Resource Inventory and Policy Structure / Gap Analysis

MESA COUNTY

Prepared for: Board of County Commissioners, Mesa County, Colorado

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Disclaimer

This document provides maps and describes the general nature of the energy resources that may be located within Mesa County based on the best public information available. Data presented in the figures are often based on broad scale (county, state, or national) information and may not accurately reflect the character or extent of a particular resource at any given location. While reasonable effort was used to acquire and verify the data, Mesa County officials, staff, and its consultants cannot be held liable or accountable for the accuracy of the information presented herein.

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Executive Summary

Mesa County is at the forefront of planning for its future relative to its proactive approach addressing policies, regulations, standards, and guidelines necessary to develop its natural energy resources. While energy development provides an excellent opportunity for economic growth within Mesa County in terms of jobs, capital investment, housing and spin-off industries, the balance of these opportunities with the protection of the environment and community values and assets, combined with prudent management of these limited resources is imperative and a key concern of County residents.

Evaluation of Energy Resources

In addition to its natural beauty, Mesa County is blessed with an abundance of energy resources including coal, natural gas, coalbed methane, oil shale, and uranium. A cursory review of renewable energy resources conducted as part of this project indicates that solar, wind, biomass, and geothermal energy have varying potential for development in the County. One of the objectives of the Energy Master Plan is to identify ways that the valuable energy resources in the County can be developed without sacrificing the quality of life enjoyed by County residents, or the scenic beauty that attract visitors to the area.

The planning process utilized in this phase of the project (Resource Inventory and Policy Structure/Gap Analysis), first identified and mapped the areas of the County that contain known deposits of energy resources and areas of active resource development. Most of the data on energy resources was obtained from publicly available data sources including the U.S. Geological Survey (USGS), Bureau of Land Management (BLM), and others.

The evaluation not only mapped known resource areas but used geographic information system (GIS) technology to identify and evaluate potential opportunities and constraints to consider for resource development. These constraints include areas protected by law (such as wilderness areas) or otherwise constrained due to existing land uses or other factors.

Following the identification of constraints, maps were created that overlaid the resource areas with the constraints. A series of maps and related data were prepared that show areas of the County that could potentially be subject to future resource development. The scope of this phase of the Energy Master Plan did not include an opportunity and constraints evaluation of renewable energy resources.

A finding of the opportunities and constraints evaluation indicates that even though Mesa County has an abundance of energy resources, not all of the resources are available for development because some of the available resources are located in areas that are specifically precluded from resource development and other resources are located in areas that would be difficult, if not impossible, to develop economically.

Results indicate that highly constrained areas for resource development generally fall into two categories: constraint (or avoidance) areas and exclusion areas. Constraint areas include conservation areas; areas with special designation such as State Parks, wildlife areas, campgrounds, and scenic byways; water resources; natural hazards; land use (agricultural and residential areas); areas with BLM and Forest Service lease stipulations; and areas of visual sensitivity. Constraint areas could potentially be developed if appropriate mitigation measures to minimize impacts are created and implemented.

Public Involvement

The project team supported by County planning staff held 18 stakeholder meetings in late 2008, and seven public meetings were conducted in January 2009 in six communities across Mesa County. One hundred sixty (160) issues/concerns were recorded from attendees of these meetings and were cataloged into six categories for analysis.

Meetings held with stakeholder groups in November and December 2008 are identified in Table ES-1. The public meeting locations are presented in Table ES-2 below.

Table ES-1:
Stakeholder Meetings Held

Stakeholder Group	Stakeholder Group
Mesa County Government Departments	Western Colorado Congress
Mesa County City Managers	Gateway Property Owners Association Chair
Town of DeBeque	Colorado Oil & Gas Association
Sportsmen	Colorado Division of Wildlife
Club 20	U.S. Geological Survey
Mesa County Farm Bureau Board	U.S. Fish & Wildlife Service
Mesa County League of Women Voters	U.S. Forest Service
Grand Junction Area Chamber of Commerce	U.S. Army Corps of Engineers
Grand Junction Economic Partnership	U.S. Bureau of Land Management

Table ES-2:
Public Meetings

Meeting Location	Meeting Date
Fruita	January 13, 2009
Collbran	January 14, 2009
Palisade	January 15, 2009
Gateway	January 20, 2009
DeBeque	January 21, 2009
Grand Junction	January 22, 2009 (two meetings at 4:30 pm and 6:30 pm)

Stakeholder meetings were structured as facilitated group discussions, while public meetings were less formal. Public meetings were more interactive with an opportunity for participants to view and comment on draft copies of the resource maps. The project team also prepared Fact Sheets that were made available to all participants for discussion. Following a presentation by County staff, public meeting participants were generally divided into smaller discussion groups. Discussion was facilitated by staff members and comments were recorded. At the conclusion of the smaller discussion sessions, each group presented summaries of their discussions to the entire group for further discussion with comments recorded by EDAW staff.

Comments, issues, and concerns that were expressed at each of the meetings were summarized and grouped into six categories for evaluation. The six categories include:

1. Infrastructure
2. Regulatory
3. Operation
4. Environment
5. Economics
6. General

Table ES-3 is a summary of the comment categories received from both stakeholder and public meetings.

Table ES-3:
Summary of Comments Received at Stakeholder and Public Meetings

Categories	Total Comments	% of Total	Total No. of Stakeholder Response	Total No. of Public Responses	Total Responses
Infrastructure	17	11%	25	26	51
Regulatory	46	28%	85	49	134
Operation	8	5%	11	3	14
Environment	25	16%	50	34	84
Economics	19	12%	27	23	50
General	45	28%	42	53	95
Total	160	100%	240	188	428

In order to prepare the data for further study during the policy gap analysis task of the project, the comments, issues, or concerns similar to each group were tabulated and a total was calculated for each issue based on the number of times each issue was raised. The top issues and concerns raised are shown in Table ES-4.

Table ES-4:
Top Stakeholder and Public Concerns

Ranking	Issue or Concern
1	Water / Ground Water Quality
2	Roads & Traffic Enforcement of all Standards Regulations & Reclamation
3	Consistent, Fair, Integrated Regulatory Environment based on Shared Data
4	Air Quality
5	Renewable Energy Sources

Participants were very supportive of the Energy Master Plan and recognize the importance energy resource development will have on the economic vitality and growth of the County but not to the detriment of the environment and quality of life found in the County. Participants held a high understanding of energy resource development and were well versed as to the potential impact resource development may have on community infrastructure in terms of transportation, the environment, noise, viewsheds, wildlife, and watersheds.

Policy Structure/Gap Analysis

The next step in the process for the project team was a review and analysis of existing County policies based on stakeholder and public input. The emphasis of this review and analysis was focused on a policy and process analysis to identify gaps and provide a foundation for policy creation that will either direct energy development away from sensitive areas and/or implement mitigation measures to minimize those impacts.

The goal of the team was to provide the Board of County Commissioners with a concise set of findings sufficient for them to adopt clear policies, guidelines, and processes that would be available to all individuals and energy industries prior to application for development.
A significant benefit of the development and implementation of the Energy Master Plan will be the integration of Land Use, Transportation, Real Estate Development Processes, and Fiscal Planning. It will also provide clear direction to planning requirements, development of appropriate infrastructure, and tools to ensure compatibility with the community.

The following summarizes the efforts associated with the policy structure/gap analysis.

Process: Following the public meetings, a list of 51 impact issues was developed from concerns that arose during the public meetings. Because some of these impact issues dealt with similar or compatible issues with respect to general policies, the list was further refined to 24 critical impact issues. These issues were then examined in light of the currently existing Mesa County Master Plan to determine if there was a policy in the Master Plan that dealt with each critical impact issue.

As a result of this process, five critical impact issues were determined to be the greatest concerns from those offered by stakeholders and the public at meetings held. The top issues and concerns raised are shown in Table ES-4.

Review of Master Plan: The overall document referred to as the Mesa County Master Plan is the compilation of many items created over time. As a result there is not a consistent method of indexing, numbering, or style throughout the many sections. The most valuable energy resource areas are located within rural areas, making the 2006 revision of the Mesa Countywide Plan, an element of the Master Plan, most applicable. Overall, the current presentation of the Master Plan would be difficult to use by someone not aware of its history or structure.

Findings: Mesa County's use of its land development code is limited by Constitutional rules, statutory requirements, and preemptive administrative action. In the area of valuable mineral resources, statutory changes and case law have made clear that the rulings of the Colorado Oil and Gas Conservation Commission and the Mined Land Reclamation Board, preempt or prohibit County action in certain areas. Notwithstanding that, the County is still able to create goals and policies that can guide input to the controlling administrative agencies.

However, the analysis finds that there is a lack of consistent approach to the format of policy that exists in the County. Some policies are on a stand-alone basis, some spring out of clearly identifiable goals, and others seem like regulations that are named policies.

Gaps: Some policies were determined to be obsolete, modified by later policies, or abandoned. In applying the other policies, the analysis found that 11 of the 24 critical impact issues were not directly addressed by the current policies. Of the five determined to be of greatest concern, two relating to regulatory approach appear not to have an applicable current policy:

1. Enforcement of all Standards, Regulations and Reclamation
2. Consistent, Fair & Integrated Regulatory Environment based on shared data

However, Mesa County does have a framework for addressing the extraction of valuable mineral (energy) resources as shown on Figure 2 in the report. The 1985 Mesa County Mineral Extraction Policy (Policy 29 of the Mesa County Master Plan) does form a framework for enacting polices to address specific critical impact issues if the County so desires. The County also uses an Energy Policy Opportunity Map (EPOM) tool, adopted code regulations, and the Evaporation Pond Facilities/Land Farms Policies adopted by the Board of County Commissioners in 2008. The County has explored possible policy revisions as recently as September 2007 (see Appendix H) but these revisions have not been adopted.

A review of the framework for Mesa County and possible alternative energy resource development in the future shows that Mesa County is aware that 1041 powers are available to form a consistent, unified approach to permitting energy resource development outside the preempted or statutory limitations, C.R.S. 24-65.1-101, et seq. (Areas of State Interest). This may provide a framework for new policies to address gaps in the current Master Plan as well as alternative energy resource possibilities that may become feasible in the future.

Implications of Findings

The above findings provide a view of the existing framework and policies that deal with impacts associated with energy resources. Several implications follow from these findings:

- The Board needs to affirm or adopt an overall goal in this area (Energy)
- The Board can maintain the status quo or move to unify all land use policies in the County Master Plan, or other document, and validate the planning commission's role in energy policy creation and adoption.
- A framework for energy resource development policy application was determined to exist as shown on Figure 2. If the Board does not affirm this framework, new approaches and policies need to be developed. If the Board affirms the framework, new policies need to be adopted to fill gaps and provide a consistent approach to permitting.
- The use of 1041 powers (Areas of State Interest) can be considered.

Figure 3 provides a suggested energy resource development application review and approval process that could be implemented following a thorough policy review and adoption of new and revised policies.

Other Findings and Implications

Analyses of stakeholder and public comments and data collected over the duration of the project have identified other findings and implications which are offered below.

Development of Mesa County's Mineral Energy Resources is generally highly constrained

Even though Mesa County has an abundance of energy resources, not all of the resources are available for development. Some of the available resources are located in areas that are specifically precluded from resource development and other resources are highly constrained and located in areas that would be difficult, if not impossible, to develop economically.

Renewable Energy Resources

Large-scale utility grade renewable generation may not be as feasible as smaller-scale distributed generation projects. Smaller scale projects may range anywhere from individual buildings and office parks to neighborhoods, education and government complexes, to industrial facilities. Providing power to remote locations can be costly. Consideration should be given to renewables to support mineral extraction and mining operations as well as telecommunication installations.

Solar energy development could conceivably occur at any location in the County while large-scale wind farm development may be limited. Biomass and geothermal are also viable resources that should be considered by the County and discussed with developers early in a project. The County may choose to develop specific policies for renewable energy development as part of the Energy Master Plan.

Infrastructure

From a planning perspective, it is recommended that the County proactively forecast infrastructure improvement to keep pace with energy development and work cooperatively with energy developers regarding responsibility for financing, constructing, and the maintenance of these assets.

Regulatory

Stakeholders and public meetings have brought awareness to the potential of the Energy Master Plan. Agencies are also interested and there appears to be a spirit of cooperation growing. The County may want to take advantage of this cooperative spirit and public interest to discuss such topics as a process for a stable, consistent, fair, and clear regulatory environment that minimizes conflicts between regulators, enforcement responsibility, and how

to efficiently and cost-effectively work with / improve existing polices and minimize the creation of new polices.

Operation

Stakeholders and the public would like to see a discussion held with energy developers regarding best management practices (BMPs) and the inclusion of BMPs in an application. It is clearly understood by both stakeholders and the public that economic growth and prosperity is directly correlated to energy development but not without regulation and a proactive planning process. The County may want to consider means to educate interested parties regarding BMPs and meaningful involvement in the application/permit process shown in Figure 3.

Environment

The protection of municipal watersheds and groundwater is very important to the County residents and its cities and towns. Suggested solutions to mitigate any impact to this precious resource include working cooperatively with other agencies and energy developers to ensure BMPs and mitigation measures are identified and an implementation plan approved as part of the permitting process.

Economics

The current recession has raised the public's economic awareness. The stakeholders and public have suggested the County identify ways to manage the impact to and protection of the environment without over-regulating or doing business in Mesa County so expensive that it becomes a deterrent for energy developers. Solutions offered include creating a cooperative working relationship with other regulators and agencies in order to streamline the approval process, thereby resulting in lower permitting costs and sending a strong message to energy developers that it is cost-effective to do business in Mesa County while still protecting the environment.

Another recommendation is for the County to seek and actively promote economic diversification to minimize or limit boom-bust cycles associated with energy development.

General

Analysis confirmed opinions held by applicants and users seeking or accessing data, that all parties would benefit from a central data collection and storage system. It has been recommended that a central database repository be implement that could be shared by communities, the County, and regionally. Many view this as a cost-savings opportunity and means of reducing confusion because all parties would have access to and use the same database, improve intergovernmental working relationships, and improve communication.

1.0 Introduction

Mesa County contains natural resources used in the development of energy for Colorado and the United States. The Board of County Commissioners has directed staff to prepare an Energy Master Plan to identify the location of these resources, identify related potential impacts to the community, and prepare a plan to address these impacts.

The Energy Master Plan is focused on all energy resources in the County including natural gas, petroleum, coal, uranium, solar, wind, and other renewables.

Energy provides an excellent opportunity for economic growth within Mesa County in terms of jobs, capital investment, housing, and secondary (spin-off) industries. It is understandable that the development of energy resources will also influence existing community infrastructure in terms of transportation, the environment, noise, viewsheds, wildlife, and watersheds. Mesa County recognizes and appreciates the importance the Energy Master Plan will have in identifying those impacts and providing the bases for policies and regulations which either direct energy development away from sensitive areas and /or implement mitigation measures to minimize those impacts.

From a land use, socioeconomic and environmental perspective, energy exploration, development, and consumption involve a variety of land use issues related to:

- Conversion of land to industrial uses
- Environmental considerations including noise, air quality, soils, wildlife, water quality
- Viewsheds and watersheds
- Avian protection
- Resource conservation
- Transportation
- Economic growth and diversification
- Waste management
- Site design

Potential resource impacts result from:

- Development of traditional energy resources including extraction, processing, and delivery
- Development of renewable energy resources
- Siting of energy generation and transmission facilities

Addressing the impacts of energy development through best management practices (BMPs), best available technologies, and policies and regulations adopted by the Board of County Commissioners will provide clear guidelines, requirements, and expectations to the community and energy industries prior to application for development. Development and implementation of the Energy Master Plan will allow the integration of Land Use, Transportation, Real Estate Development Processes, and Fiscal Planning. It will provide clear direction to planning requirements, development of appropriate infrastructure, and tools to ensure compatibility with the community.

1.1 Purpose of the Energy Master Plan and Phasing

The Energy Master Plan will be a policy document related to energy development that will be adopted by the Mesa County Board of County Commissioners. To be completed in phases, the main focus of this phase of the Energy Master Plan was to inventory energy resources, analyze existing policies and identify gaps to be addressed in future phases by the County. Included in this phase of the Energy Master Plan (Resource Inventory and Policy Structure/Gap Analysis) is the following:

- The known energy resources and opportunities within Mesa County.
- The potential impacts on the community associated with the development of those resources.
- A structural and gap analysis of current energy related policies in Mesa County.
- Findings of the analysis that will guide the preparation of a clear set of reasonable policies and guidelines for the development of energy resources and mitigation of potential impacts.

The Energy Master Plan will be implemented in coordination with the community and the energy industries primarily through Mesa County's planning and development review processes.

1.2 Resource Inventory and Policy Structure/Gap Analysis Process

The project consisted of three major tasks.

- Task 1: Inventory of Energy Resources
- Task 2: Policy Structure/Gap Analysis
- Task 3: Documentation of Findings and Web Site Enhancements

The following summarizes the planning process and tasks in more detail.

1.2.1 Inventory of Energy Resources

A comprehensive data list was prepared in partnership with Mesa County staff very early in the process to identify potentially useful project information. Data collected included aerial photography of the greater Mesa County area, existing baseline reports, energy resource datasets, and other project information including standard construction and mitigation

practices. The team also acquired GIS data from federal, state, and local online repositories for each environmental resource: soils, geology, hydrology, vegetation, wetlands, wildlife, threatened and endangered (TES) species, land use, visual, socioeconomics, and known cultural and historical resources. The collected data was mapped for use in the opportunities and constraints analysis phase of Task 1.

A list of preliminary evaluation criteria was established and an opportunity and constraints map was prepared for each energy resource based on the criteria. For the purpose of this analysis opportunity areas were identified as having substantial energy resources and compatible land uses. Constraints included ecologically sensitive lands, airsheds, parks, recreation areas, and other incompatible land uses. The opportunities and constraints process involved analysis of data collected, and revision and refinements based on comments received in meetings with Mesa County staff, various stakeholder groups, agencies and the general public.

A summary report of the resource inventory findings was prepared which is referred to as the Energy Atlas. The atlas includes a display of integrated data pulled from current existing datasets as well as those generated in this task. The Energy Atlas is intended to serve as a reference document that Mesa County can build upon for future use and reference. The Atlas is posted on the Mesa County website and has been incorporated in the County's interactive mapping tool known as the Energy Policy Opportunity Map (EPOM).

1.2.2 Policy Structure/Gap Analysis

Existing policy and regulation documents were provided by Mesa County staff for review and analysis by the project team. The primary focus of the team was to evaluate applicability, duplications, gaps, impacts, and BMPs in relation to coal, uranium, and petroleum resources. Based on input received from stakeholders, agencies and public meetings, the project team prepared summary tables of all comments received which were cataloged into six areas (see Appendix A).

1. Infrastructure
2. Regulatory
3. Operation
4. Environment
5. Economics
6. General

Input from stakeholders, agencies and the public was an invaluable ingredient into the overall review of the existing Mesa County policies. Based on this input and meetings held with County staff, the project team prepared a series of matrices that aided in the identification of gaps in current policies.

Over one hundred (160) comments were received from stakeholders and the public during the public involvement phase of the project and cataloged as identified above. The comments

were further refined based on similar categories, i.e., comments that were related to roads, roads maintenance and traffic were evaluated as one category. Additional refinement included identification of the top four comments/issues based on the total number of responses each comment/issue received from stakeholders and the public.

Using the refined data, individual categories were analyzed against existing policies to identify gaps; determine if an existing policy sufficiently addressed the issue, did not address the issue, or County did not have power to regulate and/or enforce compliance of standards.

Section 5 of this report summarizes the findings of the policy gap analysis.

1.2.3 Web Site Enhancements

In addition to policies and regulations, GIS data deliverables from Task 1 was integrated into the County's existing Energy Policy Opportunity Map (EPOM) web mapping application. Based on requirements and recommendations specified by the County's GIS Coordinator, EDAW provided Mesa County with an optimized set of ESRI map documents (.mxd), shapefiles/geodatabases, and symbologies that are efficient and cartographically compliant with the County's current ArcGIS Server Web ADF mapping interface.

Mesa County is focused on leveraging geospatial and web application technologies in order to support, enhance, and innovate policy development and implementation. The goal of the enhancements to the EPOM web mapping application was to elevate both functionality and ease of interaction and use, such as:

Smart Tags: addition of elements that link to supported documents, images and web references, which can be accessed via the following:

- Drop-down menu tool on the County's EPOM web mapping application
- Static Web page (or policy/gap analysis document appendix) with hyperlinks to related policy documents(.doc, .xls, .pdf), permit requirements, reference maps, EPOM, images and the Energy Resource Atlas

Google Earth: .kml: enable web users to view and identify EPOM Opportunity and/or Constraint datasets within Google Earth's 3D interface

These proposed enhancements are designed to elevate Mesa County's use of complex geospatial technologies and promote Mesa County as a leader in Energy Policy Implementation.

2.0 Inventory and Evaluation of Energy Resources

In addition to its natural beauty, Mesa County is blessed with an abundance of energy resources including coal, natural gas, coalbed methane, oil shale, and uranium. A cursory review of renewable energy resources conducted as part of this project indicates that solar, wind, biomass, and geothermal energy have varying potential for development in the County. One of the objectives of the Energy Master Plan is to identify ways that the valuable energy resources in the County can be developed without sacrificing the quality of life enjoyed by County residents, or the scenic beauty that draws visitors to the area.

This planning process first sought to identify and map the areas of the County that contained known deposits of energy resources and areas of active resource development. Most of the data on energy resources was obtained from publicly available data sources including the U.S. Geological Survey (USGS), Bureau of Land Management (BLM), and others. Only a cursory inventory of renewable energy resources of solar, wind, biomass, and geothermal energy are included in this task. Data sources for specific energy resources are described in the sections below.

Once the energy resources had been mapped, potential constraints on non-renewable resource development were identified. These constraints included areas that were protected by law (such as wilderness areas) or were otherwise constrained due to existing land uses or other factors. Since many of the identified constraints are common to all of the energy resources, the constraints are described in Section 2.1 below.

Following the identification of constraints, maps and related data were created using a geographic information system (GIS) that overlaid the resource areas with the constraints. The resulting maps, shown in Section 2.3 below, show areas of the County that could potentially be subject to future resource development. Please refer to Section 2.3 for a descriptive of how the opportunity and constraints analysis was developed. The scope of this phase of the Energy Master Plan did not include an opportunity/constraints evaluation of renewable energy resources. The Energy Resource Atlas includes detailed information on the Opportunities and Constraints Tables (see Appendix B) used in this evaluation.

2.1 Constraints and Exclusions

Even though Mesa County has an abundance of energy resources, not all of the resources are available for development. As described in the following sections, some of the available resources are located in areas that are specifically precluded from resource development and other resources are highly constrained and located in areas that would be difficult, if not impossible, to develop economically.

This portion of the analysis sought to identify areas that would not be readily available to resource development. These areas not available to resource development generally fall into two categories: constraint (or avoidance) areas and exclusion areas. Constraint areas include conservation areas; areas with special designation such as State Parks, wildlife areas,

campgrounds, and scenic byways; water resources; natural hazards; land use (agricultural and residential areas); areas with BLM and Forest Service lease stipulations; and areas of visual sensitivity. Constraint areas could potentially be developed if appropriate mitigation measures to minimize impacts were implemented.

Exclusion areas include those areas that are generally excluded from resource development based on various Federal and State regulatory designations including wilderness and wilderness study areas, the Colorado National Monument, and certain designated conservation areas. Specific constraints and exclusion areas that were identified are described in the following sections.

2.1.1 Conservation Areas

Conservation constraints include the following areas:

- Areas of Critical Environmental Concern (ACEC)—Areas on BLM land that have significant historic, cultural, biological, or scenic values or importance.
- Federal or state threatened or endangered species habitat or habitat for species of concern. Federal threatened and endangered species for Mesa County include humpback chub, Colorado pikeminnow, bonytail chub, razorback sucker, black-footed ferret (experimental non-essential population), Uinta Basin hookless cactus, and DeBeque phacelia.
- Areas administered by the Colorado Natural Areas Program (CNAP)
- State Habitat Areas (SHAs)
- Areas within designated bald eagle habitat. Resource development within these areas could be subject to seasonal restrictions.
- Areas within Potential Conservation Areas (PCAs). PCAs may include areas within deer and elk winter range. Resource development within these areas could be subject to seasonal restrictions.
- Conservation Easements, including those easements managed by the Mesa Land Trust. Mining is generally prohibited within these easements.

2.1.2 Designated Areas

Designated areas refer to those areas that have some level of special designation. Resource development within these designated areas is not specifically precluded by the designating legislation or the resource management agency. In spite of the special designation, resource development may be allowed in some areas under certain conditions, or with adequate mitigation.

For the purposes of the Mesa County Energy Master Plan, the following areas were identified as designated area constraints:

- State parks.
- State wildlife areas (SWAs).

- Within 300 feet of areas recommended for Wild and Scenic River designation. For the purpose of this analysis, the Dolores River has been identified as an eligible segment under the Wild and Scenic Rivers Act since 1977, and has been mapped as 'designated'. In addition, certain reaches of the Colorado River, Gunnison River, Little Dolores River, Rough Canyon Creek, East Creek, West Creek, Ute Creek, Blue Creek, North Fork Mesa Creek, and Big and Little Dominguez Creeks have also recently gained eligibility for Wild and Scenic River designation per the Bureau of Land Management Grand Junction Field Office's Wild and Scenic River Eligibility Report dated 3/24/2009, but are not mapped as a designated constraint in this analysis.
- Within 0.5 mile of designated Scenic and Historic Byways. Scenic and Historic Byways within Mesa County include the Grand Mesa Scenic Byway, the Dinosaur Diamond Scenic Byway, and the Unaweep/Tabeguache Scenic and Historic Byway.
- Sites, landmarks, districts, and monuments listed on the National Register of Historic Places (NRHP).
- BLM's North Fruita Desert Special Recreation Management Area (SRMA).
- Areas within 0.25 mile of campgrounds.
- Areas with 0.25 mile of recreational trails.

2.1.3 Water Resources

The water resources constraints include the following resource categories:

- Within 300 feet of surface water (consistent with COGCC Rule 317B)
- Within designated floodplains
- Within wetlands
- Within designated watersheds and water supply protection areas of reservoirs and other drinking water sources (see Appendix D)

2.1.4 Natural Hazards and Geology

Identified natural hazards and geological constraints include:

- Areas of slope equal to or greater than 16 degrees
- Areas with high soil erodibility
- Areas with very high runoff potential
- Designated natural hazard areas

2.1.5 Land Use and Infrastructure

Areas with various types of soils, land use, and other types of developed infrastructure have also been designated as constraint areas. Specifically, the following types of land uses have been designated as constraints:

- Areas with farmland of statewide importance
- Areas with prime farmland
- Areas of active cultivation
- All residential and commercial zoning categories

2.1.6 BLM and Forest Service Lease Stipulations

Energy development activities on BLM and U.S. Forest Service land must obtain federal leases which may carry specific lease stipulations that limit the timing or extent of allowable development. For the purposes of the Energy Master Plan, all areas within the County that were subject to a BLM or USFS lease stipulation were designated as constraint areas.

2.1.7 Areas of Visual Sensitivity

Areas of visual sensitivity that were designated as constraints to energy development include the following:

- Ridgelines where energy development activities can be seen from large distances.
- Parcels with structures: Development of energy resources near residential structures is subject to established setback requirements and recommended mitigation in the EPOM.
- Areas of Special Interest as defined in the Mesa County Master Plan - Mesa County Land Use and Development Policy #29 (1985 Mineral Extraction Policy).

2.1.8 Regulatory Exclusions

Exclusion areas generally represent those areas where development of energy resources would not be allowed, even with mitigation. These areas are typically managed for conservation of the natural features and may be protected by state or federal legislation. For the purposes of the Energy Master Plan, the following areas were designated as exclusions:

- Wilderness and wilderness study areas (WSAs).
- Inventoried Roadless Areas (USFS) and Colorado Roadless Areas.
- National Parks and Monuments.
- National Conservation Areas (NCAs). The McInnis Canyon NCA is located along the Colorado River in northwestern Mesa County. Mining activities within the NCA are prohibited by the McInnis Canyon NCA Management Plan.
- Areas with BLM or USFS “No Lease” stipulations.

2.2 Energy Resources

The following discussion describes the general nature of the energy resources that are located within Mesa County based on the best public information available. No attempt was made to quantify recoverable reserves of any of these resources, or to assess the quality of the reserves. Data presented in the figures are often based on broad scale (county, state, or national) information and may not accurately reflect the character or extent of a particular resource at any given location.

2.2.1 Coal

Mesa County is located within the Uinta Region Coal Fields. Known coal deposits (High Volatile Grade B Bituminous) within the County are located along the western edge of the Book Cliffs, north of the Colorado River in the Colorado Canyons NCA, and south of the community of Whitewater in an area located north of the Gunnison River. Known deposits of High Volatile Grade C Bituminous and Sub bituminous Grade A are located south and east of Palisade along the western edge of the Grand Mesa. Known coal deposits within the County can be found on page 6 of the Energy Resource Atlas.

Currently, there are no active coal mines located in Mesa County although there has been historic production at the Cameo Mine, Fruita Mines (several leases), and Anchor Tresner Unit. The proposed Red Cliff Mine is located immediately north of Mesa County in Garfield County. Although mining operations would generally be confined to Garfield County, ancillary facilities including the rail spur, would extend south into Mesa County.

Xcel Energy's Cameo Plant burns coal that is trucked from the McClane Canyon Mine located in Garfield County. Xcel Energy is evaluating adding solar thermal capacity to the Cameo plant.

Data on coal mines, coal fields, and leases were obtained from the following sources:

- **Coal Fields -** Digitized from Colorado Geological Survey publication, "Coal Production, Distribution, and Electric Generation Map of Colorado, 2005".
- **Known Coal Type -** Digitized from Colorado Geological Survey publication, "Resource Series 2—Mineral Resources Survey of Mesa County, a model study" By Stephen D. Schwochow, 1978.
- **Coal Mine Status -** Based on "Permitted Mines" shapefile published by State of Colorado Division of Reclamation, Mining and Safety, 2008.
- **Coal Lease Parcels -** Solid Mineral lease parcel shapefile provided by National Integrated Land System (NILS) and Bureau of Land Management (BLM) Land and Mineral Records System (LR2000), 2008.

2.2.2 Natural Gas

Mesa County is currently experiencing extensive natural gas development, particularly in the northern and eastern portions of the County. Much of the natural gas development is occurring north and east of Palisade and in the areas near Collbran and DeBeque. The natural gas industry represents the most visible energy development to most County residents, and this industry has grown rapidly in recent years. A map showing the locations of natural gas wells and gas can be found on page 15 of the Energy Resource Atlas.

Data on natural gas reserves, well status, and leases were obtained from the following sources:

- **Proved Gaseous Reserves—**Phase 1 EPCA Section 604 Natural Gas proven gross 2001 reserves data collection. Shapefile provided by Energy Information Administration (EIA).
- **Well Status—**"Wells" shapefile detailing permitted oil and gas well locations, 2008. Shapefile provided by Colorado Oil and Gas Conservation Commission.
- **Bureau of Land Management (BLM) Oil and Gas Lease Parcels—**Federal Oil and Gas lease parcel shapefile provided by National Integrated Land System (NILS) and BLM Legacy Rehost System (LR2000), 2008.

2.2.3 Coalbed Methane

Coalbed methane resources in Mesa County are located within the Mesa Verde Coalbed within the Piceance Basin. Coalbed methane resources in the County are not nearly as extensive as the natural gas resources. Due to the generally shallow depth to most of the coal formations in the County, much of the coalbed methane resource is believed to have dissipated. The approximate locations of coalbed methane production areas can be found on page 12 of the Energy Resource Atlas.

Data on coalbed methane reserves, production area locations, and well status were obtained from the following sources:

- **Production Area Locations—**"U.S. Coalbed Methane Field Boundaries" shapefile, 2007. Approximate area of Coalbed Methane gas production based on well point data. Shapefile provided by Energy Information Administration (EIA), Reserves and Production Division.
- **Estimated Reserves—**Coalbed Methane resources by coal basin in the United States, 2007. Details 'recoverable' resource estimates of coalbed natural gas under existing and foreseen technological conditions. Shapefile provided by Energy Information Administration (EIA), Reserves and Production Division.
- **Proved Reserves: Mesa Verde Coalbed—**Quantities of gas that geologic and engineering data demonstrate with reasonable certainty to be recoverable in future years under existing economic and operating conditions in the Mesa Verde Coalbed basin,

2007. Shapefile provided by Energy Information Administration (EIA), Reserves and Production Division.

- **Well Status—**"Wells" shapefile detailing permitted oil and gas well locations, 2008. Shapefile provided by Colorado Oil and Gas Conservation Commission.

2.2.4 Oil Shale

Oil shale resources in Mesa County are very limited and are generally confined to the northeastern portion of the County near Battlement Mesa. Oil shale formations include the Parachute Creek Member of the Green River Formation, and the Mahogany Zone of the Parachute Creek Member. Both of these formations are present on Battlement Mesa. There are some scattered Parachute Creek Member oil shale resources south of Collbran near Old Man Mountain in the Grand Mesa National Forest. The locations of oil shale resources in Mesa County can be found on page 9 of the Energy Resource Atlas.

There is currently no oil shale production in the County, and the likelihood of future oil shale development is low due to the limited resources and the locations of those resources in sensitive areas (Refer to Section 2.3 below for more information).

Data on oil shale formations were digitized from Schwochow, 1978.

2.2.5 Uranium

Historical uranium mining has occurred in the southwestern corner of Mesa County within the Uravan Mineral Belt near Gateway which extends from Utah, into Mesa County, and south into Montrose County, Colorado. Uranium formations within Mesa County include:

- UV-1—Salt Wash Member of the Morrison Formation
- UV-2—Brushy Basin Member of the Morrison Formation
- UV-3—Burro Canyon Formation and Dakota Group overlying the Morrison Formation

A map showing the locations of these formations can be found on page 18 of the Energy Resource Atlas.

Mesa County has recently issued a conditional use permit (CUP) to Energy Fuels Corporation that is proposing to reopen two underground uranium mines as a combined operation called the Whirlwind Mine. Ore from the mine would be transported by truck on 5/10 Road to John Brown Road to State Highway 141 at Gateway. From there, the ore would likely be trucked to a mill in Blanding, Utah for processing (Mesa County 2007).

Data on uranium formations, claims, and operations were obtained from the following sources:

- **Uranium Formations**—Colorado Geological Survey publication, "Resource Series 2—Mineral Resources Survey of Mesa County" By Stephen D. Schwochow, 1978.
- **Uravan Mineral Belt—**Denver Regional Exploration Geologists Society, www.dregs.org/fldtrips.html 2005.
- **Uranium Claims—**Based on Records entered in LR2000—Bureau of Land Management, Uncompaghre Field Office, August 2008.
- **Uranium Operations—**US Geological Survey Mineral Resources Data System, November 2007.

2.2.6 Renewable Resources

Renewable resources that were mapped in Mesa County for the purposes of the Energy Master Plan included solar, wind, biomass, and geothermal. Each of these resources is discussed in the following sections.

2.2.6.1 Solar

Mesa County is located in an area characterized has having very good solar insolation potential (5,000 to 6,000 watts per square meter). A map showing the solar insolation potential of Mesa County in relation to surrounding counties can be found on page 22 of the Energy Resource Atlas.

Solar insolation potential was obtained from the State University of New York/Albany satellite radiation model 2002 (NREL 2005a).

2.2.6.2 Wind

Wind resources within Mesa County have been mapped by the National Renewable Energy Laboratory (NREL 2003) and the majority of the County is rated as having a less than marginal wind potential for utility-scale generation. Areas within the County having a marginal or better wind potential can be found on page 23 of the Energy Resource Atlas. As shown on the figure, areas of marginal or better wind resources tend to be located along ridgelines on the Grand Mesa, south of the Gunnison River, and on the Uncompahgre Plateau. Due to the low wind potential of Mesa County and the locations of the best wind resources in sensitive areas, it is unlikely that Mesa County will see extensive utility-scale wind development in the foreseeable future. However, it is possible that small wind turbines could be installed in various locations of the County to provide electricity for small development projects.

2.2.6.3 Biomass

Based on a national assessment of biomass resources (NREL 2005b), Mesa County is characterized as having low biomass potential. A map showing the biomass potential of Mesa County in relation to surrounding counties can be found on page 21 of the Energy Resource Atlas. Although the potential for utility-scale application of biomass-generated electricity is low, development of small-scale biomass facilities to burn agricultural waste or forest-product waste could occur in the future.

2.2.6.4 Geothermal

Mesa County is located outside of areas of known geothermal resources, although based on data from the Colorado Geological Survey (1993), a low-temperature well is located near the City of Grand Junction. A map showing the geothermal potential of Mesa County in relation to surrounding counties can be found on page 24 of the Energy Resource Atlas. Data for geothermal energy resources were obtained from the following sources:

- **Geothermal Resource Areas—**Digitized from U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Geothermal Technologies Program, "Colorado Geothermal Resources Publication No. INEEL/MIS-2002-1614 Rev 1", November 2003.
- **Hot Springs and Wells—**Shapefile provided by Colorado Geological Survey, as part of "1992-1993 Low-Temperature Geothermal Assessment, Pub# OF-95-01", 1993.

Although the potential for utility-scale application of geothermal energy in Mesa County is low, it is very likely that low-temperature geothermal (ground-source) geo-exchange heating and cooling systems may be installed in the County for commercial, institutional, and residential applications. In 2009, a fairly large ground-source system was being installed at Mesa State College and other systems are being planned. Environmental and community impacts from these types of systems are very low; however, the potential for energy savings for space heating and cooling can be substantial.

2.3 Opportunity and Constraints Analysis

The final step in the evaluation of the energy resources that was conducted as part of this phase of the Energy Master Plan is known as an opportunity and constraints analysis. This analysis is conducted in the GIS system by overlaying the constraint and exclusion data (described in Section 2.1) over the energy resource data (described in Section 2.2). The resulting composite map product provides a visual overview of the resource areas and the potential constraints. The areas shown in green have the fewest constraints to resource development, while the areas shown in darker shades have the most constraints to development. Areas shown in red on each of the maps are areas of regulatory exclusion where resource development would not be allowed based on the current levels of protection. The graphic shown in Figure 1 provides a schematic overview of the process.

The sections below provide a summary of the opportunities and constraints for each of the energy resources. Note that an opportunity and constraints analysis of renewable energy resources was not conducted as part of this project. As described in Section 2.2.6, Mesa County has a low potential for the development of utility-scale wind, biomass, and geothermal resources. The County does, however, have a good potential for solar energy development. Utility-scale solar energy facilities would generally be subject to the County's current conditional use permit process as well as appropriate setbacks and separation from incompatible land uses. In addition, impacts associated with large-scale solar energy development are typically quite different than the impacts associated with traditional energy resource development and may be very site-specific. Consequently, it was outside the scope of this resource mapping effort to fully analyze potential opportunities and constraints to solar energy development which could conceivably occur at any location in the County. The County may choose to develop specific policies for solar energy development as part of the Energy Master Plan.

2.3.1 Coal

Much of the remaining coal resources in Mesa County are located in areas having medium to high levels of constraint or are located in exclusion areas. Opportunities and Constraints map can be found on page 7 of the Energy Resource Atlas. As shown on the map, the exclusion areas for coal include BLM and USFS "no lease areas", USFS Roadless Areas, National Conservation Areas, wilderness areas, and wilderness study areas. With few exceptions, the areas characterized by good coal resources and the fewest number of constraints are the areas of the County that have historically been mined for coal. Table 2-1 below provides a summary of the area of coal resources in the County that are considered opportunity areas, and those potential resource areas that are located in areas having one or more constraints or exclusion areas.

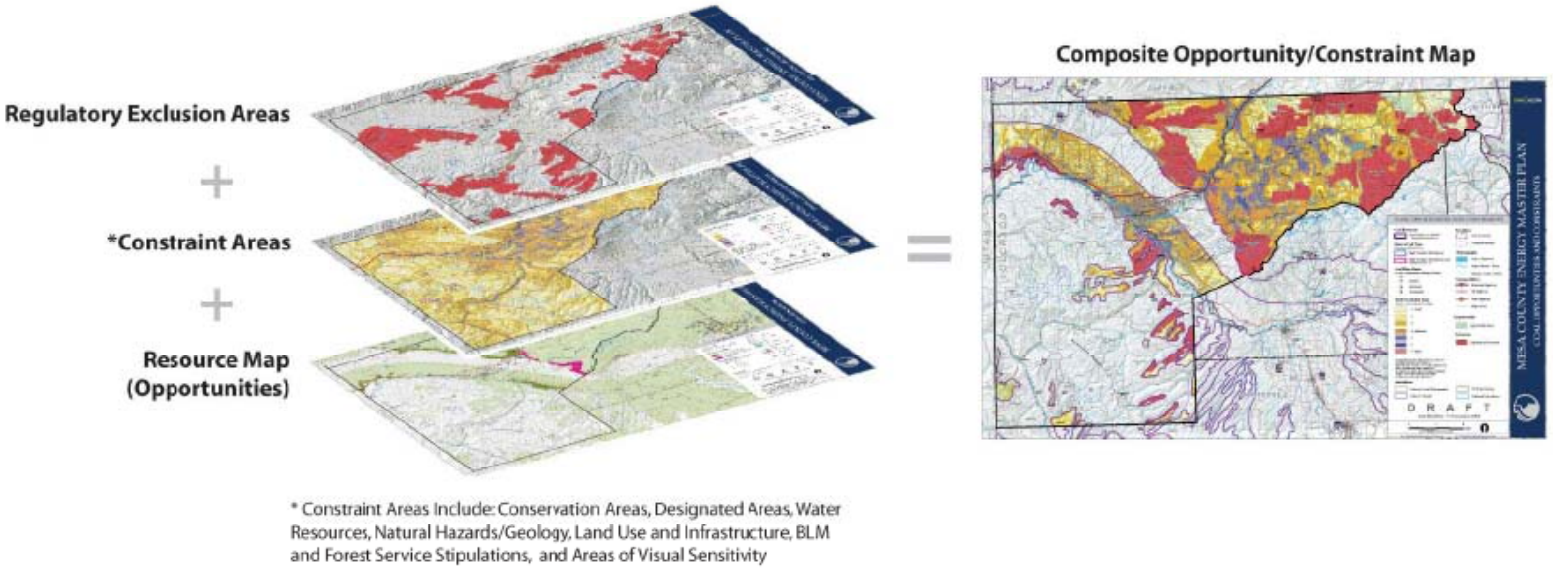
Table 2-1:
Summary of Coal Resources and Constraints

Availability of Resource	Calculated Total Acreage of Potential Resource within Mesa County (acres)	Percent of Total Resource Area1
Opportunity Areas	23,061	2%
Constraint Areas	766,816	69%
Exclusion Areas	323,807	29%
Totals	1,113,691	100%

[1] Rounded to nearest whole percentage.

A more detailed table describing land ownership and details of the constraints is provided in Appendix C.

Opportunities and Constraints Mapping Process Diagram



* Constraint Areas Include: Conservation Areas, Designated Areas, Water Resources, Natural Hazards/Geology, Land Use and Infrastructure, BLM and Forest Service Stipulations, and Areas of Visual Sensitivity

Figure 1

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2.3.2 Natural Gas

As shown on Table 2-2, much of the natural gas resources in Mesa County are located in areas having at least one constraint. Opportunities and Constraints map can be found on page 16 of the Energy Resource Atlas. Several of the gas fields and a number of abandoned wells are located partially within or on the edges of areas classified as regulatory exclusions. As shown on the map, the exclusion areas for natural gas include BLM and USFS "no lease areas", USFS Roadless Areas, and BLM wilderness study areas. Table 2-2 provides a summary of the area of natural gas resources in the County that are considered opportunity areas, and those potential resource areas that are located in areas having one or more constraints or exclusion areas.

Table 2-2:
Summary of Natural Gas Resources and Constraints

Availability of Resource	Calculated Total Acreage of Potential Resource within Mesa County (acres)	Percent of Total Resource Area1
Opportunity Areas	7,987	2.4%
Constraint Areas	288,313	86.2%
Exclusion Areas	38,360	11.5%
Totals	334,332	100%

[1] Totals may not add due to rounding.

A more detailed table describing land ownership and details of the constraints is provided in Appendix C.

2.3.3 Coalbed Methane

As shown on Table 2-3, most (84%) of the CBM production areas in Mesa County are located in areas having at least one constraint. Opportunities and Constraints map can be found on page 13 of the Energy Resource Atlas. As with natural gas, several of the CBM production areas are located partially within or on the edges of areas classified as regulatory exclusions. The exclusion areas that overlap CBM production areas include USFS Roadless Areas and BLM wilderness study areas. Table 2-3 provides a summary of the area of CBM resources in the County that are considered opportunity areas, and those potential resource areas that are located in areas having one or more constraints or exclusion areas.

Table 2-3:
Summary of Coalbed Methane Resources and Constraints

Availability of Resource	Calculated Total Acreage of Potential Resource within Mesa County (acres)	Percent of Total Resource Area1
Opportunity Areas	927	3%
Constraint Areas	25,540	84%
Exclusion Areas	3,938	13%
Totals	30,405	100%

[1] Totals may not add due to rounding.

A more detailed table describing land ownership and details of the constraints for CBM production areas is provided in Appendix C.

2.3.4 Oil Shale

As shown on Table 2-4, most (81%) of the oil shale resources in Mesa County are located in exclusion areas (USFS Roadless Areas). Opportunities and Constraints map can be found on page 10 of the Energy Resource Atlas. An additional 18% of the mapped oil shale resources are located in areas with at least one constraint. As described in the resource section above, potential development of oil shale in Mesa County is considered low. Table 2-4 below provides a summary of the opportunity areas, constraint areas, and exclusion areas for oil shale resources in the County.

Table 2-4:
Summary of Oil Shale Resources and Constraints

Availability of Resource	Calculated Total Acreage of Potential Resource within Mesa County (acres)	Percent of Total Resource Area[1]
Opportunity Areas	206	1%
Constraint Areas	2,663	18%
Exclusion Areas	12,211	81%
Totals	15,080	100%

[1] Rounded to nearest whole percentage.

A more detailed table describing land ownership and details of the constraints for oil shale development is provided in Appendix C.

2.3.5 Uranium

As shown on Table 2-5 most (93%) of the uranium resource areas in Mesa County are located in areas having at least one constraint. Opportunities and Constraints map can be found on page 19 of the Energy Resource Atlas. The exclusion areas represent approximately 1% of the total uranium resource area and include BLM "no lease" areas, USFS Roadless Areas, and BLM wilderness study areas. Table 3-5 provides a summary of the area of uranium resources in the County that are considered opportunity areas, and those potential resource areas that are located in areas having one or more constraints or exclusion areas.

Table 2-5:
Summary of Uranium Resources and Constraints

Availability of Resource	Calculated Total Acreage of Potential Resource within Mesa County (acres)	Percent of Total Resource Area[1]
Opportunity Areas	5,593	6%
Constraint Areas	88,513	93%
Exclusion Areas	1,352	1%
Totals	95,457	100%

[1] Rounded to nearest whole percentage.

A more detailed table describing land ownership and details of the constraints for uranium resource areas is provided in Appendix C.

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3.0 Stakeholder/Public Participation Process

A key component of the Energy Master Plan has been the input of stakeholders and the public. A series of 18 stakeholder meetings were conducted in late-2008, and a series of seven public meetings in six Mesa County communities were held in January 2009. The top issues and concerns raised are described in Section 3.3.

3.1 Stakeholder / Public Meetings

Meetings were held with stakeholder groups in November and December 2008 as identified in Table 3-1 below. A total of seven public meetings were conducted in January 2009 in six communities across Mesa County. The locations of these meetings are presented in Table 3-2 below. Detailed summaries of the comments received are provided in Appendix A.

Table 3-1:
Stakeholder Meetings Held

Stakeholder Group	Stakeholder Group
Mesa County Government Departments	Western Colorado Congress
Mesa County City Managers	Gateway Property Owners Association Chair
Town of DeBeque	Colorado Oil & Gas Association
Sportsmen	Colorado Division of Wildlife
Club 20	U.S. Geological Survey
Mesa County Farm Bureau Board	U.S. Fish & Wildlife Service
Mesa County League of Women Voters	U.S. Forest Service
Grand Junction Area Chamber of Commerce	U.S. Army Corps of Engineers
Grand Junction Economic Partnership	U.S. Bureau of Land Management

Table 3-2:
Public Meetings

Meeting Location	Meeting Date
Fruita	January 13, 2009
Collbran	January 14, 2009
Palisade	January 15, 2009
Gateway	January 20, 2009
DeBeque	January 21, 2009
Grand Junction	January 22, 2009 (two meetings at 4:30 pm and 6:30 pm)

Participants in all meetings were very engaged in the process and expressed their appreciation to County staff for holding meetings and seeking public input and opinion. Participants recognized and expressed the importance of energy resource development to the economic vitality and growth of the County but not at the detriment to the environment and quality of life found the County and its communities.

Stakeholder meetings were organized and lead as facilitated group discussions, while public meetings were less formal. Public meetings were more interactive with an opportunity for participants to view and comment of draft copies of the energy resource maps followed by group discussions. Following a presentation by staff, participants were generally divided into smaller discussion groups. Discussion was facilitated by County staff members and comments were recorded. At the conclusion of the smaller discussion sessions, presentations were made to the entire group for further discussion with comments recorded.

The general consensus at the conclusion of each meeting was for the County to host follow up informational sessions after completion of this phase of the Energy Master Plan project.

3.2 Summary of Comments

Comments, issues, and concerns that were expressed at each of the meetings were summarized and grouped into six categories for evaluation. The six categories include:

1. Infrastructure
2. Regulatory
3. Operation
4. Environment
5. Economics
6. General

Table 3-3 is a summary of the quantity of comments received from both stakeholder and public meetings. See Appendix A for a complete list of comments, issues and concerns.

Table 3-3:
Summary of Comments Received at Stakeholder & Public Meetings

Categories	Total Comments	% of Total	Total No. of Stakeholder Response	Total No. of Public Responses	Total Responses
Infrastructure	17	11%	25	26	51
Regulatory	46	28%	85	49	134
Operation	8	5%	11	3	14
Environment	25	16%	50	34	84
Economics	19	12%	27	23	50
General	45	28%	42	53	95
Total	160	100%	240	188	428

As tabulated in Table 3-3, the number one concern of stakeholders and the public is "Regulatory" process, management and oversight as related to energy development. Not only were the most comments received for this category, but also the most responses to these comments from stakeholders and the public. The "General" category which included such topics as improved cooperation, data sharing, and communication with agencies, a need for improved education of the public and landowners, and socioeconomic issues such as healthcare, crime and emergency planning and response received the next highest number of comments and responses to those comments.

Based on all of the comments received the top issues and concerns raised are shown in Table 3-4.

Table 3-4:
Top Stakeholder and Public Concerns

Ranking	Issue or Concern
1	Water / Ground Water Quality
2	Roads & Traffic Enforcement of all Standards that are enforceable at the permit phase Regulations & Reclamation
3	Consistent, Fair, Integrated Regulatory Environment based on Shared Data
4	Air Quality
5	Renewable Energy Sources

A summary of comments, issues and concerns for each of the six categories provided in Table 3-4 is offered in the following sections.

3.2.1 Infrastructure

The primary concern expressed by the stakeholders and public for this category is related to transportation. In this context transportation is inclusive of traffic impacts, road usage, maintenance, and standards, and rail service. Sewer and water service to support growth related to energy development as well as future piping for water from gas well operations versus trucking to minimize road usage was also a concern of participants.

Stakeholders are more concerned about road usage (daily and for emergencies) and standards than is the public. The public, although, is more concerned than the stakeholders when it comes to road maintenance, improved interchange access, community bypass roads and the availability of major sewer and water infrastructure.

Traffic and road safety is a larger concern for the remote communities such as Collbran where the primary access for energy workers is on narrow, winding roads that are also traveled by slower moving farm and ranching vehicles. The public realizes there are no easy, economic solutions to these concerns and does not want major four lane or three lane (center turning lanes) roads built through the scenic and rural character of their communities. Thus, their suggestion is to require driver safety programs for energy workers and/or limiting access on roads to only certain times of the day. Another safety suggestion is to designate and/or make provisions for truck chain-up areas.

Proactive solutions offered included the use of telemetry for data collection and the electronic transfer of this data to minimize the need to travel to remote locations. From a planning perspective, it is recommended the County proactively forecast infrastructure improvement to keep pace with energy development and work cooperatively with energy developers regarding responsibility for financing, constructing and maintenance of these assets.

For the purpose of the policy gap analysis the comments were condensed into three areas.

1. Roads and Traffic
2. Transmission Planning / Pipeline Corridors
3. Sewer and Water Service

3.2.2 Regulatory

As stated earlier, this category not only received the most comments but also the highest response total to those comments. The primary concern expressed by the stakeholders and public for this category is related to “Reclamation Standards” and “Enforcement.” This is followed by a concern and desire for a stable, consistent, fair, and clear regulatory environment that minimizes conflicts between regulators. Stakeholders and public are very clear in their message that they do not want or need more regulation, just improved cooperation, management, and enforcement between all parties.

Enforcement covered a wide range of topics including confusion regarding the limit and extent of County authority to regulate and enforce conditions imposed on energy development and operation by other agencies. The public had an opinion that they could rely on assistance or it was the responsibility of the County to ensure compliance. This opinion led to some very meaningful discussion and recommendations beyond the enforcement issue such as:

- A cooperative long range planning process.
- Improved notification of public meetings and participation from public prior to submittal of applications to help educate and receive feedback regarding potential development impacts.
- Clear and understandable polices and development guidelines to minimize confusion and promote consistency between agencies, Mesa County and adjacent counties; e.g. road standards.
- Need for an integrated regulatory framework inclusive of federal, state and local jurisdictions and agencies.
- The creation of an energy advisory board.
- Single point of contact for questions relating to energy development, the permitting process and increased County resources for enforcement oversight.
- Central repository for data collection and sharing.
- Cost management; regulation / permitting vs. profitable energy development.
- Consider a streamline permitting process based on type of energy development and upfront compliance with policies and guidelines.
- Balance of regulation vs. land rights; e.g. private landowners ability to negotiate with energy developers regarding access, easements, location of energy development.
- Use of Bureau of Land Management land for private industrial uses.
- A concern about the regulation, use, storage and potential for spills of chemicals and hazardous materials and emergency response in the event of an accident.

For the purpose of the policy gap analysis the comments were condensed into two areas.

1. Enforcement of all Standards, Regulations, and Reclamation
2. Chemicals and Hazardous Material Use

3.2.3 Operation

The “Operation” category received the lowest total comments and responses to the comments of any other category. This is most likely related to the lack of a clear understanding by the public of the day-to-day operation of energy development, agencies not in position to speak for energy developers and for the most part, energy developers that did attend sessions were there to listen and learn. For the comments that were received, the primary concern expressed by the stakeholders and public were generally related to oil and gas and mining operations. Their number one concern is the “fracing” process.

Fracing is used to improve production from wells by the use of fluids pumped into the well at high pressures and flow rates high enough to fracture or split rock. It is this process and lack of public information on what chemicals are included in these fluids that is of concern from an environmental perspective. Regulation is by the Colorado Oil and Gas Conservation Commission, thus the concern from a local perspective.

Other concerns expressed include well spacing, need for additional pipeline capacity, the need for sufficient availability of electricity and water treatment capacity, BMPs, the noticeable decrease in natural gas activity resulting from the current economic conditions, and the need for comprehensive planning regarding operation.

Stakeholders and the public would like to see a discussion held with energy developers regarding BMP and the inclusion of BMPs in an application. It is clearly understood by both stakeholders and the public that economic growth and prosperity is directly correlated to energy development but not without regulation and a proactive planning process.

For the purpose of the policy gap analysis the comments were condensed into two areas.

1. Fracing Process
2. Best Management Practices

3.2.4 Environment

Ranked third, behind “Regulatory” and “General” in total comments and responses received, this category held some of the lengthiest discussions regarding its topics at public meetings. Water quality, followed by air quality, holds the number one ranking of all concerns of all categories expressed by the stakeholders and public.

Water quality covers a wide range of topics including municipal watersheds, groundwater and monitoring. Energy development, primarily from drilling operations in municipal water supply watersheds, is of great concern to stakeholders and the public. Community water supplies and water supply protection areas for Collbran, Palisade, Grand Junction, and Clifton, contain known gas and coalbed methane reserves. Fracing is also of concern from a water quality and process perspective. Suggested solutions included working cooperatively with other agencies and energy developers to ensure BMPs and mitigation measures are identified and an implementation plan approved as part of the permitting process.

Air quality has also become a concern for the County. Mesa County desires to maintain its status as an air quality attainment area, thus not subject to strict air quality regulation from the State Department of Environmental Health. The deterioration of air quality cannot solely be contributed to energy development. Increased traffic due to growth in the County and more vehicles traveling on roads, paved and unpaved, may be a contributor. Solutions offered included the implementation of BMPs related to dust control at energy development sites, more frequent or timely sweeping of streets after winter storms, and measures to reduce traffic such as carpooling and/or busing workers to job sites.

Other concerns and issues that were identified and discussed included the following.

- Noxious weed management
- Soil erosion due to poor re-vegetation practices
- Noise and light pollution impacts to both residents and wildlife
- Preservation of the flora and fauna found in the County
- The proactive identification of cumulative impacts on wildlife and the environment and implementation of mitigation measures
- Avian protection from water ponds created by energy development and operation
- A balanced policy approach to wildlife protection, the environment and energy development
- Given energy resources are limited, a comprehensive management and use plan should be part of future phases of the Energy Master Plan

Noxious weed management and enforcement of re-vegetation plans is an issue especially in agricultural areas and on private land. Energy developers appear to be diligent implementing an agreed to re-vegetation plan during permitting but typically do not follow through to ensure noxious weeds have not taken over a re-vegetated area. Lacking the resources to pursue energy developers, private landowners may either manage the issue on their own or not. The concern is a loss of quality grassland for grazing and the preservation of agricultural production, recreational open space and natural environment as identified in the Mesa County Noxious Weed Management Plan.

For the purpose of the policy gap analysis the comments were condensed into five areas.

1. Surface and Ground Water Quality
2. Air Quality
3. Environmental Impacts, Direct and Cumulative
4. Produced Water and Disposal
5. Noxious Weeds

3.2.5 Economics

The “Economics” category consists of a number of concerns and issues relating to the economic vitality and growth of the County as influenced by energy development. The number one concern of stakeholders and the public is the balance of the cost of energy development versus the impact and protection of the environment. Other top concerns expressed include the availability of affordable workforce housing and a need for economic diversification.

The question raised at many meetings was how to manage the impact to and protection of the environment without over-regulating or making doing business in Mesa County so expensive that it becomes a deterrent for energy developers. There are also varying views on this point of view because there are some groups that believe energy development should share in the cost of infrastructure such as new road construction and maintenance, taxation,

revenue sharing, and bonding, in addition to mitigation of potential impacts to the environment. Solutions offered included creating a cooperative and sharing working relationship with other regulators and agencies in order to streamline the approval process resulting in lower permitting costs and sending a strong message to energy developers that it is cost-effective to do business in Mesa County while still protecting the environment.

Energy development and the sale of its products is a very important driver to the Mesa County economy although stakeholders and the public stated it should not be the only driver. Economic diversification to minimize or limit boom-bust cycles associated with energy development was another strong recommendation.

The cyclical nature of energy development also places a demand for services and housing. The availability of afford housing, especially for temporary workers, is not unique to Mesa County. Large construction projects over an extended period of time, the seasonal recreation industry, and individuals moving into an area for new jobs while looking of permanent housing may all compete for a limited housing supply. Short term temporary workers will also compete with the tourist industry for hotel rooms. These are also concerns of stakeholders and the public.

Due to the remote location of energy development sites, traffic in rural areas has increased. This is brought about by the desire of temporary workers to live in larger communities due to the availability of services, quality of life while awhile from their permanent place of residence, and the entertain and recreation venues not found in smaller communities. Smaller communities typically do not have the resources (financial, fire, police and health services) or infrastructure to support growth and an added housing inventory. No viable solutions were offered, thus smaller communities are looking to Mesa County for support and assistance.

Economic diversification will also provide workforce depth and availability that can be tapped by energy developers. Stakeholders and the public viewed this as a positive to offset the potential loss of lower paying service jobs to higher paying energy development jobs.

The availability of sufficient industrial land to support energy development and its spin-off industries is another important recommendation from stakeholders and the public. Presently, there is a perception that land with a higher and more valuable use is being consumed by energy developers for temporary operations such as vehicle parking and staging areas. In an effort to support the growth of new and existing businesses as well as the temporary needs of industrial sites by energy developers, Mesa County adopted specific development standards in its Land Development Code in 2008 to address “Support Services” and “Temporary Housing” related to energy development.

For the purpose of the policy gap analysis the comments were condensed into two areas.

1. Use of Taxes
2. Land Use and Zoning

3.2.6 General

There are many issues and concerns offered that did not coalesce with the other categories but are very important to capture and address. The number one concern expressed is a central data collection system that would be shared by communities, the County and regionally. Many view this as a cost-savings opportunity and means of reducing confusion, because all parties are using the same database, improving intergovernmental working relationships, creating a one-stop access to data, and improved communication.

The second highest ranking concern is for the development of alternative and renewable energy sources and offering incentives for its development. Mesa County residents recognize a need for development of the more traditional natural resources such as oil, gas and coal although they are quick to point out these are limited resources and will impact the environment. Residents perceive energy conservation, standards, technology, and development of renewable sources as the way of the future.

Other important considerations offered include the following.

- Preservation of recreation areas, scenic areas, natural heritage, and cultural, archaeological sites
- Education of the public and landowners regarding energy development, operation and their rights
- Visioning sessions for the development and input of others regarding future land use
- Improved communication regarding what constitutes and is considered a best management practice
- A desire to not export all energy resources; find ways and uses to keep some resources within the County and region

As overviewed in the economics category, a temporary workforce will have an impact on the demand for a variety of services including health, social, and welfare. Additional demands will be placed on police, fire and other emergency response services. Without adequate insurance coverage or a means to pay for additional hiring, equipment and administrative support, the concern of stakeholders and the public is that this cost will become their burden. While they recognize this will be difficult to address, it is imperative to not ignore and are willing to assist the County in developing practical solutions.

For the purpose of the policy gap analysis the comments were condensed into three areas.

1. Health Services, Emergency Response and Planning
2. Protection of Cultural and Historic Resources
3. Social Services Impacts

4.0 Policy Structure/Gap Analysis

4.1 Introduction

Once the energy resources have been mapped and input received from the public and stakeholders, the question is whether there are ways to deal with the impacts of both the process and the activity. Land use regulation is limited by Constitutional and statutory provisions. Great latitude is given to the regulating authority, but there still must be a necessary connection between the regulation and the public purpose. In Colorado this connection is established by creating a nonbinding plan, often called the Master Plan, and then implementing regulations that further the purposes of the plan.

4.2 Umbrella Policies

This overall structure implies that there are some “Umbrella Policies” that, even if unspoken, apply to land use regulation. For this analysis the following were considered to be these “Umbrella Policies” whether enumerated or not.

1. Balance the needs and protection of the community with the rights and privileges of the property owner (both surface and mineral interest owners), utility, or other applicants in a process that provides

    a. Certainty of process
    b. Certainty of reasonable timing in County decision-making
    c. Certainty of resolution
    d. Certainty of application of rules in a predictable manner

2. To assure consistency in the process, the County shall determine what activities will be governed and what activities will be governed by agencies with preemptive powers and what coordination role the County may provide through Intergovernmental Agreements or other arrangements..

3. Have permit application submittal requirements that clearly define what procedure will be followed with the submission, the timeline of review and approval process, and a list of other agencies that have to be involved to reach a final decision.

4. Work with and provide an applicant with sufficient information to reasonably predict the permitting costs for filing and processing an application as well as compliance with permit requirements subject to the applicant’s determination of applicant’s choice of resources and tools.

5. Create a nonpolitical adjudication of the request of the applicants in an administrative forum.

Discussion of the above led to the further enumeration of thoughts for the direction of land use regulation of energy resources. This list is not a list of policies, but a list of what appeared to be a logical progression from the above “Umbrella Policies.”

A. Energy resources found in the County have been mapped. Determination of whether these resources can be developed in the near future or the distant future will be dependent on variety of demand and cost factors. The County will attempt to limit future conflicting infill near these resources by non-compatible uses which will only cause conflict in the future. For currently developed areas, mineral resource development will minimize impacts to currently allowed and permitted uses.
B. Mesa County will assess specific uses of property and the impact caused by such use and determine which impacts should be the subject of regulations promulgated under an existing policy. The welfare of the citizens of the County needs to be protected, but the police power does not dictate that all impacts must be regulated because not all impacts affect the health, safety or welfare of the residents of Mesa County. Those impacts that do affect the health, safety or welfare of the residents should be regulated.
C. Mesa County realizes that other jurisdictions and agencies have statutory or other interest in land uses in Mesa County. A clear policy of when to regulate if other agencies are involved will limit confusion and promote rational development.
D. Enforcement of violations of regulations must be quick and understandable to have any positive effect.

As part of the overall process, Mesa County requested an analysis of the current policies and whether the concerns of the public and stakeholders had been addressed by the policies of previous boards. This would allow Mesa County to examine needed changes, avoid needless duplication, and present land use policies and regulations (as needed) as part of a coherent process. It was determined that this process undertaken by a neutral third party would provide impartial information about the approach to energy resources that had existed in Mesa County.

This review is limited only to the policy level. It does not attempt to analyze the Land Development Code sections that exist or resolve conflicts between existing policies, goals or code sections. It also does not attempt to analyze the conflicts with other agencies and authorities other than to point out they may exist as limiting factors to current or future policies.

4.3 Process

4.3.1 Preliminary Gap Analysis

Following the stakeholder and public meeting phase of the project, a list of comments, concerns, and potential impacts was developed. This list contained 160 comments that arose during these meetings. Of the 160 comments approximately 28 percent or 46 comments were related to regulatory issues. Because some of these issues dealt with similar or compatible issues, as far as general policies might be concerned, the list was further refined to 24 critical

impact issues. These issues were then examined in light of the Mesa County Master Plan as adopted by the Mesa County Planning Commission over time to determine if there was a policy in the Master Plan that dealt with the impacts of each critical impact issue.

As a result of this process, five critical impact issues were determined to be the greatest concerns among those that were offered by stakeholders and the public.

1. Roads and traffic
2. Enforcement of all standards, regulations, and reclamation acts
3. Existence of a consistent, fair, and integrated regulator environment based upon shared data
4. Water and Ground Water Quality
5. Air Quality

4.3.2 Other Agencies that may Impact Mesa County Energy Policies

Once the Preliminary Gap Analysis was completed and modified, a review was made of the other policies that may impact land use in Mesa County. Based upon the experience of EDAW with many other jurisdictions and agencies, a list was provided of agencies that may possibly impact regulation in Mesa County. This extensive list is presented in Appendix D These jurisdictions and agencies may significantly impact both an applicant and Mesa County, but they do more so at a Code or regulatory level rather than a policy level. They are mentioned here to indicate that greater consideration needs to be given to the interaction with these at the level of drafting codes to implement policies, than at the policy level.

The Colorado Oil and Gas Conservation Commission and the Mined Land Reclamation Board, because of new regulations and new court cases, have assumed greater powers in the energy resource area. These are discussed more fully below.

Matrix

Given the large amount of material contained in the Mesa County Master Plan, the number of agencies involved, and the formatting of the polices in the Master Plan, a Matrix was created for each critical impact issue identified in the preliminary gap analysis (see Appendix E). The purpose of the Matrix was to get an understanding of the factors involved in the critical impact issues. This matrix looked at other agencies that might be involved, the approach taken, or not, by Mesa County, and other factors that might impact regulations concerning the policy issues.

The Matrix was helpful in examining each critical impact issue and attempting to extract the applicable policy from the Mesa County Master Plan, a document adopted piecemeal over time by the Mesa County Planning Commission. It also led to important questions about the Mesa County Master Plan. Once this was completed the Matrix work was abandoned to be taken up later if Mesa County desired to build policies and Code sections.

4.3.3 Review of Master Plan

Once the Matrix helped identify possible policy sections in the Mesa County Master Plan applicable to the critical impact issues, an examination of the Master Plan from an overall standpoint was made. The purpose was to view the organic structure of the Master Plan as well as to make sure that focus was directed in the appropriate areas. This review of the Matrix findings led to an understanding of some significant aspects of the Master Plan as it is currently published.

Most energy resource areas of Mesa County are rural areas. The densely populated valley floor has not been identified as a major energy resource area for present forms of energy. This directed attention to the policies of the Master Plan that were contained within the Mesa Countywide Plan, (Chapter 4 - the 2006 Rural Master Plan and Chapter 5 – the Joint Urban Area Plan) adopted by the Mesa County Planning Commission.

However, there were also other policies that were adopted prior to the Countywide Plan, as early as 1982, for specific purposes. These policies are different in form and format from those adopted in the Mesa Countywide Plan, but all are contained within the Master Plan.

4.3.4 Policy Structure Comments

Overall, the composition of the Master Plan made it difficult to extract timely and pertinent information. Although there is an index, the items are listed by section and not continuous page number. Some parts are in pfd format and others are in Word format. Not all pages can be copied or downloaded from the website separate from the accompanying pages in that section.

More problematic was the lack of a consistent format and numbering system for the policies. Many jurisdictions, and that part of the Master Plan know as the Mesa Countywide Plan, use an approach that starts with a stated GOAL and then goes to a stated POLICY and then postulates a specific implementation policy that leads to a specific CODE SECTION or other program or action step. Such an approach allows uniform presentation for proper indexing and grouping. However, the historic approach in the Master Plan includes policies from as long ago as 1982 numbered 1 to 39 consecutively, but also allows many sections of the Mesa Countywide Plan to be designated policy 1.1, 1.2 and etc. in one section and also policy 1.1, 1.2, etc in another section. It is hard to identify what policy is being described. It is even more difficult because there is no useful nomenclature in the Master Plan itself. Also, some of the website “click on” referents lead to different links than what you would find in the hard copy.

4.4 Overview of Current Policies

4.4.1 Current Policy Table

These issues made it necessary to attempt to categorize and focus on the current policies in a way that allowed an ordered review of the application of the policies to the critical impact issues. The result of this was the Current Policy Table (see Appendix F). It does not contain

all policies in the Master Plan but all of the 1980s Policies and the applicable policies from Chapter 4 and Chapter 5 of the Mesa Countywide plan. Again, this decision resulted in a focus on rural areas of the County.

After preparation of the Current Policy Table, several discussions were held with staff to determine whether a policy that appeared to be an application to energy resources did in fact apply. Several policies are outdated or modified by other actions of the County. For example, Policy 9 indicates an endorsement of the Planned Unit Development approach to zoning and land use. Discussions with staff indicate that this approach as a guiding principle has been abandoned with the adoption of the 2000 Land Development Code. Therefore, something that on its face looked like it would be applicable to energy resources was, in fact, inapplicable. This misalignment between policy and action was found in several cases.

The critical impact issues were then re-examined in light of the policies identified in the Current Policy Table that might apply to energy resources.

4.4.2 Application of the Current Policy Table to the Preliminary Categories

The Preliminary Category list was then modified by adding columns for the timing of the impacts and the policies that might apply. Of the 24 critical impact issues identified, 11 were not addressed by a specific policy. There were judgment calls in this process but the overall results seem consistent with the direction of the Master Plan. These results are shown in Appendix E.

4.4.3 Other Items Impacting Gap Analysis

The Federal Government and the State of Colorado own 71% of the land in Mesa County. The history of the County is closely tied to land speculation and boom and bust cycles driven by energy resource development. Any analysis of policy gaps has to recognize that these factors influence the ability of the County to regulate energy resources. Any response to critical impact issues are also influenced by these issues.

Federal Government

The Constitution is the supreme law of the land. As such the Federal Government can exercise control and dominion over all aspects of their property. If they desire to do so, it is said that they have preempted the area. Preemption in many areas is voluntary. If the Federal Government chooses to exercise this right, the courts look to statutes to see if Congress indicated that they were choosing to preempt any state or local laws on the subject. Because many government agencies are involved in energy resource development in Mesa County, there may be some cases where the Federal Rules preempt any local rules that would be applicable. This analysis is beyond the scope of this project and for the purposes of a Gap Analysis is only noted here concerning the activities of the Federal Agencies. A listing of those agencies is provided in Appendix D. The County has dealt with these issues in the past by entering into Memorandums of Understanding with the US Forest Service and the Bureau of Land Management.

State Agencies

On the other hand, the last year has seen significant activity by the State to preempt local power concerning land use in matters concerning energy resources. First, a new statute reformatting the law governing the Colorado Oil and Gas Conservation Commission resulted in clear language that the intent of the statute was that the Colorado Oil and Gas Conservation Commission rules would preempt local government policy while providing opportunities for local government to review and participate in the State's permitting processes, C.R.S. 34-60-101, *et seq.* This rule had been previously decided by the Courts in *Gunnison Co v* BDS Int'l, LLC 159 P3d. 773 (Colo. App. 2006), However, it is now clear that the Commission controls the siting and drilling of wells while requiring extensive coordination and communication with a County's "Local Government Designee." Additionally, a January Colorado Supreme Court case made clear that at least some parts of the Mined Land Reclamation Act gives preemptory powers to the state. *Colorado Mining Association v. Summit Co*., (#07 SC 497, Jan 12, 2009) This means that Mesa County Land Use policies and the Code would not be effective on those issues upon which these regulatory commissions have made decisions.

However, clear and concise policy statements may help the County communicate with these State boards in any advisory role the County may be allowed. Consistency of policies would be important in presenting the strongest argument on behalf of the County.

Dealing with Preemption—the Options

Furthermore, knowledge of these areas of preemption allows the decision makers to determine what direction they would wish to take in filling any policy gaps that may exist. First, they could concede almost all authority to the state commissions and refer complaints about enforcement to the state. On the other extreme, the County could choose to have policies that would go as far as possible in regulating any areas not clearly preempted. The middle alternative would be to regulate ancillary services and uses to correspond with the intent of the County in its future land use direction. These are high level policy decisions to be made by the Board of County Commissioners.

4.4.4 Framework of Regulation

Mesa County has followed a framework that is finally revealed after study of the various pieces that comprise the Master Plan. This framework is shown on Figure 2.

First, the County is controlled by federal and state Constitutional provisions which balance the right of the property owners against the right of the County to regulate. Additionally the state empowering statutes give power to the County to regulate and also dictate some of the procedures that must be followed.

Secondly, the general goals of the County provide a framework for the development of policies. It goes without saying that the policies should be signposts on how to achieve the goals and that the policies should not be contrary to the results the goal intends. Our statement of the goal of the County in this area is an assumption based upon working with

the staff and the Master Plan. The goal is presently stated as “Create a balance between present and future resource development.”

Finally, in the Master Plan, the County has taken two directions in the existing policies. First, as expressed in the Mesa Countywide Plan, impacts are to be identified and negative impacts are to be mitigated. This is where a majority of the applicable policies address the critical impact issues identified in this phase of the Energy Master Plan. In addition, the County is currently using the Energy Policy Opportunity Map (EPOM) system to determine and address impacts through mitigation measures although EPOM has not expressly been adopted by the Board of County Commissioners as a policy or Code section. The County has also addressed some of the critical impact issues by discussion of proposed Energy Master Plan goals and policies in October of 2007, and by the adoption of the 2008 “Evaporation Pond Facilities/Land Farms Policies.”

Additionally, as required by State statute (CRS 34-1-301 et. seq.) in 1985 the County (both the Board of County Commissioners and the Planning Commission) adopted Policy #29 - the Mineral Extraction Policy, which recognizes that 1) mineral resource areas should be protected from development, 2) developed areas in mineral resource areas should be protected from the impacts of the extractive activities, and 3) there are special areas in Mesa County where special rules should exist. This policy contains language that would suggest implementation strategies for these special areas.

This framework would create the structure for consideration of any energy resource policies that may be considered to address the critical impact issues.

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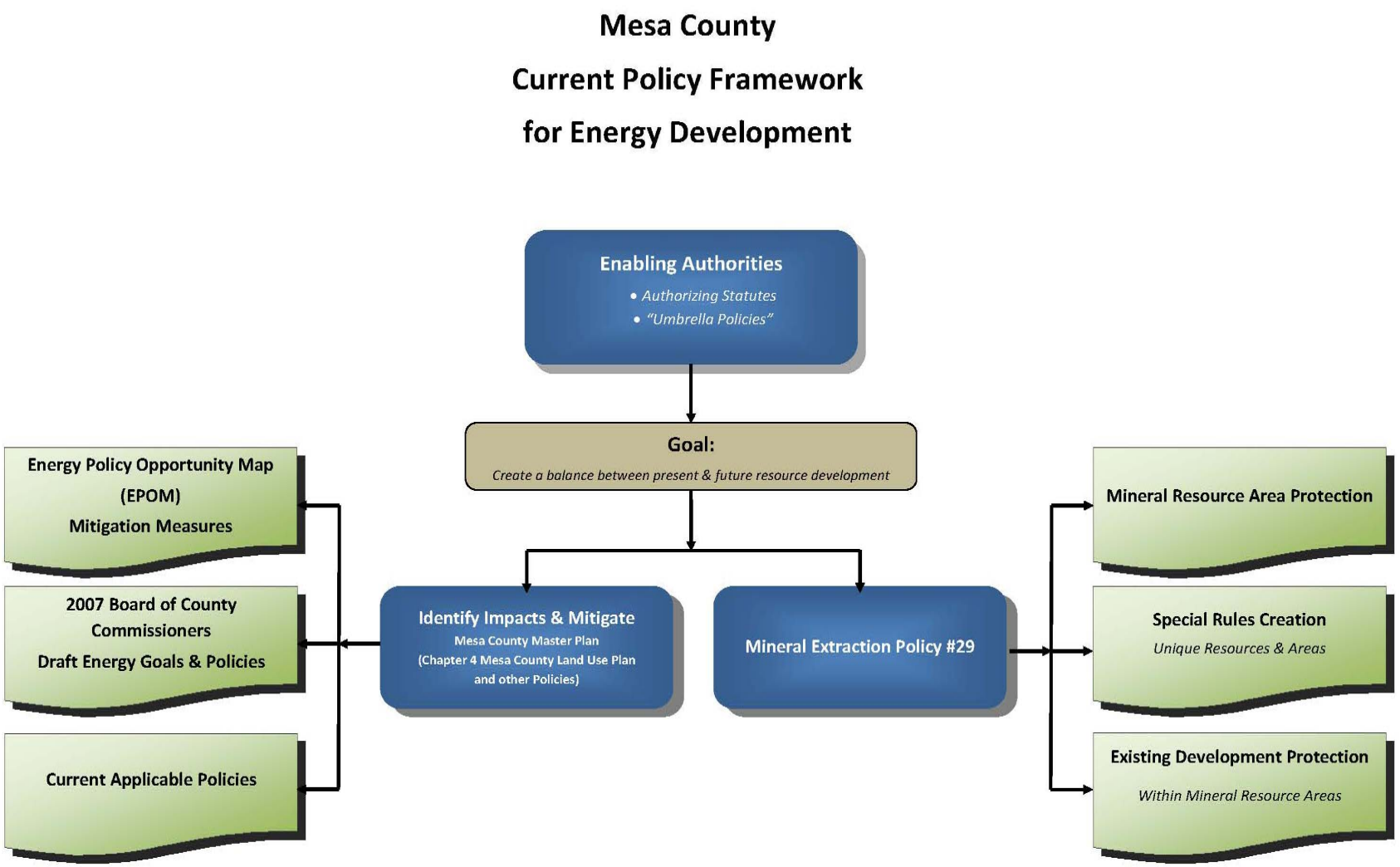
Mesa County
Current Policy Framework
for Energy Development
Enabling Authorities
• Authorizing Statutes
• "Umbrella Policies"
Goal:
Create a balance between present & future resource development
Energy Policy Opportunity Map (EPOM) Mitigation Measures
2007 Board of County Commissioners Draft Energy Goals & Policies
Current Applicable Policies
Identify Impacts & Mitigate
Mesa County Master Plan
(Chapter 4 Mesa County Land Use Plan and other Policies)
Mineral Extraction Policy #29
Mineral Resource Area Protection
Special Rules Creation
Unique Resources & Areas
Existing Development Protection
Within Mineral Resource Areas

Figure 2

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5.0 Findings and Implications

5.1 Policy Structure/Gap Analysis Findings

Top 5 Critical issues

The public and stakeholder meetings determined that the five most important critical impact issues were:

a. Roads and traffic
b. Enforcement of all standards, regulations, and reclamation acts
c. Existence of a consistent, fair, and integrated regulatory environment based upon shared data
d. Water and Ground Water Quality
e. Air Quality

As shown on Appendix E, items “a”, “d”, and “e” are addressed by at least one existing policy, most of which are not specific to energy resources. However, items “b” and “c” are not addressed by current policies. Enforcement is covered in Code sections, but there is no existing policy that defines how it should be applied. Item “c,” consistent, fair and integrated regulatory environment, is covered by the Umbrella Policies, but this is not specifically stated in the Master Plan.

Issues without Policies

Of the 19 issues deemed to be critical impact issues, eight were without County policies addressing those issues. These eight critical issues are listed below in the same order they appear on the Preliminary Gap Analysis spreadsheet.

a. Communication infrastructure
b. Best Management practices
c. “Fracing” process
d. Need for comprehensive planning
e. Existing infrastructure capacity
f. Use of taxes
g. Land Use and zoning
h. Social service impacts

Current policies could be interpreted in a very expansive manner. For example-it could be said that Policy #29 Mineral Extraction Policy covers the Land Use and Zoning impact. That sort of expansion does did not seem warranted for this analysis. Likewise some Code sections or current practices could be said to cover BMPs and the “fracing” process. For example the EPOM mitigation measures have not been formally adopted as a policy by the County. This review was limited to adopted policies, not how the current process is applied to an applicant. The purpose of this analysis is to direct attention to the policies that address

issues. After such a review the Board or staff may decide that the policies were read too strictly for this analysis. However, it seemed best to use the strict approach at this level.

Policy Structure

To address impacts, an overall structure of GOAL to POLICY to IMPLEMENTATION (often CODE SECTION) is often used in Master Plans. Except in the Mesa Countywide plan, this logical relationship does not generally exist between the Master Plan and the Code (e.g., Policies 1- 29 adopted in the 1980s have no goal statements or implementation steps – including Policy #29 - the Mineral Extraction Policy). In Chapters 4 and 5 of the Mesa Countywide Plan this structure is used.

A few examples may be helpful in understanding this finding.

The first part of Policy #29 deals with protection of mineral resource areas and says they should be protected from development. This policy is implemented by Mesa County Land Development Code (MCLDC) Section 3.1.16 that states “in any area containing a known commercial mineral deposit, no authorization, in any form, shall be given which would interfere with the present or future extraction of such deposit by an extractor.” There is a logical nexus between the Policy and the Code section but there is no articulated goal that is to be furthered by this two part limitation on development.

In reviewing the MCLDC on enforcement issues, there are several Code sections that apply; however, there is no goal or policy stating what is to be accomplished by enforcement activities. Is the goal of enforcement abatement, punishment, restitution, or deterrence, all traditional philosophical reasons for prohibiting behaviors? This is not stated in either a goal or policy of the Master Plan. This can lead to a confusing ad hoc method of enforcement.

Some policies look like Code sections, for example parts of Policy #29 and the Evaporation Pond Facilities and Land Farm Policies look like regulations and some Code sections (Support Services and Temporary Housing) look like they are part policy. This difference in format and where the item is adopted and published can be confusing where prohibitions or requirements are contained within a policy.

Existing Policy Framework

A framework exists for the creation of new policies to address those critical impact issues not currently addressed. New policies, under the existing framework, would have to be considered to either be additional policies under the concept of “mitigate impacts” or a new category like Policy #29.

Reaffirm, Modify, or Abandon the Framework

If the Board of County Commissioners desires to adopt new policies to address the critical impact issues, the current framework should be specifically reaffirmed or the current framework should be modified or abandoned in favor of a new approach.

Only policies relating to critical impact issues were reviewed. There are many other policies that may apply, but because they were not an identified impact issue they were not listed.

Policy Conflicts Need Resolution

There is an unresolved conflict between Policy #29 and the other mitigation policies that needs to be resolved if new policies are adopted.

For example, Policy #29 describes “Areas of Special Importance.” This term is not used consistently throughout the Master Plan. It is unclear how Policy #29 interacts with other policies that mitigate impacts and there is no indication of which policy would be primary in case of a conflict for a specific application Conversations with the staff indicated the following policies were either obsolete, outdated, or had been abandoned as shown below. These conclusions were consistent with the review of the policies in light of the impacts.

a. Policies 3 and 4, 1985, review for appropriateness—(fire protection)
b. Policy 5, 1985, review for appropriateness (proximity of development to commercial services)
c. Policy 6, 1985,should be modified (sewer service)
d. Policy 9, 1985, obsolete and outdated (land use and siting)
e. Policy 10, 1985, should be removed and integrated with Planning Commission By-laws/Rules (Planning Commission hearings)
f. Policy 11, 1985, obsolete (cooperation with municipalities)
g. Policy 12, 1985, obsolete (time limits to commence development)
h. Policy 14, 1985, outdated Set by COGCC permit for drill sites—integrate into other policies on mitigation (drainage requirements)
i. Policy 15, 1985, obsolete (cost sharing – parks and major public improvements
j. Policy 16, 1985, abandoned (mobile homes and modular housing)
k. Policy 17, 1985, redundant with Countywide Plan (Agriculture)
l. Policy 18, 1985, should be updated and renamed “Energy Use Policy” (energy)
m. Policy 19, 1985, redundant with Countywide Plan (environmental resources, hazards)
n. Policy 20, 1985, review for appropriateness (Siting Major Energy Facilities)
o. Policy #29, 1985, should modify/update to include Energy Atlas (Mineral Extraction)
p. Policy 32, 2000, out of date (Waste Management)

Master Plan Needs Updating

The current non-linear mix of current and outdated policies, along with regulatory “policy-like” code sections, creates a difficult environment for someone not already familiar with the Mesa County Master Plan and Land Development Code.

Terminology Clarifications Needed

Use of a clear and consistent definition of the language used in policies, such as “energy resources” and “mineral resources” and “special interest areas”, throughout the Master Plan would improve understanding of the existing structure. For example, Policy #29 applies to “Mineral Extraction” not all energy resources. A high level policy decision may be needed on whether it is to be limited or expanded to apply to all energy resources. State statutes are also confusing in this area. For example, the use of “commercial mineral deposit” in C.R.S. 34-1-302 does not cover the same elements as the use of “mineral” in C.R.S. 34-32-103.

Address Preemption

A policy on how to address preemption by state and federal agencies may provide direction for the application of other existing or new policies.

Clarify Planning Roles

There are Board policies and Planning Commission policies applied to energy resource development. A clarification of the process and role of these two approaches and the supremacy, or not, of the official County Master Plan (adopted by the Planning Commission) as related to energy resources would improve understanding of the policies and goals of Mesa County.

5.1.1 Future Alternative Energy Approach

A review of the framework for Mesa County and possible alternative energy resource development in the future shows that Mesa County is aware that Colorado’s so-called 1041 powers are available to form a consistent, unified approach to permitting energy resource development outside the preempted or statutory limitations. See C.R.S. 24-65.1-101, *et seq.* (Areas of State Interest). This may provide a framework for new policies to address gaps in the current Master Plan as well as alternative energy resource possibilities that become feasible in the future.

5.1.2 Implications of Findings

The above findings provide a view of the existing framework and the existing policies that deal with identified issues associated with energy resources. From the findings several implications follow:

1. Inferred or Adopted Goal

For the purposes of this document the overall energy resource development goal in Mesa County was inferred, i.e., “Create a balance between present and future resource development.” The County can affirm that finding, adopt another overall goal, or continue as they currently exist without an overall stated goal.

2. Planning Roles

The County has both policies created by the Board and policies made by the Planning Commission. The Board can maintain the status quo or move to unify all land use policies in the Master Plan or other document.

3. Policy Framework

A framework for energy resource land use policy application was determined to exist as shown on Figure 2. Before modifications to existing policies are made or new policies are adopted, it would seem logical to affirm this framework or adopt another process to be the framework.

a. If the current framework is affirmed, the County would benefit from a clear statement on the approach to be taken by preemption by federal and state agencies. The County could then fill in the gaps that it is felt need to be filled and pending draft policies and practices (e.g. EPOM and the September 2007 draft Goals and Policies) could be adopted as Policy or Code section.
b. If a new framework is adopted, then a major reconsideration of direction and approach would be warranted.

4. 1041 Powers

Many other counties have found value in consideration of so-called 1041 powers in either case.

5. Energy Resource Development Process

Figure 3 provides a suggested application review and approval process that could be implemented following a thorough policy review and adoption of new and revised existing policies.

5.2 Other Findings and Implications

Analyses of stakeholder and public comments and data collected over the duration of the project have identified other findings and implications, which are offered below.

Development of Mesa County's Mineral Energy Resources is generally highly constrained

Even though Mesa County has an abundance of energy resources, not all of the resources are available for development. Some of the available resources are located in areas that are specifically precluded from resource development and other resources are highly constrained and located in areas that would be difficult, if not impossible, to develop economically.

Areas not available for or with mitigation measures placed on resource development generally fall into two categories: constraint (or avoidance) areas and exclusion areas. Constraint areas include conservation areas; areas with special designation such as State Parks, wildlife areas, campgrounds, and scenic byways; water resources; natural hazards;

land use (agricultural and residential areas); areas with BLM and Forest Service lease stipulations; and areas of visual sensitivity. Constraint areas could potentially be developed if appropriate mitigation measures to minimize impacts were implemented.

Areas that are generally excluded from resource development based on various Federal and State regulatory designations including wilderness and wilderness study areas, the Colorado National Monument, and certain designated conservation areas.

Renewable Energy Resources

This phase of the Energy Master Plan did not include a detailed evaluation of renewable energy resources. Consequently, it was outside the scope of the resource mapping effort to fully analyze potential opportunities and constraints to renewable energy resources.

Large scale utility grade renewable generation may not be as feasible as smaller scale distributed generation projects. Smaller scale projects may range anywhere from individual buildings and office parks to neighborhoods, education and government complexes, to industrial facilities. Providing power to remote locations can be costly. Consideration should be given to renewables to support mineral extraction and mining operations as well as telecommunication installations.

Solar energy development could conceivably occur at any location in the County while large scale wind farm development may be limited. Biomass and geothermal are also viable resources that should be considered by the County and discussed with developers early in a project. The County may choose to develop specific policies for renewable energy development as part of the Energy Master Plan.

Infrastructure

From a planning perspective, it is recommended the County proactively forecast infrastructure improvement to keep pace with energy development and work cooperatively with energy developers regarding responsibility for financing, constructing and maintenance of these assets.

Regulatory

Stakeholders and public meetings have brought awareness to the potential of the Energy Master Plan. Agencies are also interested and there does appear to be spirit of cooperation growing. The County may want to take advantage of this cooperative spirit and public interest to discuss such topics as a process for a stable, consistent, fair, and clear regulatory environment that minimizes conflicts between regulators, enforcement responsibility, and how to efficiently and cost-effectively work with/improve existing polices and minimize the creation of new polices.

Operation

Stakeholders and the public would like to see a discussion held with energy developers regarding BMPs and the inclusion of BMPs in an application. It is clearly understood by both stakeholders and the public that economic growth and prosperity is directly correlated to energy development but not without regulation and a proactive planning process. The County may want to consider means to educate interested parties regarding BMPs and meaningful involvement in the application/permit process shown in Figure 3.

Environment

The protection of municipal watersheds and groundwater is very important to the County residents and its cities and towns. Suggested solutions to mitigate any impact to this precious resource include working cooperatively with other agencies and energy developers to ensure BMPs and mitigation measures are identified and an implementation plan approved as part of the permitting process.

Economics

The current recession has raised the public's economic awareness. It has been suggested by stakeholders and the public that the County should identify ways to manage the impact to and protection of the environment without over-regulating or making doing business in Mesa County so expensive that it becomes a deterrent for energy developers. Solutions offered included creating a cooperative and sharing working relationship with other regulators and agencies in order to streamline the approval process resulting in lower permitting costs and sending a strong message to energy developers that it is cost-effective to do business in Mesa County while still protecting the environment.

Another recommendation was for the County to seek and actively promote economic diversification to minimize or limit boom-bust cycles associated with energy development.

General

Analysis confirmed opinions held by applicants and users seeking or accessing data that all parties would benefit from a central data collection storage system. The recommendation is the data repository would be shared by communities, the County and regionally. Many view this as a cost-savings opportunity and means of reducing confusion, as a result of all parties using the same database, improving intergovernmental working relationships, creating a one-stop access to data, and improved communication.

Endnote

The study of cultural geography teaches that the earth is molded by the values of those who inhabit it. Mesa County has been molded by various cultures and uses. First the Native Americans used Mesa County as their home; then came the land speculators of the 1800s; and then came gold and silver development in the distant mountains. A flurry of agricultural development post World War I added to the economy of the County and further developed the canal system. The post World War II uranium boom and the oil shale boom of the early

1980s added their own unique signature to the structure of the County. All of these changes brought conflict and a different use of the resources of the County. The changes also modified local land use patterns.

During these periods land use was impacted by various conflicting value systems. Currently, the County is the center of health care delivery, higher education, recreational opportunities, materials and service distribution, and resource development, still including agriculture. History and its imprint show that no one use is likely to dominate all others, although the expectation would be that a single use would dominate for awhile and then be replaced by another use with more significance at that particular time.

Today an opportunity currently exists to address the different values and different land uses within the County through the development of a Comprehensive Plan that provides consistent and predictable results as stated in the “Umbrella Policies” above. If policies are clean and understandable, as well as predictable in application, conflict will eventually be reduced and the values of the citizens of the County will mold the geography in a way that balances the competing interests. Energy resources are only one part of this equation The current environment of state regulation and the development of the special tools the County is now using, such as EPOM, create an unique opportunity for a timely creation of a Comprehensive Plan in coordination with the municipalities, especially since the County and City are working together for one for the valley floor.

The completion of this study and the implications flowing from the review of the current policies all point to the decisions that need to be made today as expressions of the values that will control the future development cycle in a way that properly balances competing interests. The values enumerated in the Master Plan, if applied consistently through regulations implementing the policies, will then mold the landscape for the good of all. If the Master Plan is not dictating the values that are to be applied, the conflicts between conflicting uses will define those values as that of the momentary victor, a result that brings little lasting peace.

Request for Development Permit Involving Energy Resources

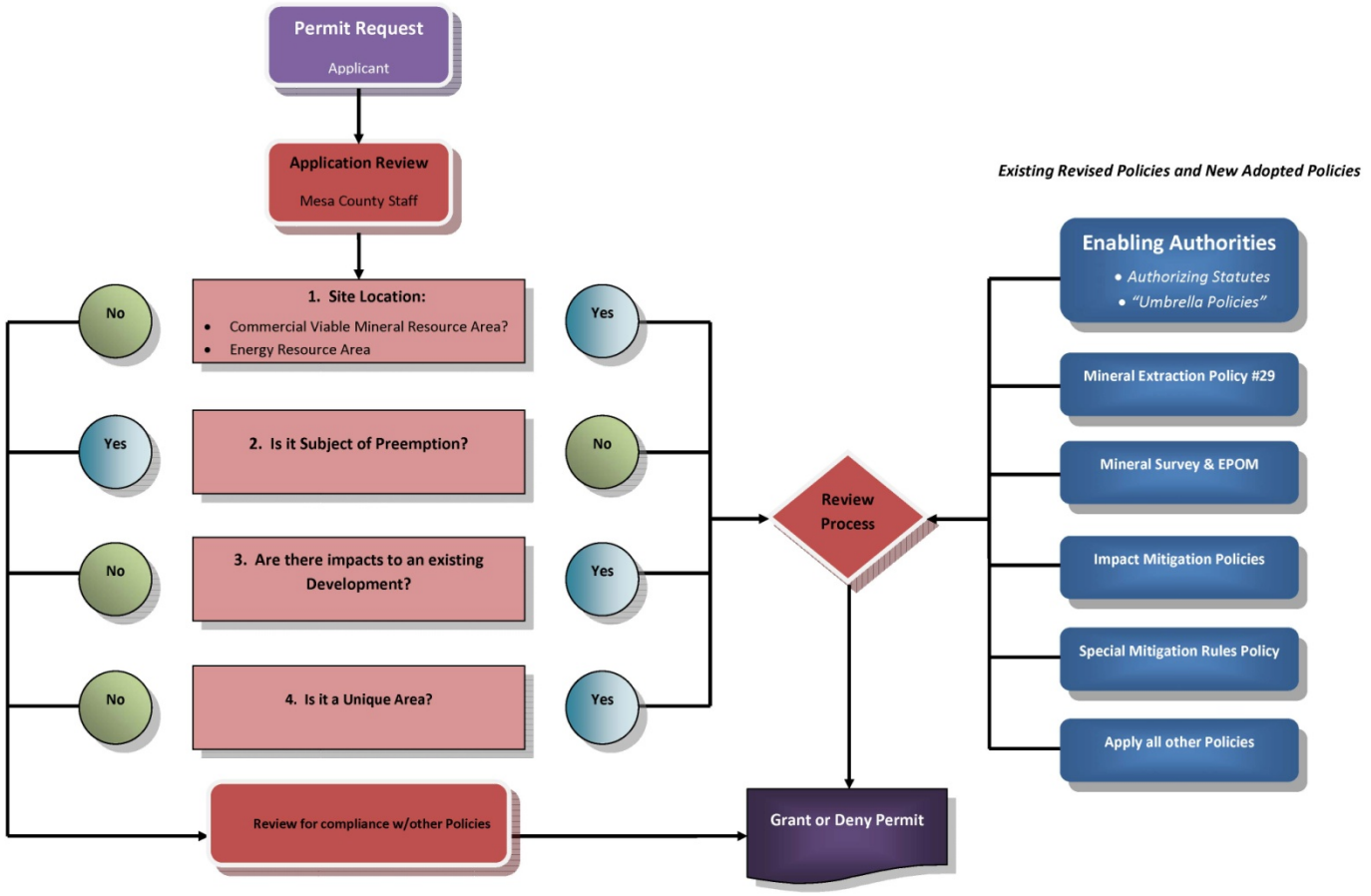

Figure 3

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Appendix A:
Stakeholder/Public Meeting Summary Matrix

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Stakeholder / Public Meeting Summary

Mesa County Energy Master Plan

Issues / Concerns	Stakeholder																	Public Meetings							Stakeholders		Public Meetings		Overall Summary	
	Mesa County Government Departments	Mesa County City Managers	Town of De Beque	Sportsmen	Club 20	Mesa County Farm Bureau Board	Mesa County League of Women Voters	Grand Junction Area Chamber of Commerce	Grand Junction Economic Partnership	Western Colorado Congress	Gateway Property Owners Assoc. Chair	Colorado Oil & Gas Association	Colorado Division of Wildlife	US Geological Survey	US Fish & Wildlife Service	US Forest Service	US Army Corps of Engineers	US Bureau of Land Management	Fruita (January 13, 2009)	Collbran (January 14, 2009)	Palisade (January 15, 2009)	Gateway (January 20, 2009)	De Beque (January 21, 2009)	Grand Junction (January 22, 2009) 4:00 pm	Grand Junction (January 22, 2009) 6:30 pm	Total Responses	Top 3 Issues Ranking	Total Responses	Top 3 Issues Ranking	Total Responses	Top 4 Rank
Infrastructure																														
Increased Traffic Impacts	✓	✓	✓	✓		✓	✓	✓		✓	✓								✓			✓				9	2	2	2	11	2
Roads & Access, Daily & Emergency Use, Standards	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓				✓										11	1			11	2
Road Damage, Trucks on Steep Grades																				✓								1	3	1	
Roads on BLM Land / What is county role?																						✓						1	3	1	
Establish Truck Routes																					✓							1	3	1	
How to best transport energy resources																								✓				1	3	1	
Street and Road Maintenance / Cooperative agreements with industry																			✓	✓			✓					3	1	3	
New/Improved interchanges/bypass roads																				✓		✓	✓					3	1	3	
Improved Communication Infrastructure / data telemetry																						✓			✓			2	2	2	
Ensure infrastructure keeps pace with energy development																			✓					✓				2	2	2	
County needs a long-term transportation strategy/task force																				✓								1	3	1	
DOLA Grants for Roads																				✓								1	3	1	
Additional Rail Service Needed	✓		✓		✓			✓	✓																	5	3			5	
Transmission Planning/Establish Transmission/Pipeline Corridors																			✓		✓			✓				3	1	3	
Availability of Sewer/water / water pipelines																				✓		✓		✓				3	1	3	
Provision of Truck Chain-up Areas																				✓								1	3	1	
Provision of Equipment and Truck Parking Areas																				✓								1	3	1	
Number of Responses	**3**	**1**	**3**	**2**	**1**	**2**	**2**	**3**	**2**	**2**	**2**	**1**				**1**			**4**	**8**	**2**	**5**	**2**	**4**	**1**	**25**		**26**		**51**	
Regulatory																														
Limits / Extent of County Authority	✓			✓	✓					✓		✓						✓	✓							6	2	1		7	
Enforcement	✓	✓		✓			✓	✓		✓							✓		✓	✓			✓				7	1	3	3	10	3
Enforcement - Proactive vs. Reactive																							✓					1		1	
Enforcement - Inspections - How often?, By Whom?																							✓					1		1	
Need more self-enforcement by industry																				✓	✓							2		2	
Scenic Byways		✓		✓								✓														3				3	
Increased County Resources / Services Needs	✓				✓		✓												✓							3		1		4	
Cooperative Long Range Planning Process	✓	✓	✓														✓									4				4	
Changes in Demographics (Population Growth)	✓						✓	✓																		3				3	
Data Collection & Sharing Needs / Central Data Repository	✓				✓			✓								✓		✓				✓				5	3	1		6	
Fees - Cost of Services/ Impacts Recovery	✓						✓			✓																3				3	
Need Neighborhood Meetings Prior to Applications	✓										✓															2				2	
Chemical / Hazardous Material Use / Storage / Spills / Response	✓	✓					✓					✓				✓	✓	✓								7	1			7	
Reclamation Standards and Enforcement	✓			✓		✓				✓					✓	✓				✓	✓		✓	✓	✓	6	2	5	2	11	2
Reclamation - pre-development inventory, setbacks																									✓			1		1	
Stable, Consistent, Fair, Clear Regulatory Environment / no conflicts / don't over-regulate					✓							✓							✓	✓	✓	✓		✓	✓	2		6	1	8	4
Policies should be clear and understandable - "Leaner & Meaner"																							✓					1		1	
Permitting Process Expensive & Slow - Federal, State & County Level												✓								✓		✓				1		2		3	
Are state and Federal Regulations (BLM) overly restrictive?																						✓						1		1	
Streamline Permitting Process																				✓	✓							2		2	
Permit Permanent Field Offices																				✓								1		1	
Need Integrated Regulatory Framework - Federal, State, Local					✓		✓					✓							✓		✓	✓				3		3	3	6	
Coordination between counties on regulations, road standards, etc.																							✓		✓			2		2	
Do we really need more regulations?																							✓	✓				2		2	
Gaps in Regulations should be filled by agency with main responsibility																								✓				1		1	
Cost of regulation vs. cost of energy																							✓					1		1	
Influence of economic slowdown on timing of regs. Boom-Bust cycle																							✓					1		1	
Offer Faster Permitting for Detailed / Long Range Planning													✓								✓					1		1		2	
Need Knowledgeable County Staff w/ Energy Field Experience					✓							✓														2				2	
Balance Land Use Regs with Property Rights	✓				✓	✓		✓																		4				4	
Mineral Rights / access to data					✓	✓																	✓			2		1		3	
Update Mineral Extraction Policies / currently favor sand and gravel																					✓							1		1	
Initial surface disturbance (permitting)/ ongoing surface impacts																					✓							1		1	
Management of broad impacts (who's responsible?)																					✓							1		1	
Improve Public Notification in Rural Areas (Internet availability)					✓		✓															✓	✓			2		2		4	
Single County Point of Contact Needed													✓			✓										2				2	
Additional Permit Review Time Needed	✓												✓													2				2	
Private Property Highest Protection					✓								✓													2				2	
Coordination of Public and Private Property Permitting							✓									✓	✓									3				3	
Law Enforcement								✓		✓																2				2	
Operating Agreement/Coordination - County & Energy Developers		✓																	✓							1		1		2	
Creation of an Energy Advisory Board		✓																								1				1	
Need BLM Land for Private Industrial Uses	✓		✓					✓								✓										4				4	
Agricultural Land Use / Preservation / promote use of renewables						✓																			✓	1		1		2	
Need Agricultural Impact Statements						✓																				1				1	
County Overlay Plan																						✓						1		1	
Number of Responses	**13**	**6**	**2**	**4**	**10**	**5**	**8**	**6**		**5**	**1**	**7**	**4**		**2**	**6**	**3**	**3**	**6**	**7**	**9**	**7**	**11**	**4**	**5**	**85**		**49**		**134**	
Operation																														
Well Spacing				✓																						1				1	
Need Additional Pipeline Capacity							✓					✓														2	2			2	
Sufficient Availability of Electricity												✓														1				1	
Need Additional Water Treatment Capacity										✓	✓	✓														3	1			3	
Best Management Practices										✓					✓											2	2			2	
"Fracing" Process	✓	✓																							✓	2	2	1		3	
Decreased activity due to economic conditions																				✓								1		1	
Comprehensive Planning regarding operation needed																					✓							1		1	
Number of Responses	**1**	**1**		**1**			**1**			**2**	**1**	**3**			**1**					**1**	**1**				**1**	**11**		**3**		**14**	
Environment																														
Water Quality, Including Ground Water	✓	✓		✓	✓	✓	✓			✓				✓		✓	✓		✓	✓	✓	✓	✓	✓		10	1	6	1	16	1
Water quality monitoring needed / catalog water resources																			✓					✓				2		2	
Watershed / Impacts on Fish																								✓	✓			2		2	
"Produced" Water/disposal expense	✓																		✓	✓		✓				1		3	2	4	
SWPPP Regulations																									✓			1		1	
Air Quality	✓	✓		✓		✓		✓		✓		✓							✓						✓	7	2	2		9	4
Clearing of road sand following storms/air quality impacts																			✓									1		1	
Soil Erosion				✓		✓										✓										3				3	
Noise (including drilling activity and coal trains)	✓									✓									✓	✓						2		2		4	
Odor										✓																1				1	
Light Pollution / impacts on people and wildlife	✓																			✓					✓	1		2		3	
Noxious Weeds / Pipeline Construction	✓					✓										✓				✓			✓	✓		3		3	2	6	
Preservation of Unique Region Plants															✓	✓										2				2	
Health Impacts due to Energy Development	✓									✓			✓			✓							✓			4		1		5	
Energy Conservation	✓				✓		✓			✓									✓							4		1		5	
Threatened and Endangered Species					✓										✓											2				2	
Avian Protection re: Energy Development Ponds				✓									✓		✓											3				3	
"Cumulative Impacts" on Wildlife & Environment				✓						✓			✓		✓	✓									✓	5	3	1		6	
Roads on ridges impact wildlife movement																									✓			1		1	
Better signage to warn drivers of wildlife, reduced speed at night																									✓			1		1	
Require off-site mitigation / habitat restoration																									✓			1		1	
Cumulative Impacts - General / Protection of Environment																					✓				✓			2		2	
Balanced Policy Needed - Wildlife Protection / Environment / Energy Dev.													✓									✓		✓		1		2		3	
Animal Poaching (new access to remote areas)													✓													1				1	
Limited Supply of Resources																					✓							1		1	
Number of Responses	**8**	**2**		**5**	**3**	**4**	**2**	**1**		**7**		**1**	**5**	**1**	**4**	**6**	**1**		**7**	**5**	**3**	**3**	**2**	**6**	**9**	**50**		**35**		**85**	
Economics																														
Need Diversified Economic Development	✓	✓	✓					✓											✓						✓	4	2	2	2	6	
Housing (lack of affordable workforce housing) / Variety of housing	✓		✓			✓			✓												✓	✓				4	2	2	2	6	
Balance Economic & Environmental Impact / Protection								✓	✓			✓		✓					✓	✓				✓		4	2	3	1	7	
Industrial Land - Insufficient Availability	✓	✓	✓					✓	✓																	5	1			5	
Land Use/Zoning / support of new and existing businesses																					✓		✓					2	2	2	
Lack of commercial property leads to increased traffic																							✓					1		1	
Infrastructure Funding	✓							✓																		2	4			2	
Labor Force - Availability									✓												✓					1		1		2	
Economic Impacts of Hunting / Recreation & Loss of Wildlife Habitat		✓		✓								✓														3	3			3	
Hotel Room Availability (Tourism)		✓																								1				1	
Wages (inflated for energy workers impacts other employers)									✓																	1				1	
Revenue Sharing			✓																							1				1	
Taxation / Land Valuation / Mining on Federal Lands	✓																		✓			✓				1		2	2	3	
Consider taxing industrial properties																								✓				1		1	
Use of Severance taxes locally to address impacts / local involvement																				✓		✓		✓				3	1	3	
Positive View of Economic Development from Industry																			✓	✓								2	2	2	
Short-term social impacts vs. providing additional services																			✓	✓								2	2	2	
Bonding requirements for energy development																									✓			1		1	
Assess additional permit fees for county use																									✓			1		1	
Number of Responses	**5**	**4**	**4**	**1**		**1**		**4**	**5**				**2**		**1**				**5**	**4**	**3**	**3**	**2**	**3**	**3**	**27**		**23**		**50**	

Issues / Concerns	Stakeholder																		Public Meetings							Stakeholders		Public Meetings		Overall Summary	
	Mesa County Government Departments	Mesa County City Managers	Town of De Beque	Sportsmen	Club 20	Mesa County Farm Bureau Board	Mesa County League of Women Voters	Grand Junction Area Chamber of Commerce	Grand Junction Economic Partnership	Western Colorado Congress	Gateway Property Owners Assoc. Chair	Colorado Oil & Gas Association	Colorado Division of Wildlife	US Geological Survey	US Fish & Wildlife Service	US Forest Service	US Army Corps of Engineers	US Bureau of Land Management	Fruita (January 13, 2009)	Collbran (January 14, 2009)	Palisade (January 15, 2009)	Gateway (January 20, 2009)	De Beque (January 21, 2009)	Grand Junction (January 22, 2009) 4:00 pm	Grand Junction (January 22, 2009) 6:30 pm	Total Responses	Top 3 Issues Ranking	Total Responses	Top 3 Issues Ranking	Total Responses	Top 4 Rank
General																															
Public / Landowner Education Needs					✓		✓					✓			✓	✓				✓	✓					5	3	2	3	7	
Industry worker education on alternative energy																								✓				1		1	
Annual Energy Expo Expansion of Topics / Attendees												✓														1				1	
Need a "Visioning Exercise" re: Future Land Use			✓		✓								✓													3				3	
Improve Communication - Best Management Practices					✓	✓		✓	✓			✓	✓													6	2			6	
Improve Communication - Additional Stakeholder Meetings/business owners																				✓	✓							2	3	2	
Data Collection / Sharing - County & Communities / Region	✓	✓	✓		✓			✓					✓	✓		✓		✓	✓							9	1	1		10	3
Quality of Life								✓																✓		1		1		2	
Privacy concerns - adequate distance from development activities/amenities																				✓								1		1	
Health Services / Emergency Planning / Emergency Response	✓						✓															✓		✓		2		2	3	4	
Social Services	✓																									1				1	
Recreation Preservation		✓		✓		✓					✓															4	4			4	
Scenic Area Preservation		✓						✓																		2				2	
Natural Heritage Preservation											✓				✓											2				2	
Cultural / Historical Stakeholder review / protect archaeological res.																							✓	✓				2	3	2	
Surface Use Agreements					✓																					1				1	
Alternative and Renewable Energy Resources and Incentives	✓					✓			✓	✓	✓								✓	✓					✓	5	3	3	2	8	5
New Energy Standards/New Energy Technology																			✓									1		1	
Proposed solar plant at Xcel Energy Cameo site																								✓				1		1	
Renewable Energy should be held to same requirements as traditional energy																									✓			1		1	
Look into Energy Grants																				✓								1		1	
Bio-fuels/Bio Energy Plant																			✓									1		1	
Consider Hydropower																			✓					✓				2	3	2	
Increase in Criminal Activity / Drug use																			✓		✓							2	3	2	
Local Use of Energy Resources																			✓									1		1	
Identify locations of best resources / where to extract?																					✓							1		1	
Update BLM maps since CBM resource has dissipated from some coal beds																								✓				1		1	
Establish Complaint Hotline																				✓								1		1	
Love-Hate Relationship with Oil & Gas																				✓								1		1	
Keep Oil & Gas industry in county/local communities																				✓	✓	✓		✓				4	1	4	
Pursue all energy resources / Promote energy development																					✓	✓						2	3	2	
Local control - Oil & Gas																					✓							1		1	
Driver Training / Education / check driving records																					✓				✓			2	3	2	
Uranium Use / Mining / Clean Up																					✓			✓				2	3	2	
Perceived lower levels of service in rural parts of county																							✓					1		1	
Consider re-circulating list of concerns to stakeholders																								✓	✓			2	3	2	
What's the vision / rationale / scope for the Energy Master Plan?																								✓	✓			2	3	2	
Base decisions on science, not emotions																								✓				1		1	
Plan for the next generation																								✓				1		1	
Assess Regulatory Exemptions																									✓			1		1	
Evaluate requiring worker carpooling to job sites / reduced fuel use																									✓			1		1	
Assess Impact of energy development on climate change (carbon footprint)																									✓			1		1	
Consider energy use / conservation in buildings / building code incentives																									✓			1		1	
Use of passive solar design in public buildings																									✓			1		1	
Additional public comment and input is needed																									✓			1		1	
Number of Responses	4	3	2	1	5	3	2	4	2	1	3	3	3	1	2	2		1	7	8	9	3	2	13	11	42		53		95	
Total Issue or Concern by Stakeholder or Public Meeting	34	17	11	14	19	15	15	18	9	17	7	15	14	2	10	15	4	4	29	33	27	21	19	30	30	240		189		429	

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Fruita, January 13, 2009

Discussion Summary (Detailed Comments):

- The State has standards for evaporative ponds
- The time-line for a CUP for evaporative ponds is approximately 3 months
- Water quality protection should be addressed beyond just drilling – other associated impacts.
- What is the extent of Coal Bed Methane impact to ground water and how does that compare to deep well extraction impact to ground water. How is the difference measured
- There is a distinct increase of crime related to oil and gas industry. There should be some mechanism to track the criminals – fingerprint or something to follow them when they leave the state.
- Energy conservation is not mentioned in the plan. The county is doing a building audit and is in the process of developing and implementing energy conservation measures. Conservation will be a future part of the EMP
- Mesa County's future is energy development. The County shouldn't over regulate. I worry about over regulation. Recent State Supreme Court decision (Summit County) ruled in favor of the industry when the County tried to over regulate.
- Energy extracted in Mesa County should be used (at least some) in the County
- Has Grand Valley Power had a chance to provide input to this plan? They should. They are required to provide a certain percent of renewable energy and will have a hard time meeting their requirement because of inconsistent availability of renewables.
- Will the plan take advantage of recently discussed Federal incentives and initiatives. The county should be ready to use whatever the Federal gvmt. is making available.
- The plan should include transmission corridors so that the county does not end up being a spider web of transmission lines. There is an element of efficiency with corridors.
- Noise associated with coal trains is increasing. Also there are more big trucks on the roads that are driven by gas and oil workers. Air quality is getting worse.
- Economic development from extraction is good. It's a good opportunity for the Fruita Greenway Business Park. Sales tax money should stay in Fruita – laughter.
- County is not clearing sand from the roads and it is adding to bad air quality. Due to increased traffic from gas and oil traffic.
- County needs to include the bio energy plant in the plan.
- The plan needs to include economic diversity in the energy plan so the boom/bust is not so dramatic
- How many new staff will the County have to enforce violations and issues?
- How are violators prosecuted?
- Do not forget to include hydro power. Dominquez Dam has lots of potential.
- The County should consult with other Counties to learn lessons from them.
- The County should look at energy development and planning from a regional perspective. There are benefits from regional planning efforts.

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Bullet Points from Flip Chart:

- Evaporation Ponds
- Truck Traffic
- Water Quality Monitoring (21 Road and Highway 6)
- Coalbed Methane/Gas Wells – Access/Water Quality
- Social Impacts associated with short-term operations and workers/employees
- Energy Conservation – Does it play or have a role?
- Cost of Energy Development – Economic Development and Balancing (do not over-regulate)
- Use of Energy Resources locally
- Meeting new energy standards
- Can energy resources be kept in the county vs. sending out? (can/how should it be managed?)
- Work/contact local energy providers to obtain their input
- New energy technology and spin-off opportunities
- What role can county play in identifying corridors (i.e. for pipelines)?
- Explore and stay abreast of new technologies
- Noise associated with energy development (Quality of life concerns)
- Economic Development opportunities
- Tax revenue
- Street and road maintenance issues (also routine maintenance such as sweeping)
- Infrastructure – keep pace with energy development
- Balance economic diversity
- (County?) Staffing of policy enforcement
- What are county's limits/process for enforcement?
- Renewable sources – can they be bundled if one is not sufficient on its own?
- Regional look at energy development/ sharing of data / partnering with other counties
- Don't overlay or contradict with other regulators

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Collbran, Plateau Valley School – January 14, 2009

Group 1 - Discussion Summary (Detailed Comments):

- State regulators – short term impact
- Vega – 2 rigs in Harrison Creek
- Activity (this summer) was approximately 25% of last summer
- Produced water disposal is a big expense for industry.
- Oxy' will use a combination of techniques to re-use water – without completion, water has to be disposed of.
- Options for water disposal:
  -recycle and re-use
  -injection wells in proper formation
  - COGCC regulates
  -reverse osmosis – water treatment
  -Cisco and Rangely closest commercial evaporation facility
  -Black Mtn facility closure is an impact to industry
  -Dalbo is considering a facility on Sunnyside

- DOLA grants for roads:
  -$200K grant cycles twice a year
  -2 million available annually
  -over 6 million/yr from grants
  -not all rural impacts, some are urban where workers live
  -65K gal/yr magnesium chloride
  -industry provides
  -also asphalt patches
  -Mesa County and industry work together fairly well

- Severance taxes should be used to address impacts. Tax expenditures don't always help industry either – frustrating to industry
- More stringent water quality regulations are forthcoming.
- The ability to enforce regulations is difficult.
- Weeds are regulated based on concerns for spreading and water consumption.
- Education about options may help company negotiations with land owners.
- Pipeline construction does not address weed management quickly enough.
- Discussed possibility for more housing, restaurants, retail not perceived as desirable to industry. (Some workers are transient).
- Residents want distance from amenities – privacy
- Sewer limitations may affect new development.
- Collbran bypass was not accepted by residents.
- Trucks chaining up on the road is an impact – rodeo grounds could be used

- Community Counts Program:
  - 24-hour hotline in place for complaints or concerns
  - 10 signs will go up soon
    -1-Vega Y
    -2-Brush Creek
    -3-Top of hill

  - Calls are dispersed to proper company

- Equipment parking needs to be far away from residences; lights and noise are issues

Group 1 - Bullet Points from Flip Chart:

- Decrease in drilling activity
- Water storage/disposal/transport (process to manage)
- Severance tax dollars (DOLA grants)
- County participation with energy development (RE: roads/bridges)
- Water quality and standards
- Weed management (pipeline weed management)
- Additional development – housing/services
- Collbran bypass
- Chaining area for trucks
- Call center (for complaints)
- Equipment and truck parking

Group 2 - Discussion Summary (Detailed comments):

1. Where is the money going? The oil & gas companies are paying fees but the money is not being spent on roads here. A lot is going to the front range. Collbran and Hwy 330 is being heavily impacted but no improvements. Discussion regarding the severance tax dollars; ½ is going locally which is distributed to communities with impacts.
2. The oil & gas industry is paying more than their share, but money is not coming here. The companies are doing some voluntary "good neighbor" actions anyway.
3. It takes a deliberate long-term strategy to deal with transportation issues. Would it be a good idea for a task force to be created to look at it?
4. We have a "love-hate" relationship with oil & gas. Love the jobs, the stability, the fact that families and kids can stay in the valley and find work. Hate the traffic and the noise impacts.
5. It would help if the county would chip-in.
6. They are expecting 10-15 years of drilling
7. Alternative sources of energy would be very important to be studying for long term.
8. There are energy grants that the community could be fighting for. It would take a team effort, but Collbran could continue applying for grants to get the money.

9. Town of Collbran should get involved in grant writing. Also taking an active role in planning for infrastructure growth and improvements.
10. The permitting process should be streamlined.
11. Expressed concerns about too much regulation- is more coming?
12. The county is too slow in permitting projects.
13. We need the energy, drilling. Need to balance getting the energy but having the least amount of impact on the environment.

Around the Table- each person's biggest issue(s):

1. Mesa County needs to find a way to permit permanent field offices. There is no allowance for that in the current code.
2. Owner of local business: the stakeholder group did not list any groups from the Town of Collbran—no business owners, no town council.
3. Appreciates the revenue and business generated by the industry. Wants the town to continue to grow.
4. Streamline process- find a way to be efficient. The rules should be reasonable and avoid requiring something that may not even be effective.
5. Noxious weeds need to be controlled.
6. Don't want oil & gas to leave.
7. Noise. There are bells and whistles going off on rigs at all hours. You can hear them for miles.
8. Big trucks on steep grades, too much damage to the country roads.
9. The oil & gas companies need to self-police, not have regulations to follow.
10. Streamline the process- should be predictable and smooth.
11. Streamline the process, not for the sake of avoiding regulations, but make sure the regulations have an impact, and also consider the ability of the county staff to keep up with demand.
12. Night lighting. Rigs could consider cutoff fixtures to respect the dark sky.
13. Don't want them to leave. Need to make it viable for them to stay.

Group 2 - Bullet Points from Flip Chart:

- Taxes (severance tax) paid by development – How to keep local
- Highway 330
- More involvement in required DOLA funds
- Jobs – keep industry in town/County (don't want them to leave)
- "Field Office" close to operations
- Noise from drill rigs
- "Community Counts" industry hotline
- Business owners part of stakeholder group (need to include)
- More jobs for area
- Streamline permitting
- Reclamation – Effective enforcement needed

- Weeds
- Trucks on steep grades
- Night lighting
- Involvement with county with severance tax budgeting

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Palisade – January 15, 2009

Discussion Summary (Detailed Comments):

- Need more opportunity for public to comment; Palisade & stakeholders need opportunity at front end
- Water quality should be most important asset to protect
- Need public education regarding resources, constraints, federal, state and local regulations
- Underlap in regulations between state and local government. Consultant will analyze gaps
- Land uses have not been prioritized; County can authorize where activities can take place
- All energy resources should be aggressively pursued. Could create jobs. Use of resources should take precedence over other types of land development. This statement (position) has to be balanced with long term protection of natural resources.
- Protect water by:
  BMP's (Best Management Practices)
  bat's
  policies and regulations
  County can use these tools
- Subsurface water resources have not been protected by the state.
- Energy industry can extract without zoning regulations in place; they can operate anywhere. Locational restrictions are not in place.
- State is encouraging companies to do comprehensive, longer term planning. Offering incentives to disclose plans to drill with fewer permits
- Surface disturbance initially and then ongoing surface impacts are county concerns
- Policy should avoid polarized, priority statements
- Identify broad impacts and which entity will address these
- Industry should participate in prioritization by identifying prime resources. They should be more of a partner. Existing permitting process is reactive, not proactive.
- Mineral extraction policies do prioritize sand and gravel resources
- We shouldn't drive out industry. They contribute to economy and we need to use our own resources in U.S. to sustain ourselves.
- New gas drilling rules will affect companies in violation the most; they won't affect companies operating in good faith ahead of the new rules.
- Pipelines should be in place to move gas.

Bullet Points from Flip Chart:

- Reclamation – protect for future
- Housing – multi-family – affordable housing
- Trucks – Orchard Mesa – define routes
- Local control – Oil & Gas
- Shortage of electric power

- Limited supply of resources
- Loss of employment
- Watershed drilling (quality / quantity of water)
- Drug use by workers / community
- Driver training
- Uranium – use / mining
- Multi-jurisdiction management
- More public to comment
- Water quality
- Public education regarding reclamation
- State and local government
- Land use
- Pursue all (energy/mineral?) resources. This equates to jobs
- Protection of environment
- Subsurface water protection
- Comp. planning regarding operation
- Surface impacts
- Address broad impacts (who manages?)
- Where are best resources located? Where should these resources be extracted?
- Don't drive out industry
- Pipeline capacity

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Gateway – January 20, 2009

Bullet Points from Flip Chart:

- Water quality/reuse from energy development
- Water discharge – regulated by state (quarterly monitoring – Energy Fuels Representative)
- Public notice – post cards – website restrictions – limitations due to internet connection speed (lack of access to high-speed internet in Gateway)
- Affordable housing
- County overlay plan
- Water system for community needed
- Emergency response / transportation
- Gateway looking for guidelines
- Flight for life – weather / time / availability
- Tax Revenue – County
- Mining on federal lands – taxes how shared?
- Reliable Communication systems (cell towers, emergency use, emergency services)
- Need more energy development
- Need more highways and roads
- Available housing/infrastructure/utilities will bring workers. Additional participation in community. Also need a variety of housing types.
- There has been an increase in traffic (trucks/cars/bikes/motorcycles) – This is more of an observation, not necessary an issue of concern
- Energy development should be respectful of the environment/infrastructure, but not over-regulated.
- State regulations – are they overly restrictive?
- BLM permit is time consuming (Energy Fuels representative)
- Mesa County should have interaction/discussions with other counties regarding permitting and regulations
- Roads on BLM lands – What is the role of the County? Could road be turned over to County?
- Share data / maintain central data repository

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

DeBeque – January 21, 2009

Bullet Points from Flip Chart:

- Mineral rights – access to data
- County notification of permits
- County regulation (location) / Enforcement (availability of resources)
- Cultural / historical stakeholder review
- Proactive vs. reactive approach to enforcement / and by whom?
- Permit compliance – How often reviewed?
- Do existing regulations and policies already address regulations / issues? Do we really need more regulations?
- Process: Issue permit, then inspection for compliance. If non-compliance observed, then enforcement action is/should be taken. (by whom?)
- Efficiency/cost effective enforcement – How do we achieve?
- Clear and understandable policies – "Leaner and Meaner"
- Cost of regulation vs. cost of energy
- Regarding development on Logan Mountain – There needs to be increased cooperation between Mesa and Garfield counties.
- Influence of economic slowdown on timing on new regulations. Boom-bust cycles
- New commercial development / land use / zoning. Support of new and existing businesses
- Perception: Is DeBeque viewed as part of county? Levels of service/support in large vs. small population centers.
- Availability of commercial property vs. travel distance – leads to increased traffic on I-70.
- Need another interchange on I-70.
- DeBeque Concerns: Water, Weeds, Reclamation
- Cooperation between oil and gas companies and Mesa County on Roads

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Grand Junction – January 22, 2009
Location: Old Court House, Grand Junction

Subgroup #1 - 4 p.m. Session

Don't create redundant regulations
- identify gaps and see if the agencies responsible can cover those gaps, instead of Mesa County adding a new process

Limits and extent of County authority need to be clarified
Can this be done in two months?
Don't overburden the oil and gas companies
Don't re-create the wheel
Economic development between the public and the gas companies
Will there be time for additional comments? (yes, during the public hearing process)
Other maps are available that are not reflected in the maps presented during these meetings:
- Coal Bed Methane (CBM) maps are available. Maps used for these meetings are EPCA maps that are national, broadbrush maps and are not necessarily current. Many of the areas of CBM have dissipated. There are currently 29 CBM wells in the Piecance Basin. BLM has a lot of this data. An analysis of their maps can get public and private land resources identified.
- Helium, Nitrogen, food-grade CO_2 are available in western Mesa County (Route 139 west to Cisco). Up to 40% in inert elements/minerals and low BTUs.
- Helium is a strategic gas (only Department of Defense can extract it – they use it for the space program). BLM has information on the supply, and the data for strategic reserves is in Amarillo, TX.
- Food grade CO_2 - one person has contract. Expensive to extract, but if the oil & gas companies produce it as a by-product, then they have to provide contractor with place to install the refrigerated unit for storing the CO_2.

For well drilling permits, incorporate by reference all existing policies and procedures like the federal government does.
BLM has bonds in place for years, don't require another bond
Mesa County can turn things around faster than the feds if they find a gap, maybe the County would be the better alternative for that.
BLM and US Forest Service can make policies at the field office level as a Notice to Lessee. That is a process that can be used here.
How do the ranking of issues get prioritized? By frequency of issues listed? It should be prioritized by the groups themselves instead. Now that there is a list, it should be re-circulated to Stakeholders and let them prioritize the issues.
What is the vision for doing this? Economic development? Energy security? Quality of life? It seems like the Economic Development is the only positive and all the other issues are negatives, we need to re-evaluate that idea and make more positives in the process.
Interactions between resources preclude the extraction of other resources (oil shale development precludes natural gas development).

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Grand Junction – January 22, 2009

Subgroup #3 - 4 p.m. Session

What is the capacity of these resources? How long will they last?
Should we invest differently in potential future uses?
We need to plan for the next generation and what energy resources they will have available.

Climate Change
Has the county considered climate change issues related to use of carbon fuels. (Gave staff a copy of "A report of Working Group 1 of the Intergovernmental Panel on Climate Change – Summary for Policymakers.")

Health concerns need emphasis in the energy master plan – based on science.
Black Mountain Disposal facility has impacted health of neighbors one mile away – thyroid issues, endocrine system. Concerned with "orange-red" rain water.
Evaporative Pond Facility Policies are inadequate to handle health concerns especially the ½ mile standard for distance from a residence.
Citizens for Responsible Energy Development 9CRED) recommend not allowing evaporative pits within 6 miles of residences.
Ute Water reservoir is within 3 miles of the Black Mtn. Pit and downstream.

Uranium
Also a health concern. We've lived through previous uranium booms and have seen cancer cases increase.
Concerned with latency period between mining and disease.
Larimer County has banned uranium mining. And Mesa County should too.
There is no need for nuclear energy.
We mishandled uranium in the past and are continuing to suffer the consequences.
Transportation of ore and routes is an issue. Dangerous roads, John Brown Canyon, Paradox to Hwy 50 to I-70 takes ore through populated areas.

Volunteer Fire Districts are inadequate to deal with impacts.
County needs to deal with emergency services comprehensively – Countywide.
Limits and extent of County authority need to be clarified

Need to plan for getting renewable energy onto the grid and upgrade the grid/infrastructure.
We could be a model for others on how to utilize renewables.

Municipal watershed drilling (oil/gas) is inappropriate.

Air quality concerns related to venting of drilling operations.

How does public participate in process to locate appropriate places for need gas pipelines (more capacity needed)?

County needs to balance regulations, health issues, environmental issues and energy development.

Energy companies can and will participate in balancing the communities needs if required to.

Road impacts –

Hwy 330 and 45 ½ Roads need better de-icing
Damaged road shoulders from oversized vehicles are dangerous to the public.
Need adequate fees from energy companies for road maintenance.
Need pipelines for produced water instead of trucking water to disposal facilities.

Long Range Planning needed now

Plan for 20 years from now
What infrastructure will be needed?
Harness as much local energy as possible.

Solar energy

How can we support projects like Xcel's Cameo plant going solar?

Grand Junction – January 22, 2009 - 4 p.m. Session

Bullet Points from Flip Chart:

General Discussion:

- The county should investigate the use of rivers in the valley for hydroelectric power
- Health concerns: Setback distance from energy development (Black Mountain)
- Water Quality: Pond/drainage into basins
- Transport of energy resources

GROUP 1 Summary:

- No redundant regulations – incorporate existing regulations by reference:
  1. COGCC
  2. USFS
  3. BLM
  4. CDPHE
- Update BLM Maps
  1. CBM has dissipated from much of the coal resource areas shown on the maps
- Gaps in regulations should be filled by the primary agency responsible for regulating that resource or issuing permit
- Don't recreate/reinvent the wheel. Many of the regulations that are currently in place have been developed over many years and have generally worked well.

- Recirculate the list of concerns to all of the stakeholders so that concerns can be ranked
- What's the vision/rationale for the Energy Master Plan? What does the county hope to accomplish?

GROUP 2 Summary:

- Categorize/catalog water resources
- Base decisions on science, not emotions
- Jobs: keep in county
- Don't over-regulate the industry
- Provide education for energy industry employees
    - For example, education on renewable energy resources
- Catalog and protect archaeological resources in mining/drilling areas
- Ensure that severance tax dollars are spent locally
- Consider taxing industrial properties (property tax)
- Noxious weeds
- Inspect reclamation to ensure that required reclamation/restoration is occurring
- The county should strive to preserve the quality of life

GROUP 3 Summary:

- Plan for the next generation – what resources are needed?
- Health concerns (use medical science)
- Health issues associated with uranium mining – Former mining and milling activities "left a mess"; Residual waste and tailings needs to be cleaned up
- Volunteer Fire Districts' provision of emergency services are a limitation in parts of the county
- Existing grid/infrastructure – how should they be developed?
- Quality of life – balance with energy development
- Must be considerate of watersheds
- Capacity of gas pipelines – some may be under-capacity today
- Balance energy development with
    1. Health
    2. Environment
    3. Socioeconomics in county
- Xcel Cameo Power Plant – How can the county support the development of the proposed solar power plant at this site?

Mesa County Energy Master Plan
Summary of Comments Received at Public Meetings

Grand Junction – January 22, 2009 – 6:30 p.m. Session

There was a small enough group to document and address comments as a consolidated group.

Summary of General Discussion:

- Wildlife Concerns
  1. Roads located on ridges and traffic on these roads impact the movement of wildlife
  2. Better signage is needed
  3. Reduce speed at night
  4. Explore the possibilities for offsite mitigation – refreshed/restored habitat
- Water quality – potential impacts on fish
- "Fracing" chemicals used/concern for watershed impacts
- Evaluate effectiveness of reclamation
  1. Take pre-development inventory of resources present in development areas
  2. Evaluate possible setbacks from sensitive resources
- "SWPPP" – regulations
- "Bonding" related to energy development
- Need baseline studies of air, water quality, etc. prior to energy development to enable "cumulative" impacts assessments of proposed development prior to approval of permit
- Exemptions – will they be inventoried and studied as part of policy analysis? (a concern was raised that certain drilling activities may be exempt from Clean Air Act requirements)
- Provide funds for county to use to fund baseline studies and staff to maintain the data (funds raised by assessing additional permit fees on energy development)
- Evaluate the possibility of requiring energy developers to implement carpooling for energy workers (concern regarding traffic impacts from worker vehicles)
- Mesa County should coordinate with neighboring counties on energy-related issues. For example: road standards and networks to energy development sites – consistent standards.
- Mesa County should consider evaluating the impact of energy development on climate change. For example: assess / calculate the carbon footprint of energy development projects.
- What is the role of renewable resources in energy development? Is there funding available to supplement/encourage renewable energy development?
- Remote transmission (telemetry) of data from energy development sites – a benefit may be a reduction in traffic / trips to remote sites by energy workers
- Balance economic diversity within the county
- Driver safety classes/check driving records of energy workers
- Alignment of energy development with energy conservation and efficiency
  - Examples may include energy efficiency in buildings/infrastructure/energy development sites/extraction of resources
- This plan appears to be an energy development plan, not a comprehensive Energy Master Plan.

- How comprehensive (how in depth?) should the Energy Master Plan be? Should it be comprehensive and include not only energy resources, but also energy conservation and sustainable considerations?
- Use land use codes to assist in energy development / development of land for renewable energy. Example: agricultural operations may be compatible with some types of renewable energy development.
- Conservation of fuel. Example: encourage use of public transportation, and evaluate types of fuel used by public transportation vehicles
- County should promote energy conservation
- Incentives for use of renewables:
  1. These incentives could be built into the county building code
  2. Tax incentives could also be explored
- Public building design and construction should consider / require passive solar design/energy conservation, LEED certification, etc. and set an example.
- Ensure Energy Master Plan policies do not conflict with existing federal and state regulations
- Meeting attendees requested that the county provide opportunities for additional public input and comment on suggested policies after this phase of the Energy Master Plan. There was also a suggestion to revisit with initial stakeholder groups for comment
- Renewable energy development should be held to the same policies and standards as other types of energy development – for example: wildlife protection
- Light pollution from drill rigs could be a potential impact on wildlife

Appendix B:
Opportunities and Constraints Tables

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Mesa County Energy Master Plan

Opportunity, Constraint, and Exclusion Areas

Methodology and Overview of Opportunity and Constraint Maps

Non-renewable energy resources evaluated in this phase of the Mesa County Energy Master Plan include coal, oil shale, uranium, coal bed methane, and natural gas. Renewable energy resources were mapped but were not evaluated in terms of constraints in this phase of the Energy Master Plan.

For each of the non-renewable energy resources, opportunity areas were identified in those areas having substantial energy resources and compatible land uses. Constraints to resource development were categorized as either constraint areas or exclusion areas depending on the sensitivity of the resource and regulatory designations.

The graphic below illustrates the general procedure by which composite maps showing the energy resource opportunity areas and constraints were developed for coal. As shown on the opportunity map, coal resources are present throughout much of Mesa County. However, due to various constraints and regulatory exclusion areas not all of the coal resource is available for development without implementing mitigation measures. The constraint layer includes those areas with known values or attributes: conservation areas, areas with special designation such as State Parks, wildife areas, campgrounds, scenic byways, etc., water resources, natural hazards, land use (agricultural and residential areas), areas with BLM and Forest Service lease stipulations, and areas of visual sensitivity. The exclusion layer includes those areas that are generally excluded from resource development based on various Federal and State regulatory designations including wilderness and wilderness study areas, the Colorado National Monument, and certain designated conservation areas.

The specific categories and land uses that are included in each of the constraint and exclusion layers are described in Tables 1 through 8 on the following pages.

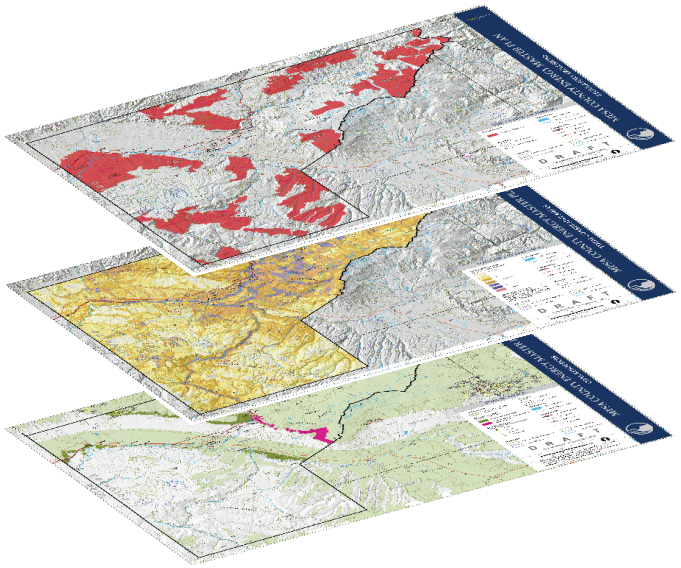
Regulatory Exclusion Areas

\+

***Constraint Areas**

\+

Resource Map (Opportunities)



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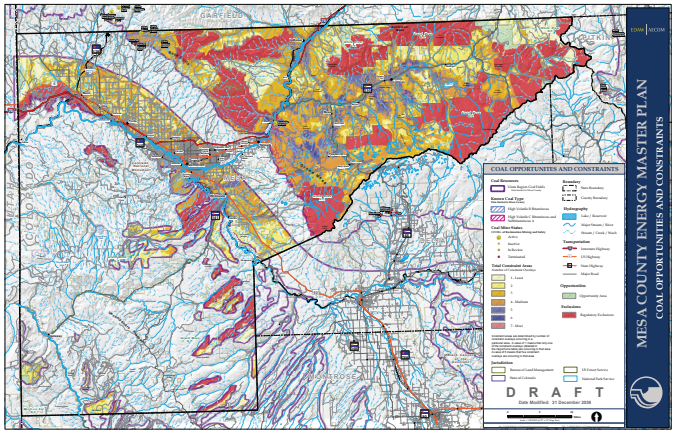
Composite Opportunity/Constraint Map



* Constraint Areas Include: Conservation Areas, Designated Areas, Water Resources, Natural Hazards/Geology, Land Use and Infrastructure, BLM and Forest Service Stipulations, and Areas of Visual Sensitivity

Table 1: Summary of Superlayers

Resource Opportunity Areas
Coal Opportunities • Coal Resources **Petroleum Opportunities** • Coalbed Methane • Gaseous Natural Gas Reserves • Oil Shale **Uranium Opportunities** • Uranium Resources

Notes on Resource Opportunity Areas:

1. There is no Oil Density Map due to a lack of quantitative data suitable for mapping at the county level.

2. Oil Shale: Two maps showing Oil Shale resources have been provided:
   1) The maps on display show Oil Shale resources within Mesa County
   2) The map on the right illustrates Oil Shale resources within the Green River Formation Basins in Colorado, Utah, and Wyoming as described in the TarSands/Oil Shale PEIS

Sources: Colorado Geologic Survey, Mesa County and BLM

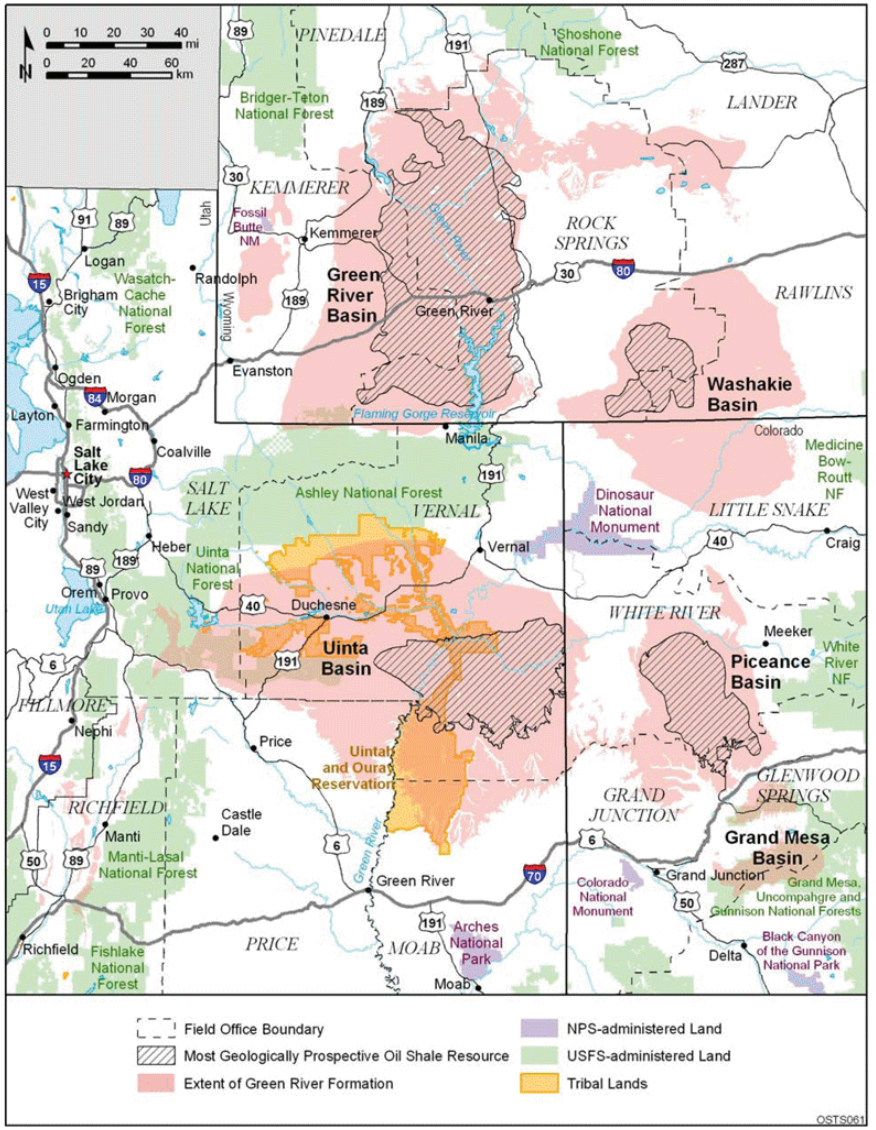
3. Natural Gas: Gaseous Natural and Natural Gas datasets are from the same source, and contain the same resource areas. The only difference is in yields which are based on gaseous and liquid. We have mapped resource areas for gaseous Natural Gas only.

Source: EIA data for Gaseous Natural Gas and Natural Gas Liquids were created by the Reserves and Production Division, Office of Oil and Gas, Energy Information Administration pursuant to studies required by Section 604 of the Energy Policy and Conservation Act Amendments of 2000 (P.L. 106-469). The boundaries are not informed by subsurface structural information. The data and methods used in their creation are detailed in a report, "Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and Reserves and the Extent and Nature of Restrictions to Their Development", prepared by the US Departments of Interior, Agriculture and Energy.

4. Coal: Formation data limited to Mesa County; Coalbed locational data limited to Colorado

Sources: Colorado Geologic Survey (Coalfield locations); Colorado Geologic Survey and Mesa County (Coal formations)

5. Uranium data sources: Colorado Geologic Survey (formations); Denver Regional Exploration Geologists Society (Uravan Mineral Belt); USGS (operational data)



Most Geologically Prospective Oil Shale Resources within the Green River Formation Basins in Colorado, Utah, and Wyoming

Table 1: Summary of Superlayers (Continued)

Superlayers: Constraint Areas	Superlayers: Exclusion Areas
Conservation Superlayer (indicated species and habitat issues) – Table 2 • ACECs • TES Habitat • TES Potential Habitat • CNAP Program Areas • State Habitat Area (SHAs) • Bald Eagle Habitat • Potential Conservation Areas (PCAs - CNHP) • Deer and Elk Winter Range **Designated Areas Superlayer – Table 3** • State Parks • State Wildlife Areas (SWAs) • Wild and Scenic River (Recommended) • National Scenic Byways • Historic Places/Districts • North Fruita Desert SMA • Campgrounds • Existing and Proposed Recreational Trails **Water Resources Superlayer – Table 4** • Surface Water • Floodplains • Wetlands **Natural Hazards/Geology Superlayer – Table 5** • High Soil Erodibility • Very High Soil Runoff Potential • 16 – 20 degree slope • Designated natural hazard areas **Land Use and Infrastructure Superlayer – Table 6** • Prime Farmland • Farmland of Statewide Importance • Prime Farmland if Irrigated • Areas of Active Cultivation • Zoning – dense commercial/residential development **BLM and Forest Service Stipulations – Table 7** • BLM Lease Stipulations • USFS Lease Stipulations **Areas of Visual Sensitivity - Table 8** • Ridgelines • Parcels with structures	**Regulatory Exclusions Superlayer – Table 9** • Wilderness • Wilderness Study Area • USFS Roadless Areas • National Parks and Monuments • Conservation Easements (Mesa Land Trust, and others) • National Conservation Areas (McInnis Canyons NCA)

Table 2: Conservation Superlayer

	Resource Category	Constraint	Reference/Justification
Conservation Superlayer	Areas of Critical Environmental Concern (ACEC)	Within ACEC Boundaries	The BLM is required to identify and consider ACECs through the resource management planning process. ACECs must meet the following criteria: • 1) Relevance: Significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard. • 2) Importance: Resource in #1 must have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to human life or property. Each formally designated ACEC should have associated resource use limitations (CFR 43 § 1610.7-2). Mining is not specifically prohibited.
	Threatened or Endangered Species Habitat	Within Habitat and Potential Habitat of State and Federal Threatened, Endangered, and Species of Concern	Federal ESA Colorado Endangered Species List BLM and USFS
	Colorado Natural Areas Program (CNAP)	Within CNAP Areas	The Colorado Natural Areas Act of 1977 provides for the designation of natural areas to identify, evaluate, and protect certain natural features and phenomena in Colorado, including ecosystems, ecological communities, species, and other natural features or phenomena. Land use provisions may be included in the designation documents, but mining is not specifically prohibited (http://parks.state.co.us/NaturalResources/CNAP/AboutCNAP/TheNaturalAreasAct/).
	State Habitat Areas (SHAs)	Within SHA	The Bald Eagle was delisted from Endangered Species Act protection in 2007. The bald eagle, however, remains a protected species under the Bald and Golden Eagle Protection Act.
	Bald Eagle Habitat	Within Bald Eagle Habitat	Possible seasonal restrictions
	Potential Conservation Areas (PCAs)	Within Deer and Elk Winter Range	Possible seasonal restrictions

[1]Federal Threatened and Endangered Species for Mesa County include humpback chub, Colorado pikeminnow, bonytail chub, razorback sucker, black-footed ferret (experimental non-essential population), Uinta Basin hookless cactus, DeBeque phacelia

Table 3: Designated Areas Superlayer

	Resource Category	Constraint	Reference/Justification
Designated Areas	State Parks	Within State Parks	While Colorado State Parks serve recreational purposes, mining (specifically oil and gas leasing), is not prohibited. The Parks board has the power to: b) Lease, exchange, or sell any property, water rights, land, or interest in land or water rights, including oil, gas, and other organic and inorganic substances which now are or may become surplus or which, in the proper management of the division, the board desires to lease, exchange, or sell (CRS 33-10-107).
	State Wildlife Areas (SWAs)		SWAs are managed primarily to protect wildlife and wildlife habitat. It is prohibited to "enter, use, or occupy any area for commercial purpose or to conduct land, water, oil, gas, or m mineral investigations, surveys, or explorations of any kind" on all lands under the administrative control by the Division of Wildlife, EXCEPT as specifically authorized by contractual agreement, official document, public notice, permit, or by posted sign (Chapter 9 – Division Properties, Article 1 #900) http://wildlife.state.co.us/NR/rdonlyres/43038645-1B5A-4772-8221-E210532023FC/0/Ch09.pdf.
	Areas recommended for Wild and Scenic River Designation	Within 300 feet of the Dolores River	Report recommending Congressional designation of Wild and Scenic River sections transmitted to Congress on May 23, 1977. Action never taken. . The river remains an important recreational, scenic, and tourism resource. Per COGCC Rule 317B
	Designated Scenic Byways	Within 0.5 mile of Scenic Byways: Grand Mesa Scenic Byway Dinosaur Diamond Scenic Byway	Scenic byways are important recreation and tourism resource that merit visual resource protection. http://www.grandmesabyway.org/ http://www.byways.org/explore/byways/2474/
	National Registered Historic Places, Sites. Landmarks, Districts and Monuments	Within NRHP districts (polygons) and within 500 feet of points	Mining and resource extraction activities may interfere with the values that contributed to the NRHP designation of the site.
	North Fruita Desert Special Recreation Management Area	Within North Fruita Desert SRMA	North Fruita Desert SRMA is managed for motorized and non-motorized trail activities, and does not prohibit mining.
	Campgrounds	Within 0.25 miles of campgrounds	Campgrounds are valuable recreational resources. Mining activities may decrease value due to noise, scenery degradation, and other issues.
	Recreational Trails, Proposed Recreational Trails	Within 0.25 miles of recreational trails	Recreational Trails are valuable recreational resources. Mining activities may decrease value due to noise, scenery degradation, and other issues.

Table 4: Water Resources Superlayer

	Resource Category	Constraint	Reference/Justification
Water Resources	Surface Water	Within 300 feet of Surface Water	Mining and resource extraction activities should be conducted a sufficient distance from surface water to preclude contamination of this resource. Per COGCC Rule 317B
	Floodplains	Within Floodplain	Federal, state and county policies restrict development in or alteration of floodways or floodplains.
	Wetlands	Within Wetlands	Permits under Section 404 of the Clean Water Act must be obtained from the US Army Corps of Engineers for activities that would result in wetland impacts.
	Drinking Water Supplies	Within designated watershed and water supply protection areas of reservoirs and other drinking water sources	Protection of drinking water

Table 5: Natural Hazards/Geology Superlayer

	Resource Category	Constraint
Natural Hazards/Geology	Slope	Areas of slope greater than 16 degrees
	Soil Erodibility	High Soil Erodibility
	Runoff Potential	Very high runoff potential
	Natural Hazards	Designated natural hazard areas

Table 6: Land Use and Infrastructure Superlayer

	Resource Category	Constraint	Reference/Justification
Land Use and Infrastructure	USDA Soils	Farmland of Statewide Importance Prime Farmland	Farmland Policy Protection Act (FPPA)
	Mesa County Soils	Areas of Active Cultivation	Avoid conflicts with agricultural operations
	Mesa County Zoning (Residential and Commercial)	All residential and commercial zoning categories	AF 35 allowable housing density is 1 unit per 35 acres AFT allowable housing density is 1 unit per 5 to 35 acres All other residential/commercial zones have housing density greater than 1 unit per 5 acres Areas include current and future residential and future development Mesa County Mineral Extraction Policy (1985) finds residential and commercial land uses incompatible with mineral extraction Housing density corresponds to low population density

Table 7: BLM and Forest Service Lease Stipulations

	Resource Category	Constraint	
Stipulations	BLM Lease Stipulations	Stipulations: 2 – Scenic and natural values 4 – Elk calving areas 5 – Cultural values 6 – Watershed protection 7 – Perennial streams water quality 8 – Gunnison Gravels and Indian Wash Dam 9 – Bighorn seasonal closures	10 – Wild horse winter range 12 – Deer and elk winter range 13 – Threatened and Endangered Species (TES) Habitat 14 – Seasonal TES habitat
	USFS Lease Stipulations	0 – Steep slopes, Roadless, and Big Horn Sheep 1 – NSO - Big Horn Sheep 2 – NSO - 3A Management Area 3 – NSO - Riparian, Wetlands 4 – CSU - Scenic Byway 5 – Standard Lease Terms 6 – NSO - High Geologic Hazard 7 – CSU - Moderate Geologic Hazard 8 – CSU - Municipal Watershed 9 – NSO - Sensitive Area	10 – NSO - Retention VQO and Low VAC 11 – CSU - VQO - Retention 12 – NSO - Recreation Complex 13 – CSU/T - Elk Calving 14 – NSO - Sage Grouse Leks 15 – NSO - Alpine Tundra 17 – NSO - Elk Summer Range 18 – NSO - Roadless Area 19 – CSU/T - Big Game Winter Range

Table 8: Areas of Visual Sensitivity

	Resource Category	Constraint	Reference/Justification
	Ridgelines	Ridgelines	Ridgelines are considered areas of visual sensitivity because development on ridgelines can be seen from large distances.
	Parcels with Structures	Parcels with Structures	Parcels with structures were identified as constraint areas. Development of energy resources near residential structures is subject to established setback requirements.

Table 9: Regulatory Exclusions Superlayer

	Resource Category	Exclusion	Reference/Justification
Regulatory Exclusions	Wilderness Areas	Wilderness Areas, Wilderness Study Areas	Mineral development prohibited in designated Wilderness and Wilderness Study Areas BLM currently treats WSAs as Exclusions
	Inventoried Roadless Areas (USFS) and Colorado Roadless Areas	Within Roadless Areas	Draft EIS for the Colorado Roadless Rule was published August 1, 2008 and is currently in the public comment period. Preferred alternative in the DEIS recommends high level of protection for Colorado Roadless Areas. This level of protection would generally prohibit construction of new roads within these designated areas, with certain exceptions.
	National Parks and Monuments	Within Colorado National Monument	Colorado National Monument is managed by the National Park Service. The monument was established to preserve, study, and enjoy the geological resources and processes as well as the canyon, mesa, and plateau ecosystems that are representative of the greater Colorado Plateau. Mining and other resource extraction is not currently allowed within Colorado National Monument.
	Conservation Easements	Mesa Land Trust and other easements	Mining prohibited
	National Conservation Areas (NCAs)	Within McInnis Canyons NCA	Mining prohibited by McInnis Canyon NCA Management Plan
	BLM and FS Stipulations	'No Lease'	

Appendix C:
Energy Resource Calculations

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Gaseous Natural Gas Resources			
Total Resource Area		***Total Acreage***	***% of Total Resource Area***
		334,332	**100.00%**
Ownership Types		***Total Acreage***	***% of Total Resource Area***
Bureau of Land Management		176,130	52.68%
US Forest Service		28,999	8.67%
Private		125,558	37.55%
CO Div. of Wildlife		3,239	0.97%
CO State Parks		400	0.12%
Exclusion Areas		***Total Acreage***	***% of Total Resource Area***
		38,360	**11.47%**
Constraint Areas		***Total Acreage***	***% of Total Resource Area***
		288,313	**86.24%**
Constraint Type		***Acreage***	***% of Constraint Areas***
Stipulations		130,279	45.19%
Land Use		131,972	45.77%
Visual		41,808	14.50%
Water Resources		91,633	31.78%
Designated Areas		107,996	37.46%
Conservation		154,217	53.49%
Natural Hazards		215,352	74.69%
Number of Constraint Overlays		***Acreage***	***% of Constraint Areas***
1 constraint		41,659	14.45%
2 constraints		61,089	21.19%
3 constraints		87,136	30.22%
4 constraints		57,411	19.91%
5 constraints		29,511	10.24%
6 constraints		9,726	3.37%
7 constraints		1,780	0.62%
Opportunity Areas		***Acreage***	***% of Total Resource Area***
		7,987	**2.39%**
Ownership Types		***Total Acreage***	***% of Opportunity Area***
Bureau of Land Management		6,021	75.39%
US Forest Service		22	0.28%
Private		1,944	24.34%

Coalbed Methane Resources			
Total Resource Area		***Total Acreage***	***% of Total Resource Area***
		30,405	**100.00%**
Ownership Types		***Total Acreage***	***% of Total Resource Area***
Bureau of Land Management		16,401	53.94%
US Forest Service		4,480	14.73%
Private		9,445	31.06%
CO Div. of Wildlife		0	0.00%
CO State Parks		92	0.30%
Exclusion Areas		***Total Acreage***	***% of Total Resource Area***
		3,938	**12.95%**
Constraint Areas		***Total Acreage***	***% of Total Resource Area***
		25,540	**84.00%**
Constraint Type		***Acreage***	***% of Constraint Areas***
Stipulations		10,505	41.13%
Land Use		9,667	37.85%
Visual		3,206	12.55%
Water Resources		5,001	19.58%
Designated Areas		4,458	17.45%
Conservation		12,995	50.88%
Natural Hazards		18,454	72.26%
Number of Constraint Overlays		***Acreage***	***% of Constraint Areas***
1 constraint		7,123	27.89%
2 constraints		5,153	20.18%
3 constraints		8,479	33.20%
4 constraints		3,142	12.30%
5 constraints		1,067	4.18%
6 constraints		512	2.00%
7 constraints		63	0.25%
Opportunity Areas		***Acreage***	***% of Total Resource Area***
		927	**3.05%**
Ownership Types		***Total Acreage***	***% of Opportunity Area***
Bureau of Land Management		671	72.38%
US Forest Service		0	0.00%
Private		256	27.62%

Coal Resources			
Total Resource Area		***Total Acreage***	***% of Total Resource Area***
		1,113,691	**100.00%**
Ownership Types		***Total Acreage***	***% of Total Resource Area***
Bureau of Land Management		402,795	36.17%
US Forest Service		347,962	31.24%
US Bureau of Reclamation		755	0.07%
Private		352,071	31.61%
CO Div. of Wildlife		5,205	0.47%
CO State Parks		3,245	0.29%
State of Colorado		5	0.00%
State Land Board		973	0.09%
Mesa County		159	0.01%
City		422	0.04%
Exclusion Areas		***Total Acreage***	***% of Total Resource Area***
		323,807	**29.08%**
Constraint Areas		***Total Acreage***	***% of Total Resource Area***
		766,816	**68.85%**
Constraint Type		***Acreage***	***% of Constraint Areas***
Stipulations		401,349	52.34%
Land Use		358,385	46.74%
Visual		122,804	16.01%
Water Resources		247,114	32.23%
Designated Areas		309,530	40.37%
Conservation		347,945	45.38%
Natural Hazards		517,162	67.44%
Number of Constraint Overlays		***Acreage***	***% of Constraint Areas***
1 constraint		88,211	11.50%
2 constraints		162,014	21.13%
3 constraints		232,632	30.34%
4 constraints		187,098	24.40%
5 constraints		75,705	9.87%
6 constraints		18,453	2.41%
7 constraints		2,701	0.35%
Opportunity Areas		***Acreage***	***% of Total Resource Area***
		23,061	**2.07%**
Ownership Types		***Total Acreage***	***% of Opportunity Area***
Bureau of Land Management		10,476	45.43%
US Forest Service		12,351	53.56%
Private		234	1.01%

Oil Shale Resources			
Total Resource Area		***Total Acreage***	***% of Total Resource Area***
		15,080	**100.00%**
Ownership Types		***Total Acreage***	***% of Total Resource Area***
Bureau of Land Management		118	0.78%
US Forest Service		14,279	94.69%
Private		683	4.53%
Exclusion Areas		***Total Acreage***	***% of Total Resource Area***
		12,211	**80.97%**
Constraint Areas		***Total Acreage***	***% of Total Resource Area***
		2,663	**17.66%**
Constraint Type		***Acreage***	***% of Constraint Areas***
Stipulations		2,319	87.09%
Land Use		246	9.25%
Visual		148	5.56%
Water Resources		365	13.72%
Designated Areas		331	12.45%
Conservation		1,463	54.94%
Natural Hazards		1,991	74.76%
Number of Constraint Overlays		***Acreage***	***% of Constraint Areas***
1 constraint		394	14.78%
2 constraints		861	32.33%
3 constraints		645	24.24%
4 constraints		600	22.54%
5 constraints		139	5.23%
6 constraints		23	0.86%
Opportunity Areas		***Acreage***	***% of Total Resource Area***
		206	**1.36%**
Ownership Types		***Total Acreage***	***% of Opportunity Area***
Bureau of Land Management		26	12.79%
US Forest Service		179	87.22%

Uranium Resources			
Total Resource Area		***Total Acreage***	***% of Total Resource Area***
		95,457	**100.00%**
Ownership Types		***Total Acreage***	***% of Total Resource Area***
Bureau of Land Management		83,631	87.61%
US Forest Service		3,268	3.42%
Private		8,205	8.60%
Exclusion Areas		***Total Acreage***	***% of Total Resource Area***
		1,352	**1.42%**
Constraint Areas		***Total Acreage***	***% of Total Resource Area***
		88,513	**92.73%**
Constraint Type		***Acreage***	***% of Constraint Areas***
Stipulations		42,097	47.56%
Land Use		8,236	9.31%
Visual		5,412	6.11%
Water Resources		11,133	12.58%
Designated Areas		12,068	13.63%
Conservation		70,194	79.30%
Natural Hazards		62,624	70.75%
Number of Constraint Overlays		***Acreage***	***% of Constraint Areas***
1 constraint		14,286	16.14%
2 constraints		37,854	42.77%
3 constraints		25,990	29.36%
4 constraints		7,668	8.66%
5 constraints		2,164	2.45%
6 constraints		549	0.62%
7 constraints		2	0.00%
Opportunity Areas		***Acreage***	***% of Total Resource Area***
		5,593	**5.86%**
Ownership Types		***Total Acreage***	***% of Opportunity Area***
Bureau of Land Management		4,118	73.63%
US Forest Service		1,408	25.18%
Private		67	1.19%

Appendix D:
Jurisdictions and Agencies

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Jurisdictions and Agencies

Federal Agencies

Bureau of Land Management (BLM)
U.S. Army Corps of Engineers (USACE)
U.S. Forest Service (USFS)
National Park Service (NPS)
U.S. Fish and Wildlife Service (USFWS)
Office of Surface Mining (OSM)
Environmental Protection Agency (EPA)
Occupational Safety and Health Administration (OSHA)
Internal Revenue Service (IRS)
Federal Railroad Administration (FRA)
U.S. Department of Transportation (USDOT)
USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA)
Federal Highway Administration (FHA)
U.S. Nuclear Regulatory Commission (NRC)
Federal Energy Regulatory Commission (FERC)

State Agencies

Colorado Division of Wildlife (CDOW)
Colorado Oil and Gas Conservation Commission (COGCC)
Colorado Division of Reclamation Mining and Safety (CDRMS)
Colorado Department of Public Health and Environment (CDPHE)-Water Quality Control Division (WQCD)
CDPHE-Hazardous Materials and Waste Management Division
CDPHE-Air Pollution Control Division (APCD)
CDPHE-Office of Environmental Integration & Sustainability
CDPHE-Emergency Medical Services Division
State Historic Preservation Office (SHPO)
Colorado Department of Revenue
Colorado Department of Agriculture
Colorado State Parks
Colorado Department of Transportation (CDOT)
Colorado Department of Public Safety (CDPS)

Local Agencies

Mesa County Pest Control Administration
City of Grand Junction
City of Fruita
City of Palisade
Mesa County Public Works Department
Mesa County Regional Transportation Planning Office (RTPO)
Mesa County Planning and Economic Development Department
Mesa County Health Department
Mesa County Sheriff
Mesa County Emergency Management
Mesa County Assessor

Appendix 5 AGENCY PERMITTING MATRIX FOR OIL AND GAS LEASE DEVELOPMENT

Item	Permit/ Regulatory Process Title	Agency	Description	Likelihood	Likelihood Explanation	Responsibilities / Tasks
Federal						
	NEPA	BLM	3 stage NEPA; First two EA's, Programmatic and the Pilot Scale Demonstration, Final EIS based on final Mining Plan	Underway	required by law	Coordinate with BLM as lead agency
	FLPMA	BLM	BLM Rights of Way	Likely	required by law	Coordinate with BLM as lead agency
	Mineral Leasing Act	BLM		Likely	required by law	Coordinate with BLM as lead agency
	CWA Section 404	USACE	Regulates discharge of dredge and fill materials to waters of US. Can be avoided by not disrupting waters of the US. (1) Individual permits required for potentially significant impacts. (2) Regional general permits issued for minimal adverse effects. (3) Nationwide permits authorize categories of activities nationwide. allows utility line discharges w/out an EA or EIS. NWP #12 permits discharge for utility activities. (4) Ongoing farming & ranching activities are exempt from permits. (5) Certain gravel pits may be excluded from Corps jurisdiction.	Likely	Probably needed, but must meet with Corps to confirm project is in compliance w/ federal regulations (will the project will avoid waters of the US, i.e., all jurisdictional wetlands)	(1) Confirm with USACE that certain waters and wetlands are jurisdictional.
	ESA Section 7 Compliance	FWS and any Federal permitting agency	Federal agencies must ensure that projects they operate, or for which they provide federal permits or funds, are not likely to jeopardize any T&E species or to adversely modify critical habitat.	Likely	required by law	FWS Biological Opinion
	ESA Section 9 Compliance-Colorado River depletions	FWS	Section 9 prohibits the "take" (including significant adverse habitat modification) of listed species. FWS could view Project depletions as contributing to the take of Nebraska-listed species.	Possible	FWS has included take statements in previous biological opinions.	(1) Meet with FWS after meeting with USACE. Obtain FWS confirmation that Colorado River RIP, will address possible depletive impacts on Colorado River listed species. (2) If Prairie dog holes present, ensure they are not occupied by T&E species prior to construction.

	Nest Depredation Permit	FWS	Take permit could be needed for clearing of active nest sites of all Colorado birds except European starling, house sparrow, and rock dove (pigeon). The nest or nest trees cannot be removed during the breeding season (April to July) unless a permit is obtained.	Unlikely	conflicts can be avoided through appropriate scheduling, does not apply to construction in existing roads and developed areas	Ensure that construction near potential nest sites is scheduled between August and March. Survey prairie dog colonies (if any) nearby; confirm no burrowing owls.
	ESA Section 10 incidental take permit - On-site species	FWS	Permit required when a non-federal party incidentally harasses or harms endangered species through their activities; Take should be avoided through coordination with FWS and avoiding documented habitat	Unlikely	coordination with FWS should avoid need to take T&E species.	Review Status of Federally Listed Species
	Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR)	FEMA	Needed if the floodplain is altered as a result of the project. Only needed if you raise 100-year water surface elevations due to the construction. Underground facilities do not require a CLOMR or LOMR.	Unlikely	floodplain will probably not be altered by the pipeline and pump stations	determine if any floodplains are altered by project
	Noise Permit	OSHA	Employee exposure to noise levels above regulated levels must be mitigated with administrative or engineering controls	Possible	OSHA issues are usually managed by construction jobsite SOPs for worker noise protection. Facilities are not expected to have high operational noise levels.	Contractor SOPs

	Injection Well Permits	EPA	Class I: Industrial and Municipal Wells That Inject Beneath Lowermost USDW Class II: Associated with Oil and Gas Production Class III: Associated With Mineral Recovery Class IV: Wells Injecting Hazardous Waste Into USDWs (Prohibited) Class V: Injection Wells Not Included in Other Classes (typically Shallow Disposal Systems)	Likely	Oil Shale Development will likely require drilling of a number of types of wells. Most activities will require either a Class I or Class V Well permits; Class III will be required for mineral (such as Nacholite) recovery. A complete matrix of drilling activities and the types of well permits required is available from Dan Jackson, EPA Region 8	Regulation of Class II Injection wells, Oil and Gas delegated to Colorado Oil and Gas Commission
	Section 106 Review National Historic Preservation Act	BLM/SHPO	Requires federal agencies to take into account the effects of their actions on historic properties	Required by Law	Agencies must review possible impacts to listed properties	Requires federal agencies to take into account the effects of their actions on historic properties
State						
	Mining and Reclamation Permit	Colorado Division Reclamation, Mining and Safety	Comprehensive Mining permit used to evaluate the effects of mining and reclamation	Required by Law		Division of Reclamation, Mining and Safety designated lead state agency, Proponent prepares permit submittal based on permit requirements
	Consultation	Colorado Division of Wildlife	State listed T&E species fall under the jurisdiction of CDOW. CDOW generally looks at projects on a case by case basis and makes recommendations during a public comment process.	Unlikely		Review List of Species
	Water Rights	Colorado Division of Water Resources	Developer must hold proper water right to allow for the use of surface or groundwater	Required by Law	Evidenced by proper decree	Developer responsible for compliance with existing decrees or if changes needed proceed through water court for new/ changed decree
	Temporary Substitute Water Supply Plans	Colorado Division of Water Resources	Allows for the implentation of water use plans, which may be based on pending water court applications	As needed		Submit application for review. Water use plans that will cause depletions for more than 5 years require prior submittal of a water court application for the same use
	Water Rights	Colorado Division of Water Resources	Developer must hold proper water right to allow for the use of surface or groundwater	Required by Law	Evidenced by proper decree	Developer responsible for compliance with existing decrees or if changes needed proceed through water court for new/ changed decree

	Temporary Substitute Water Supply Plans	Colorado Division of Water Resources	Allows for the implentation of water use plans, which may be based on pending water court applications	As needed	Evidenced by an approved SWSP http://www.water.state.co.us/wateradmin/wateradmin.asp	Submit application for review. Water use plans that will cause depletions for more than 5 years require prior submittal of a water court application for the same use
	Well Permit	Colorado Division of Water Resources	Allows for the drilling/ construction of water wells	Required by Law	Evidence of an approved permit http://www.water.state.co.us/pubs/forms.asp	Submit application for review. Plan for augmentation may be required.
	Monitoring and Observation Well Permit	Colorado Division of Water Resources	Allows for the drilling/ construction of monitoring wells	Required by Law	Evidence of an approved permit http://www.water.state.co.us/pubs/forms.asp	Submit application for review.
	Approval of Plans for Reservoir; Permit to Impound Water	Colorado Division of Water Resources	Allows for the construction of impoundment structures	Required by Law	Evidence of approved plans and/or permit http://www.water.state.co.us/damsafety/dams.asp	Jurisdictional Dams - Submit construction plans and specifications for review & approval; Non-jurusdictional Dams - Submit notice of intent to construct.
	Construction Stormwater Discharge Permit COR-030000	Colorado Department of Public Health and Environment, Water Quality Control Division	Permit maybe needed for stormwater discharges associated with construction activities disturbing at least 1 acre. Can waive need for permit if site is < 5 acres and R-factor (erosion potential) is less than 5. Typically can negotiate 1 permit for entire construction component.	Likely	entire project area of construction is > 5 acres	(1) Complete a stormwater management plan (SWMP), does not need to be submitted with permit application, but must be certified complete and maintained at the construction site
	Operational Stormwater Discharge Permit Assciated with Light Industry COR-010000	Colorado Department of Public Health and Environment, Water Quality Control Division	Permit is needed for stormwater discharges associated with operational activities.	Likely		
	Individual Process Water Discharge Permit	Colorado Department of Public Health and Environment, Water Quality Control Division		Posssible	Would be required if there is a process water is discharge assiciated with the project	

	Air Pollutant Emission Notice/ Construction Permit Application	CDPHE Air Pollution Control Division	Air Pollutant Emission Notice (APEN) and/or Permits required as persuant to Colorado Regulation No. 3 for the following activities and processes: 1) construction related surface disturbance and construction activities. Needed if disturbance is more than 25 acres and earth moving lasts more than 6 months. 2) Boilers rated at 5 MMBtu/hr or greater. 3) Condensate tanks with an annual throughput of 730 bbl or greater. 4) Internal Combustion Engines as detailed in Colorado Reg. 3, Part A, Section, II.D.1.sss. 5) Fugitive VOC emissions. 6) H2S emissions from wastewater treatment plants. 7) Any other activities or processes meeting the criteria provided in Colorado Regulation No. 3.	Likely	project is large enough to qualify for permit	(1) submit APEN to initiate process (2) CDPHE will respond whether or not that the permit is required prior commencement of construction; application requires description of type of activities projected as well as air pollution control activities such as emission controls, watering, reveg, and Fugitive Dust Control Plan
	NPDES / Colorado Discharge Permit System (CDPS)	CDPHE	Discharge permits for treatment facilities	Likely	will be needed	Application requires: (1) map (2) facility sketch (3) obtain permission from owner(s) of storm sewers, ditches, or other conveyance into which water is discharged
	Permit to Survey State or Private Land for Archeological, Paleo, and Historic Resources	OAHP	Permit the standards and requirements to perform archeological work in Colorado (could include work if there are disturbances along State or County Right of Ways?)			
	Hazardous Materials and Solid Waste	CDPHE Hazardous Materials and Waste Management Division	Prohibit the transfer storage or disposal (TSD) of Hazardous Waste except at permitted TSD sites			
Mesa County						
	Building Permit	Building Dept.	Needed for construction of buildings and facilities	Likely		(1) notify architect, landscaper of standards for buildings per zoning includes landscaping, site design considerations, fencing reqm'ts etc. (2) submit application submittal
	Conditional Use Permit - Pipelines, compressor stations, outdoor storage,	Board of County Commissioners	Requjired to ensure compatibility of proosed uses.	Likely		(1) Pre-application meeting with Planning staff required (2) Public hearing before Planning Commission and Board of County Commissioners

	Floodplain Development Permit	Planning and Economic Development Dept.	Needed for any human-made change on all lands, adjacent to any watercourse, that fall within the 100-year floodplain limits of that channel. Evaluation of the proposed projects compliance with floodplain management standards and requirements.	likely	At stream crossings or any work within floodplains.	Provide engineering documentation, as required by the application, for work within any floodplain within county administered areas. NOT including Federal or State administered areas.
	Noise Statutes	Mesa County	Statutory limits on noise from industrial uses	Mandatory compliance	Review any complaints received	Comply with Colorado Revised Statutes 25-12-103.
	Notice of Intent to Permit an Access (NOI)	Regional Tranportation Planning Office	Issuance of an NOI is required in advance of a land use application. Once an NOI is issued a “Notice to Proceed” is requred prior to construction of access(es)	Likely	Site specific, but occasionally a “Notice to Proceed” is all that will be needed.	Submit Application for Review
	Site Plan - Oil and Gas Drilling	Planning and Economic Development Dept.	Typically reviewed concurrently with APDs	Likely		Submit site plan for review
	Storage and handling of toxic chemicals	Designated Emergency Response Authority: Grand Junction Fire Department	EPA required reporting to Grand Junction Fire Dept as designated response authority	Likely	Reportable Quantity Thresholds	Submit Tier II Reports to GJFD, Local Emergency Planning Committee and Mesa County Emergency Management. Possible site review by the Fire Department
	Subdivision	Planning and Economic Development Dept.	Required to subdivide land into parcles smaller than 35 acres	Unlikely		Multi-step process - Concept plan (Public Hearings), Preliminary/Final Plan/Plat (Administrative review)
	Surface Alteration Permit	Public Works Department	Typically needed to do work in County Road or ROW	likely		Permit application requires location or construction plan, traffic control plan, bonding may be required, etc.
	Weed Management Plan	Division of Pest Management	Submit a Noxious Weed Management Plan for approval by County Pest Inspector.	Required		Weed Plan must contain a map of weeds found in project area, discussion of control methods and timing of treatment, plans for reseeding, treatment of weeds on stockpiled topsoil and final revegetation plan. Contact Judith Sirota for more information and guidelines.
	Extra-Legal & Special Extra-Ordinary Use Permits for Oversize Vehicles	Public Works Department	Required for vehicles exceeding 85,000 lbs, 8’6”wide, 75’ length, 13’6” in height. CDOT and County restrictions apply including but not limited to pilot cars, road closures, route plans,etc.	Required	Any vehicle exceeding limits set forth in the Mesa County Right-of-Way Use Regulations.	Submit an Extra-Legal permit application for vehicles exceeding the limits to the Public Works Department. Contact 244-1765 to obtain an application and load limit map.
Municipal						

	Watershed Permit	Town of Palisade	No person shall engage, commence or continue any land use activity within the Watershed except in conformance with a Watershed Permit issued by the Town.	Very likely	see Palisade Watershed Ordinance	Submit application with the following information: (1) Land use activity description. (2) Alternatives. A detailed description of any reasonable alternative to the proposed land use activity which may result in less of an impact to the Watershed. (3) Environmental assessment and mitigation measures. An environmental assessment and mitigation measures addressing the following: a. Water resources. b. Vegetation. c. Soils. d. Drainage. e. Wastewater treatment. f. Water supply g. Geographic location. (4) A water quality monitoring plan, spill prevention countermeasures and control plan, emergency response plan, soil erosion and stormwater control plan, and a revegetation plan, meeting or exceeding the standards set forth in the applicable provisions of Section XX-57. (5) Grading plan. A plan showing elevations, dimensions, location and extent of all proposed excavating, filling, grading or surfacing within the Watershed by the proposed land

	Watershed Permit	City of Grand Junction	No person shall engage, commence or continue any activity within the Watershed except in conformance with a Watershed Permit issued by the City.	Required by law	Any oil and gas development within a watershed requires a watershed permit.	Submit application with the following information: (1) Activity description. (2) Detailed project history. (3) Alternatives. A detailed description of any reasonable alternative to the proposed activity which may result in less of an impact to the Watershed. (4) Environmental evaluation and mitigation measures addressing the following: a. Water resources. b. Vegetation. c. Soils. d. Drainage. e. Water supply. f. Geographic location. (5) A water quantity monitoring plan, spill prevention countermeasures and control plan, emergency response plan, soil erosion and stormwater control plan, and a revegetation plan, meeting or exceeding the standards set forth in the applicable provisions of Section XX-57. (6) Grading plan. A plan showing elevations, dimensions, location and extent of all proposed excavating, filling, grading or surfacing within the Watershed by the proposed activity.
Special Districts						
	Water and sewer crossings					
Railroads						
	Permit to be on railroad property / surveying permit			Possible		
	Permit for new pipeline crossing / Right of occupancy			Possible		
Utilities						
	UGTV utility crossing			Possible	site specific	
	UGE utility crossing			Possible	site specific	
	UGT utility crossing			Possible	site specific	
	NGP utility crossing			Possible	site specific	
	OHE utility crossing			Possible	site specific	

Appendix E:
Policy Gap Analysis Category Matrix

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Preliminary Gap Analysis
for Policy and Regulatory Assessment
Stakeholder / Public Involvement Comment

Preliminary Gap Analysis Matrix

Category / Stakeholder - Public Comments	Energy Resource					Summarized Stakeholder & Public Comments by Category (Overall Ranking)	Energy Development Phase			County Involvement				Applicable Current Policy	Policies that may have been applicable but were omitted
	Coal	Coalbed Methane	Oil Shale	Natural Gas	Uranium		Permitting	Operational	Transition	Yes - Currently	None	Uncertain	Will		
A) Infrastructure						**A) Infrastructure**									
Roads & Road Standards	✓	✓	✓	✓	✓	**1. Roads and Traffic (2)**	✓	✓		✓				**20,22, 29,**	**Road Need Study 1992, 8**
Road Maintenance	✓	✓	✓	✓	✓	2. Transmission Planning / Pipeline Corridors/Pipelines	✓	✓		✓				**20, 22, 29**	**2.3--mcw--rmp**
Interchanges and Bypass Roads	✓	✓	✓	✓		3. Sewer and Water Service	✓	✓		✓				2, 3, 4, 6, 13, 19, 22	
Transportation & Traffic	✓			✓	✓	4. Communication Infrastructure	✓	✓		✓				****	
Transmission Planning / Pipeline Corridors	✓	✓	✓	✓	✓										
Sewer and Water Service / Pipelines	✓	✓	✓	✓	✓										
Communication Infrastructure	✓	✓	✓	✓	✓										
General Infrastructure Improvements	✓	✓	✓	✓	✓										
B) Regulatory						**B) Regulatory**									
Enforcement of Existing Regulations	✓			✓	✓	**1. Enforcement of all standards, regs, & reclamation (2)**	✓	✓	✓	✓				****	9
Chemicals and Haz Materials Use	✓	✓	✓	✓	✓	**2. Consistent, Fair & Integrat. Reg. Env. based on shared data (3)**								****	**9**
Limits and Extent of County Authority	✓	✓	✓	✓	✓	3. Chemicals & Hazardous Materials Use	✓	✓	✓	✓				**2-25-08; 19.1-mcw-5**	
Reclamation Standards and Enforcement	✓	✓		✓	✓										
Data Collection and Sharing	✓	✓	✓	✓	✓										
Consistent, Fair Regulatory Environment	✓	✓	✓	✓	✓										
Integrated Regulatory Environment	✓	✓	✓	✓	✓										
C) Operation						**C) Operation**									
Water Treatment Capacity	✓	✓	✓	✓	✓	1. Best Management Practices	✓	✓			✓			****	**9**
Gas Pipeline Capacity		✓		✓		2. "Fracing" process		✓			✓			****	
Best Management Practices	✓	✓		✓	✓	3. Need for Comprehensive Planning				✓				****	**9**
"Fracing" process				✓		4. Existing Infrastructure Capacity				see A				****	9
Downturn in Energy-Related Activity		✓		✓	✓										
Comprehensive Planning Needed	✓	✓	✓	✓	✓										
D) Environment						**D) Environment**									
Water Quality / Ground Water Quality	✓	✓	✓	✓	✓	**1) Water and Ground Water quality (1)**	✓	✓			✓			**2,3,4, 6, 13, 14, 19**	
Air Quality	✓	✓	✓	✓	✓	**2) Air Quality (4)**	✓	✓			✓			**19**	
Cumulative Impacts on Wildlife & Envir.	✓	✓	✓	✓	✓	3) Wildlife and other Environmental Impacts, Direct and Cumulative	✓	✓			✓			**19; I1.1-mcw-rmp; II 2.1-mcw-rmp; III 2.1, 2.2, 2.3, 2.4, 2.5-mcw-rmp**	**29**
Produced Water & Disposal		✓		✓	✓	4) Produced Water and Disposal	✓	✓			✓			**6, 14, 29, 2-25-08**	
Noxious Weeds	✓	✓	✓	✓	✓	5) Noxious Weeds	✓	✓	✓		✓			**II 2.1-mcw-rmp**	**?**
E) Economics						**E) Economics**									
Lack of Industrial Land	✓	✓	✓	✓	✓	1. Availability of Affordable Housing	✓	✓		✓				****	
Diversified Economic Development	✓	✓	✓	✓	✓	2. Balance Economic Development & Environmental Impact								**19; III 2.2, 2.3&4-mcw-rmp**	
Lack of Affordable Workforce Housing	✓	✓	✓	✓	✓	3. Balance Hunting & Recreation w/Loss of Habitat					✓			**19, III 2.3 and 2.3-mcw-rmp**	
Balance Econ. Development & Envir. Impact	✓	✓	✓	✓	✓	4. Use of Taxes				✓				****	**15**
Balance Hunting & Rec. with Loss of Habitat	✓	✓	✓	✓	✓	5. Land Use & Zoning	✓	✓		✓				****	**9**
Use of Severance Taxes Locally	✓	✓	✓	✓	✓										
Land Use and Zoning - Support Businesses	✓	✓	✓	✓	✓										
Taxation and Mining on Federal Lands	✓	✓	✓	✓	✓										
Short-term Social Impacts vs. Additional Services	✓	✓	✓	✓	✓										
F) General						**F) General**									
Data Collection and Sharing	✓	✓	✓	✓	✓	1. Health Services, Emergency Response & Planning	✓			✓				**3, 4, 11**	
Improve Communication Regarding BMPs	✓	✓	✓	✓	✓	2. Protection of Cultural & Historical Resources	✓			✓				**19.1-mcw-5**	
Public and Landowner Education	✓	✓	✓	✓	✓	3. Social Services Impacts				✓				****	
Alternative and Renewable Energy (on-site generation)	✓	✓	✓	✓	✓										
Keep Oil & Gas (& Energy) Industry in County	✓	✓	✓	✓	✓										
Improve Communication, Addl Stakeholder Mtgs	✓	✓	✓	✓	✓										
Health Services, Emerg. Planning & Response	✓	✓	✓	✓	✓										
Protect Cultural and Historical Resources	✓	✓	✓	✓	✓										
Criminal Activity and Drug Use	✓	✓	✓	✓	✓										
Pursue all Energy Resources, Promote Develop.	✓	✓	✓	✓	✓										
Driver Training and Education, Driving Records	✓	✓	✓	✓	✓										
Cleanup of Formerly Mined Uranium Lands					✓										
Vision, Rationale, & Scope of Energy Master Plan	✓	✓	✓	✓	✓										
G. Renewable Resources															
Alternative & Renewable Energy Resources & Incentives						**(4)**									

Appendix F:
Current Policy Table

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Current Policy Table

Resource Inventory and Policy Structure/Gap Analysis

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
N	**#2 Water Supply**	1.assure water is adequate in quality and quantity	A1,D1	
		2.Protect raw water and watersheds		Same as 5.5-mcw-rmp under Conservation/Easements and in other places--- Should watersheds be designated an URA (Unique Resource Area)?
		3.maximum reliance on appropriate entity		
N	**#3 Minimum fire flows**	1. Not required in low density residential	A3, D1	
		2. Required if near adequate distribution line		These probably not Applicable to VMR (Valuable Mineral Resource) extraction— Many changes since adoption in 1985— should be reviewed and modified
		3.required for multi-family, institutional, commercial and industrial		
N	**#4 Fire Response time**	1.Not required for low density residential	A4, D1	Same as Policy #3
		2. considered and encouraged to be		

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
		in fire district-high density residential, commercial, industrial and institutional		
N	**#5Proximity to commercial services**	A policy creating a "non-policy" of deferral to the private sector		Residential application—out of date
N	**#6Standards for Sewer and Septic**	Requires 201 connection and approves low density septic	A3,D1, D4	Review, revise, integrate in light of different mechanisms and changing regulations
N	**#7 Coordination and School Capacity**			Not applicable to mineral resource development—other standards now apply--review
N	**#8 Street Standards**	Establishes ways to determine standards in various locations	A1	Generally for high density areas and not areas of mineral resource development—revise and update
N	**#9 Land Use and Site Planning**	Endorses philosophy of PUD for site planning and buffer zones for incompatible uses	A1, A2, B1, C1,C3, C4	Obsolete and outdated--
N	**#10 Public Hearings**	Planning Commission will hold public hearings on matters before it		Remove and integrate with other Planning Commission rules and policies
N	**#11Cooperation with Municipalities**	1-Allows opportunity for review and comment by Municipalities in areas that affect them 2. policy is to have a joint planning commission with Grand Junction		#2 is obsolete-obsolete since adoption of Chap 5 and other city plans
N	**#12 Time limits for**	Time limits will be placed on		Obsolete--Technical

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
	Commencement	developers to avoid speculation		note establishes for final plat and installation of utilities—handled in other code sections
N	**#13Irrigation Water of Non-household uses**	Enforce historic irrigation easements and encourage use of irrigation water for non-domestic purposes	A3,D1	Integrate into Chaps 4&5 where it is also handled
N	**#14Drainage Requirements**	Encourages natural approach to limit run-off not in excess of historic site levels	D1	Set by COGCC permit for drill sites—integrate into other policies on mitigation
N	**#15 Policies for Cost sharing in Parks and other Public improvements**	Establishes method and levels of compensation to the county for and limits land dedication to fulfill the requirements		Obsolete—County has adopted Park Policy
N	**#16Mobile and Modular housing**	Encourages HUD and "look alike" uses and not others	E1, F3,F1	Abandoned--Intent seems to relate to permanent residences and not temporary structures
N	**#17 Agricultural Land**	Approaches to protect usage of agricultural land		Include in Chapter 4 on rural master plan--Freedom to Farm act may impact this
N	**#18 Energy Policies**	1.encourage efficient use in County		Update--Relates to Energy Conservation, not development—Expand to overall Energy Conservation Policies
		2.pursued a program of energy conservation		
N	**#19Environmental**	GOAL—to improve and protect and	A3,D1,D2,D3,E2,E3	cf mitigation measures

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
	Resources and Hazards—Air, Water	maintain air, water and land resources Policy 1. Discourage development near natural hazard areas 2. Use land use to control development in certain natural areas that may cause hazard or be destructive to natural resources 3. Requires new development to meet reasonable air and water quality standards of the County, state and Federal Government		in Chapter 4 -consider whether "hazardous" areas are URA or a different subset— Consider creating a list of standards required by 3
N	**#20 Energy siting**	1.work cooperatively with new energy facilities to locate pipelines, power plants, oil shale facilities and other similar	A1,A2	Integrate— O&G preempted by rules of COGCC; Mining preempted by MLRB
		2. mitigate by full disclosure		Consider 1041 procedure
		3. mitigate environmental impacts		The policy describes intentions that are timeless
		4.help County compensate for fiscal impacts		Obsolete--Fiscal impacts are not defined
N	**#21 Transmission lines**	PUC jurisdiction recognized Public process to locate lines minimize risks to public health, safety and welfare	A2	Handled by CUP— consider 1041 process for electric transmission lines

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
N	**#22 corridor policies**	Policy to establish land use themes for road corridors based on existing land use	A1,A2, A3	Not applicable to transmission or pipeline corridors--May be implemented and amended by Mesa Countywide Plan review by area--update
N	**#23 Walker Field**	Recognizes need for control of area around Walker Field		Not applicable—review and update
N	**#29 Mineral Extraction**	1.Adopts Mineral Resources Survey		Old map needs to be replaced with new survey done by EDAW--Core Mineral Extraction Policy--
		2.Burden of proof on applicant to show non-interference with mineral extraction		To fulfill CRS 34-1-401
		3.Mineral Resources should be protected by controlling land use		Review and Revise--Update all sections for clarity
		4.areas have been identified		
		5.Development must be restricted in a mineral resource area until extraction is complete		States 3 out of 4 of the major policies of Mesa County—4th is mitigation of harmful impacts as listed in Chap 4-policy 1.1 and 1.2
		6.Access to mineral resources shall		

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
		be preserved from incompatible land uses like commercial and residential		
		7.Residential and other compatible uses shall have setbacks and buffering and road access		
		8.Public Roads should be rated for maximum load or protected or insured against damage	A1	
		9.Development proposals within designated mineral influence needing blasting must mitigate impacts		
		10.Areas of Special Importance to Mesa County should be protected from extensive mining development. --policy then goes on in detail how these areas of Special Importance should be handled	A2	Must determine the definition of URA and the limitation imposed---Preempted by rules of COGCC as to drill sites and MLRB as to mining—hazardous areas to be included or not
N	**#32 Waste Management**	Take care of our waste not others'	A3, B3	Out of date
	Mesa Countywide Land Use Plan			
	I. Community			
Y	**#1.1-mcw-rmp-**	Development must identify and mitigate impacts to a) important rural features, b) scenic	All "impacts" of concern could be covered by this	"Impacts" are not defined in code

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
		vistas/corridors, and natural areas impacted—see list	Policy.	
Y	**#1.2-community**	New development shall be compatible with existing uses	B1, All "impacts" of concern could be covered by this Policy.	"Impacts" are not defined in code
	II. Conservation and Easement			
	#2.1	Conserve natural ecosystems	D1, D2, D3,E2,E3	
	#3.1	Dedicate access easements across private property	?	
	#3.2	Encourage preservation of Open Space	D3	
	#3.3	Provide buffers and setbacks adjacent to public lands	D3	
	#4.1	Identify hazards	See policy 29	
	#4.2	No development near hazards without mitigation	See policy 29	
	4.3	Address geologic and soil issues	See Policy 29	
	5.1	Work with resource managers		
	5.2	Provide incentives to protect natural areas and concentrate development	C1,E2,	
	5.3	Revise County Drainage Manual	D4	SEE POLICY , supra
	5.4	Adopt Industrial siting and performance standards	B1, C1	
	III. Open Lands and Trails			
Y	**#2.1-mcw-rmp**	Buffer areas to preserve riparian areas and waterways	D3	
Y	**#2.2-mcw-rmp**	Conserve important wildlife areas—	D3,E2,E3	

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
		pay compensation from GOCO		
	#2.3-mcw-rmp	Conserve migratory corridors	~~A2~~,D3,E2,E3	Applies to Migratory corridors
Y	**#2.4-mcw-rmp**	Development shall use existing and native vegetation when possible	E2	
Y	**#2.5-mcw-rmp**	Reduce conflicts with wildlife near development	D3, E3	
	IV Community services/Facilities			
Y	**#4.3—mcw-rmp**	County will enter intergovernmental agreements and MOU to coordinate efforts	B2,	
	Chapter 5			
Y	**#19.1-mcw-5**	Inventory, designate, and protect valued historic places	F2	See Community character/image 1.1 implementation 1.3
Y	**#20.6-mcw-5**	Promote State, Federal and private efforts to clean up contaminated sites	B3	
	#20.7-mcw-5	Limit development on steep slopes, ridgelines and hilltops—Bookcliffs, Grand Mesa, Co Nat'l Monument	See Policy 29	Is mineral extraction to be treated differently that other development?
Y	**#20.8-mcw-5**	Limit development on banks of Colorado and Gunnison Rivers	See Policy 29	Is mineral extraction to be treated differently that other development?

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
N	**(Unnumbered 2-25-08) Evaporation Pond Facilities/Land Farms Policies**	Provides guidelines for CUP for Exploration and Production waste disposal facilities and other evaporation pond uses	B3,D4	This is not in the Master Plan—Is similar to code sections on Support Services and Temporary Housing
N	**Roads Need Study (1992)**		A1	Obsolete
	Draft Policies			
N	**8/30/07—Mitigation Measures**			Look like best practice method for mineral resources
	9/19/07 Master Plan Draft Policies based upon 9/18 meeting with BCC			
	Staff draft goals and policies	These were revised in 9/07 after discussion. No further action has been taken.		
	Goals suggested			
	1. Be a leader in protecting County assets while minimizing impacts of energy development			
	2. Balance technologies to strengthen growth, provide energy, and mitigate environmental impacts			
	3.Exploration,			

Goal	Policy	Requirements	Public Input Category	Gaps or suggestions
	development and use of energy resources will be compatible with potentially impacted lands			
	4. development must be safe and environmentally sound			
	5. No duplication of regulatory oversight			
	6. Develop a database of knowledge			
	7. Everyone has enjoys same protection from hazards and access to info- "environmental justice"			
	Suggested Policies			
	1. Create EPOM			
	2.Povide comments to other regulators			
	3. Require use of EPOM			
	4. Provide model policies and standards for evaporative ponds			
	Modified Garfield Co policies for use in Mesa Co	These were modified for review—no action taken		

Appendix G:
Public Meeting Fact Sheets

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Mesa County Energy Master Plan

Project Overview

Purpose of the Energy Master Plan

The Energy Master Plan will be a policy document related to energy development that will be adopted by the Board of County Commissioners. This phase of the Energy Master Plan will identify:

- The known energy resources and opportunities within Mesa County,
- The potential impacts on the community associated with the development of those resources,
- An analysis of current energy related policies in Mesa County, and
- A set of recommended clear and understandable policies that will guide reasonable regulation and development of energy resources and mitigation of the impacts.

The Energy Master Plan will be implemented in coordination with the community and the energy industries through the planning and development review processes.

Energy Resources

Mesa County contains natural resources used in the development of energy for Colorado and the United States. The Board of County Commissioners has directed staff to prepare an Energy Master Plan to identify the location of these resources, identify potential impacts to the community, and prepare a plan to address these impacts.

The Energy Master Plan is focused on all energy resources in the county including natural gas, petroleum, coal, uranium, solar, wind, and other renewables.

Energy provides an excellent opportunity for economic growth within Mesa County in terms of jobs, capital investment, housing and secondary (spin-off) industries. It is understandable that the development of energy resources will also influence existing community infrastructure in terms of transportation, the environment, noise,

viewsheds, air, soils, wildlife, and watersheds. Mesa County recognizes and appreciates the importance the Energy Master Plan will have in identifying potential opportunities and impacts. It will be a policy document directing energy development to appropriate locations and describing measures to avoid, minimize, or mitigate impacts on sensitive areas and the community.

Land Use, Socioeconomic, and Environmental Considerations

Energy exploration, development and consumption will have an influence on the following areas:

- Conversion of land to industrial uses
- Environmental considerations including noise, air quality, soils, wildlife, and water quality
- Viewsheds and watersheds
- Avian protection
- Resource conservation
- Transportation
- Economic growth and diversification
- Waste management
- Site design

Potential resource impacts result from:

- Development of traditional energy resources including extraction, processing, and delivery
- Development of renewable energy resources
- Siting of energy generation and transmission facilities

Addressing potential impacts of energy development through best management practices, best available technologies, policies, and regulations adopted by the Board of County Commissioners will provide clear guidelines, requirements and expectations to the community and energy industries prior to application for development. Development and implementation of the Energy Master Plan will allow the integration of Land Use, Transportation, Real Estate Development Processes and Fiscal Planning. It will provide clear direction to planning requirements, development of appropriate infrastructure, and tools to ensure compatibility with the community.

Status of the Energy Master Plan

The Energy Master Plan is still under development and is designed to provide guidance to anyone interested in the future of Mesa County including:

A. The energy industry

B. Private landowners

C. County staff during the review of applications; and

D. The general public.

Schedule

These Public Meetings are your opportunity to provide comments and direction on this phase of the Energy Master Plan to the Board of County Commissioners. Please use the Public Comment Form to submit your comments. The schedule below illustrates the remaining steps before completion of this phase of the Energy Master Plan in April 2009.

Thank you for your participation.

	2009			
	JAN	FEB	MAR	APR
TASKS				
Public Meetings (January 13-15 and 20-22)				
Draft Policies Analysis Report				
Draft-Final Resource Maps				
Final Resource Maps				
Final Energy Atlas				
Draft-Final Policy and Recommendations Report				
Final Reports and Maps for County Review				
Work Sessions and Presentations to County				
Complete Website Enhancements				

Questions and Additional Information

For more information on the Mesa County Energy Master Plan please visit the Energy Master Plan website: www.mesacounty.us/planning/EnergyMasterPlan.aspx

You may also call Mesa County at (970) 244-1650 or send an e-mail to mclrange@mesacounty.us

Mesa County Energy Master Plan

Opportunity, Constraint, and Exclusion Areas

Methodology and Overview of Opportunity and Constraint Maps

Non-renewable energy resources evaluated in this phase of the Mesa County Energy Master Plan include coal, oil shale, uranium, coal bed methane, and natural gas. Renewable energy resources were mapped but were not evaluated in terms of constraints in this phase of the Energy Master Plan.

For each of the non-renewable energy resources, opportunity areas were identified in those areas having substantial energy resources and compatible land uses. Constraints to resource development were categorized as either constraint areas or exclusion areas depending on the sensitivity of the resource and regulatory designations.

The graphic below illustrates the general procedure by which composite maps showing the energy resource opportunity areas and constraints were developed for coal. As shown on the opportunity map, coal resources are present throughout much of Mesa County. However, due to various constraints and regulatory exclusion areas not all of the coal resource is available for development without implementing mitigation measures. The constraint layer includes those areas with known values or attributes: conservation areas, areas with special designation such as State Parks, wildife areas, campgrounds, scenic byways, etc., water resources, natural hazards, land use (agricultural and residential areas), areas with BLM and Forest Service lease stipulations, and areas of visual sensitivity. The exclusion layer includes those areas that are generally excluded from resource development based on various Federal and State regulatory designations including wilderness and wilderness study areas, the Colorado National Monument, and certain designated conservation areas.

The specific categories and land uses that are included in each of the constraint and exclusion layers are described in Tables 1 through 8 on the following pages.

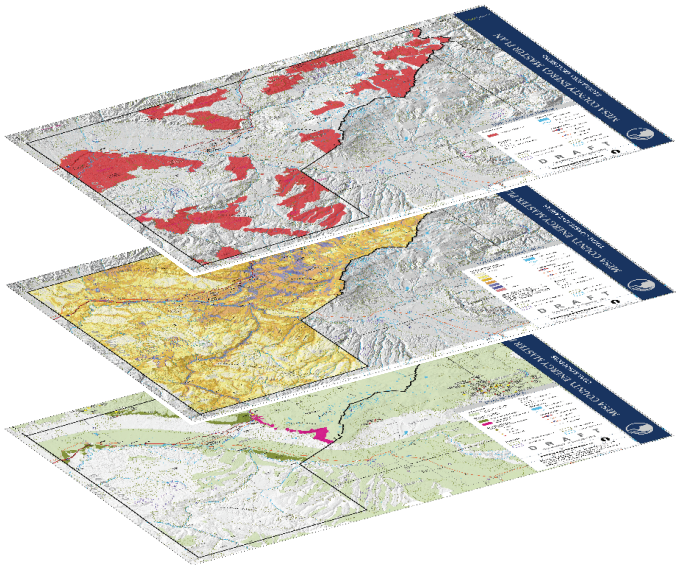
Regulatory Exclusion Areas

\+

***Constraint Areas**

\+

Resource Map (Opportunities)



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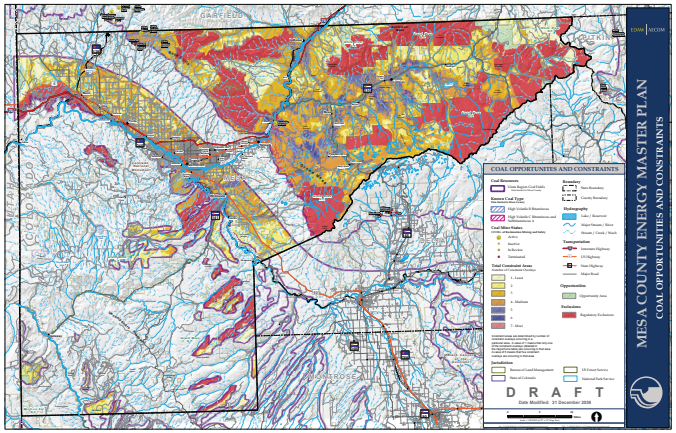
Composite Opportunity/Constraint Map



* Constraint Areas Include: Conservation Areas, Designated Areas, Water Resources, Natural Hazards/Geology, Land Use and Infrastructure, BLM and Forest Service Stipulations, and Areas of Visual Sensitivity

Table 1: Summary of Superlayers

Resource Opportunity Areas
Coal Opportunities • Coal Resources **Petroleum Opportunities** • Coalbed Methane • Gaseous Natural Gas Reserves • Oil Shale **Uranium Opportunities** • Uranium Resources

Notes on Resource Opportunity Areas:

1. There is no Oil Density Map due to a lack of quantitative data suitable for mapping at the county level.

2. Oil Shale: Two maps showing Oil Shale resources have been provided:
   1) The maps on display show Oil Shale resources within Mesa County
   2) The map on the right illustrates Oil Shale resources within the Green River Formation Basins in Colorado, Utah, and Wyoming as described in the TarSands/Oil Shale PEIS

Sources: Colorado Geologic Survey, Mesa County and BLM

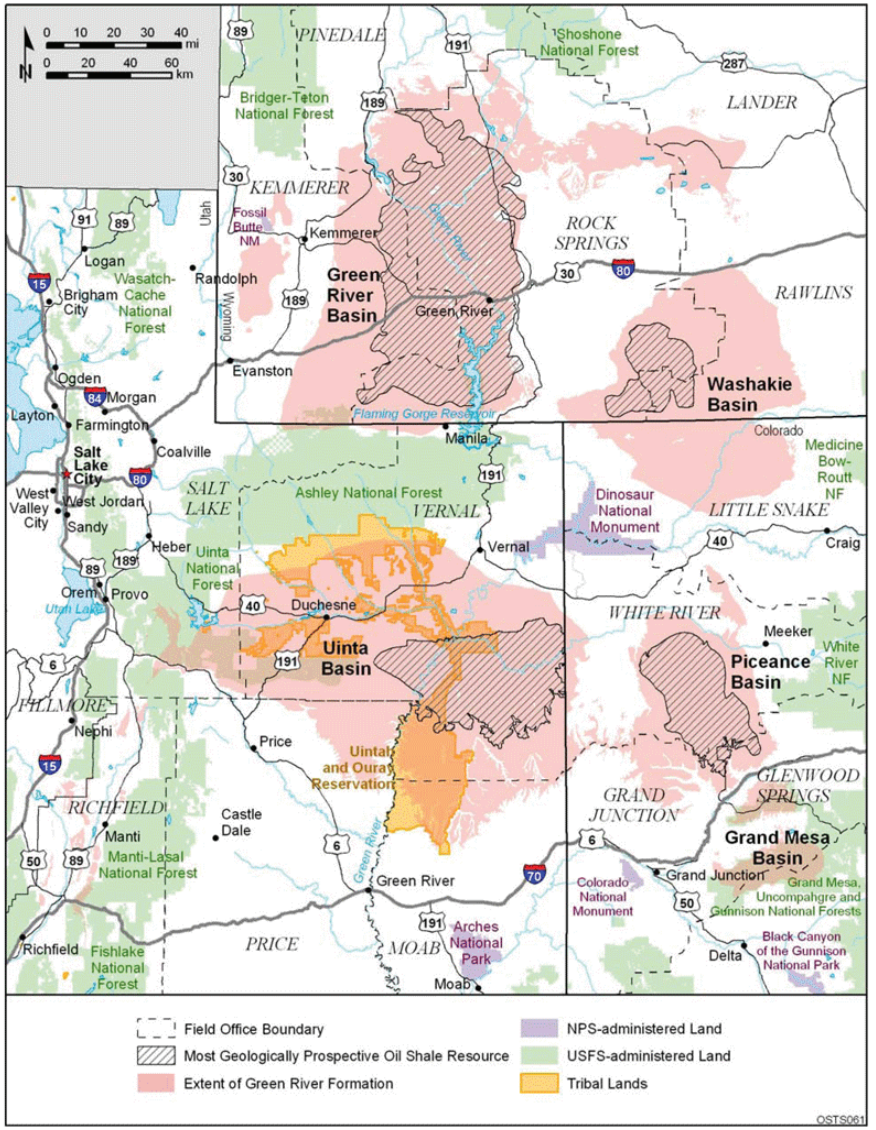
3. Natural Gas: Gaseous Natural and Natural Gas datasets are from the same source, and contain the same resource areas. The only difference is in yields which are based on gaseous and liquid. We have mapped resource areas for gaseous Natural Gas only.

Source: EIA data for Gaseous Natural Gas and Natural Gas Liquids were created by the Reserves and Production Division, Office of Oil and Gas, Energy Information Administration pursuant to studies required by Section 604 of the Energy Policy and Conservation Act Amendments of 2000 (P.L. 106-469). The boundaries are not informed by subsurface structural information. The data and methods used in their creation are detailed in a report, "Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and Reserves and the Extent and Nature of Restrictions to Their Development", prepared by the US Departments of Interior, Agriculture and Energy.

4. Coal: Formation data limited to Mesa County; Coalbed locational data limited to Colorado

Sources: Colorado Geologic Survey (Coalfield locations); Colorado Geologic Survey and Mesa County (Coal formations)

5. Uranium data sources: Colorado Geologic Survey (formations); Denver Regional Exploration Geologists Society (Uravan Mineral Belt); USGS (operational data)



Most Geologically Prospective Oil Shale Resources within the Green River Formation Basins in Colorado, Utah, and Wyoming

Table 1: Summary of Superlayers (Continued)

Superlayers: Constraint Areas	Superlayers: Exclusion Areas
Conservation Superlayer (indicated species and habitat issues) – Table 2 • ACECs • TES Habitat • TES Potential Habitat • CNAP Program Areas • State Habitat Area (SHAs) • Bald Eagle Habitat • Potential Conservation Areas (PCAs - CNHP) • Deer and Elk Winter Range **Designated Areas Superlayer – Table 3** • State Parks • State Wildlife Areas (SWAs) • Wild and Scenic River (Recommended) • National Scenic Byways • Historic Places/Districts • North Fruita Desert SMA • Campgrounds • Existing and Proposed Recreational Trails **Water Resources Superlayer – Table 4** • Surface Water • Floodplains • Wetlands **Natural Hazards/Geology Superlayer – Table 5** • High Soil Erodibility • Very High Soil Runoff Potential • 16 – 20 degree slope • Designated natural hazard areas **Land Use and Infrastructure Superlayer – Table 6** • Prime Farmland • Farmland of Statewide Importance • Prime Farmland if Irrigated • Areas of Active Cultivation • Zoning – dense commercial/residential development **BLM and Forest Service Stipulations – Table 7** • BLM Lease Stipulations • USFS Lease Stipulations **Areas of Visual Sensitivity - Table 8** • Ridgelines • Parcels with structures	**Regulatory Exclusions Superlayer – Table 9** • Wilderness • Wilderness Study Area • USFS Roadless Areas • National Parks and Monuments • Conservation Easements (Mesa Land Trust, and others) • National Conservation Areas (McInnis Canyons NCA)

Table 2: Conservation Superlayer

	Resource Category	Constraint	Reference/Justification
Conservation Superlayer	Areas of Critical Environmental Concern (ACEC)	Within ACEC Boundaries	The BLM is required to identify and consider ACECs through the resource management planning process. ACECs must meet the following criteria: • 1) Relevance: Significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard. • 2) Importance: Resource in #1 must have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to human life or property. Each formally designated ACEC should have associated resource use limitations (CFR 43 § 1610.7-2). Mining is not specifically prohibited.
	Threatened or Endangered Species Habitat	Within Habitat and Potential Habitat of State and Federal Threatened, Endangered, and Species of Concern	Federal ESA Colorado Endangered Species List BLM and USFS
	Colorado Natural Areas Program (CNAP)	Within CNAP Areas	The Colorado Natural Areas Act of 1977 provides for the designation of natural areas to identify, evaluate, and protect certain natural features and phenomena in Colorado, including ecosystems, ecological communities, species, and other natural features or phenomena. Land use provisions may be included in the designation documents, but mining is not specifically prohibited (http://parks.state.co.us/NaturalResources/CNAP/AboutCNAP/TheNaturalAreasAct/).
	State Habitat Areas (SHAs)	Within SHA	The Bald Eagle was delisted from Endangered Species Act protection in 2007. The bald eagle, however, remains a protected species under the Bald and Golden Eagle Protection Act.
	Bald Eagle Habitat	Within Bald Eagle Habitat	Possible seasonal restrictions
	Potential Conservation Areas (PCAs)	Within Deer and Elk Winter Range	Possible seasonal restrictions

[1]Federal Threatened and Endangered Species for Mesa County include humpback chub, Colorado pikeminnow, bonytail chub, razorback sucker, black-footed ferret (experimental non-essential population), Uinta Basin hookless cactus, DeBeque phacelia

Table 3: Designated Areas Superlayer

	Resource Category	Constraint	Reference/Justification
Designated Areas	State Parks	Within State Parks	While Colorado State Parks serve recreational purposes, mining (specifically oil and gas leasing), is not prohibited. The Parks board has the power to: b) Lease, exchange, or sell any property, water rights, land, or interest in land or water rights, including oil, gas, and other organic and inorganic substances which now are or may become surplus or which, in the proper management of the division, the board desires to lease, exchange, or sell (CRS 33-10-107).
	State Wildlife Areas (SWAs)		SWAs are managed primarily to protect wildlife and wildlife habitat. It is prohibited to "enter, use, or occupy any area for commercial purpose or to conduct land, water, oil, gas, or m mineral investigations, surveys, or explorations of any kind" on all lands under the administrative control by the Division of Wildlife, EXCEPT as specifically authorized by contractual agreement, official document, public notice, permit, or by posted sign (Chapter 9 – Division Properties, Article 1 #900) http://wildlife.state.co.us/NR/rdonlyres/43038645-1B5A-4772-8221-E210532023FC/0/Ch09.pdf.
	Areas recommended for Wild and Scenic River Designation	Within 300 feet of the Dolores River	Report recommending Congressional designation of Wild and Scenic River sections transmitted to Congress on May 23, 1977. Action never taken. . The river remains an important recreational, scenic, and tourism resource. Per COGCC Rule 317B
	Designated Scenic Byways	Within 0.5 mile of Scenic Byways: Grand Mesa Scenic Byway Dinosaur Diamond Scenic Byway	Scenic byways are important recreation and tourism resource that merit visual resource protection. http://www.grandmesabyway.org/ http://www.byways.org/explore/byways/2474/
	National Registered Historic Places, Sites. Landmarks, Districts and Monuments	Within NRHP districts (polygons) and within 500 feet of points	Mining and resource extraction activities may interfere with the values that contributed to the NRHP designation of the site.
	North Fruita Desert Special Recreation Management Area	Within North Fruita Desert SRMA	North Fruita Desert SRMA is managed for motorized and non-motorized trail activities, and does not prohibit mining.
	Campgrounds	Within 0.25 miles of campgrounds	Campgrounds are valuable recreational resources. Mining activities may decrease value due to noise, scenery degradation, and other issues.
	Recreational Trails, Proposed Recreational Trails	Within 0.25 miles of recreational trails	Recreational Trails are valuable recreational resources. Mining activities may decrease value due to noise, scenery degradation, and other issues.

Table 4: Water Resources Superlayer

	Resource Category	Constraint	Reference/Justification
Water Resources	Surface Water	Within 300 feet of Surface Water	Mining and resource extraction activities should be conducted a sufficient distance from surface water to preclude contamination of this resource. Per COGCC Rule 317B
	Floodplains	Within Floodplain	Federal, state and county policies restrict development in or alteration of floodways or floodplains.
	Wetlands	Within Wetlands	Permits under Section 404 of the Clean Water Act must be obtained from the US Army Corps of Engineers for activities that would result in wetland impacts.
	Drinking Water Supplies	Within designated watershed and water supply protection areas of reservoirs and other drinking water sources	Protection of drinking water

Table 5: Natural Hazards/Geology Superlayer

	Resource Category	Constraint
Natural Hazards/Geology	Slope	Areas of slope greater than 16 degrees
	Soil Erodibility	High Soil Erodibility
	Runoff Potential	Very high runoff potential
	Natural Hazards	Designated natural hazard areas

Table 6: Land Use and Infrastructure Superlayer

	Resource Category	Constraint	Reference/Justification
Land Use and Infrastructure	USDA Soils	Farmland of Statewide Importance Prime Farmland	Farmland Policy Protection Act (FPPA)
	Mesa County Soils	Areas of Active Cultivation	Avoid conflicts with agricultural operations
	Mesa County Zoning (Residential and Commercial)	All residential and commercial zoning categories	AF 35 allowable housing density is 1 unit per 35 acres AFT allowable housing density is 1 unit per 5 to 35 acres All other residential/commercial zones have housing density greater than 1 unit per 5 acres Areas include current and future residential and future development Mesa County Mineral Extraction Policy (1985) finds residential and commercial land uses incompatible with mineral extraction Housing density corresponds to low population density

Table 7: BLM and Forest Service Lease Stipulations

	Resource Category	Constraint	
Stipulations	BLM Lease Stipulations	Stipulations: 2 – Scenic and natural values 4 – Elk calving areas 5 – Cultural values 6 – Watershed protection 7 – Perennial streams water quality 8 – Gunnison Gravels and Indian Wash Dam 9 – Bighorn seasonal closures	10 – Wild horse winter range 12 – Deer and elk winter range 13 – Threatened and Endangered Species (TES) Habitat 14 – Seasonal TES habitat
	USFS Lease Stipulations	0 – Steep slopes, Roadless, and Big Horn Sheep 1 – NSO - Big Horn Sheep 2 – NSO - 3A Management Area 3 – NSO - Riparian, Wetlands 4 – CSU - Scenic Byway 5 – Standard Lease Terms 6 – NSO - High Geologic Hazard 7 – CSU - Moderate Geologic Hazard 8 – CSU - Municipal Watershed 9 – NSO - Sensitive Area	10 – NSO - Retention VQO and Low VAC 11 – CSU - VQO - Retention 12 – NSO - Recreation Complex 13 – CSU/T - Elk Calving 14 – NSO - Sage Grouse Leks 15 – NSO - Alpine Tundra 17 – NSO - Elk Summer Range 18 – NSO - Roadless Area 19 – CSU/T - Big Game Winter Range

Table 8: Areas of Visual Sensitivity

	Resource Category	Constraint	Reference/Justification
	Ridgelines	Ridgelines	Ridgelines are considered areas of visual sensitivity because development on ridgelines can be seen from large distances.
	Parcels with Structures	Parcels with Structures	Parcels with structures were identified as constraint areas. Development of energy resources near residential structures is subject to established setback requirements.

Table 9: Regulatory Exclusions Superlayer

	Resource Category	Exclusion	Reference/Justification
Regulatory Exclusions	Wilderness Areas	Wilderness Areas, Wilderness Study Areas	Mineral development prohibited in designated Wilderness and Wilderness Study Areas BLM currently treats WSAs as Exclusions
	Inventoried Roadless Areas (USFS) and Colorado Roadless Areas	Within Roadless Areas	Draft EIS for the Colorado Roadless Rule was published August 1, 2008 and is currently in the public comment period. Preferred alternative in the DEIS recommends high level of protection for Colorado Roadless Areas. This level of protection would generally prohibit construction of new roads within these designated areas, with certain exceptions.
	National Parks and Monuments	Within Colorado National Monument	Colorado National Monument is managed by the National Park Service. The monument was established to preserve, study, and enjoy the geological resources and processes as well as the canyon, mesa, and plateau ecosystems that are representative of the greater Colorado Plateau. Mining and other resource extraction is not currently allowed within Colorado National Monument.
	Conservation Easements	Mesa Land Trust and other easements	Mining prohibited
	National Conservation Areas (NCAs)	Within McInnis Canyons NCA	Mining prohibited by McInnis Canyon NCA Management Plan
	BLM and FS Stipulations	'No Lease'	

Summary Of Stakeholder Meetings
Mesa County Energy Master Plan

A key component of the Energy Master Plan is the involvement of stakeholders. Over the past sixty days, the Energy Master Planning team has met with 18 different stakeholder groups and solicited their input relative to the influence energy development may have on Mesa County.

The following is a list of the various stakeholder groups.

- Mesa County Government Departments
- Mesa County City Managers
- Town of De Beque
- Sportsmen
- Club 20
- Mesa County Farm Bureau Board
- Mesa County League of Women Voters
- Grand Junction Area Chamber of Commerce
- Grand Junction Economic Partnership
- Western Colorado Congress
- Gateway Property Owners Association Chair
- Colorado Oil & Gas Association
- Colorado Division of Wildlife
- US Geological Survey
- US Fish & Wildlife Service
- US Forest Service
- US Army Corps of Engineers
- US Bureau of Land Management

Discussion held with each group was annotated by the project team. Comments, issues or concerns have been summarized and placed in six categories for reference in the accompanying matrix. The six categories include:

1. Infrastructure,
2. Regulatory,
3. Operation,
4. Environment,
5. Economics, and
6. General

Top Five Stakeholder Concerns

Comments, issues or concerns similar to each group were tabulated and a total recorded. Based on the total number of similar responses, the top five issues or concerns were as follows.

Ranking	Issue or Concern
1	Roads & Access, Daily & Emergency Use, Standards
2	Water Quality
3	Increased Traffic Impacts Data Collection / Sharing – County & Communities / Region
4	Air Quality Enforcement Chemical / Hazardous Material Use / Storage / Spills / Response
5	Limits / Extent of County Authority Reclamation Standards & Enforcement Improve Communication – Best Management Practices

Issues / Concerns	Stakeholder																		Summary	
	County Agency Departments	Mesa County City Managers	Town of De Beque	Sportsmen	Club 20	Mesa County Farm Bureau Bd.	MC League of Women Voters	Grand Junction Chamber	GJ Economic Partnership	Western Colorado Congress	Gateway Property Owners Chair	Colorado Oil & Gas Association	Colorado Division of Wildlife	US Geological Survey	US Fish & Wildlife Service	US Forest Service	US Army Corps of Engineers	Bureau of Land Management	Total Responses	Top 5 Issues Ranking
Infrastructure																				
Increased Traffic Impacts	✓	✓	✓	✓		✓	✓	✓		✓	✓								9	3
Roads & Access, Daily & Emergency Use, Standards	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓				✓			11	1
Additional Rail Service Needed	✓		✓		✓			✓	✓										5	
Regulatory																				
Limits / Extent of County Authority	✓			✓	✓					✓		✓						✓	6	5
Enforcement	✓	✓		✓			✓	✓		✓							✓		7	4
Scenic Byways		✓		✓								✓							3	
Increased County Resources / Services Needs	✓				✓		✓												3	
Cooperative Long Range Planning Process	✓	✓	✓														✓		4	
Changes in Demographics (Population Growth)	✓						✓	✓											3	
Data Collection & Sharing Needs	✓				✓			✓								✓		✓	5	
Fees - Cost of Services/ Impacts Recovery	✓						✓			✓									3	
Need Neighborhood Meetings Prior to Applications	✓										✓								2	
Chemical / Hazardous Material Use / Storage / Spills / Response	✓	✓					✓					✓				✓	✓	✓	7	4
Reclamation Standards and Enforcement	✓			✓		✓				✓					✓	✓			6	5
Stable, Consistent, Fair, Clear Regulatory Environment					✓							✓							2	
Permitting Process Expensive - State & County Level												✓							1	
Need Integrated Regulatory Framework - Federal, State, Local					✓		✓					✓							3	
Offer Faster Permitting for Detailed / Long Range Planning													✓						1	
Need Knowledgeable County Staff w/ Energy Field Experience					✓							✓							2	
Balance Land Use Regs with Property Rights	✓				✓	✓		✓											4	
Mineral Rights					✓	✓													2	
Improve Public Notification in Rural Areas					✓		✓												2	
Single County Point of Contact Needed													✓			✓			2	
Additional Permit Review Time Needed	✓												✓						2	
Private Property Highest Protection					✓								✓						2	
Coordination of Public and Private Property Permitting							✓								✓	✓			3	
Law Enforcement								✓		✓									2	
Operating Agreement - County & Energy Developers		✓																	1	
Creation of an Energy Advisory Board		✓																	1	
Need BLM Land for Private Industrial Uses	✓		✓					✓								✓			4	
Agricultural Land Use / Preservation						✓													1	
Need Agricultural Impact Statements						✓													1	
Operation																				
Well Spacing				✓															1	
Need Additional Pipeline Capacity							✓					✓							2	
Sufficient Availability of Electricity												✓							1	
Need Additional Water Treatment Capacity										✓	✓	✓							3	
Best Management Practices										✓					✓				2	
"Fracing" Process	✓	✓																	2	

Issues / Concerns	Stakeholder																		Summary	
	County Agency Departments	Mesa County City Managers	Town of De Beque	Sportsmen	Club 20	Mesa County Farm Bureau Bd.	MC League of Women Voters	Grand Junction Chamber	GJ Economic Partnership	Western Colorado Congress	Gateway Property Owners Chair	Colorado Oil & Gas Association	Colorado Division of Wildlife	US Geological Survey	US Fish & Wildlife Service	US Forest Service	US Army Corps of Engineers	Bureau of Land Management	Total Responses	Top 5 Issues Ranking
Environment																				
Water Quality	✓	✓		✓	✓	✓	✓			✓				✓		✓	✓		10	2
"Produced" Water	✓																		1	
Air Quality	✓	✓		✓		✓		✓		✓		✓							7	4
Soil Erosion				✓		✓										✓			3	
Noise	✓									✓									2	
Odor										✓									1	
Light Pollution	✓																		1	
Noxious Weeds	✓					✓										✓			3	
Preservation of Unique Region Plants																✓	✓		2	
Health Impacts due to Energy Development	✓									✓			✓				✓		4	
Energy Conservation	✓				✓					✓									3	
Threatened and Endangered Species					✓											✓			2	
Avian Protection re: Energy Development Ponds				✓									✓			✓			3	
"Cumulative Impacts" on Wildlife & Environment				✓						✓			✓			✓	✓		5	
Balanced Policy Needed - Wildlife Protection / Energy Dev.													✓						1	
Animal Poaching (new access to remote areas)													✓						1	
Economics																				
Need Diversified Economic Development	✓	✓	✓					✓											4	
Housing (lack of affordable workforce housing)	✓		✓			✓			✓										4	
Balance Economic & Environmental Impact / Protection								✓	✓				✓			✓			4	
Industrial Land - Insufficient Availability	✓	✓	✓					✓	✓										5	
Infrastructure Funding	✓							✓											2	
Labor Force - Availability									✓										1	
Economic Impacts of Hunting / Recreation & Loss of Wildlife Habitat		✓		✓									✓						3	
Hotel Room Availability (Tourism)		✓																	1	
Wages (inflated for energy workers impacts other employers)									✓										1	
Revenue Sharing			✓																1	
Taxation / Land Valuation	✓																		1	
General																				
Public / Landowner Education Needs					✓		✓						✓		✓	✓			5	
Annual Energy Expo Expansion of Topics / Attendees													✓						1	
Need a "Visioning Exercise" re: Future Land Use			✓		✓														3	
Improve Communication - Best Management Practices					✓	✓		✓	✓				✓	✓					6	5
Data Collection / Sharing - County & Communities / Region	✓	✓	✓		✓			✓						✓	✓		✓		9	3
Quality of Life								✓											1	
Health Services / Emergency Planning	✓						✓												2	
Social Services	✓																		1	
Recreation Preservation		✓		✓		✓				✓									4	
Scenic Area Preservation		✓						✓											2	
Natural Heritage Preservation										✓				✓					2	
Surface Use Agreements					✓														1	
Energy Conservation					✓		✓												2	
Alternative and Renewable Energy Resources	✓					✓			✓	✓	✓								5	

Appendix H:
September 2007 Draft Goals and Policies

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Revised 9/19/07 based on 9/18 mtg with BCC

GENERAL

Goals:

Mesa County will be a leader in protecting natural, social, environmental, and economic assets of Mesa County that will assure prosperity and quality of life into the future while minimizing impacts of development and use of energy resources.

Balance new and traditional technologies related to exploration, development, exploitation, conservation and use of energy resources in a way that will strengthen economic growth, provide safe and reliable energy, and mitigate environmental impacts.

All exploration, development, and use of energy resources will be compatible with potentially impacted lands, land uses, residents, and communities recognizing the location of the resources and current land use patterns.

Permit development in a safe and environmentally sound fashion.

No duplication of regulatory oversight.

Develop a database of knowledge related to any health risks associated with energy exploration, development, and use while minimizing any such risks and make such information publicly available.

All exploration, development, and use of energy resources will be done in manner in which everyone enjoys the same degree of protection from environmental and health hazards and equal access to the information and decision-making process to have a healthy environment in which to live, learn, and work ("environmental justice" as defined by the US Environmental Protection Agency).

Objectives:

Participate in rule making of the appropriate State regulatory agencies (e.g., CDPHE and COGCC)

Participate as a cooperating agency with Federal regulatory agencies.

Policies (specific to Phase 1 of this plan):

Provide a tool for use by landowners, energy industry interests, the public, and county staff to minimize and mitigate impacts of energy exploration and development (an interactive GIS map on the Mesa County website known as the Energy Policy Opportunity Map - EPOM). Addressing (but not limited to):

Sensory Impacts (odor/visibility)	Biological Sensitivities
Water Related Sensitivities	Transportation
	Hazards and Mineral Resources

Provide comments to the State and federal regulatory agencies (COGCC, BLM, USFS) on Applications for Permits to Drill (APD) based on the EPOM to include in their permits which are enforced by the appropriate regulatory agencies.

Require energy developers to demonstrate their use of the EPOM tool, including applicable mitigation measures, best management practices, and best available technology in their applications to Mesa County for appropriate permits.

Provide model policies and standards for development of evaporative ponds (suggest State adopt and enforce)