MONTANA STATE UNIVERSITY
College of LETTERS & SCIENCE

Department of Earth Sciences

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Mountains & Minds

Comments for the Record

To: Stillwater County Commissioners
From: Julia H. Haggerty, Montana State University
Date: 11/10/15
Re: Unconventional Oil and Gas Development

INTRODUCTION

I understand that landowners in Stillwater County, Montana, are submitting a petition to create a zoning district to regulate oil and gas activity within the district. Some of those landowners have asked me to make an oral presentation and to submit a written statement regarding oil and gas activity. I am providing a brief summary of the academic literature on local costs and benefits of oil and gas development. I offer that in my capacity as a faculty member in the Earth Sciences Department with a research focus on community experiences with natural resource development, especially energy infrastructure. A short biography is attached to this memo along with a set of color illustrations that support my presentation and discussion.

ANALYSIS

The evidence about outcomes of oil and gas development are likely less important than one simple fact. The most consistent experience of places that experience oil and gas development is the challenge in planning for it. Communities that can host productive conversations about oil and gas development when that development is in the distant future are way ahead of the game. Thus, I applaud the leadership shown by the community and Stillwater County in engaging in a proactive conversation.

That said, here are a few points to consider from the economic and planning literature that I follow closely in my professional capacity as a professor:

1. Local Impacts. Consider the map on page 2 of the attached document. A basic feature of horizontal drilling and hydraulic fracturing technologies and their use in unconventional or tight shales ("fracking") is that these technologies demand far greater inputs and activity to extract liquid fossil fuels than did conventional drilling. Exploration and Production company Continental Resources estimates that 48,000 wells will need to be drilled over several decades to extract up to 24 billion barrels of oil from the Bakken (half a million barrels per well). The North Dakota Industrial Commission estimates that 33,000 wells will be drilled in the next 15 to 25 years, with 5,000 of these coming in the next two years as companies rush to secure leases at low prices. By comparison, Alaska's Prudhoe Bay had produced nearly 11 billion barrels of oil from just 1,114 wells by 2006 (nearly 10 million barrels per well).

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Unlike mining or conventional oil and gas fields, shale drilling activities tend to be widely dispersed. Primary local impacts include increased truck traffic, road maintenance requirements, and water infrastructure required to service remote drilling locations. These impacts are especially intense for fracking-based oil and gas development, but are true to some extent for any new oil and gas development.

2. Economic Benefits. Second, the ability of many rural places to capture the benefits of new economic activity is fairly limited. As the oil and gas industry matures, drilling companies and support services are increasingly based out of "hub" cities, such as Rock Springs, WY; Billings, MT; Williston, ND and Oklahoma City, OK. Local employment opportunities are important, but tend to be fewer than promised (as many jobs are taken by workers who commute or live in temporary housing) and temporary. These observations are supported by the research from diverse locations, including Pennsylvania (page 3) and Colorado (page 4).

3. Benefits and Burdens. Third, poor regulations and fiscal policies often increase a community's exposure to risk of volatility. While economic benefits accrue across a wide regional economy, the costs of mitigating impacts, including road maintenance, water systems, public safety, and housing impacts, are borne primarily by the local government. State fiscal policies often do not provide adequate resources in the right time, location, and predictability to facilitate development during booms or provide lasting resources after production slows. Page 5 provides a good graphic of how this can look. Montana's current tax policies exacerbate these challenges, in part because the tax holiday delays revenue by 12-18 months after the start of production. In its 2015 report on the impacts of the Bakken on local economies and local governments, the Eastern Montana Impact Coalition notes that "this current growth cycle requires funding that is often more than local municipalities can provide. This is particularly challenging since energy driven impacts are hitting counties and communities years in advance of their receiving any significant revenues from the companies creating these impacts" report (see page 6 of handouts for citation).

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SUMMARY

All of these points should encourage a conservative approach to the potential benefits of oil and gas development, and hopefully, a willingness to continue to discuss and develop a proactive management strategy on the part of the local governments.

I am happy to respond to questions and emphasize that Montana State University has many resources to offer as you continue this important conversation.

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