

PINEDALE FIELD OFFICE OIL AND GAS DEVELOPMENT
SOCIAL AND ECONOMIC MONITORING PLAN
(Draft 1a – 6/24/08)

Western Wyoming is currently experiencing rapid economic growth, strongly associated with the development of oil and gas resources. This document proposes a set of indicators through which to track social and economic change generated by oil and gas development in the Pinedale Field Office of the Bureau of Land Management (BLM), particularly in the Pinedale Anticline and the Jonah Field. The plan is intended to provide an annual update to inform county and municipal planning and budgeting, community participation, and federal agency resource management.

This draft has been prepared to facilitate discussion by citizens, local and state government officials, operators, BLM managers and staff, and other interested parties. It does not represent BLM policy, nor does it imply a commitment by the BLM to provide funds or staffing to a monitoring effort.

Oil and gas activities in the Pinedale planning area form part of a larger region of energy development that also includes Sweetwater and Lincoln Counties. In addition, while BLM's Pinedale planning area falls largely within Sublette County, oil and gas activities in that field office generate social and economic impacts in communities outside the county, for example in Rock Springs (Sweetwater County). For these reasons, the monitoring program outlined below is proposed for use across Sublette, Sweetwater, and Lincoln Counties.

The indicators are prioritized in three tiers. Priority 1 provides the most limited monitoring program, Priority 3 the most extensive and most costly. Priorities 2 and 3 include indicators listed under Priority 1 and Priorities 1 and 2, respectively.

The indicators were selected using several criteria.

- **Balanced.** The indicators should reflect both the benefits and the challenges of oil and gas development, as well as other drivers of economic change.
- **Consistent.** The indicators selected should be broadly consistent with the monitoring objectives proposed by the Pinedale Anticline Working Group (PAWG), though not necessarily with the data sets used by the PAWG.
- **Comparable.** At least some of the indicators should be applicable to any area of the country, to facilitate the implementation of a consistent social and economic monitoring strategy across the lands administered by the Bureau of Land Management. Economic and demographic indicators should use readily available Federal or state data, to the extent feasible. Federal data sources provided through the BLM's Economic Profile System are particularly useful.¹

Issues needing further consideration.

(1) *Cumulative effects.* How should the monitoring effort consider (a) oil and gas development on non-BLM lands and (b) other industrial activities within the monitoring area, such as a proposed carbon sequestration project near Big Piney?

(2) *Sources of data.* If timeliness of data is important, federal data may need to be supplemented with other sources which may be more recent.²

(3) *Use of projections.* Most of the indicators listed below are retrospective: they estimate what has happened. To the extent that future oil and gas activity can be estimated, such data could be used to project many of these indicators forward, which would make the monitoring effort much more valuable as a basis for local planning for facilities and services.³

(4) *Staffing and coordination.* Given the commitment already made by Sublette County to track social and economic conditions and trends, it may be appropriate to request that the county’s Socioeconomic Analyst assume certain responsibilities for conducting monitoring activities under this plan. Depending on the specifics of the final monitoring plan, available skills, and level of funding for the position, this role could involve providing data, analyzing data, coordinating monitoring activities, or preparing the monitoring report.

Benchmarking. Categories marked by (●) could also be compared with data for a benchmark county selected for minimal oil and gas activity. (Teton County?)

prior-ity	indicator	source	notes
<i>Oil and Gas Activity</i>			
1	oil and natural gas prices	oil: Wyoming Sweet; gas: prices at Opal Hub.	Price trends may provide an early indicator of shifts in exploration activity. Use a 3-year moving average?
1	rig months, oil and gas wells (1) in operation and (2) 10-year projected drilling activity	Operators	
1	10-year projected oil and gas production	Operators	R. Allen. This would provide the basis for estimating county mineral revenues. ⁴ To protect proprietary data, submissions could be aggregated by a third party.
<i>Demographics</i>			
1	Population: county trend compared with benchmark county and state ●	BEA – REIS, Table CA30?	
2	Oil and gas workers and dependents, by county	Operators	J. Jacquet: Have to estimate these numbers, using workforce requirements on a per-well or per-rig basis. Need to collaborate on a methodology to do so. ⁵

prior-ity	indicator	source	notes
<i>Economic Activity</i> (by county, unless otherwise noted)			
1	estimated oil and gas industry employment, including subcontractors	Operators? BLS: NAICS sectors 211, 212, 213?	See note 5. Will Bureau of Labor Statistics capture out-of-state subcontractors' employees?
1	employment by sector ●	BEA, REIS, Table CA25N - NAICS	
1	personal income by sector; non-labor income ●	BEA, REIS, Table CA05N - NAICS	
2	income distribution ●		Are annual data available for this analysis? Can we use the Kuznets ratio or Gini coefficient? ⁶
1	unemployment rate compared with benchmark county, state, and nation ●	Bureau of Labor Statistics	
2	employment diversity/specialization		Are annual data available for this analysis? See index used in EPS. ⁷
2	recreation use: recreation days by category, Pinedale Field Office	BLM Recreation Management Information System	
3	tourism: visitor origin, recreational use, and spending	intercept survey	
<i>Revenues</i>			
1	Wyoming share of federal mineral revenues	Minerals Management Service	can this be tracked by project (Pinedale Anticline, etc.)?
1	Wyoming severance tax	Wyoming Dept. of Revenue	
1	county property tax revenues, by source, including ad valorem oil and gas production tax	county assessor	

priority	indicator	source	notes
<i>Demand on Public Services</i>			
1	value of proposed and current growth-related capital improvements, by jurisdiction (e.g., sewer, water, roads, public facilities)	provided by counties and municipalities	suggested by Pinedale council member
2	traffic accidents by county ●	Wyoming Dept. of Transportation	
<i>Housing</i> (by county, unless otherwise noted)			
1	Housing availability: rental occupancy rates by category of housing ●		
1	Housing availability: existing stock and new construction of housing units by category ●	county assessor	
1	Housing affordability ●		What sources can provide annual data?
2	Temporary (operator provided) housing: worker-months occupied	operators	
<i>Social Impacts</i> (by county, unless otherwise noted)			
1	Crimes charged, adult and juvenile ●	U.S. Dept. of Justice, Uniform Crime Report	
2	Circuit Court cases		Highlight categories of particular interest: drug offenses, domestic violence, etc. Could provide more detail than Uniform Crime Report.
3	Quality of life survey		A quality of life survey would be most useful if administered on a regular basis, annually or semi-annually, based on a random sample of residents. The questions should be closed-ended and limited in number. The attitudinal

priority	indicator	source	notes
			<p>questions should be scaled (typically on a 5-point scale, “strongly agree” to “strongly disagree.”). An example: “Overall, energy development has benefited county residents.” These should be accompanied by demographic questions, including income, education, sector of employment, and years of county residence.</p>
3	Focus groups to address particular issues related to energy development		<p>A focus group is valuable for interpreting existing information (e.g., explaining changes in patterns of tourism and recreation) or eliciting suggestions for solving problems (e.g., how to accommodate growing housing demand by oil and gas workers). For issues related to energy development, focus groups should include both long-term residents and shorter-term oil and gas workers.</p>

Document history. Draft 1 prepared by Rob Winthrop, Senior Social Scientist, BLM – Washington Office, Division of Decision Support, Planning, and NEPA (WO-210); 202-557-3587. Draft 1a reflects comments from Roy Allen, Regional Economist, BLM Wyoming State Office, and Jeffrey Jacquet, Sublette County Socioeconomic Analyst.

References.

Bureau of Land Management (2007), Revised Draft Supplemental Environmental Impact Statement for the Pinedale Anticline Oil and Gas Exploration and Development Project, Sublette County, Wyoming.

Collins Planning Associates (2008), Sublette County, Wyoming: An Assessment of Current Housing Conditions.

Ecosystem Research Group (2008), Sublette County Socioeconomic Impact Study: Phase I Final Report.

Headwaters Economics, Economic Profile System: Profile for Sublette County, Wyoming (2007). URL: www.headwaterseconomics.org/eps.

Pinedale Anticline Working Group – Socioeconomic Task Group (2005), Report and Monitoring Plan.

Sonoran Institute (n.d.), Recent Growth Trends & Future Growth Projections for Sublette County 2004 to 2014.

Notes.

¹ The Economic Profile System application and database as well as county-level reports can be downloaded free of charge at www.headwaterseconomics.org/eps.

² Jeffrey Jacquet suggests that because most federal data will be two to three years old, the monitoring program may need to rely more on state data.. “The Wyoming Department of Administration and Information -- Economic Analysis Division and the Wyoming Department of Employment -- Research and Planning offer similar statistics that are typically only 6 months to 1 year old.”

³ Jeffrey Jacquet: “The BLM is ‘supposed to be’ providing yearly 10-year development projections for both the Anticline and the Jonah field. Could the monitoring program take into account these development scenarios and then project the impacts to the selected indicators? As well as track the changes in field development and the changes in the development projections – such as when “the bust” is scheduled to hit, etc...”

⁴ Roy Allen: “By including [production projections] in the monitoring plan, the impacted counties and communities would be able to project earnings, employment and population by 10 year increments that would then be updated on an annual basis based on industry submissions. They would also be able to estimate taxes and royalties on the same 10 year basis as a function of industry provided production estimates and these projections would also be kept current by sending out an annual request to industry for this information.”..

⁵ Comment by Jeffrey Jacquet re estimating number of oil and gas workers and dependents, by county: “The operators do not have this information. The gas field organization and employment residency is too complex and decentralized for the operators to provide this information. The only so-far proven way of obtaining these numbers is to estimate them, using workforce requirements on a per-well or per-rig basis, et cetera. The operators do not have qualified staff to provide these numbers. The monitoring program will have to work with the operators and various subcontractors to put together a methodology to estimate the workers and dependents accurately.”

⁶ Debraj Ray, *Development Economics*, Oxford UP, 1998, pp. 187-190.

⁷ The specialization index used in the Economic Profile System is calculated as:

$$\text{SPECIAL}_{it} = \sum_{j=1}^n ((\text{EMP}_{ijt}/\text{EMP}_{it}) - (\text{EMP}_{usjt}/\text{EMP}_{ust}))^2$$

Where, SPECIAL_{it} = specialization of economy in county i in year t

EMP_{ijt} = employment in industry j in county i in year t

EMP_{it} = total employment in county i in year t

EMP_{usjt} = employment in industry j in US in year t

EMP_{ust} = total employment in US in year t

n = number of industries

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