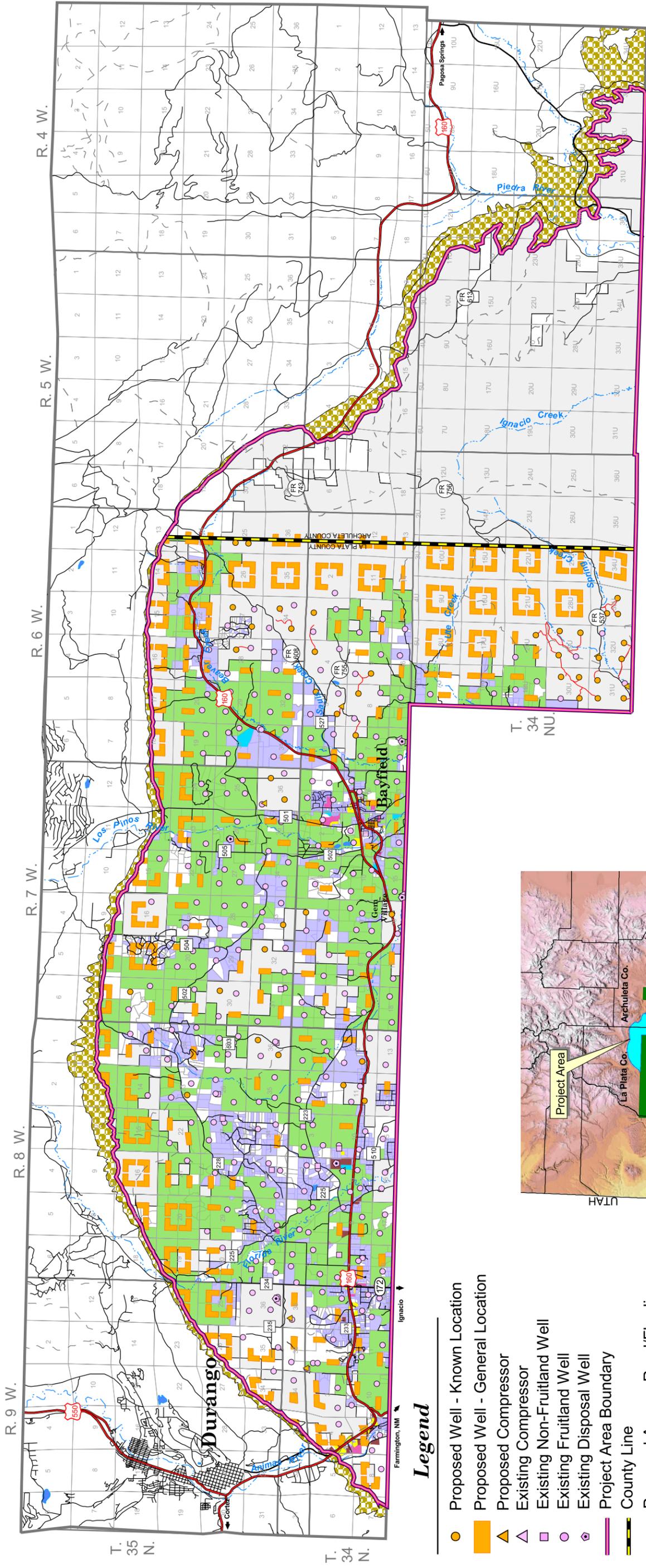
For private land in the study area, approximately 57 percent is agricultural and 20 percent is residential. Most of the open land in the study area is federal- or state-owned; therefore, this category is only 3 percent of the private land.

Some of the new CBM wells would be located within “windows” that were split between federal and state and private surface ownership. It was assumed that all wells to be located on split surface ownership windows would be designated as wells on private lands to provide the most conservative impact analysis (worst case scenario). Therefore, approximately 194 of the proposed CBM wells would be located on private lands.

Implementation of the anticipated development of CBM would cause short-term disturbance of 2.6 acres per well for 194 new CBM wells on private lands, for a total of 504 acres within private lands. Long term disturbance would be about 2.2 acres per well for each of 194 wells, or a total of 427 acres on private lands. In addition, two compressor stations are proposed, which would each cause 3 acres of long-term disturbance, or a total of 6 acres of long-term disturbance on private lands. Therefore, total long-term disturbance on private lands equals 433 acres for the anticipated development of CBM.

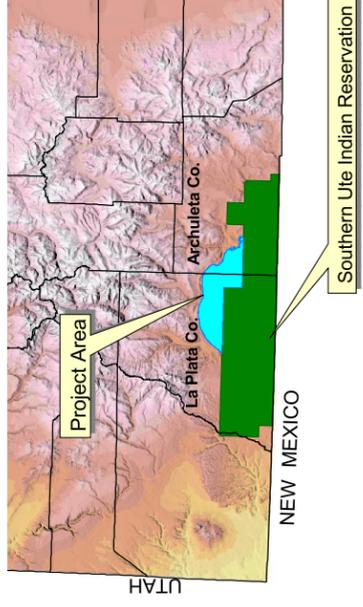
This analysis further focuses on potential impacts to the primary land uses in the area (agricultural and residential), as defined by the Objectives of La Plata County. Because these are the primary land uses, they are also considered the most sensitive to CBM development. The potential impacts to agricultural and residential land uses from the anticipated development of CBM are discussed in the following subsections.

Some of the anticipated CBM wells would be located within windows that are located the split land use category. The split land use category means that the land use where the well would be located is not defined at this time. Approximately 136 windows are located at least in part within the agricultural land use category. Of these 136 windows, 27 are entirely located within agricultural land. For the remaining 109 windows, only a portion is within agricultural lands.



Legend

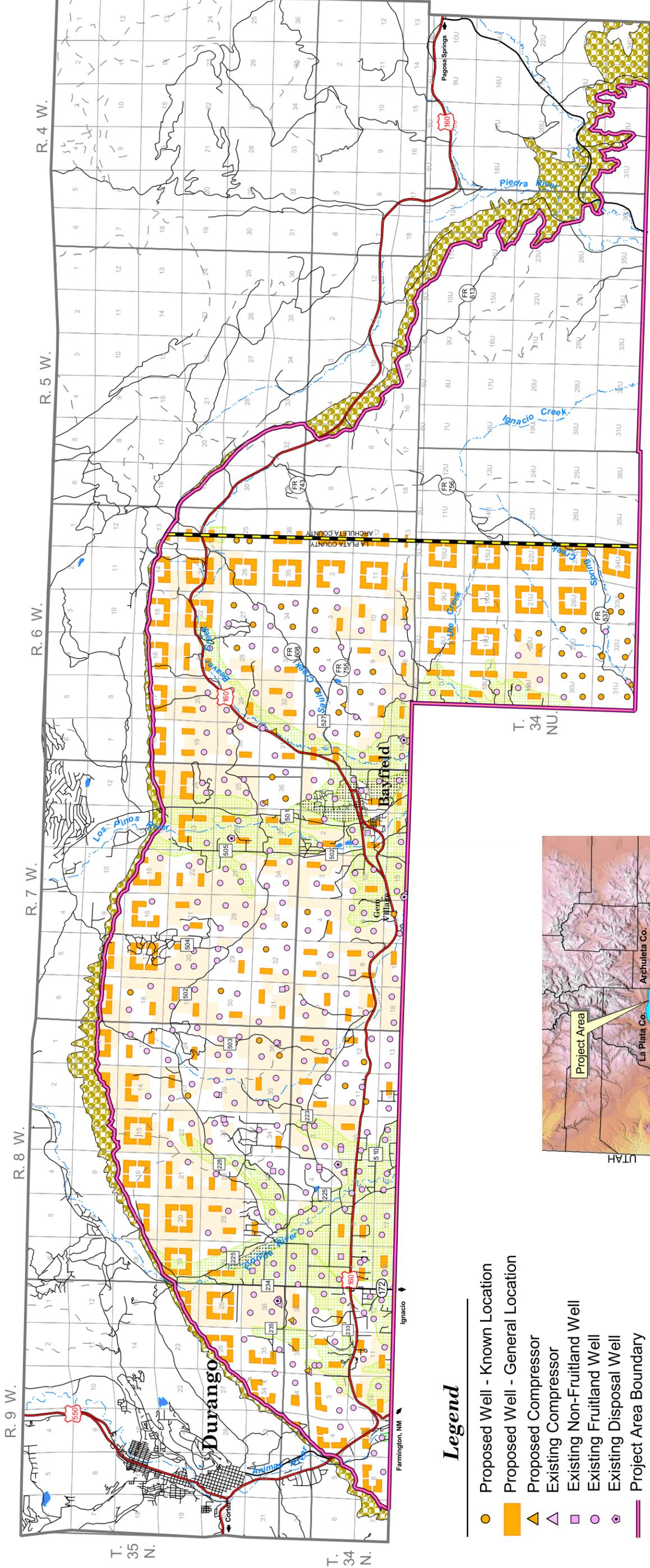
- Proposed Well - Known Location
- Proposed Well - General Location
- ▲ Proposed Compressor
- △ Existing Compressor
- Existing Non-Fruitland Well
- Existing Fruitland Well
- ◇ Existing Disposal Well
- ▭ Project Area Boundary
- ▬ County Line
- ▬ Proposed Access Road/Flowline
- ▬ U.S. Highway
- ▬ Primary Road
- ▬ Secondary Road
- ▬ River/Stream
- ▨ Fruitland Outcrop
- Surface Ownership
 - ▭ Federal/State
 - ▭ Private
- Land Use
 - ▭ Agriculture/Rangeland
 - ▭ Commercial
 - ▭ Industrial
 - ▭ Public Facilities
 - ▭ Residential
 - ▭ School/Church/Library/Museum
 - ▭ Undeveloped



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. Land Use types from La Plata County 'ipareels' file. Existing wells extracted from COGCC well database and edited by the BLM & USFS.

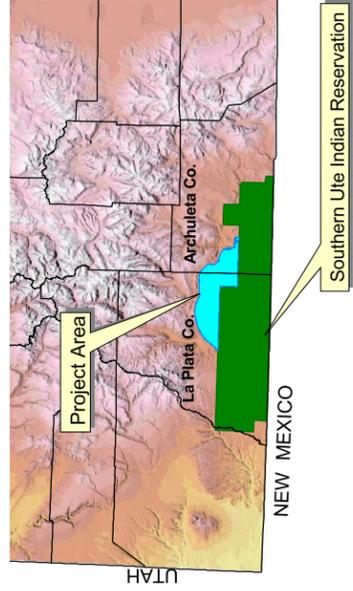
*Transverse Mercator Projection
1927 North American Datum
Zone 13*

LA PLATA COUNTY IMPACT REPORT
FIGURE 5-1
ANTICIPATED CBM DEVELOPMENT
BY LAND USE CATEGORY
ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO
Date: 06/15/02
ArcView File: C:\984-sanjuan\icr.apr
Prepared By: JG



Legend

- Proposed Well - Known Location
- Proposed Well - General Location
- ▲ Proposed Compressor
- △ Existing Compressor
- Existing Non-Fruitland Well
- ◇ Existing Fruitland Well
- Existing Disposal Well
- ◆ Project Area Boundary
- County Line
- U.S. Highway
- Primary Road
- Secondary Road
- River/Stream
- ▨ Fruitland Outcrop
- ▩ Agriculture/Rangeland
- Farmlands**
- ▨ High Potential
- ▩ Irrigated (not prime)
- Prime Irrigated



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. Farmland data digitized from USDA prime farmlands map, 1980.

*Transverse Mercator Projection
1927 North American Datum
Zone 13*

LA PLATA COUNTY IMPACT REPORT	
FIGURE 5-2	
AGRICULTURE BY CULTIVATION TYPE & ANTICIPATED CBM DEVELOPMENT	
ANALYSIS AREA:	LA PLATA & ARCHULETA COUNTIES, COLORADO
Date:	06/15/02
ArcView File:	C:\994-sanjuan\CIR.apr
Prepared By:	JG

Approximately 73 windows are located at least in part within the residential land use category. Of these 73 windows, 5 are entirely located within residential land. For the remaining 68 windows, only a portion is within residential lands. The maximum number of windows potentially located within residential areas (73 wells) was used for the impact analysis to represent the most conservative (worst-case scenario) approach.

Agriculture

Agriculture is the predominant existing land use in the study area that would be displaced by the anticipated development of CBM for both the short-term and long-term disturbances (**Figure 5-2**). The existing and proposed CBM wells on private agricultural land are shown in **Table 5-3**. As discussed for the residential land use category, some of the new CBM wells would be located within windows that are designated as located within the split land use category. The maximum number of windows potentially located within agricultural areas (136 wells) was used for the impact analysis to represent the most conservative (worst-case scenario) approach.

Table 5-3 CBM Wells on Private Agricultural Land in CIR Study Area					
Existing Land Use	CBM Wells			Acres of Disturbance for Proposed CBM Wells	
	Existing	Proposed	Percent Increase	Short Term	Long Term
<i>Farmland (Total)</i>	81	33	41	86	73
High Potential	1	0	0	0	0
Irrigated Not Prime Farmland	78	33	42	86	73
Irrigated Prime Farmland	2	0	0	0	0
<i>Rangeland</i>	78	103	132	268	227
Total Agriculture	159	136	86	354	300

Notes: Assumes total short-term disturbance is 1.4 for well pad and 1.2 acres for roads per well, for a total of 2.6 acres per well; and one well per well pad.

Assumes long-term disturbance is 1.0 acre for well pad and 1.2 acres for roads per well, for a total of 2.2 acres per well.

Currently, approximately 159 existing CBM wells and an anticipated 136 wells are located within the 34,353 acres of private agricultural land, an increase of 86 percent compared with the number of wells in private agricultural land over the life of the project. The disturbance to private agricultural lands associated with the proposed CBM wells would be 354 acres (short term) and 299 acres (long term).

Most of the new CBM wells would be located on agricultural land that is classified as rangeland and is used for livestock and cattle grazing; however, a portion of the agricultural land is used as farmland for crop production (**Figure 5-2**). The three types of farmland within the study area are high-potential farmland, irrigated not prime farmland, and irrigated prime farmland (see **Table 5-3**). No CBM wells are proposed to be located within high-potential farmland or irrigated prime farmland. All of the proposed CBM wells within farmlands (33 wells) would be located within irrigated not prime farmland (**Table 5-3**). The disturbance to private irrigated not prime farmlands for the proposed CBM wells would be 86 acres (short term) and 73 acres (long term).

Residential

The residential land use category (**Figure 5-1**) is made up of single-family and multi-family dwellings, including site-built structures, mobile homes, and manufactured homes. Although there is less acreage within residential land use areas compared with agricultural areas, residential land uses are generally more sensitive to CBM facilities. Currently, 47 existing CBM wells are located on the 11,968 acres of private residential land within the study area (**Table 5-4**). A maximum of 73 new CBM wells would be located within private residential land for the anticipated development of CBM. Over the life of the project, this figure is an increase in the number of wells within residential land use areas of 155 percent compared to the number of existing wells. The disturbance to private residential lands associated with the proposed CBM wells would be 190 acres (short term) and 161 acres (long term).

Indirect impacts to the existing residential land uses on properties adjacent to the anticipated CBM facilities would occur as a result of the generation of noise, visual and aesthetic effects of the proposed facilities and activities, dust and increased traffic levels from vehicles related to development of CBM, and increased public access opportunities as a result of the development of new and upgraded access roads for the life of the project.

Projected Growth Areas

Projected growth areas within the study area were described in Section 3.0. The anticipated CBM development by land use category the projected growth areas is shown on **Figure 5-3**. The proposed CBM wells and disturbances associated with the anticipated CBM development are shown in **Table 5-4**, and would primarily be located within the agricultural or residential land use categories. Approximately 102 new CBM wells would be located within private land, the designated projected growth areas. Approximately 265 acres of potential short-term disturbance and 225 acres of long-term disturbance would be located on private lands in the projected growth areas (**Table 5-4**).

The study area also includes platted and at least partially built subdivisions (**Figure 5-3**). As depicted, subdivisions are dispersed throughout the study area. Although they are primarily located along major roads and near major intersections, they are also large and dispersed throughout the study area.

5.1.3 Summary of Land Use Impacts

The anticipated Development of CBM would cause direct short-term and long-term impacts to the existing land uses, primarily agricultural land used for rangeland and grazing, because these uses would be displaced by anticipated CBM facilities. Approximately 1.0 percent of the existing private agricultural and 1.6 percent of residential land within the study area could see short-term disturbance associated with the anticipated development of CBM. The long-term potential disturbance would be 0.8 percent for private agricultural land and 1.3 percent for residential land. The potential within projected growth areas in agricultural land would be 0.8 (short term) and 0.7 percent (long term). Within projected growth areas in residential land, the potential disturbance would be 1.9 percent (short term) and 1.6 percent (long term). (**Table 5-5**).

Indirect impacts to nearby properties during construction and operation of anticipated CBM facilities may affect future growth for portions of the study area for the life of the project.