Fracking and Sub-state Federalism:
State Preemption of Local Regulatory Decisions in Colorado

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U.S. energy companies have expanded production of natural gas using hydraulic fracturing technologies (or fracking) to extract gas resources from underground shale formations. Despite public concerns about health and environmental impacts from fracking operations, state energy regulators have historically been sensitive to the economic importance of industry jobs. They often favor the development of uniform regulatory requirements at the state level to ensure predictability even if statewide rules preempt the policymaking authority of city and county officials. Conversely, many local officials seek to preserve decision-making autonomy over land use regulations to protect their constituents from health and environmental impacts. Drawing from the federalism literature on state-local relationships, I examine local governments' efforts to regulate fracking operations in Colorado.

Introduction

Over the past five years, U.S. energy companies have expanded the production of natural gas using hydraulic fracturing technologies (or fracking) to extract gas resources from tight shale formations located deep underground. While environmentalists and some local officials have raised questions about prospective environmental impacts from fracking operations such as the contamination of water supplies or deteriorating air quality at production sites, natural gas companies have been exempted from federal water quality laws and are currently regulated by state agencies (Pless, 2010). However, as Rabe and Mundo (2007) indicate, state energy and environmental regulators have historically been sensitive to the economic importance of industry jobs. Both industry and state officials have sought to develop uniform regulatory requirements at the state level to ensure predictability and a level playing field. For some, the desire by state oil and gas regulatory administrators to maximize the economic and energy-related benefits of natural gas development has been pursued without adequate consideration of residents' concerns about human health and environmental protection; hence, an upsurge in local political opposition to fracking can be observed in high production states like Pennsylvania or Colorado (Wilber, 2012; Hobson, 2012). Consequently, local officials will attempt to appease public fears by enacting policies or regulations to protect their constituents from the impacts of drilling activities. This has led to an increase in political tension between state and local officials since competing policy objectives are not easily resolved in ways that allow each to maintain a desired level of decisional authority (Tavernise, 2011).

The analysis of policy-based influence associated with state-local relations has received little scholarly attention from students of public policy. Most research in this area is centered within the federalism literature (Stephens, 1974), is largely institution-based, and tends to focus on taxes and revenue (Kenyon and Kincaid, 1991) or the degree of autonomy granted to local

governments by states (Berman, 2003; Zimmerman, 1995). While recent work does include a pair of articles that begin to bridge the gap between analyses of jurisdictional relationships and substantive policy decisions (see Woods and Potoski, 2010; Bowman and Kearney, 2011), additional research that offers empirical evidence about the importance of traditional policy variables such as problem severity, economic factors, and partisan orientation will add to our understanding of state-local policy relationships.

This paper offers an exploratory analysis of one such issue, subnational fracking policy, that examines the political tug and haul between municipalities and state political authorities in Colorado from 2009 to the present. Two questions are considered here. Have Colorado regulators succeeded in retaining policy control in the face of increasing local support for fracking ordinances that are stricter than current state regulatory requirements? Can the enactment of county or city fracking policy decisions be attributed to the sheer density of drilling activities, socioeconomic factors, or the partisan orientation of affected communities? Information used to address these questions was drawn from documentary, media, and secondary sources.

Literature and Research Expectations

The legal context of state-local relations is complex. An early source of guidance for many policymakers is *Dillon's Rule*, a U.S. legal doctrine that limits the policymaking authority of city or county governments to powers that are explicitly granted to them by state political authorities, implied powers that are derived from explicitly granted powers, or powers that are deemed as essential to carrying out the primary responsibilities of local government (Nice and Fredericksen, 1995). But states vary in terms of how home rule is interpreted. Consequently, changing circumstances requiring actions by local officials have increasingly led to frustration since state officials are frequently not inclined to grant "permission" for making new or expanded policy decisions (Zimmerman, 1995).

Clearly, there are competing perspectives in play. One is the argument supporting more regulatory autonomy for local authorities based on the notion that "one size does not fit all;" i.e., differing policy responses may be appropriate because of geological differences or because of the proximity of proposed drilling activities to more populated areas (Gilbert and Gold, 2012). Conversely, state officials are more inclined to defend policies that place emphasis on the promulgation of statewide regulatory requirements allowing companies to develop resources without running headlong into a "patchwork of differing policies, rules, and procedures" (Interstate Oil and Gas Compact Commission, 2010). A number of intergovernmental programs such as the Clean Water Act call for differing federal, state, and local decision-making roles at the implementation phase but the lines can easily get blurred when new city or county regulations aimed at resolving policy problems are viewed by higher-ups as an unlawful effort to "usurp" state authority (Hovey, 1989).

One key issue of concern analysts of state-local relations is the extent to which states have centralized policymaking responsibilities formerly handled by local officials. A seminal study by G. Ross Stephens (1974) examined the distribution of power between states and local governments from the beginning of the twentieth century through the early 1970s. A quantitative index ranging from "0" to "100" (most centralized) was constructed, incorporating financial responsibility, service delivery spending, and personnel as key indicators. He found that states varied considerably in terms of the amount of state centralization but that, in general, states were

increasingly assuming a greater share of policymaking responsibilities at the expense of city and county officials. An updated analysis conducted by Stephens and Nelson Wikstrom (2007) concluded that the state centralization trend peaked in the mid-1980s and that by 2002 a policy reversal of sorts could be detected.

A related issue that has been largely unaddressed in the analysis of state-local relations is the extent to which state level decisions to enhance or restrict local regulatory authority varies according to policy area. A recent article by Bowman and Kearney (2011) offers some useful information about programs that are more or less likely to be passed along to city or county officials without the imposition of legal restrictions. They also partially replicate the work of Stephens and Wikstrom by extending the analysis of state centralization trends and provide additional data obtained from surveys administered to key state legislators and city managers. Their analysis of city managers' views is particularly revealing, suggesting that both local discretion and autonomy have declined because of state policymaking within a greater number of service delivery areas. But it is important to note that declining autonomy is felt more keenly in some policy areas than others. State officials are less inclined to intervene in the operations of programs with an explicitly local focus such as police, health care or parks and recreation departments. Similarly, researchers analyzing welfare policy, i.e., the Temporary Assistance for Needy Families program, have found that local government represents a better jurisdictional fit for meeting management goals (Cho, Kelleher, Wright, and Yackee, 2005; Gainsborough, 2003).

If we focus more explicitly on environmental policy concerns, the evidence is mixed. Bowman and Kearney (2011) found that city managers are significantly more likely to report state controls over policies pertaining to land use planning and natural resources. However, in a study examining the extent to which states delegated management authority to cities in the implementation of air quality programs, Woods and Potoski (2010) found that the transfer of decision-making power occurred in over half the states but with conditions. While few states entrusted local governments with the power to develop regulations, local administrators were more likely to receive clearance to engage in monitoring and some enforcement activities. Their analyses revealed several factors that proved useful in explaining some of the cross state variation in delegation of authority. In general, cities were more likely to obtain decisional latitude in air quality policymaking in states with more serious air pollution problems, in states where a more influential environmental lobby is present, and in states with a higher percentage of residents living in urban areas.

Can we assume that state officials will react similarly in trusting local officials with the responsibility to regulate fracking policies within their jurisdiction? And under what circumstances will local governments test the limits of state preemptive authority by developing land use regulations or special use permits that exceed current COGCC standards? A complicating factor here is that natural gas is a multifaceted policy issue. As Lowry (2008) has noted, energy and environmental policies can easily diverge and the emergence of natural gas policy is, in some respects, a hybrid containing elements of both environmental and economic development policymaking. Woods and Potoski (2010) contend that there is a stronger case to be made that locally derived management solutions are appropriate when the nature of the policy problem varies significantly in differing areas within a state. This is certainly true for some gas producing states and because of public fears about the environmental impacts of fracking (Efstathiou, 2012), it seems reasonable to expect that state regulators will willingly cede more regulatory authority to city officials.

However, a countervailing factor that may carry more weight during a financial downturn is the rather powerful economic development argument that accompanies industry promises of jobs in states that have been hard hit by the recession (IHS Global Insight, 2009). Accordingly, I expect to find that Colorado regulatory officials will be less inclined to allow local officials much discretion to enact and implement fracking policy decisions. In addition, I expect that Republican state legislators will also be less likely than their Democratic counterparts to favor local autonomy on this issue because of their closer ties to energy industry officials (Common Cause, 2012).

Determining the characteristics of local governments that are more likely to push the fracking policy envelope is also challenging. For suburban and urban fringe community officials that perceive natural gas drilling as a threat to public health and environmental quality, fracking can more easily be depicted as an environmental issue; hence, local governments with a higher percentage of voters identifying as Democrats can be expected to favor policy initiatives that restrict where and when drilling practices can occur. For others, fear of fracking is less a partisan issue than a more generalizeable perception of risk connected to property values or the geographical proximity of drilling operations to schools, neighborhoods, churches or parks. So an equally plausible perspective would include expectations that cities or counties with a higher median family income and/or a greater number of gas wells within the area would favor protective local policies dealing with fracking operations.

The Policymaking Context of Fracking

Colorado is a major producer of energy in the U.S. (U.S. Energy Information Office, 2012). It ranks eighth in energy production, relying heavily on coal for generating electricity but also producing a considerable amount of natural gas annually along with some wind and solar. Political institutions in the centennial state are considered receptive to the policy concerns of large companies and trade associations representing the interests of energy companies (Common Cause, 2012). And Colorado also has ample experience with fracking - it has been utilized extensively since the early 2000's to mine the state's vast reserves of coalbed methane. It remains a major source of natural gas, but the more recent discovery and development of gas and oil reserves within the Niobrara shale play that covers much of the state has raised the stakes considerably, both economically and politically.

What is the typical division of labor found between state and local governments in terms of making important regulatory decisions pertaining to natural gas drilling operations? State officials are clearly in the driver's seat when considering most key policies that regulate the development of natural gas resources in the U.S. and can largely shape or restrict the contours of local government fracking policy decisions (Negro, 2012). State influence over local policy decisions begins with the establishment of legal authority that is granted to municipalities and counties by the state constitution and is extended through subsequent legislative enactments. Oil and gas statutes that predate the shale gas revolution typically begin by emphasizing the preeminence of state regulatory authority in relation to powers that might otherwise be exercised by local officials. The *Colorado Oil and Gas Conservation Act* was enacted in 1951 to foster the orderly development of energy resources within the state and has since been amended to include the protection of groundwater and wildlife resources (cited in University of Colorado Law School, 2010).

An explicit decision-making role for city and county governments is rarely spelled out in state policies. However, one important study of U.S. shale gas regulation suggests that cities can usually develop ordinances or rules to protect public health, including the issuance of permits for traffic, flood plain restrictions, setbacks between drilling operators and neighborhoods, schools, and other structures, and noise (Ground Water Protection Council and ALL Consulting, 2009). In Colorado, some areas of discretionary authority that have been delegated to local governments include land use and developmental planning responsibilities granted under the *Local Government Land Use Control Enabling Act of 1974.* But there are limits. It is likely that local policies will be preempted if they conflict with state policies or regulations "in an operational sense" (Colorado Department of Local Affairs, 2010). Thus, efforts by local government authorities to defend the enactment of ordinances or regulations that duplicate existing state policies or rules will find it exceedingly difficult to prevail in court if challenged by state regulators. Larger municipalities or counties that have been granted "home rule" powers are typically given more latitude than non-home rule jurisdictions but can still face pushback from COGCC if proposed policies are seen to be addressing state-based regulatory concerns rather than issues with an ostensibly more local focus such as zoning (Zimmerman, 1996; Negro, 2012.

While policymakers in Colorado clearly support the development of shale gas resources, it is evident that many are also concerned about minimizing the environmental impacts associated with fracking operations. From a local governmental perspective, the consideration of drilling-related pollution problems is most critically linked to water quality concerns but additional effects or byproducts of industrial activities prompting discussion and debate among local city and county officials include air pollution, the disposal of produced waters, noise, traffic, road damage from thumper trucks, and setback requirements for neighborhoods and public buildings (Tavernise, 2011). In terms of sensitivity to environmental policy concerns writ large, Colorado ranks as an "above average" state (Wingfield and Marcus, 2007).

Turning to partisan orientation, the major political parties in Colorado have generally been competitive in state executive and legislative elections. Generally speaking, Republicans have opted to more closely accommodate natural gas industry interests by pushing more aggressively for a statewide regulatory approach while Democrats have been more inclined to side with environmentalists in supporting local discretionary authority over fracking as an important insurance policy in countering weak state enforcement of pollution control policies (Sirota, 2012). In Colorado, Democrats have succeeded in holding onto the governor's office over the past two election cycles along with one or both chambers within the state legislature. Both governors – Bill Ritter and John Hickenlooper - have been actively engaged in efforts to shape fracking policies since 2009.

Natural Gas Politics in Colorado through 2010

The development of natural gas resources in Colorado escalated sharply over the past fifteen years thanks to the technological merger between hydraulic fracturing and horizontal drilling. However, Colorado has benefitted from oil and gas drilling activities for several decades. The first wave of significant gas production occurred in the giant Wattenberg Field located in north central Colorado, an area that includes portions of Weld, Broomfield, Boulder and Larimer Counties. Larger companies such as Kerr-McGee (now Anadarko) drilled numerous wells in and around the City of Greeley beginning in the 1970s. The creation of jobs and positive economic impacts by the energy industry was clearly welcome in Weld County, an area that was

beginning to decline somewhat in terms of employment offered by the historically important meatpacking industry. Gas company officials have continued to work closely with Weld County commissioners to balance industry access with local governmental concerns such as the mitigation of environmental risks and the costs of road repair (Colorado Department of Local Affairs, 2010). In a recent speech before Longmont Republican women, Commissioner Barbara Kirkmeyer emphasized that because of the presence of a thriving energy sector that Weld County is "debt free" and that she and fellow commissioners "try to eliminate unnecessary regulatory barriers to the oil and gas industry" (Fryar, 2012). A glance at COGCC data reinforces her point about the link between industry-friendly policies and increased gas production; i.e., there were 16,442 active wells in Weld County as of April, 2011 (cited in Illescas, 2011).

A second phase began with the coal-bed methane boom of the early 2000s which resulted in an upsurge in drilling activity in LaPlata, Mesa and Rio Blanca Counties in the less populated western part of the state (Colorado Oil & Gas Commission, 2012). Since the development of coal-bed methane resources was linked to fracking and a host of ancillary environmental and property rights issues, it set the stage for growing political conflict among a diverse array of stakeholders. Energy industry officials were closely aligned with the pro-development COGCC in a powerful energy policy sub-government that also included political allies such as chambers of commerce and economic development groups. But organizations like the Durango-based Oil and Gas Accountability Project succeeded in raising awareness about changing drilling practices that left a more visible environmental imprint. This, in turn, led to the development of political opposition from some particularly unusual political quarters (University of Colorado Law School, 2010).

Split estate policy disputes ensued pitting energy companies that owned mineral rights below a given parcel of land against surface owners, often ranchers, who objected when company officials sought access to the resources through road construction, drilling pads, and other activities that contributed to surface area disturbances as well as the surface owner's concerns about possible contamination of water sources and adverse effects on the tranquility of the daily life. Not only did natural gas firms enjoy a presumptive advantage in such cases because of energy friendly statutory language but county officials were well aware of the local economic importance of fracking operations. According to Bryner (2003), severance taxes collected from gas-related energy firms contributed 43% of the tax base for LaPlata County coffers in the early 2000s.

Beyond the question of how differences between surface and subsurface property rights might be resolved, public concerns about the risks associated with fracking operations were aggravated by reports of water contamination in Garfield County. Nearby drilling by natural gas firms resulted in complaints from county residents about foul testing water, dizziness, and assorted medical issues. County public health officials contracted with a team of public health scientists to determine whether unsafe levels of methane detected within residential water could be attributed to gas drilling. A three year county sponsored study compared methane samples from water wells and from the shale rock formation located a mile and a half below. Researchers concluded that gas could have migrated that far because of interconnected fissures and faults (Lustgarten, 2009). The validity of the study results was subsequently challenged by spokesmen representing Bill Barrett Corporation, EnCana Oil & Gas, and Williams Energy Company in testimony before the COGCC (Jaffe, 2009).

Adding to the complexity of fracking policy issues along the western slope is a rather sizeable amount of federal land managed by the U.S. Bureau of Land Management and the U.S.

Forest Service. This often produces a mosaic of federal, state, local, and private lands, necessitating intergovernmental agreements and memorandums of understanding between multiple governmental jurisdictions in an effort to coordinate energy-related land use policies. Recreational consumers of federal and state lands often include wilderness outfitters, hunters and hikers as stakeholders who often join environmentalists in opposing industry efforts to frack particular sites. Since COGCC was rarely sympathetic to issues raised by environmental or recreational interests, the venue of choice for these constituencies was often county government which put commissioners in the uncomfortable position of making policy decisions that involved tradeoffs between jobs, water quality, outdoor recreation, and quality of life (Duffy, 2008).

County commissioners adopted rules to address policy issues important to rural areas and smaller cities understanding that decisions aimed at shaping any aspects of drilling or wastewater disposal were likely to be preempted by COGCC. Thus, regulations adopted in the early 2000s were aimed at land use decisions that would ease or, in some cases, mitigate environmental or traffic related impacts. One example is Mesa County, a large area encompassing five municipalities and over 3,000 square miles with a sizeable percentage of federal land. Rules called for easing the visual impacts to ensure that drilling activities would more easily blend in with the surrounding scenery. A building permit had to be acquired prior to the construction of any permanent structures. The public works department required that a permit be obtained for any oversized/overweight vehicles using county roads (University of Colorado Law School, 2010). Other counties utilized zoning regulations as a means of guiding developmental decisions and occasionally identified and encouraged the use of best management practices for fracking operations.

Rising policy conflicts in natural gas politics coupled with a major shift in the state governing coalition led to a third phase that integrated increased environmental sensitivity with natural gas policy reforms. Much of Colorado's natural gas policymaking agenda from 2006 through 2010 was based on legislation developed with the gubernatorial administration of Democrat Bill Ritter and very few of these policies dealt directly with city or county officials. However, Ritter did succeed in shaping state natural gas policies in three important respects. First, with the aid of Democratic majorities in both chambers of the Colorado legislature, he pushed for the enactment of the *Oil and Gas Commission Reform Act*, a statute that expanded the membership requirements of the Colorado Oil and Gas Conservation Commission (COGCC) from seven to nine and altered the occupational mix to include representation on the COGCC for wildlife, environmental protection, and local government interests as well as industry. This was followed by a hard fought but ultimately successful effort in 2008 to promulgate new COGCC rules designed to implement the new laws. It is important to note that in the process of debating what to include in the new regulations, a decision was made by COGCC not to update setback requirements, changes favored by city and county officials (Jaffe, 2011). Third, in 2010, Governor Ritter supported legislation that called for the gradual replacement of coal-based power plants with cleaner burning natural gas, a controversial policy aimed at reducing adverse air quality and climate impacts (State of Colorado, 2010).

Local Governments Respond to Expanded Well Production

The impact of fracking policies on local governments in Colorado became increasingly visible from 2009 through 2010 but localized controversies were largely overshadowed by the more widely publicized and often contentious policy battles taking place in COGCC rulemaking

hearings and in the state legislature. But events ensued that would again affect the political relationships between state and local officials. First, major energy companies decided to expand the geographical scope of production. In mid-2011, energy companies entered the state with ambitious plans to drill in the massive Niobrara shale play, a field containing substantial reserves of oil and gas that stretches from southeastern Nebraska, and eastern Wyoming through much of Colorado, including the more populous front range cities such as Denver, Aurora, Colorado Springs, and Fort Collins (Johnson, 2011). One immediate and visible impact was the proliferation of wells in smaller communities that were unaccustomed to industrial activities; e.g., the towns of Erie and Windsor north of Denver each has a population of approximately 18,000 residents but now include 200 and 254 wells respectively within their borders (Finley, 2012; Magill, 2012).

The speed and scale of gas company actions coupled with the absence of information about where and when drilling might occur provided a serious challenge for local governments (Finley, 2012). For some (e.g., Commerce City), a key source of local discontent was not just the decision to begin fracking operations in or near the community but the failure of the industry or COGCC to give notice that drilling activities were about to commence. When company officials obtained permits to drill in urban areas that included smaller municipalities, cities, rapidly growing suburbs, parks, and even lakes, city and county officials scrambled to make adjustments (Johnson, 2011). They were inundated with calls and emails from business leaders and homeowners worried about the possibility of declining air and water quality and lower property values and seeking protection through the adoption of land use regulations. Or as John "Chip" Taylor, the executive director of Colorado Counties Inc. indicated, "when local residents see a lot of new drilling activity, they start calling [county commissioners]" (cited in Hobson, 2012).

Another source of concern for local residents was the perception that COGCC was a timid regulator that was more inclined to appease industry interests by overlooking serious violations of state pollution control regulations than to enforce environmental policies. News accounts from 2010 to the present reported the number and severity of industrial accidents linked to fracking operations (Hubbard, 2010) , the abysmally small ratio of state inspectors to the number of wells or drilling sites in need of inspection, and a reluctance on the part of state regulators to fine or punish industry violators. Industry reported spills from August, 2009 through August, 2011 totaled more than 1,000 and major companies, including serial violators, were rarely fined by COGCC administrators (Finley, 2011).

While the enforcement record is, in part, based on a management style that promotes consensus and collaboration for affected parties, there has also been an agency capacity issue to consider since COGCC employs fifteen inspectors to inspect nearly 47,000 wells. By way of contrast, the state of Pennsylvania's enforcement staff increased to 65 in response to the rapid increase in drilling within the Marcellus shale play. A report by the Oil and Gas Accountability Project (2012), revealed that in 2010, the Colorado inspector visited an average of 1,082 wells compared to 253 for each Pennsylvania inspector. A COGCC press release (2011) responding to these reports did little to suggest appropriate actions to be taken by community residents or local officials but offered a basic rationale for why the agency responded as it did and what industry violators did to address the problems.

How did city and county officials respond to these challenges? From mid-2011 to the present, several municipalities and counties have adopted ordinances, regulations, or temporary moratoria on the issuance of drilling permits. One particularly important policy topic discussed by residents and local officials at public meetings is the adequacy (or lack thereof) of setback

requirements for oil and gas rigs. Current COGCC rules allow drilling to occur within 150 feet of structures within unincorporated areas and 350 feet within urban areas, requirements that are considered to be overly risky by most local officials. However, setback requirements of 400 feet have been adopted by LaPlata and Douglas Counties respectively while Gunnison County opted for a 500 feet standard. This compares to a 600 feet buffer established for the most heavily drilled city in the U.S. – Fort Worth, Texas (Jaffe, 2011).

In addition, lengthier setbacks are supported for structures generating a greater degree of public concern such as neighborhoods, schools, churches, parks, etc. (Finley, 2011). A recent review of natural gas wells operating in Adams, Boulder, Broomfield, and Weld Counties by Western Resource Advocates (2012) found that 32 schools were located within 2,000 feet of a drilling site while 26 schools were within 1,000 feet. An oil and gas attorney working in Weld County suggested that a plausible legal option for school districts was to negotiate with gas companies over acceptable setback standards. Otherwise, district administrators might be faced with the possibility of fracking operations being sited near a school because of Colorado's "forced pooling" policy which gives greater weight to the owners of mineral rights (cited in Magill, 2012). More affluent jurisdictions such as El Paso and Elbert Counties sought physical separation from gas rigs for aesthetic purposes. Both adopted new requirements for the construction of berms and planting of vegetation between buildings and drilling sites as well as ensuring that any permanent equipment be painted colors that matched but was somewhat darker than the surrounding landscape (Jaffe, 2011a).

At the other end of the policy spectrum are policies or regulations that have been adopted by communities that, at minimum, may be subjected to legal challenges in state courts or that may face the possibility of preemption by COGCC. Erie town officials have pushed a more novel approach by promulgating new air quality regulations requiring gas companies to capture all of the air emissions released during drilling activities (Finley, 2012a). Aspen town officials have adopted a tough regulatory ordinance that seeks to directly regulate oil and gas drilling – a move that has already been challenged by companies seeking to operate there (Johnson, 2011). Other county and municipal leaders along Colorado's front range (e.g., Boulder County) have decided to utilize or even extend a short term moratorium to consider the nature and type of land use controls or special use permits needed to protect their constituents. City council members within Colorado Springs are still deliberating about the possible enactment of a policy time-out for the development of fracking regulations.

If we examine the counties that have enacted fracking policies, there are no obvious patterns that stand out. Boulder County residents are strongly Democratic in terms of partisan orientation (70% supported Democrat John Hickenlooper in the 2010 gubernatorial election) and rank more highly than the state average in terms of median family income (U.S. Census Bureau, 2012). However, Elbert and El Paso Counties strongly favored non-Democratic candidates (75% and 63% respectively) and Elbert County residents are considerably more affluent, income-wise. In terms of 2010-2011 county well density figures (COGCC, 2012), it is interesting to note that none of the three counties has more than twenty wells within its borders. Thus, county policy development appears to be rather idiosyncratic.

Similarly, municipalities with moratoriums or stronger fracking regulations varied in terms of wealth and educational attainment but all three had a sizeable and increasing number of gas wells (partisan orientation was not examined since voting data for the 2010 gubernatorial election was unavailable for smaller cities). Erie residents rank very high in terms of median family income and many live in close proximity to a large number of gas wells (at least 200)

operating within the city (cited in Finley, 2012b). The latter factor may be particularly important since many residents have recently expressed discontent with the number of actual or proposed wells located close to schools. Commerce City residents rank quite low in terms of college graduates but approximate the state average in terms of income (U.S. Census Bureau, 2012). There are 23 wells within the city and many residents are concerned with how additional drilling adds to health-related risks because of an already high concentration of refineries and related industrial facilities within city limits. Loveland also has a relatively high number of new and existing wells (n=30) that provides a plausible rationale for the City's adoption of a temporary moratorium. Otherwise, city residents rank about average in relation to above-mentioned state income and educational data (U.S. Census Bureau, 2012).

The State Strikes Back

State officials have been quick to respond to local fracking policies that "overreach." First, actions have been taken by both COGCC commissioners and Attorney General John Suthers to communicate a common message – that city and county policies that go beyond state requirements are illegal. When temporary moratoriums were adopted by Boulder, Elbert and El Paso Counties, letters were sent from the Attorney General's office to county officials informing them that the policies were clearly incompatible with state laws (Hobson, 2012). Second, cities recently contemplating a moratorium on drilling activities, i.e., Fort Collins and Longmont, recently backed out following last minute testimony at council meetings from representatives of COGCC and COGA, urging them to work in a more collaborative fashion with state officials. Third, Republican state legislators proposed policies during the 2012 legislative session (SB 88 and HB 1356) aimed at restricting the ability of local governments to enact restrictive fracking ordinances through the denial of severance tax monies normally distributed to city and county officials on the basis of county gas production figures (Streater, 2012a). These policies failed on a party line vote. Similarly, a bill designed to grant local governments more autonomy in dealing with fracking policy issues was introduced in the same session by a Democratic state legislator – it met a similar fate, also by a straight party line vote (Schroyer, 2012).

Since 2011, a more nuanced approach aimed at tamping down efforts by local officials to expand regulatory authority has been undertaken by Governor John Hickenlooper. Like his predecessor, Bill Ritter, the new Governor is a Democrat, but Hickenlooper has played down any notion that his policy positions can be easily pigeonholed as "pro-environment" or "pro-development." His response to complex policy questions, including fracking, appears to stem from varied work experiences that include employment as a geologist in Colorado during turbulent economic times in the 1980s energy industry, a successful run as a businessman before his entry into politics and a period of subsequent public service as Mayor of Denver.

From the environmental side of the ledger, Governor Hickenlooper worked with COGCC and various stakeholders to develop one of the strictest state disclosure rules in the U.S. for fracking fluids, a policy that requires companies attempting to use the trade secret rationale for nondisclosure to provide written justification in a form submitted to agency commissioners (Jaffe, 2011b). Conversely, he has also cultivated support from industry groups attempting to accelerate drilling operations in Colorado. The Governor's initial appointments to COGCC included a balance of incumbents, Republicans, and individuals with industry experience that drew praise from the Colorado Oil and Gas Association (COGA) but a more guarded assessment from environmental groups (Draper, 2011). Second, to the chagrin of environmentalists,

Hickenlooper appeared in a television ad sponsored by COGA, indicating that since COGCC rules went into effect in 2009, “we have not had one instance of groundwater contamination associated with drilling and hydraulic fracturing" (cited in Finley, 2012c). Third, Hickenlooper’s state of the state address in January, 2012, placed emphasis on the need to work with local governments to ensure adequate regulation of drilling activities while also siding with the longstanding industry claim that “the state can’t have 64 or even more different sets of rules” (cited in Hobson, 2012).

Governor Hickenlooper then sought to head off a political rebellion from local officials seeking stricter fracking regulations on February 29, 2012 by by issuing an Executive Order that created a twelve member task force designed to clarify and coordinate state and local government responsibilities in the development and implementation of fracking policies. The Order placed emphasis on devising strategies aimed at avoiding regulatory duplication and overlap between COGCC and municipalities or counties. The Task Force was headed by Mike King, the Executive Director of the Department of Natural Resources, and included representatives from the Colorado Department of Local Affairs, the Colorado Municipal League, Colorado Counties, Inc., COGCC, the oil and gas industry, and the environmental community. Policy issues to be discussed included setback requirements for oil and gas facilities, floodplain restrictions, noise abatement, air quality, traffic impacts and management, fees, financial assurance, and inspection, and the protection of wildlife and livestock (State of Colorado, 2010).

The final Task Force Report was submitted to Governor Hickenlooper in mid-April, 2012. While the Report was generally well received by the Governor as well as Task Force members, no firm decisions were made about if and when policy recommendations would be implemented. One of the major policy prescriptions put forward was establishing an enforcement role for local government in relation to the inspection of oil and gas facilities. Each county or municipality would be empowered to select an individual (referred to as a “local government designee” or LDI) who would receive training and attend workshops set up by COGCC to provide information about current regulations, inspection protocols, and negotiation processes (Streater, 2012b). However, the recommended policy stopped short of assigning any authority beyond inspections such as the imposition of fines or penalties. Any evidence of violations uncovered by an LDI inspection warranting further action would be forwarded to COGCC commissioners for resolution.

Task Force participants appeared to be generally satisfied with the outcome of the negotiations subject to the caveat offered by environmental representatives that it was an encouraging first step. But not all critical issues were addressed. For example, an attorney representing Earth Justice suggested that insufficient enforcement of existing rules by COGCC was not discussed. And the main policy concern lacking recommendations was setback requirements for residences, schools, and drilling operations (Hooper, 2012). Toward that end, a separate stakeholder group was put together by Task Force Leader Mike King to consider regulatory options acceptable to affected parties. To date, no updates or agreements have been reported. While it is premature to offer an evaluation of policy recommendations that remain in a state of flux, it does seem reasonable to conclude that the collaborative approach utilized within Governor Hickenlooper’s Task Force Report has provided institutional reinforcement for the status quo, apart from the “LDI” carrot offered to the local government representatives.

Discussion

An examination of fracking policy and sub-state federalism in Colorado over the past decade indicates that COGCC remains in charge of key policy decisions. Local government officials in western Colorado developed land use rules in the early 2000s to mitigate some of the more egregious drilling impacts, including, in some cases, setback rules exceeding state standards. However, it is important to note that county and city officials were not antagonistic to drilling per se (with the possible exception of Durango, a college town with an amenity-based economy). Because these counties have had prior experience in dealing with mining, energy, and natural resource developmental activities, the emergence of natural gas drilling as a policy issue was less unusual or threatening for local residents than for people residing in an urban corridor. Indeed, the prospect of well paying jobs in the natural gas industry has likely been viewed by many in western rural communities as a means of offsetting declining employment opportunities in logging or mining (hardrock and coal). The primary goal of ensuring the "orderly development of natural gas resources" was quite compatible with community and COGCC interests. Because, fracking occurred in a more rural, geographically distant part of Colorado, the issue received relatively little attention from COGCC or from major media sources.

In 2011, the rapid expansion of natural gas drilling activities in front range communities led to rising concern among local residents about the ability or willingness of COGCC commissioners to address the health and environmental impacts associated with fracking operations. This led to the enactment of city and county land use policies aimed at reducing the risks linked to drilling activities. While an admittedly small number of county and municipal fracking policies were not associated with economic factors like median family income, a common denominator found among municipalities was sizeable number of actual number of gas wells in or near city boundaries. But it is generally safe to conclude that the growth of local fracking policy initiatives has largely stalled since then because of state efforts to persuade local officials to give collaborative decision-making a chance, by giving cities and counties an opportunity to designate a "local government designee" with limited inspection authority to augment state enforcement of state regulatory policies, and by the willingness of local and environmental policy interests to adopt a "wait and see" attitude pending the release of policy recommendations from a setback stakeholder's group established by Governor Hickenlooper's Task Force.

While natural gas drilling policies in Colorado can be aptly characterized as in a "state of flux," we can conclude at present that advocates of greater state control have the upper hand over those favoring a greater degree of local autonomy. In comparing Colorado with other major gas producing states along a continuum that ranges from little or no local government influence over fracking policies with those that allow more city and county discretionary authority, the centennial state lags behind Texas but fares better than Pennsylvania. Like Colorado's recent experience with expanded drilling activity in the Niobrara shale play in the populous front range communities, the major sources of natural gas production within Texas have been located in or near major metropolitan areas, i.e., Fort Worth and San Antonio. However, city officials in Fort Worth and several affluent suburban governments have successfully crafted ordinances that go much further than those enacted in Colorado in terms of setback requirements and stronger rules protecting air and water quality.

On the other hand, Pennsylvania Governor Tom Corbett recently pushed a major policy change, *Act 13*, that punishes any local government adopting new fracking policies by denying

them monies from industry impact fees that would normally be earmarked for road repairs and other infrastructure needs linked to increased drilling activities. The implementation of *Act 13* awaits the outcome of a legal challenge initiated by a coalition of municipalities, but the new law may effectively establish a new policy threshold for other states considering how to address the larger question of state control versus local autonomy. In short, the study of state-local relations and fracking is clearly an important topic for students of sub-state federalism to pursue; however, I would also suggest that devoting more scholarly attention to substantive policy concerns and to the decision-making context would be useful as well.

References

Berman, D. R., & Martin, L. L. (1988). State-local relations: An examination of local discretion. *Public Administration Review*, 48, 637–641.

Bowman, A.O.M. and R. Kearney (2011). Second-order devolution: Data and doubt. *Publius* 41, No. 4, pp. 563-585.

Bryner, G. (2003). Coalbed methane: The costs and benefits of an emerging energy source. *Natural Resources Journal, 43* (2), 519-560.

Cho, C. L., Kelleher, C. A., Wright, D. S., & Yackee, S. W. (2005). Translating national policy objectives into local achievements across planes of governance and among multiple actors: Second-order devolution and welfare reform implementation. *Journal of Public Administration Research and Theory*, 6, 31–54.

Colorado Department of Local Affairs. (2010). *Oil and gas regulation: A guide for local government*. http://www.colorado.gov/cs/Satellite/DOLA-Main/

Colorado Oil and Gas Conservation Commission. (2011). *Oil and gas industry spills and releases.* Press release (October 13).

Common Cause (2010). *Legislating under the influence* (July 13). http://www.commoncause.org/energyreport

Davis, C. (1993). *The politics of hazardous waste*. Englewood Cliffs, NJ: Prentice-Hall.

Draper, E. (2011). Hickenlooper reappoints two of eight members to state oil and gas conservation commission**.** *Denver Post* (July 29).

Duffy, R. J. (2008). Conflict expansion or conflict management? Energy development in Colorado. Western Political Science Association Conference Paper.

Efstathiou, J. (2012). Tighter fracking regulations favored by 65% of U.S. in poll. Bloomberg News (March 14). http://www.bloomberg.com/news/2012-03-15/tighter-fracking-regulations-favored-by-65-of-u-s-in-poll.html Accessed on March 15, 2012.

Finley, B. (2011). Colorado groups want regulations for city, stream-side projects. *Denver Post* (November 3).

Finley, B. (2012a). Erie monitoring air, water quality but can't enforce rule. *Denver Post* (April 10).

Finley, B. (2012b). Cities dig in before drills do. *Denver Post* (February 12).

Finley, B. (2012c). Hickenlooper's spiel in oil, gas ad irks environmentalists. *Denver Post* (February 12).

Fryar, J. (2012a). Weld commissioner defends fracking, contrasts Weld's policies with Boulder County's. *Longmont Times-Call* (May 17).

Fryar, J. (2012b). Boulder County commissioners extend oil and gas drilling moratorium. *Longmont Times-Call* (April 16, 2012).

Gainsborough, J. *(*2003*).* To devolve or not to devolve? Welfare reform in the states. *Policy Studies Journal*, **31**, 603–624.

Gilbert, D. and R. Gold. (2012). Towns fight states on drilling. *Wall Street Journal* (April 4).

Ground Water Protection Council. (2009). *State oil and natural gas regulations designed to protect water resources.* Prepared for the U.S. Department of Energy, Office of Fossil Energy, and the National Energy Technology Laboratory. DOE Award No. DE-FC26-04NT15455 (May).

Ground Water Protection Council and ALL Consulting. (2009). *Modern shale gas development in the United States: A primer.* Prepared for the U.S. Department of Energy, Office of Fossil Energy, and the National Energy Technology Laboratory. DOE Award No. DE-FG26-04NT15455 (April).

Hobson, M.K. (2012). Jurisdictional tug of war rages in Colorado. *EnergyWire* (March 12).

Hooper, T. (2012). Colorado gas fracking rules still hazy in wake of guv's task force report. *Colorado Independent* (April 19). http://www.coloradoindependent.com/118564

Hovey, H. (1989). Analytical approaches to state-local relations. In E.B. Liner (Ed.), *A decade of devolution: Perspectives on state-local relations (pp. 163-182).* Washington, DC: Urban Institute Press.

Hubbard, B. (2010). Millions of gallons spilled in Colorado over a $2^{1/2}$ year period. *Denver Post* (June 28).

IHS Global Insight. (2009). *Measuring the Economic and Energy Impacts of Proposals to Regulate Hydraulic Fracturing.* Report prepared for the American Petroleum Institute (June).

Illescas, C. (2011). Elbert County banks on oil boom. *Denver Post* (April 13).

Interstate Oil and Gas Compact Commission, (2010). *Hydraulic Fracturing Issues.* http://www.iogcc.state.ok.us/hydraulic-fracturing Accessed on 11/19/10.

Jaffe, M. (2009). Gas firms dispute Garfield analysis: The study cites drilling as a likely cause of water degredation. *Denver Post* (July 15).

Jaffe, M. (2011a). Energy drilling invades suburbs. *Denver Post* (July 17).

Jaffe, M. (2011b). Hickenlooper: Colorado's frack fluid disclosure rule will be a model for the nation. *Denver Post* (December 13).

Johnson, K. (2011). Drilling in fast-growing areas ushers in new era of tension. *New York Times* (October 24).

Kenyon, D. and J. Kincaid. (1991). *Competition among states and local governments*. Washington, DC: Urban Institute Press.

Lowry, W. (2008). Disentangling energy policy from environmental policy, *Social Science Quarterly*, 89 (5), 1195-1211.

Magill, B. (2012a). Small town, big oil: Windsor residents grapple with energy boom. *Fort Collins Coloradoan* (May 6).

Magill, B. (2012b). Windsor: Drilling could occur near school. *Fort Collins Coloradoan* (May 19).

Magill, B. (2012c). Loveland enacts emergency fracking ban, Fort Collins may follow. *Fort Collins Coloradoan* (May 15).

Negro, S. (2012). Fracking wars: State and local conflicts over the regulation of natural gas activities. *Zoning and Planning Law Report* 35 (2), pp. 1-16.

Pless, J. (2010). Hydraulic fracturing: What's the big fracking deal? *National Conference of State Legislatures* (December).

Powers, E. (2011). Fracking and federalism: Support for an adaptive approach that avoids the tragedy of the regulatory commons. *Journal of Law and Policy* 19 (2), pp. 913-971.

Rabe, B. and P. Mundo. (2007). Business influence in state-level environmental policy. In M. Kraft and S. Kamieniecki, (Eds.), *Business and environmental Policy.* Cambridge, MA: MIT Press.

Schroyer, J. (2012). House GOP kills bill for local control of oil, gas regs. *Colorado Springs Gazette* (February 20).

Sirota, D. (2012). Fracking's best friends: State politicians in Colorado and Pennsylvania are blocking local communities from fighting back against Big Energy. SALON (January 10).

Smith, J.M. (2011). The prodigal son returns:Oil and gas drillers return to Pennsylvania with a vengeance – are municipalities prepared? *Duquesne Law Review* 49 (1).

Stephens, G.R. (1974). State centralization and the erosion of local autonomy. *Journal of Politics* 36 (February), pp. 44-76.

State of Colorado. (2010). *2007-2011Ritter Administration Accomplishments.* Office of the Governor. http://cospl.coalliance.org/fez/eserv/co:9511/gov12r512011internet.pdf

State of Colorado. (2012). Executive order creates task force to examine oil and gas regulatory jurisdiction between the state and local governments (February 29). Available at www.colorado.gov

Stephens, G.R. and N. Wikstrom (2007). *American intergovernmental relations: A fragmented federal policy.* New York: Oxford University Press.

Streater, S. (2012a). Colorado bill would punish local governments that block energy development. *EnergyWire* (May 1).

Streater, S. (2012b). Colorado governor's task force provides 'road map' for Niobrara development. *EnergyWire* (April 20).

Tavernise, S. (2011). As gas drilling spreads, towns stand ground over control. *New York Times* (December 14).

Tiemann, M. and A. Vann. (2011). *Hydraulic fracturing and Safe Drinking Water Act issues.* CRS Report No. R41760. Washington, DC: Congressional Research Service.

U.S. Census Bureau. (2012). *Quick facts.* http://quickfacts.census.gov/qfd/state/42000.html

U.S. Energy Information Administration. (2012). *U.S. states.* http://www.eia.gov/state/state-energy-profiles.

U.S. Environmental Protection Agency. (2011). *Draft plan to study the potential impacts of hydraulic fracturing on drinking water sources*. Washington, DC: U.S. Environmental Protection Agency, Office of Research and Development (February 7).

University of Colorado Law School. (2010). *Intermountain oil and gas bmp project.* Natural Resources Law Center. http://www.oilandgasbmps.org/laws/colorado_localgovt_law.php

Western Resource Advocates. (2012). *School drill: Too close for comfort.* http://www.westernresourceadvocates.org/schooldrill/

Wilber, T. (2012). *Under the surface: Fracking, fortunes, and the fate of the Marcellus Shale*. Ithaca, NY: Cornell University Press.

Wingfield, B. and M. Marcus. (2007). America's greenest states. *Forbes* http://www.forbes.com/2007/10/16/environment-energy-vermont-biz-beltway-cx_1017greenstates.html

Wiseman, H. (2010). Regulatory adaptation in fractured Appalachia. *Villanova Environmental Law Journal* 21 (2), pp. 229-287.

Woods, N.D. and M. Potoski. (2010). Environmental federalism revisited: Second-order devolution in air quality regulation. *Review of Policy Research* 27, No. 6, pp. 721-739.

Zimmerman, J. F. *(*1995*). State-local relations* (*2nd* ed.). *Westport, CT: Praeger.*