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COUNTY COALITIONS AS IMPACT MITIGATION

Local Government Coordination in the Wyoming
Coalbed Methane Boom

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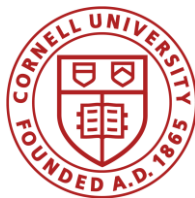


TABLE OF CONTENTS



INTRODUCTION	3
CASE STUDY APPROACH	4
Case study selection.....	4
Methods.....	5
CONTEXT & BACKGROUND	6
Background.....	9
DISCUSSION	12
Coalition Achievements.....	12
Information Exchange.....	13
Supporting Landowners.....	15
Creating Industry-Community Dialogue.....	16
Areas for Improvement.....	17
Community Engagement.....	19
Looking Ahead.....	21
CONCLUSION	24
REFERENCES	26

INTRODUCTION

The pace and scale of energy development in the United States over the past two decades poses significant challenges for rural landscapes in the American West. Between the year 2000 and 2014, U.S. energy production increased by 22.5% (U.S. Energy Information Administration 2015). The rapid rise in domestic production is the result of natural gas and crude oil extraction which have increased 35% and 49% respectively during this timeframe (U.S. Energy Information Administration 2015). Fast-paced energy development has widespread implications for host communities and landscapes. Since the year 2000, an estimated 50,000 oil and gas wells have been drilled in North America each year (Allred et al. 2015). The proliferation of oil and gas wells demands innovation and creativity around managing local impacts and implementing effective governance. Documented changes resulting from extraction concern the local ecology (Entrekin et al. 2011; Nasen et al. 2011), economy (Bekkedahl 2011; Brown 2014; Jacobsen and Parker 2014; Kinnaman 2011), social landscape (Brown et al. 2005; Jacquet and Stedman 2013; Measham et al. 2016; Weber et al. 2014), and land-use (Bekkedahl 2011; Drohan et al. 2012).

This report focuses on how communities in the Powder River Basin (PRB) of Wyoming worked to respond to the challenges and opportunities of a fast-paced episode of energy development during a rush of coalbed methane (CBM) (also called coal seam gas or coalbed natural gas) development from 1998-2008. In response to emerging constituent concerns prompted by the CMB boom, a group of county governments established the Coalbed Methane Coordination Coalition (CMBCC). This Coalition was a nonpartisan attempt to share information and reduce inefficiencies in planning and revenue management. Given that local governments often need to collaborate when energy development impacts cross jurisdictional boundaries, this case study seeks to document the effectiveness, achievements, and areas for improvement in the CMBCC's record with a goal of assisting future energy communities.

CASE STUDY APPROACH



This case study is part of a larger research project called *Escaping the Resource Curse: Developing Governance and Investment Frameworks to Leverage the Benefits of Energy Development for Rural Prosperity* funded by a United States Department of Agriculture (USDA) (USDA NIFA Project #2014-05498, see www.montana.edu/energycommunities). The aim of the entire project is two-fold: (1) to evaluate how rural communities and local stakeholders in agriculture assess the costs and benefits of energy development; and (2) to identify the local share of the economic costs and benefits of oil and gas. The project involves a series of case studies focused on local efforts to mitigate oil and gas impacts in agricultural and rural development contexts in Wyoming, Montana, North Dakota and Pennsylvania.

CASE STUDY SELECTION

The case study was selected based on preliminary research that included review of relevant academic literature, government documents and local media analysis. The project's advisory board representative from the area helped to organize six key informant interviews with county government representatives, landowners, and agricultural stakeholders in Sheridan and Buffalo, Wyoming. The CBMCC emerged as a worthy topic of study based on the content of preliminary interviews and related research. Key informants suggested that the CBMCC was as an important local government tool that could be replicated elsewhere.

In order to understand how the CBMCC could be an innovative model for other energy communities, this research asked:

How did the CBMCC function to increase the effectiveness of local governments and address the impacts of CBM development on landowners and community members within the Basin?

METHODS

We pursued a mixed methodology to answer this research question. First, media analysis was conducted to gather background information about the CBM activities in the PRB and how the Coalition was regarded in the press. Next, twelve semi-structured interviews were conducted with a diverse sample of vested stakeholders including local policymakers (retired and current), agency officials, and industry representatives that were involved and had knowledge of the Coalition (Table 1). Those listed as ‘involved with Coalition, but not voting members’ include consultants that drafted educational reports for the CBMCC or were invited to present on a particular topic at Coalition meetings, for example. Participants were deliberately recruited via purposive and snowball sampling to ensure the sample had relevant expertise. Each interview lasted between 25 and 90 minutes. Interview questions can be grouped into four thematic categories: (1) experiences with the CBMCC; (2) goals and functions of the CBMCC; (3) achievements of the CBMCC; and (4) ways the CBMCC could have been improved. The interviews were transcribed and the manuscripts manually coded.

Participant Description	Number of Participants in Sample (n=12)
Involved with Coalition, but not voting members	5
Current/Former County Commissioners (members)	4
Coalition Leadership (members)	2
Industry Representatives (non-voting members)	1

TABLE 1. INTERVIEW SAMPLE

In addition to qualitative interviews, document analysis was a key component of the research methodology. Document analysis, “requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge” (Bowen 2009, 27). Document analysis is particularly well-suited to case study research (Bowen 2009) and mixed-methods research to foster triangulation (Bowen 2009; Patton 1990). Document analysis is relied on in order to analyze institutional reports, press releases, letters and memoranda, various public records, and legal cases. Documents relating to the CBMCC including founding documents, meeting agenda and minutes, budgets, industry operations and production amounts, and educational materials were gathered from the Sheridan County Commissioners Office and the Lake DeSmet Conservation District. After analysis of the documents and interview manuscripts, results were compiled in this technical report.

CONTEXT & BACKGROUND



The PRB is located in northeast/central Wyoming and extends northward into southeast Montana (Figure 1). Within Wyoming, the PRB encompasses all of Campbell County and parts of Sheridan, Johnson, Converse, Crook, Weston, and Niobrara Counties. The Yellowstone River lies to the north, the Laramie and Casper Mountains make up the Basin's southern boundary, and the Big Horn Mountains are to the west (Stearns et al. 2005). Covering roughly 20,000 square miles of semi-arid grasslands used primarily for livestock production, the PRB experienced rapid and intensive coalbed methane development from 1998-2008. After the economic downturn and subsequent decline in the natural gas market, over 4,000 abandoned wells remain on farms and ranches in Wyoming (Richards 2017), along with considerable uncertainty about who will take responsibility for well and land reclamation. For context, CBM accounts for 9% of U.S. natural gas production and 25% of U.S. CBM is produced in the PRB (Thakur et al. 2014). In fact, the PRB is the third most productive CBM play in the U.S. after the San Juan Basin of New Mexico and the Raton Basin of Colorado/New Mexico (National Research Council 2010).

LOCAL GOVERNMENT COORDINATION IN THE WY COALBED METHANE BOOM

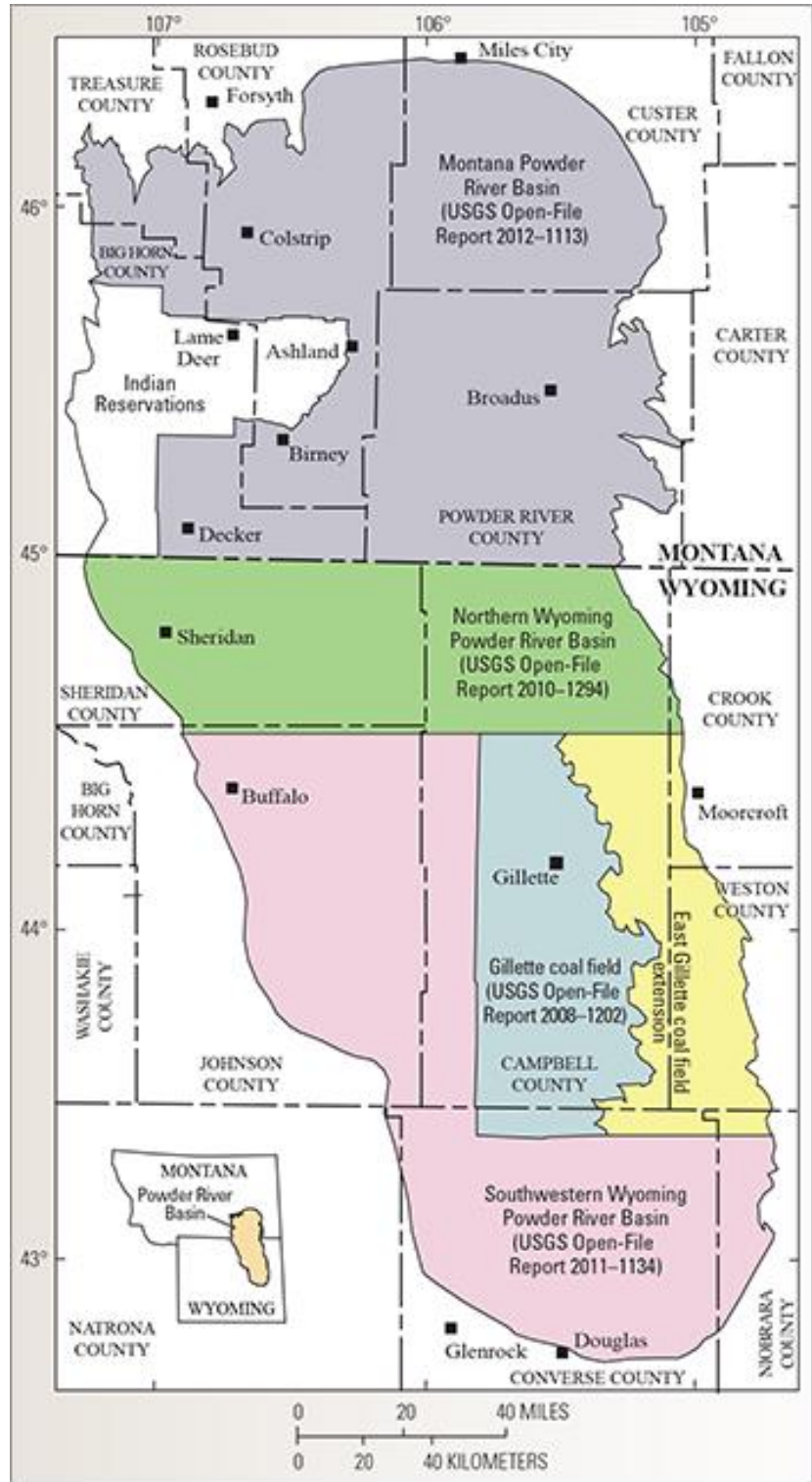


FIGURE 1. MAP OF POWDER RIVER BASIN (SOURCE: USGS 2015)

Ranchers have long been aware of the presence of gas in shallow water wells in the PRB (Ayers 2002). However, it was not until the 1970s that exploration began into the basin’s coal resources. By the late 1980s and early 1990s, smaller coalbed gas projects were initiated (Moore 2012), incentivized by the Section 29 tax credit. None were wildly productive until 1997 when, “the effects of prolonged dewatering by mine and coalbed gas operators were realized in increased gas production rates and reserves, and the potential of the play was recognized” (Ayers 2002, 1873). Operations quickly intensified and up to 3,655 wells were drilled in the Basin in 2001 alone (Ayers 2002).

The boom of the late 1990s was prompted by a number of outside factors including: (1) interest in coal degasification by the U.S. Bureau of Mines to prevent underground mining explosions; (2) the Section 29 tax credit that resulted from the 1970s OPEC oil embargo; (3) research funding provided by the U.S. Department of Energy (DOE) and the Gas Research Institute (GRI); and (4) research conducted by operating firms (Ayers 2002). The rapid increase in CBM production brought about new challenges to the host counties and prompted the affected county governments to form the CBMCC. Ten years after the initial boom, the collapse of the dry gas market resulted in resource bust, with steep declines in production (Figure 2).

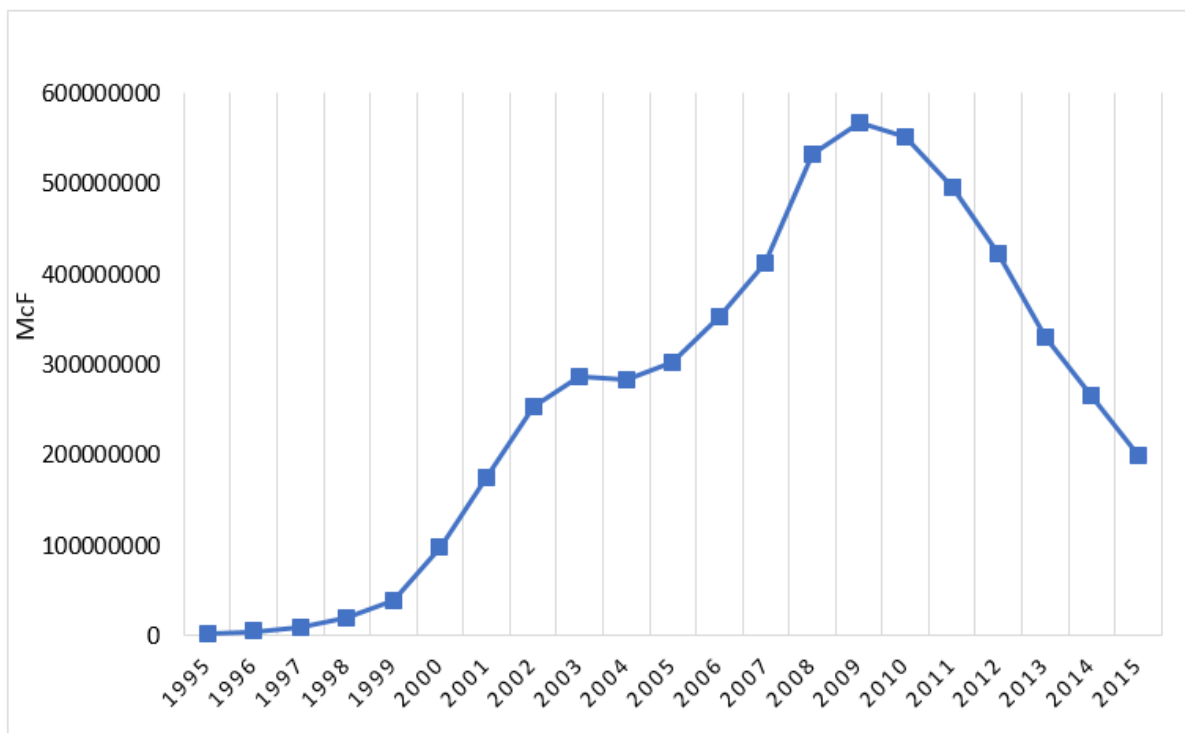


FIGURE 2. WYOMING COAL BED METHANE PRODUCTION (SOURCE: WYOGCC)

BACKGROUND

The CBMCC was formed in the year 2000, approximately two years after the CBM boom began. By this time, PRB counties were experiencing rapid and intense CBM development and the challenges that accompany such rigorous production. Challenges most often noted by study participants include traffic, dust abatement, road maintenance, and water storage and quality concerns. It quickly became clear that PRB policymakers would face new demands from landowners and community members in their respective counties. As stated by one member of the Coalition:

It was fairly important at the time because you had a number of counties that were dealing with this significantly fast-paced energy development. And a number of these counties were dealing with a lot of the same issues and it made sense to find some forum for them to get together and be able to talk about these issues and compare notes, figure out what somebody else was doing that might work well for them and basically become more of a coordinated effort.

The establishment of the Coalition began with the formation of a Joint Powers Board (JPB) with the CBMCC being the corresponding Joint Powers Agency. In Wyoming, under WY Statute 16-1-106, “An agreement pursuant to this [Wyoming Joint Powers Act] may create a joint powers board to conduct a joint or cooperative undertaking. A joint powers board shall consist of not fewer than five members, all of whom shall be qualified electors of the counties in which the board operates.” By forming an official JPB, the Coalition was allowed to, “[w]ithin the limits of its authorized and available funds, ... employ technical, legal, administrative and clerical assistance and engage the services of research and consulting agencies. In the performance of its duties a joint powers board may utilize the services of any officer or employee of a participating agency with the approval of the governing body of the agency.” The board met monthly in centrally-located Johnson County. The Coalition’s initial budget was \$165,000, with 50% of the funding allocated by the State of Wyoming and the remaining funds provided by member counties. The State of Wyoming, specifically the Governor’s Office, was considered an ‘advisory member’ of the Coalition.

The original members of the Coalition included Sheridan, Campbell, Converse, Johnson and Carbon Counties and the Lake DeSmet and Campbell County Conservation Districts, with support from the State of Wyoming. Conservation districts are local units of government that take on natural resource management programs at the local level under state mandates. Coalition membership changed over time (Figure 3). In late 2002 Campbell County left the Coalition though their Conservation District remained a part of the CBMCC. By 2005 Converse County was no longer participating in the Coalition and

LOCAL GOVERNMENT COORDINATION IN THE WY COALBED METHANE BOOM

Sweetwater County had joined. One individual from each entity (i.e. County or Conservation District) served on the Coalition’s JPB as voting members.

A coalbed methane coordinator (title later changed to director) was hired in late 2000 to serve as chief advisor to the CBMCC and act as a liaison between the Coalition and agency personnel, landowners, industry and the press, among other related tasks. While one coordinator was initially appointed, a second co-coordinator was hired soon after to meet growing demands. Upon reviewing the Coalition’s founding documents, no mission statement is listed. However, a former Coalition leader and study participant reported that the Coalition operated under the mission, “rational development through effective communication.” In addition to the participation of Coalition members, participation of many non-voting members, many of which were consultants and industry representatives, were essential to facilitate communication. Industry participation promoted open dialogue between operators and policymakers as well as a space for local officials to become better educated about CBM development and associated impacts directly from industry sources. In this way, the Coalition avoided misinformation and tried to work cooperatively with producers.

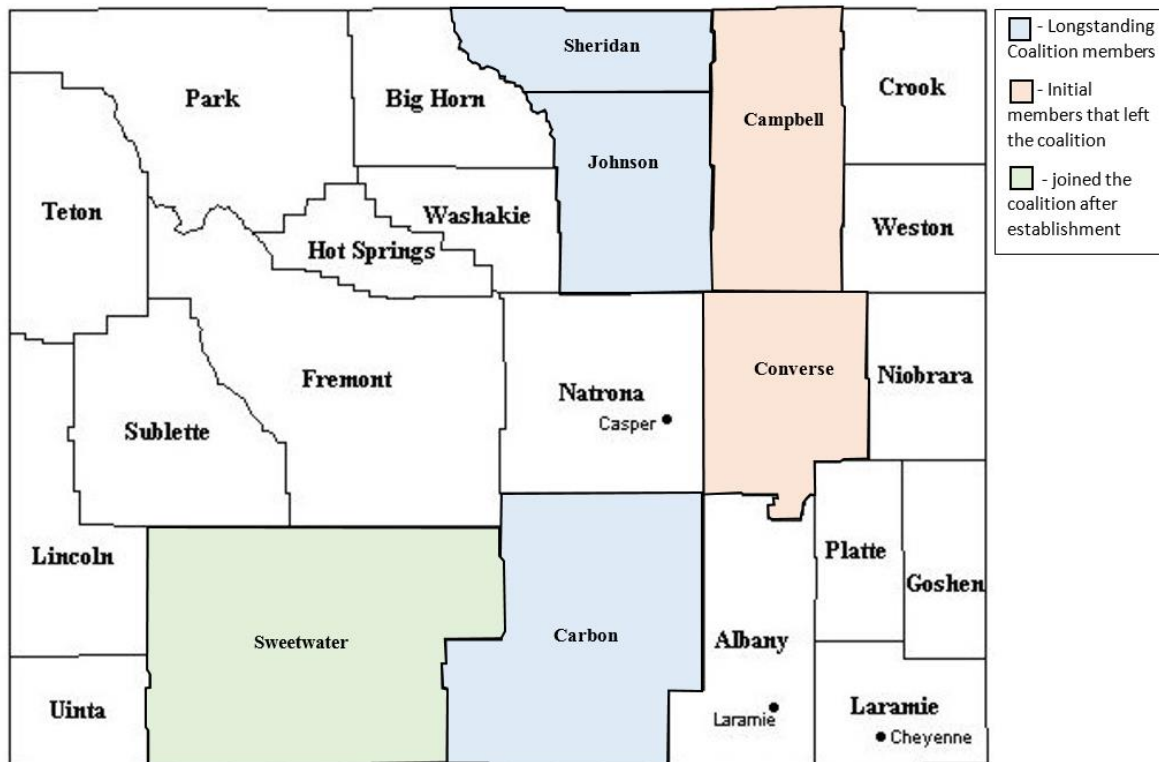


FIGURE 3. CBMCC MEMBERSHIP BY COUNTY

As described, the Coalition included County Commissioners, and other agency personnel as well as industry representatives. In order to collaborate effectively, from the outset the Coalition took no specific stance (i.e. environmental advocacy, industry advocacy etc.) on CBM development. Instead they set out to remain impartial. However, over the course of this research the Coalition's objectivity came into question. Some interviewees reflected on the Coalition's objectivity favorably and when asked if they believe the Coalition acted impartially they replied:

I think they did. I mean there's...you can probably find some instance of one time they went one way or one time they went the other way. All in all, they did.

I'd have to say from my perspective it seemed like a very balanced group.

However, this opinion was not agreed upon by all participants. When asked if the Coalition acted impartially and objectivity, one respondent said:

No, I don't think so. I think they took all comers and they listened to all... every comment, but they were actually put together to protect themselves and the counties they represented. Whatever entity they represented, the Coalition and the members, they'd listen to everybody and they'd consider everything but at the end of the day... they were there to protect their interests. And their interests were the counties. So there was no mistake about that.

In fact, in 2002 a large, well-known industry operator wrote and submitted a formal letter to the Coalition withdrawing their support stating, "We have difficulty supporting CBMCC under its current structure. [Name of company redacted] feels that the group has become more of an advocacy group than an information exchange." While illustrating that the Coalition was not viewed as impartial by all parties, such examples must be considered critically as this letter was the only documentation of withdrawn support that could be located. Moreover, only one of the twelve interview participants spoke critically of the Coalition's objectivity.

DISCUSSION

IV

The CBMCC was formed hastily in 2000, prompted by pressing local issues and urgent requests for information. Although the Coalition’s structure and purpose were clear from the outset, the hurried nature of its formation did not allow for lengthy, detailed planning discussions. Therefore, it is advantageous now to encourage CBMCC participants and members to reflect on the Coalition’s activities, accomplishments, and shortcomings. By doing so, communities and local governments facing future energy development can learn from the Coalition’s past endeavors.

COALITION ACHIEVEMENTS

The utility of the CBMCC can be evaluated by identification of its most notable achievements. Each interview participant was asked, “In your opinion, what do you think the Coalition accomplished and what were some of its greatest achievements?” Responses fell into four categories, listed here in order based on frequency of mention: (1) education and information exchange; (2) landowner support; (3) local government and industry collaboration; and (4) development of materials (i.e. well location maps) (Table 2).

Achievement	Frequency (n=12)
Education and Information Exchange	10
Landowner Support	5
Local Government and Industry Collaboration	4
Development of Materials	2

TABLE 2. CBMCC TOP ACHIEVEMENTS BY FREQUENCY

INFORMATION EXCHANGE

Education and information exchange were cited most often as the Coalition's greatest achievement. After all, the Coalition was established with these two goals in mind. In the late 1990s, at the beginning of the CBM boom, each producing county was facing new and mounting challenges. The Coalition provided opportunity for county policymakers to come together to share information, educate themselves, and become more knowledgeable for the betterment of their county. According to a Coalition non-voting member:

They accomplished that goal, it became a forum for these counties to get together and talk about these energy issues and help others understand how they were addressing them in their individual county and learn from things people were doing in the other counties.

Information exchange assisted all counties as each did not have to become an expert on every facet of CBM development. In light of this, the CBMCC was able to capture two tangible benefits as a direct result of information sharing: (1) collection of industry money to fund road maintenance; and (2) tax revenue generation for host counties.

Example: Road Impact Abatement

One of the most disruptive challenges that accompanied CBM development in the PRB was traffic. The remote, rural geography of the PRB exacerbated this challenge as county roads were not designed for heavy use by tractor trailer trucks. This was especially problematic as counties did not have adequate funds to address the increased road maintenance required. Higher traffic volumes not only damaged roads, but also created dust abatement issues. In the PRB, many of the roads are dirt or gravel. The region itself is semi-arid, only receiving between 10-20 inches of rain annually (Wyoming Climate Atlas 2004). Lack of moisture and high traffic volumes increased the presence of dust. Air quality was at times a great concern (Figure 4). This was an issue present in all CBMCC counties, and motivated Coalition members to discuss potential solutions. The CBMCC decided to demand industry operators assist in funding county road maintenance. As stated by a Coalition non-voting member:

The Coalbed Methane Coalition did in fact get with several of the principal producers and say, 'here we're going to put some of our money where our mouth is. Here's a fund that ...we want you to add to in various road situations so we can continue to enhance and improve our roads and keep our dust down because of

your activities'. And they did. They were successful in advocating for that and receiving funds from the different companies.

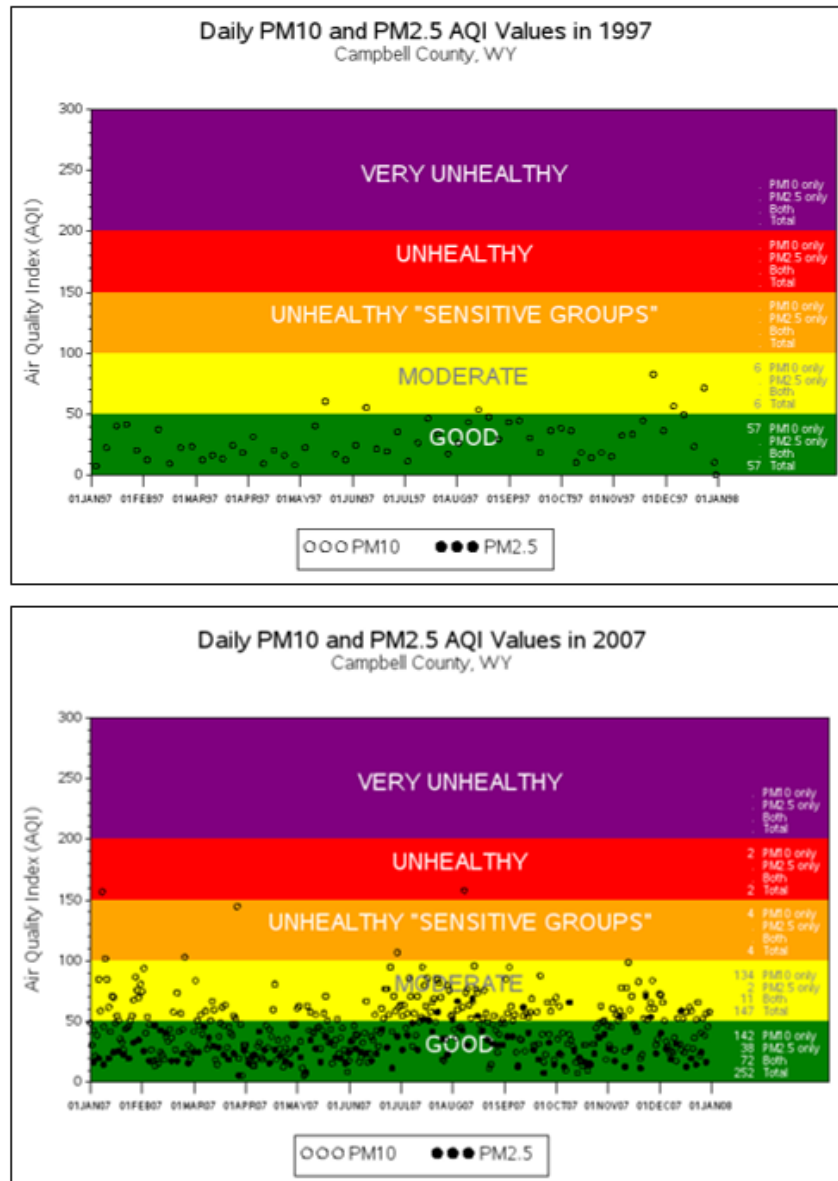


FIGURE 4. PARTICULATE MATTER IN CAMPBELL COUNTY IN 1997 AND 2007 (SOURCE: US EPA)

Participating industry operators paid an amount proportional to their use of the roadways. For example, in Johnson County, Schoonover Road was one of the most heavily used county roadways by CBM operators. According to a Coalition leader:

I remember Johnson County, [industry operators] calculated what percent of the road they were using based on their development. And then they all got together and said, 'okay I've got 26% of it, I've got 17% of it...' and they actually then figured out how much for Schoonover Road. Which is the primary, one of the primary roads in Johnson County through the CBM fields...[the funds provided] were proportional depending on their development.

Acquiring industry money to assist with road maintenance costs was especially helpful for county governments because of the lag time between when CBM development began and when the counties began to receive increased tax revenue from industry. The industry funds allowed counties to not fall as far behind on road upkeep while awaiting taxes from producers.

Perhaps more importantly, the promotion of information exchange at the Coalition meetings encouraged county officials to become more fluent in tax policy. A former County Commissioner explained that Sheridan County officials took the lead on researching tax policy to ensure counties were receiving all tax revenue that they were able. In doing so, policymakers learned that many CBM operators were buying most of their required equipment and supplies in only one county although their operations spanned the entire basin. This was problematic for the other counties as they were not receiving the sales tax revenue although they were still burdened by the operations. Once aware, county officials began informally campaigning for operators to purchase all required equipment and supplies in the county in which their operations were located, if possible. This enabled each county to capture wealth from industry to address the challenges brought about by CBM extraction.

SUPPORTING LANDOWNERS

Second to education and information exchange, landowner support was mentioned as a notable achievement of the Coalition. In the early boom days of CBM, County Commissioners as well as landowners were starved for information and educational materials. The Coalition became an organization that landowners could turn to for assistance and advice. When asked what the CBMCC achieved, Coalition members stated:

Helping the landowners have a voice, probably more than anything else.

I think it accomplished its goal which was to be a resource for people to go to...I think they were a great resource for people to go to.

I think we accomplished our objectives which was to keep the Commissioners informed of development issues and I think we were a good sounding board for a lot of landowners.

The Coalition's outreach to landowners and the public will be discussed further in the Community Engagement section of this report.

CREATING INDUSTRY-COMMUNITY DIALOGUE

Next, local government and industry collaboration was regarded as an accomplishment by nearly half of the interview sample. Industry attendance at Coalition meetings promoted open dialogue. In regards to Coalition achievements, one former County Commissioner and CBMCC member explained:

Being able to develop a relationship with the companies and the companies having a formal place to come and talk where each county was represented...I thought it worked pretty well and then you could come together and you could say in our county we're seeing these things. You'd have your industry rep there and they are going oh, okay. But then you got to hear the industry side too.

Moreover, the attendance of industry representatives and other officials at Coalition meetings helped to avoid misinformation spreading throughout the Basin. An industry representative and Coalition non-voting member explained:

When you have development going as quickly as the Powder did the information often was not correct that was out there. The people were...the rumor mill in a small community...a lot of things happen at the coffee shop and things would often get off-kilter and information was not exactly correct but it built momentum because it was said so many times it must be true, right? So the Coalition became an important place to put together good information, factual information, and try to get it out to everybody.

The presence of industry representatives at the Coalition's monthly meetings facilitated communication between local policymakers and industry and allowed for problem solving amongst all parties. Without the Coalition, it is highly unlikely that industry and local County Commissioners, as well as conservation district officials, would get together with such regularity.

Lastly, one participant mentioned that the Coalition's creation of educational and informational materials was a great accomplishment. The Coalition created PRB well

location maps and consolidated well data for ease of use. A former County Commissioner and CBMCC member said:

I think one of the biggest [accomplishments] was being able to develop mapping to show where those wells were, latitude, longitude and location.

In addition, the Coalition employed a consultant to research and draft a report on the socioeconomic impacts of CBM development on PRB counties. It is clear that the Coalition achieved much of what it set out to do. By sharing information, supporting landowners, collaborating with industry and developing original materials, the CBMCC became a progressive group that worked for what was best for their respective counties. However, with the achievements come areas that require improvement which is the focus of the following section.

AREAS FOR IMPROVEMENT

To assess this Coalition as a model that could potentially be replicated in emerging or existing energy communities, achievements as well as possible improvements must be considered. Therefore, each interview participant was asked, “How do you think the Coalition could have been improved?” Of the twelve interviewees, seven either offered no suggestions making statements like, “I thought it was pretty good the way it was” or could not recall potential improvements due to the time that has passed since the Coalition was active. One participant responded:

I’m sure there was, it’s just been too long...I’m sure at the time I could’ve nitpicked and said I wish we would’ve done this different or this better, but those brain cells have long moved onto something else.

The fact that the majority of participants had no suggestions for improvement is revealing unto itself. However, five participants did express sentiments around Coalition improvements that deserve consideration. Interviewee suggestions for improvement fall into five categories (Table 3).

Suggestion for Improvement	Frequency (n=5)
More Post-Development Emphasis	3
More Dialogue Around Sustainability	1
Earlier Establishment	1
More Industry Participation	1
Stronger Partnership with the State	1

TABLE 3. WAYS TO IMPROVE CBMCC BY FREQUENCY

The most commonly mentioned suggestion for Coalition improvement was that the Coalition should have put more emphasis on post-development issues. Post-development issues include economic instability, reclamation and changing population, for example. Three participants articulated that the Coalition had a limited focus on post-development challenges (which the PRB is currently facing). The Coalition sought to deal with the most pressing issues, of which there were many, during initial production. However, to some the CBMCC neglected to look ahead, plan for and learn of what was to come after the eventual (and expected) CBM downturn. A Coalition leader stressed that the Coalition could have been enhanced by adopting a more forward-thinking mentality:

And what I've learned in other places that I work now is that the post-development emphasis has to be there at the very beginning.

Moreover, another interview participant and Coalition non-voting member stated:

In the beginning the excitement level was high, and the wants of everybody were high. Towards the end, we didn't meet once every month, we met once a quarter. And I think there was an opportunity lost to be collaborative...I think we should've met on a more regular basis towards the end.

Post-development issues could have been discussed in greater depth at regular Coalition meetings if they continued to be held monthly instead of quarterly at the end of the CBMCC's tenure. Although, as stated by a Coalition leader, it is helpful to plan for post-development issues from the beginning, this was difficult to accomplish considering the many urgent problems that required attention during initial development.

The four remaining suggested improvements were each only stated by one interview participant. First, a Coalition leader explained that, "It would've been useful if we had been able to establish meaningful dialogue regarding sustainability." This recommendation reinforces the former suggestion regarding post-development consideration. However, the limited time spent looking ahead is not exclusive to the CBMCC or the PRB. In fact, it is quite common that communities facing energy development get bogged down in the pressing issues and neglect to plan for the future. Ultimately, this is not only a shortcoming of the CBMCC but happens quite often in overwhelmed energy communities that are conditioned to boom-bust cycles.

Next, a Coalition member and former County Commissioner mentioned that the activities of the Coalition could have been improved if the group had been established earlier stating, "The one thing is if they would've been in place five years before the development

hit.” This suggestion is obviously much harder to implement as, after CBM-related challenges present themselves, it takes time to design, organize and formally establish a county government Coalition of this kind. The two remaining recommendations for improvement concern Coalition partnerships with industry and also with the State of Wyoming. One Coalition member expressed that:

I think the purpose was communication and information and it would've been better if we had figured out a way to have more industry participants...One of the reasons [that was difficult] was because of industry itself. You think the industry they all get together and chat with each other, no! And they would come to the Coalition meetings and they did not want to tell each other [their] secrets. I mean they might've not minded telling us something but they didn't want their competitor sitting there. So I don't know how that could've been more effective but there are ways that it could've been improved.

Moreover, a Coalition leader stated, “I think it would've been useful if we could've partnered a little more with the State.” Stronger partnerships with both industry and the State could have benefitted the Coalition's efforts to exchange information and support landowners. State agencies like the Wyoming Department of Environmental Quality (DEQ) are influential in the energy development and subsequent reclamation phases. By partnering more closely with the state, perhaps there could have been more open communication between counties and state agencies involved with CBM. Stronger partnerships would have also aided the Coalition's goal of information exchange. In retrospect, interview participants were able to reflect on the Coalition's activities and provide many useful suggestions for improvement that other energy communities should carefully consider.

COMMUNITY ENGAGEMENT

As discussed when outlining Coalition achievements, landowner support and community engagement were priorities of the CBMCC. This priority was operationalized in two ways: through visits with landowners and by hosting public meetings. The greatest demand for landowner and community support occurred during the first few years the Coalition was in place. This is relatively unsurprising as this was a time of rapid development and landowners and community members sought information about the energy production and changes taking place on their properties and within their counties.

According to a Coalition member, the primary focus of the public meetings was to “try to educate people and make them aware of things that could happen”. A Coalition non-voting member explained further that, “[meetings] were open, conspicuous...and

welcome to the public.” However, these public meetings provided more than just information to attendees. The meetings provided opportunity for landowners to conference with one another about their negotiations and contracts with industry. Landowners could then learn about what their neighbors had been offered to ensure they were not being taken advantage of by industry operators. One Coalition member explained:

There were tons of public meetings. You know...some landowners were part of it and some benefitted even though they may not have been part of the Coalition. I saw people sharing some of their agreements and things and it was...If I made a deal with a company, and you and I were neighbors, you found out what kind of deal I got so you could get an equal deal.

Other interview participants recalled public forums being held including one that was organized as a panel in which the Governor of Wyoming was a panelist. A Coalition member and former County Commissioner stated, “I remember one of them it was really cool. They did a panel. The Governor was on it and it was really well attended. It had a lot of industry people...It was really well done.” Based on the interview data collected, public meetings took a few different forms and offered a variety of resources to community members including information exchange, chance for landowner-to-landowner discussions and opportunity for connection with state- and county-level government officials. Conversely, the Coalition also provided one-on-one conferencing with landowners offering the community both individualized and collective information sharing and advice.

After the CBMCC was established and word got out to the public about their existence, landowners quickly sought out the knowledge and know-how of the Coalition. In these early years of the CBMCC, Coalition leaders spent most of their time fielding phone calls and visiting with concerned landowners. In this way the Coalition provided a valuable service to landowners and community members who did not know where else to turn for accurate information and reliable advice. Coalition leaders explained:

[Landowners] would call once we got on the radio and started doing interviews and stuff...then people started calling just directly. Because we got word-of-mouth and people knew where we were at.

People would get a hold of us and we'd go out to their ranch or their little farmstead and what not and we'd talk to them about what their concerns were and their issues and we talked to them about who they could get a hold of and why something was right or wrong.

The CBMCC was able to engage with individual landowners as well as the broader public through a deliberate two-prong approach. This approach seemed to be effective as, after 10 years of activity, the Coalition disbanded in 2010 as most community members had become well informed regarding CBM and the CBMCC's utility waned.

In addition to community engagement with landowners, the civic engagement with state-level policymakers among the members of the Coalition was noteworthy. As a function of its establishment, with support from the Governor's office, the members of the Coalition, County Commissioners in particular, were able to regularly engage with the Governor's office staff and legal counsel. One Coalition member stated that they were given a phone number to the Governor's office that they could call at any time with questions, concerns or otherwise. This access and opportunity to engage with state-level decision-makers empowered the Coalition's members. One former County Commissioner articulated that the knowledge alone that they had the support of and contact with the Governor's office helped to make the CBMCC feel more effective.

The following section provides an overview of how the CBMCC was disbanded and a look ahead at the issues facing the PRB and how the Coalition could have potentially been re-purposed to address present-day challenges.

LOOKING AHEAD

Before looking towards the future, it is important to outline the reasons as to why the Coalition disbanded. In 2008, the Coalition was exclusively supported by funding from member counties. In the final years of the boom and after the CBM downturn of that year, the CBMCC had less utility and counties no longer could financially support a Coalition that was becoming less useful. The information that was in such high demand in the late 1990s and early 2000s had largely been shared and was no longer desperately sought after by local policymakers and agency officials. The counties had most of the information they needed and the CBMCC was no longer 'good value' for the county funds it needed to operate. One industry representative and Coalition non-voting member described:

I think at some point these organizations like this, it had real need, things were happening so frantically. I think as any sort of development gets more mature I think the need for these types of activities probably decreases because everybody finds the status quo...I think you're going to get to the point...where County Commissioners or some of these elected officials that have so many meetings on their plate anyway that they would say, 'I'm not sure this is providing the same value it did when we were going 190MPH'.

Another participant, a Coalition member and former County Commissioner, made a similar statement:

I think it was one of those things, it was put into place at the beginning of the development to handle issues, problems and be a resource. As the development progressed a lot of those things got worked out, people became knowledgeable. There wasn't this crash course of what do we do. I think it was one of those that fulfilled its purpose and the [coalbed] methane development basically came to a halt and once they did that there wasn't a whole lot of reason for them [the CBMCC] to stay in business.

A subsequent interview question considered the impacts of the CBMCC's dissolution. Participants were asked, "Has anything happened since the Coalition disbanded that made you wish the CBMCC was still operating? How could it still be useful?" Only two interviewees believed the Coalition could have been re-purposed to still provide a valuable service to the counties. A Coalition leader made the following statement in response to the preceding question, "But did I think towards that end that [the Coalition] was a useful, vibrant entity? No. I think its natural life cycle had pretty well terminated." In general, the sample believed that the Coalition had petered out due to declining production and lessening demand for educational resources and information.

However, two participants had ideas for how the CBMCC could have been re-purposed into a useful organization. One Coalition non-voting member explained that the CBMCC's mission should have broadened and the group should have re-messaged and re-marketed themselves as a natural resource development coalition. That way there would still be regular opportunities for county government officials and conservation districts to communicate about any natural resource related issues or opportunities in the region. A Coalition leader suggested that the Coalition stay in existence to focus specifically on the socioeconomic challenges brought about by the CBM bust:

I tried to tell them they should probably keep, whether they kept us around or not, keep the organization together so that you can utilize it after determining what to do during the bust...now that energy development has taken a different direction, what can the communities do to help those people out because now, suddenly, you have hundreds of people unemployed essentially overnight...So I think that the Coalition could have stayed in touch with some of this stuff, utilize their joint powers board capacity to do that, but they felt it was time to disband.

It seems as if there may have been use for the Coalition, in a slightly different form, after extraction slowed but interest and motivation among members waned. On the whole,

LOCAL GOVERNMENT COORDINATION IN THE WY COALBED METHANE BOOM

participants felt it was unlikely that they could have breathed new life into the CBMCC. After such fast a furious activity over the course of the previous decade, the Coalition could not weather the CBM bust.

CONCLUSION



Undoubtedly, the Coalition provided an effective governance strategy that assisted landowners and community members during what was a new and very rapid CBM boom. By facilitating regular communication between county governments, industry, conservation districts and the public, the CBMCC helped to better equip those in the region to face the challenges brought about by CBM development. The CBMCC had a decade of success in part because of their innovation in putting together a Coalition of diverse members that operated as objectively as possible. Based on the research, the Coalition's achievements greatly overshadow potential improvements, notably their success at information sharing and community outreach. At the conclusion of each interview, participants were asked, "What suggestions would you make to others, in a similar position to you, who may face rapid energy development in their communities?" Responses included the following:

To look down the road and say, 'what are we going to do with this opportunity that has been given to us now', and to believe, despite how no one ever wants to believe it, is that it will be over...to insert from the beginning some kind of awareness that after the party is over somebody has to pick up the paper cups.

Be proactive. They need to be proactive, because if they even think that there's some type of development...that's going to bring a lot of people, a lot of vehicles, a lot of money...to try to get ahead of it...So my response would be sit down, think about what all possible things could be influenced based on development.

The number one things would be points of contact. Who is doing what and how do I get a hold of them. It sounds simple, but I want to know who the top stick on the wood pile is, I want to know who the decision maker is...I want to be right at the table front and center at the very first meeting before the activity starts. And you only can do that if you're in the permitting process...if I give any advice...it is early on, if you're in the know of what's going on through the permitting process, you can make those contacts early enough to make a decision and also to make a difference in a positive way.

I think first off is having some sort of organization like the Coalition provided value. I think that's lesson number one, promoting communication is always a good thing...You need a diversity of organizations, hopefully some that are a little bit more experienced and some that are learning.

I guess it would be not to reinvent the wheel but look at what other communities have done would be my first advice. Go to somebody that's been there, done that and use them as a resource and then draw from that. But when it comes at you and you're sitting there with the deer in the headlights look don't try to figure it out on your own. Go to where it's already been done.

Locate all your resources as quickly as possible. Find out what your resources are. State agencies, Federal agencies, County, everybody and find out what's available.

The advice given by participants can be distilled into one general suggestion; bring stakeholders impacted by development together. This in-depth investigation into the CBMCC confirms that bringing stakeholders together can lead to tangible and meaningful positive changes in host communities. The assembly of diverse stakeholders in a nonpartisan environment enables sharing of resources and contact information, exchange of lessons learned, communication among landowners and between industry operators and local stakeholders. Through these exchanges, misinformation can be avoided and local governments can assist one another and receive assistance (financial and otherwise) from industry. As with the Coalition, this can be avoided if diverse stakeholders are brought together regularly to stay informed about the development in their community and plan collectively for anticipated issues and opportunities. Despite the Coalition's best efforts, the PRB is still facing challenges today, specifically around reclamation. But post-development issues were never the CBMCC's top priority, although, in hindsight, some participants had wished they were. Learning from and analyzing the activities and efforts of the Coalition have helped to illuminate what is truly most useful to local policymakers, agency officials and the public in energy communities – and that simply is the importance of creating a structured space for stakeholders to come together and collectively learn from one another.

REFERENCES

- Allred, B. W., W. K. Smith, D. Twidwell, J. H. Haggerty, S. W. Running, D. E. Naugle, S. D. Fuhlendorf. 2015. Ecosystem services lost to oil and gas in North America. *Science* 348 (6233): 401-402.
- Ayers, W. B. 2002. Coalbed gas systems, resources, and production and a review of contrasting cases from the San Juan and Powder River Basins. *The Association of Petroleum Geologists Journal* 86 (11): 1853-1890.
- Bekkedahl, B. 2011. The good, bad, and the ugly: Bakken development impacts. *Legislative Assembly Special Session* 7 November 2011.
- Bowen, G. A. 2009. *Document Analysis as a Qualitative Method*. *Qualitative Research Methods* 9 (2): 27-40.
- Brown, J. 2014. Production of natural gas from shale in local economies: A resource blessing or curse? *Economic Review*: 5-33.
- Brown, R. B., S. F. Dorius, and R. S. Krannich. 2005. The boom-bust recovery cycle: Dynamics of change in community satisfaction and social integration in Delta, Utah. *Rural Sociology* 70 (1): 28-49.
- Drohan, P.J., M. Brittingham, J. Bishop, and K. Yoder. 2012. Early trends in landcover change and forest fragmentation due to shale-gas development in Pennsylvania: A potential outcome for the Northcentral Appalachians. *Environmental Management* 49: 1061-1075.
- Entrekin, S., M. Evans-White, B. Johnson, and E. Hagenbuch. 2011. Rapid expansion of natural gas development poses a threat to surface waters. *Frontiers in Ecology* 9 (9): 503-511.
- Environmental Protection Agency. <https://www3.epa.gov/airdata/> (last accessed 8 September 2016).
- Jacobsen, G. D. and D. P. Parker. 2014. The economic aftermath of resource booms: Evidence from boomtowns in the American West. *The Economic Journal*: 1-37.
- Jacquet, J.B., and R. C. Stedman. 2013. The risk of social-psychological disruption as an impact of energy development and environmental change. *Journal of Environmental Planning and Management* 57 (9): 1285-1304.

LOCAL GOVERNMENT COORDINATION IN THE WY COALBED METHANE BOOM

- Kinnaman, T.C. 2011. The economic impact of shale gas extraction: A review of existing studies. *Ecological Economics* 70 (7): 1243-1249.
- Measham, T.G., D. A. Fleming, and H. Schandl. 2016. A conceptual model of the socioeconomic impacts of unconventional fossil fuel extraction. *Global Environmental Change* 36: 101-110.
- Moore, T. A. 2012. Coalbed methane: A review. *International Journal of Coal Geology* 101: 36-81.
- Nasen, L.C., B. F. Noble, and J. F. Johnstone. 2011. Environmental effects of oil and gas lease sites in a grassland ecosystem. *Journal of Environmental Management* 92: 195-204.
- National Research Council of the National Academies. 2010. *Management and Effects of Coalbed Methane Produced Water in the Western United States*. The National Academies Press: Washington, D.C.
- Patton, M. Q. 1990. *Qualitative Evaluation and Research Methods*. Sage Publications: Newbury Park.
- Richards, H. 2017. Wyoming regulators may start keeping track of bad CBM operators. *Casper Star Tribune* 14 February.
- Stearns, M., J. A. Tindall, G. Cronin, M. J. Friedel, and E. Bergquist. 2005. Effects of coalbed methane discharge waters on the vegetation and soil ecosystem in the Powder River Basin, Wyoming. *Water, Air, and Soil Pollution* 168: 33-57.
- Thakur, P., S. Schatzel, and K. Aminian. 2014. *Coalbed Methane: From Prospect to Pipeline*. Elsevier: Oxford.
- United States Geological Survey. 2015. *Powder River Basin, Wyoming and Montana*. <http://energy.usgs.gov/RegionalStudies/PowderRiverBasin.aspx#3832131-overview> (last accessed 20 April 2016).
- U.S. Energy Information Administration. 2015. *Monthly Energy Review October 2015*. Washington, D.C.
- Weber, B. A., J. Geigle, C. Barkdull. 2014. Rural North Dakota's oil boom and its impact on social services. *Social Work* 59 (1): 62-72.
- Wyoming Climate Atlas. 2004. <http://www.wrds.uwyo.edu/sco/climateatlas/> (last accessed 8 September 2016).

LOCAL GOVERNMENT COORDINATION IN THE WY COALBED METHANE BOOM

Wyoming Oil and Gas Conservation Commission. <http://wogcc.state.wy.us/> (last accessed 20 April 2016)

Wyoming Statutes. Joint Powers Boards. § 16-1-106 (2011).