

This is one in a series of policy working papers prepared by a group of researchers centered at Cornell University to inform policy makers and citizens about key issues related to shale gas drilling and production. Our goal is to look at the big picture, and to ensure that people have accessible and relevant information to help them make good decisions at the state and local levels. We hope that our research raises new questions and perspectives, sparks debate, and informs policy.

A Vote of “No Confidence”

Why Local Governments Take Action in Response to Shale Gas Development

Susan Christopherson

Clay Frickey

Ned Rightor

Authors

***Susan Christopherson** is a Professor in the Department of City and Regional Planning at Cornell University. She is an Economic Geographer, who has led a series of policy research projects to develop, analyze or evaluate strategies for economic development and job creation.*

***Clay Frickey** will be receiving a Master's degree in Regional Planning in August 2013. His capstone project in the Master's program was based on interviews he conducted with local officials in communities in New York and Pennsylvania that have passed local legislation or resolutions in response to new shale gas development.*

***Ned Rightor** is President of New Economy Dynamics LLC, a research and consulting firm focused on workforce development and economic development projects throughout the northeast.*

Summary

A systematic study of local communities that have passed resolutions or statutes in response to HVHF shale gas development¹ in Marcellus states (New York, Pennsylvania, Ohio, and West Virginia) indicates that local governments have taken action in response to complex risks and uncertain accountability. An analysis of our database of 298 communities in all four states in which localities have taken legislative action shows that these Marcellus communities are not isolated rural areas but connected to urban centers. The majority of communities taking action want to delay drilling operations or restrict specific shale gas related activities, facilities, outputs, or land uses. Very few communities have enacted outright bans. And the structured interviews we conducted with a sample of local officials in two of those states indicate that a major impetus for action is a lack of trust in the capacity or willingness of the oil and gas industry or the state to take action to protect local communities from harm or to pay the costs of shale gas development.

Keywords: High volume hydraulic fracturing, fracking, shale gas, local government, supersession, natural resource governance

¹ Vertical drilling for natural gas, using another form of hydraulic fracturing, is permitted and has occurred for many years in the Marcellus Shale states. The current controversy is over something different: the combination of horizontal drilling techniques and high volume slickwater hydraulic fracturing (HVHF, also referred to as “hydro-fracking” or just “fracking”) to extract natural gas that is embedded in shale layers -- a more intensively industrial process requiring the use of millions of gallons of water per well, the utilization of an array of chemicals, and the disposal of the resulting hazardous waste, all on a scale far in excess of what vertical drilling requires. The two drilling processes are dramatically different in their impact on the regions in which they occur, both environmentally and economically.

Introduction

In the United States, natural resource development is regulated through a complex layering of local, state and federal policies whose purposes are to: 1) aid resource extraction companies in harvesting the resource; 2) protect or lessen the damage inflicted on the environment in which the resource development occurs; and 3) ameliorate public costs incurred in conjunction with resource development. Ideally, this “cooperative federalist” approach to regulation enables equitable distribution of the costs and benefits of natural resource development across producing and consuming populations, and flexibility to respond to the wide variety of environmental conditions across the US landscape (Sovacool, 2008). This complex multi-scale framework may be unworkable, however, if there are no mechanisms to allocate these costs and benefits, or if the regions that incur the costs of natural resource development do not trust that they will be treated fairly and that their economic and physical environment will be preserved beyond the resource depletion boom.

Our research addresses why hundreds of communities in and around the Marcellus and Utica shale “plays” have taken local legislative action in the face of a regulatory regime that has vested state government with primary authority for regulating high volume hydraulic fracturing (HVHF) shale gas development, and responsibility for its effects on local economies, public health, and environmental conservation.

These local actions in response to shale gas development began in 2009-2010 and escalated in 2011-2012. As we describe below, local legislative actions have included outright bans, local moratoria and land use restrictions in zoning law. In response to these assertions of local authority to restrict natural gas development, 54 local governments in New York have adopted resolutions based on a model distributed by the Joint Landowners Coalition of New York to support state regulation of natural gas development (Joint Landowners Coalition of New York, 2012). Local governments in all four states we studied have engaged in court cases that seek to sort out the prerogatives of states, localities, property owners, and oil and gas industry firms. Communities seeking to regulate HVHF activity face state supersession laws that have been interpreted as preempting any local action to address the community scale impacts of HVHF natural gas development. The resulting court cases pose financial and legal risks for these communities that are not trivial, and they could not be undertaken without significant resources, organization, and widespread public support (McAdam and Boudet. 2012).

Our study analyzes why and how the local response to HVHF shale gas development has emerged. To understand why communities have been moved to exercise local authority or “home rule” over natural gas development, we need to examine how they came to understand (1) the risks attendant to HVHF, and (2) their strategic and regulatory options. An answer to these questions requires looking at the concerns that have framed the public discussion, and at how key local actors evaluated industry and state government willingness or capacity to address those concerns.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



Our analysis is supported by dozens of formal and informal interviews conducted since 2010 with experts on the environmental, social and economic impacts of natural resources development in general and shale gas development in particular; state and local public officials; industry representatives; environmental advocates; and attorneys representing communities in suits over “home rule” authority. These interviews provided us with an understanding of how issues have been framed and reframed over time, and of how key actors have adapted (Christopherson and Rightor, 2012).

In 2012, we carried out a systematic study of communities taking local legislative action in response to HVHF shale gas development in the four Marcellus states (New York, Pennsylvania, Ohio, and West Virginia). We began by developing a database of communities and the type of legislative action they had taken -- using (and cross-checking) press reports; the websites of research, advocacy and interest organizations; local government and community websites; and direct inquiry -- and continually updated it over the course of the year. We used a socio-economic analysis to learn about how these communities compare with similar communities in their state, and classified their location along a rural-urban continuum (based on the county in which a community is located). We then used these classifications to select a stratified sample of communities that had passed local resolutions or legislation on shale gas development in two states, New York (which has not yet authorized HVHF natural gas development) and Pennsylvania (which has), and conducted structured interviews with the highest-ranking public official or his or her designee in each community.

Our interviews obtained information on the process of decision-making, the critical issues discussed in public meetings, and on community expectations regarding oil and gas industry practices and State regulation or monitoring of the industrial activities associated with HVHF. We also posed questions on residents’ attitudes toward shale gas development in the Empire State Poll conducted yearly by Cornell University’s Survey Research Institute.

This policy brief presents some of the key findings from this research.

Of the 298 communities in our four state database in the Marcellus Shale / Utica Shale region that have passed local resolutions or legislation on shale gas development, the vast majority (233) are in New York State. The State has had an official and unofficial moratorium on HVHF drilling since 2010 in order to move through an environmental and regulatory review process. When we began this study in January 2012, we could identify 39 communities in New York and 13 communities in Pennsylvania that had taken action to delay, restrict or ban HVHF. By the time we selected our stratified sample for the survey at the beginning of June, there were 118 such communities in New York and 26 in Pennsylvania. Our initial sample of communities to interview was drawn from this group, and by the end of November we had conducted interviews with key officials in 33 of those communities in New York, and 14 of the 26 in Pennsylvania.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



We also sought interviews with similar sample of communities in New York that have passed resolutions in favor of State (Department of Environmental Conservation) control of HVHF. These communities totaled 35 in June 2012, and we were able to obtain interviews with 6 of them. The number of communities passing a support resolution had increased to 54 by the end of December 2012.

We continued to track and classify communities taking action throughout 2012. In New York, that number increased dramatically: by the end of December, we had recorded 179 taking actions to delay, restrict or ban HVHF. In Pennsylvania, the number of localities and counties that had taken action to regulate the shale gas development already underway there rose to 33 by the end of December 2012. Overall, based on the 275 communities in New York, Pennsylvania, Ohio and West Virginia for which we have a date of action, there was a 573% increase in communities taking action between 2010 and the end of 2012.

What Actions Have Been Taken?

Communities in Pennsylvania and New York have responded differently to HVHF because each State's approach to approving drilling and establishing a regulatory regime to govern new shale gas development has differed. In December 2010, the New York State governor, David Paterson declared a moratorium on new horizontal drilling/HVHF extraction of natural gas until a broad environmental review process was completed. By contrast, Pennsylvania had little environmental or regulatory review before HVHF drilling began.

Of the 266 New York and Pennsylvania local governments (municipalities, boroughs, townships and counties) identified in our 2012 database, 54 took action in support of pursuing shale gas development under state regulation. These communities were all in New York State. The majority of these actions were organized by the Joint Landowners Coalition of New York, which circulated a draft resolution that (as a resolution, not a statute) could legally be passed by a local government without public hearings, as the State's SGEIS process dragged on and the pace of restrictive actions adopted by other local governments in New York accelerated.

The majority of the actions to constrain HVHF shale gas drilling in New York fall into the category of moratoria (123), that is, a delay for further study or to "wait and see", rather than an outright ban. Only a small number of communities (10) have adopted outright bans on hydraulic fracturing. The other most common action in New York communities has been to place restrictions on some aspect of HVHF shale gas development (40), frequently by use of the zoning code. These include limits on all industrial land uses, shale gas drilling by-products (e.g. toxic waste water, tailings, or drilling sludge), shale gas related facilities (e.g. pipelines, compressor stations, waste disposal facilities), or shale gas related activities (e.g. leasing, drilling locations, noise levels, road use).

In Pennsylvania, where HVHF was initiated with little review, communities have had different options in attempting to address the risks and costs associated with shale gas drilling. 13 of the 31

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



localities we identified have adopted zoning amendments to regulate shale gas development (most of them in Southwest Pennsylvania), and another 8 communities have passed “Citizens Bill of Rights” legislation that asserts the right to ban or regulate shale gas development at the local level. In addition, 2 suburban Philadelphia county governments have passed moratoria.

In response, the Pennsylvania General Assembly in February 2012 enacted Act 13. This Act strengthens some environmental protection provisions, but its central goal is to require all Pennsylvania communities to adopt a uniform set of local zoning provisions that essentially prevent localities from restricting shale gas drilling or related facilities. The Act provides localities with impact fees, but there is no indication that these fees correspond to the actual public costs associated with shale gas development. A controversial portion of the Act restricts health care professionals who obtain (in connection with a diagnosis) information about the chemicals used in hydraulic fracturing from releasing that information to anyone else who may be at risk from exposure to the same chemicals.

Seven communities sued the State to retain their local jurisdiction over land use, and portions of the Act were overturned in a 4-3 decision by the Appellate Court in July 2012. That decision is being appealed by the Commonwealth to the State Supreme Court.

All together, these actions indicate that communities have concerns about the shale gas development process in general, and a range of concerns about its potential impact on their community. The variety of issues being addressed by local regulation casts doubt upon the depiction of these communities as mere “NIMBYists” because the actions taken are specific to perceived harms rather than a uniform opposition to shale gas development.² In addition, our analysis of the legal text of community actions indicates that a moratorium should not be assumed to imply unequivocal opposition to HVHF natural gas extraction. Nor does an endorsement of state DEC regulation mean that a community renounces all rights to local control or approves of unfettered industry development of shale gas resources.

What Do We Know About the Communities That Have Taken Action?

Local response to Marcellus shale gas drilling has been slow to develop in Pennsylvania because there was little time for people to learn about the horizontal drilling/HVHF extraction process before it began, and because of strong state legislative and gubernatorial support for drilling. 31 localities in 16 counties and 2 of the 16 county governments in Pennsylvania have taken action to ban, restrict or assert the right of local control over shale gas industrial activities, including compressor plants and water withdrawal. No communities took action to support HVHF development because it already was underway in the state.

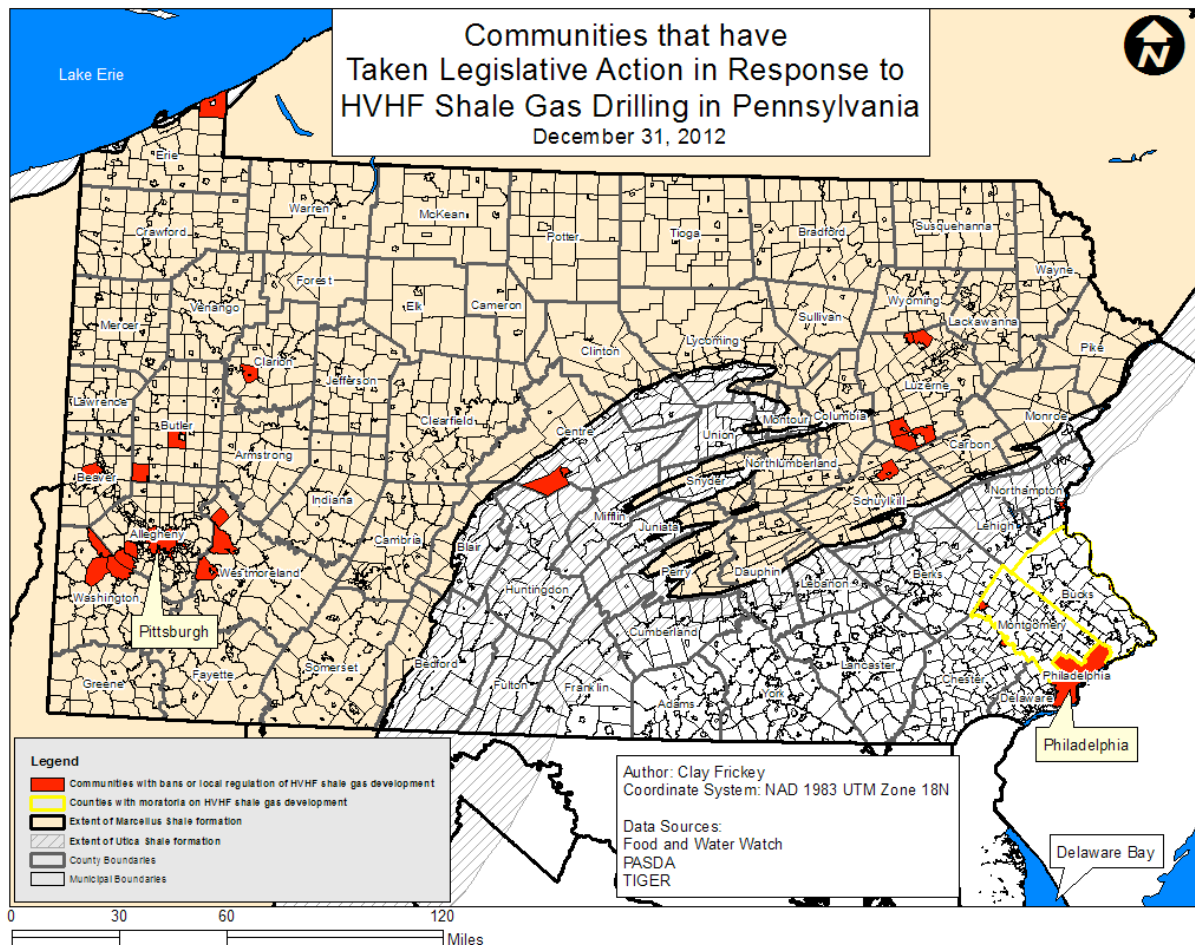
² For depictions of NIMBY-ists (Not In My Back Yard) as a catch-all description of opponents to high volume hydraulic fracturing, see: <http://www.naturalgasamericas.com/a-nimby-problem-requires-a-nimby-expert>. For an analysis of what are depicted as NIMBYist responses, see Cotton, 2013 at: <http://www.naturalgaselectricitynews.com/article-print-page/nimby-or-not-integrating-social-factors-into-shale-gas-community-engagements.aspx>.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



The counties and localities taking action in response to HVHF are currently concentrated in the Southwestern part of the state, in Pittsburgh and its surrounding suburbs. (See Map below)



Useful socio-economic data on household income levels and educational attainment rates are only available on a county-by-county basis, but the average median household income in the Pennsylvania counties with localities that have taken action to regulate, restrict, or ban some or all HVHF shale gas development related activity is \$46,637 per year, as compared with an average among counties statewide of \$47,954. The City/County of Philadelphia is included among the communities taking action. If Philadelphia County is removed from this comparison, the average median household income among all the other Pennsylvania counties with localities that have taken action is \$46,796, whereas the statewide county average excluding Philadelphia County is \$48,121. We conclude that the communities taking action in Pennsylvania closely resemble the statewide average.

As for educational attainment, in the Pennsylvania counties with localities that have taken action, 87.1% of citizens are high school graduates and 19.4% hold at least a bachelor's degree. Statewide,

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



87.1% of citizens are high school graduates and 20.1% hold at least a bachelor's degree. Again, if we remove Philadelphia from this comparison, in the Pennsylvania counties with localities that have taken action, 87.2% of citizens are high school graduates and 20.1% hold at least a bachelor's degree. We conclude that here too, the counties with localities that have taken action to restrict shale gas development do not differ significantly from the statewide averages.

Counties in New York with localities that took action in support of pursuing shale gas development under state regulation have populations with a lower proportion of BA degree holders and slightly lower household income levels than counties with localities that have passed moratoria, restrictions, or bans.

Counties with localities that took action in support of pursuing shale gas development under state regulation have an average median household income of \$47,822; 87.5% of their citizens graduated from high school while 21.4% have at least a bachelor's degree.

The average median household income in the moratoria/restriction/ban counties is \$50,293 per year; 87.6% of citizens are high school graduates but 25.0% hold at least a bachelor's degree. Among counties statewide, the average median household income is \$53,529; 87.1% of citizens are high school graduates and 25.3% hold at least a bachelor's degree.

As in Pennsylvania, the largest city in New York is included among those communities that have passed legislation seeking to restrict shale gas development. If the five counties that comprise New York City are removed from this comparison, the average median household income among all the other New York counties with localities that have taken restrictive actions is \$49,780, whereas the statewide average among counties excluding New York City is \$53,387. Among New York counties (other than those that comprise New York City) with localities that have taken restrictive actions, 87.7% of citizens are high school graduates and 24.0% hold at least a bachelor's degree, while in all New York counties (other than NYC), 87.8% of citizens are high school graduates and 24.6% hold at least a bachelor's degree.

We conclude that household income levels and educational attainment in the moratoria / restriction / ban communities of New York are little different than levels statewide, and the communities that have supported pursuing shale gas development under state regulation are only marginally different. These factors do not provide a good basis for explaining the differences in their policy stances, or why these communities have taken local legislative action where others have not.

Are Shale Gas Development Counties "Rural"?

As for the counties where HVHF is taking place or anticipated, these are often depicted in the media as poor and "rural", with fewer economic resources than those counties in which communities have taken action to slow down or regulate HVHF. They are also often depicted as having little or no economic activity. Our analysis indicates that while HVHF drilling may be occurring in areas

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



considered rural by Pennsylvania or New York standards -- as measured by total population, population density or worker commuting patterns -- these areas are not “rural” by national standards. By comparison to other parts of the nation where shale gas development is occurring, New York and Pennsylvania drilling regions are all adjacent to large or small metropolitan areas or within commuting distance of urban employment and services, such as health care (USDA Economic Research Service 2012).

The relative “urbanity” of Pennsylvania counties where shale gas drilling is occurring, or the New York counties where drilling is likely to occur, is important for several reasons (Kay and Bills, 2007).

First, landowners may have located to these counties for amenity reasons, rather than for their livelihood. Second, many residents may be tied to employment opportunities in nearby urban counties rather than dependent on the land. Third, both landowners and residents may be engaged in economic activities (e.g. organic farming or wineries) that depend on the accessible urban customer base nearby. All of these conditions are less characteristic of the Western US rural areas where natural resource extraction historically has occurred.

What Does the Urban Character of Potential Drilling Locations Mean for Local Responses?

New York communities that have taken action to delay (moratoria), restrict (regulate) or ban drilling are predominantly located in counties adjacent to the Southern Tier or in areas of New York where Marcellus Shale drilling is unlikely, but where drilling in the Utica Shale (a deeper but more widespread shale formation) may eventually occur. They are more likely to be located in counties with larger populations and include more urban centers. Bans have been passed in Albany, Buffalo, Syracuse, and the City of Binghamton, moratoria in the Cities of Rochester and Utica, restrictive legislation in Niagara Falls. These 7 communities incorporate half of the population of all communities that have passed local moratoria, restrictions, or bans on HVHF in New York. Overall, the population contained in the communities taking action to regulate, delay or ban HVHF is nine times larger than that of the communities taking action in support of HVHF shale gas development. As of August 2012 and based on 2010 US Census figures, the population living in New York municipalities that had passed local HVHF-related restrictions, moratoria or bans was about 1.6 million people, while approximately 178,000 people lived in municipalities that had passed support resolutions.³

The New York counties and municipalities that have passed some type of resolution in support of state regulation of HVHF (as distinct from abjuring local control altogether) or in support of the initiation of shale gas drilling, are disproportionately located in that portion of the state most likely to experience substantial drilling activity in the near term. While the area of highest-yielding wells in New York is still speculative, drilling is likely to initially concentrate in an area within the

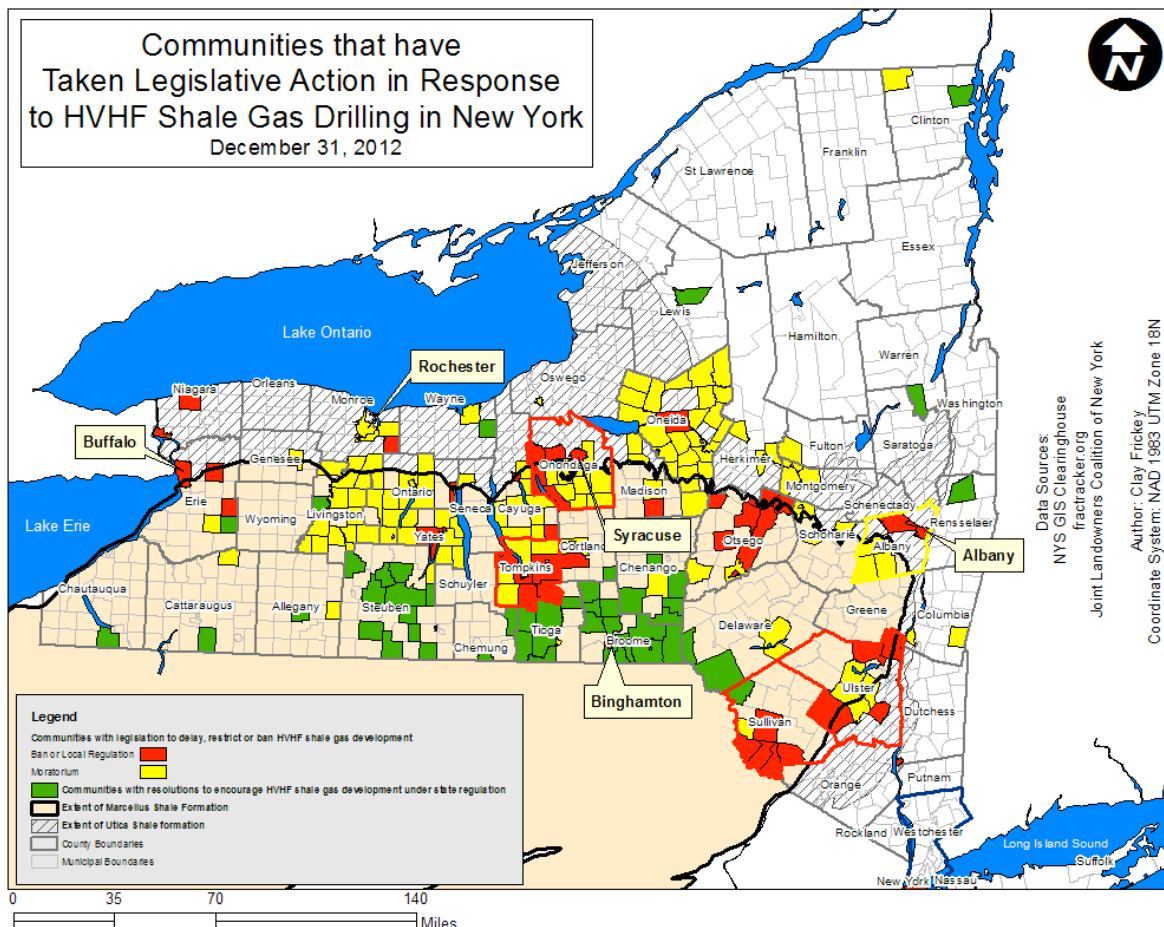
³ Edelstein, Karen on <http://www.fracktracker.org/maps/ny-moratoria/>, and quoted in the *Ithaca Independent*, “Stats: New Yorkers Reject Fracking 9-to-1” by Ed Sutherland, August 17, 2012. Available at : <http://www.ithacaindy.com/2012/08/17/stats-new-yorkers-reject-fracking-9-to-1.html>

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



“Southern Tier” counties arrayed along the border with Pennsylvania: Chautauqua, Cattaraugus, Allegany, Steuben, Chemung, Tioga, Broome, Delaware and Sullivan. Because of their proximity to the drilling activity already underway in northern Pennsylvania, these counties already host businesses that are engaged in shale gas development activities (e.g. trucking companies, quarries, hotels), and a workforce employed by the oil and gas industry in Pennsylvania. The majority of the municipalities that have passed support resolutions (29 of 54) are in three of those counties -- Steuben, Tioga and Broome -- and another six communities are in the southern part of Chenango County, immediately north of Broome. Of all Southern Tier counties, only Sullivan has more municipalities that have passed legislation to delay or ban HVHF than to support it.



What Did Local Government Leaders Tell Us?

To gather in-depth information on the motivations and public discussion behind local legislative action, we conducted structured interviews with the chief elected official of each locality (or his or her designee) in a stratified sample of the “action taking” communities in New York and

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



Pennsylvania. We selected sample communities with a locational distribution, median household incomes and educational attainment rates that mirrored all action-taking localities.

Every interviewee answered the same set of questions. These questions included a description of public deliberations in response to the prospect of shale gas development and their sense of community opinions about the role of the State, the natural gas industry, and local government in how natural gas extraction should be regulated.

We interviewed officials in 25% of the New York municipalities and townships that had passed a local statute or resolution on HVHF at the time we launched our survey in June 2012 (or 17% of the New York municipalities and townships that had taken some kind of local action as of the end of 2012). We interviewed both those that have voted to delay, restrict, or ban HVHF shale gas development (118 localities then, 173 localities now, of which we surveyed 33) and those that have passed resolutions in support of initiating HVHF shale gas development and/or of leaving the decision to the State DEC (35 localities then, 54 localities now, of which we surveyed 6) -- a sample of 39 localities out of a total of 227 in New York as of the end of 2012.

In Pennsylvania, we interviewed officials in 14 communities -- 54% of the municipalities, boroughs or townships in the state that had passed a local statute or resolution on HVHF at the time we launched our survey in June (26 localities), and 45% of Pennsylvania localities that had taken some kind of local action as of the end of 2012 (31 localities).

The Deliberative Process

In New York and Pennsylvania communities taking action to restrict HVHF, the deliberative process was extensive. Of the 45 communities responding to a question about the extent and content of official public meetings dedicated to discussing shale gas issues since 2008, 22 (49%) had between 1 and 3 public meetings or hearings, 9 (20%) had between 4 and 8 public meetings/hearings, and 13 (29%) had more than 8. By contrast, in the New York communities we interviewed who passed resolutions in favor of state control (6 communities), 4 had no public meetings. Although our sample is small, the minimal public involvement in these resolutions is substantiated by press accounts for a larger number of communities (Reilly, 2012).

Community Concerns

Interviewees indicated that residents who testified during the meetings that preceded the legislative decision expressed concerns about a range of issues. Residents had concerns about environmental impacts from shale gas development, but also raised public health issues, traffic congestion, and how the industrialization of the region would affect their quality of life. Not surprisingly, there was more discussion of potential community disruptions in communities that passed restrictive legislation, both in New York and Pennsylvania, whereas in communities that passed resolutions supporting shale gas development the focus was more on community benefits, although road maintenance and traffic congestion were mentioned as concerns.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



Community meetings also included discussion of the benefits of shale gas development in places that passed restrictive legislation (but only in New York). Officials in the 33 “restrictive” communities we surveyed in New York were asked to rank the top three issues discussed in their deliberations. Out of a total of 95 entries, a benefit from shale gas drilling received a top-three ranking 10 times. Among the benefits mentioned were tax benefits, economic benefits to local citizens, economic benefits to local businesses, and induced commercial development. The most frequently cited benefit was economic benefits to local citizens (6). In Pennsylvania, our survey respondents did not list any of these benefits as being among the top three issues discussed in their public meetings.

We probed which concerns were most significant in driving action, as indicated by which were most discussed during public deliberations. Our respondents indicated that the primary concern of 37 out of the 45 communities among those passing restrictive legislation (and responding to the question) was with water issues. Water issues were among the top three issues for 44 out of the 45. In the 2 of the 6 communities we interviewed that passed supportive legislation, water concerns were also mentioned as one of three top items of discussion.

With respect to community impacts, the top concerns were road maintenance, public health, and traffic. 35 of 49 (71%) of respondents said road maintenance was one of their top three most-discussed community impacts during public deliberations. The second most commonly discussed community impact during public deliberations was public health, with 27 of 49 (55%) of respondents listing public health in their top three. Finally, traffic issues and traffic congestion were the third most-discussed community impact, with 25 of 49 (51%) of respondents listing this issue among their top three most discussed prior to legislative action.

The broadly-held concern with negative community impacts was confirmed by the answers to questions we commissioned in the *Empire State Poll*, a survey of a statistically representative sample of all New York residents conducted since 2003 (Xian, 2012).⁴ In both 2010 and 2011, twice as many *Poll* respondents felt that the risk of water contamination from HVHF natural gas development outweighed any possible revenues from natural gas drilling (53% vs. 25% in 2010, and 52% vs. 27% in 2011). And in response to a 2012 *Empire State Poll* question, a plurality of New York residents (45%) indicated that they believed the quality of life in communities affected by shale gas drilling would get worse (23% said it would stay the same and 32% said it would get better); significantly more Upstate New York residents (51%) said it would get worse than Downstate residents.

Trust Issues

The majority of the public officials we interviewed in New York and Pennsylvania indicated that their citizens are skeptical of the willingness or ability of the natural gas industry or their state

⁴ Cornell University Survey Research Institute. *Empire State Poll 2012 Report: Natural Gas Drilling*. Cornell University. Available at: <https://sri.cornell.edu/sri/esp.reports.cfm>. For an introduction to the *Poll* and its method, go to: <https://sri.cornell.edu/sri/esp.introduction.cfm>.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



government to protect affected communities from the impacts of HVHF shale gas drilling. Interviewees were asked about their level of confidence that the industry or the State will protect the communities' environment and economy (ranked on a scale of 1 to 5, with 1 being "confident" and 5 being "not at all confident").

31 of 48 respondents (65%) rated their confidence that the natural gas industry will protect the environment, health and safety of affected communities a "4" or "5". 32 of 49 respondents (65%) reported a similar lack of confidence (a "4" or "5" rating) that the natural gas industry will protect the economic and social stability of affected communities.

31 of 50 respondents (62%) rated their confidence that the State has the capacity to enforce environmental, health and safety regulations to protect affected communities as a "4" or "5". 33 of 49 respondents (67%) rated their confidence that their State will regulate drilling activity effectively to protect the economic and social stability of affected communities as a "4" or "5".

Public Costs and Local Capacity

We asked about local capacity to respond to the needs and expectations of the public and of gas companies for services during the drilling phase. On the scale of 1 to 5, with 1 being good, 3 being "Stressed but OK", and 5 being "Overwhelmed", 39 of 50 respondents (78%) rated their capacity as somewhere between "Stressed but OK" and "Overwhelmed" (17). The median response was 3.5.

Communities are unsure about how any costs related to shale gas development will be covered. When asked how they anticipated that any increased demand for local services would be paid for, 24 of 50 respondents (48%) said they were not sure. Only 14 (28%) respondents anticipated state aid in the form of impact fees. No respondent anticipated that state taxes would be used to pay for their additional costs.

Regulatory Preferences

Interviews with political leaders in our sample of New York and Pennsylvania communities that have enacted legislation or resolutions on HVHF indicate that the issue of shale gas development is important to local decision-makers, but equally important is the ability of the community to control its own destiny. Asked what level of government should control shale gas extraction, 43 of 50 respondents (86%) indicated that local government should play a substantial role in regulating shale gas drilling: 24 respondents indicated a preference for local control only, while 19 more favored a multi-level distribution of regulatory authority that includes localities. Indeed, only one of the six communities we talked to that had passed resolutions in *support* of pursuing shale gas development under state regulation advocated state regulation exclusively.

This finding, too, is reinforced by *Empire State Poll* results (Xian 2012) that indicate that 61% of New York residents "agree" or "strongly agree" that local government should control shale gas development.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



Asserting Local Control

In Pennsylvania, shale gas development is already underway and communities are taking action to control the effects on their communities, the majority via zoning regulation. Their initiatives were prompted by public dissatisfaction with the State's regulation of HVHF development, or by the passage (in February 2012) of Act 13 -- a Commonwealth of Pennsylvania statute designed to (a) create consistent land use regulations across communities where drilling would occur, (b) strengthen some environmental regulations governing the industry, and (c) minimally compensate communities for damages attributable to HVHF development. The most important purpose of that statute, however, was to exert State power to govern all aspects of HVHF shale gas development in the state regardless of local government preferences.

Seven Pennsylvania communities -- Cecil, Peters, Mt. Pleasant, and Robinson in Washington County; South Fayette in Allegheny County; and Yardley and Nockamixon in Bucks County -- sued the State over Act 13, contending that it takes away their ability to control shale gas related operations through local zoning, and leaves them unable to protect homeowners, parks and schools from drilling sites, waste pits, truck traffic or other industrial activities associated with shale gas development. Local officials also contend that the Act prevents them from carrying out their duty as elected officials to protect the health and welfare of the citizens in their communities. 70 other Pennsylvania communities, nearly 20 environmental groups, and "good government" organizations such as the Pennsylvania Chapter of the American Planning Association, the state associations of Boroughs and of Township Supervisors, and the League of Women Voters of Pennsylvania, have supported the suit against Act 13. Their issue is captured well by a "Will of Council" issued by the City of Pittsburgh (April 3, 2012) that asks the courts to overturn Act 13 because it "diminishes municipalities and local elected officials of the fundamental oversight of zoning and land use controls."

Act 13 was overturned by lower Pennsylvania state courts in July of 2012, but those decisions are currently being appealed to the State Supreme Court by the Commonwealth. Meanwhile, the State (through the Public Utilities Commission) has sought to "punish" the seven petitioner communities by withholding the impact fees that would help them ameliorate the effects of shale gas development on their communities.

In New York, the movement toward use of a home rule argument has been slower to emerge. The state moratorium encouraged communities to learn about the environmental, social and economic issues related to HVHF, and the focus has been on the State's process, particularly comment on drafts of a Supplemental Generic Environmental Impact Statement (SGEIS). This learning process, including learning from the experience of Pennsylvania communities, has evolved into a home rule movement as local officials and environmental leaders have interacted with the State of New York over the development of HVHF regulations and revision of the SGEIS. According to our interviews, experience with State officials has *decreased* confidence in the willingness or capacity of state government to address the short-term and long-term effects of shale gas development on localities.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



The move to exercise “home rule” in response to the risks posed by shale gas development has emerged in response to a concern that the State of New York was likely to approve HVHF and enforce State preemption of local authority over land use. In New York, suits against communities asserting the right to local jurisdiction over land use have pitted landowners or oil and gas companies against local governments. In these cases, too, the courts have upheld community rights to local jurisdiction over industrial activities. In February 2012, Supreme Court Justice Donald F. Cerio, Jr. ruled in favor of the Town of Middlefield’s ban on hydro-fracking in response to a claim by a dairy farmer that the ordinance denied her rights to derive economic benefit from a lease to develop her mineral rights. In a separate case, Supreme Court Justice Phillip R. Rumsey upheld the Town of Dryden’s right to ban mineral extraction. This case stemmed from a complaint filed by Anschutz Exploration Corporation, which argued that state laws regulating oil, gas and mineral extraction supersede local ordinances regulating *any* aspect of the industrial activities associated with HVHF development. As in Pennsylvania, this case has attracted support from other localities, even beyond the likely drilling regions: 52 municipalities in New York became signatories to an *amicus* brief in the Dryden case, supporting the home rule rights of local communities.⁵

The significance of the movement supporting some level of local jurisdictional control over shale gas development is that the legal arguments in favor of home rule support the idea that this governance mechanism is appropriate for all localities. Jurisdictions who favor natural gas drilling might be able to approve it within their jurisdiction under whatever limitations or regulations they stipulate.⁶

Conclusions

What began as a protest movement among environmental groups concerned with the environmental impact of shale gas development has drawn wider interest from local government policymakers and individual citizens. This is, in part, because of a lack of trust that the oil and gas industry will implement practices to protect the long-term environmental integrity (or economic integrity) of the regions where natural gas development is occurring or is expected to occur. Equally, it is because localities lack confidence in their own state governments, and are skeptical about whether the State has the willingness or the capacity to address the full range of issues of concern to communities that will bear the costs of HVHF natural gas development.

The drive for local action has emerged in the context of a lack of trust in state and federal government generally⁷, enhanced by their failure to engage in anticipatory policy making on energy development. During the statewide moratorium in New York, localities seeking information or

⁵ In the state court system of New York, a “Supreme Court” is the highest trial-level court of general jurisdiction, with a branch in each county -- the equivalent of a “Superior Court” in most states.

⁶ Although the natural gas industry opposes local jurisdiction over natural gas drilling, contending that it will create an inefficient patchwork, this is the situation under which they operate in Texas, which is a strong home rule state.

⁷ See, for example, results of polling by the Pew Research center, available at: <http://www.pewresearch.org/key-data-points/views-of-government-key-data-points/>.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



clarification from the State have encountered 1) a lack of response to questions about state monitoring capacity (in public health, for example), and 2) indications that state officials have limited knowledge of the costs and risks of shale gas development (to other industries in the region, for example) (Christopherson and Rightor, 2012). Pennsylvania communities have been frustrated by a lack of transparency (as evidenced by poor public information on drilling activity, and the imposition of confidentiality requirements on public health professionals), though in Pennsylvania, skepticism about the effectiveness of state regulation of shale gas development has been overshadowed by the Commonwealth's pre-emption of local control over land use via Act 13.

These experiences appear to be provoking concern and resistance among an ever-widening range of citizen groups and local public officials. The increasing incidence of local moratoria as more information has become available attests to escalating rather than decreasing concern. The movement challenging the current regimen for regulating shale gas development has matured through the mobilization of strategic resources including internet-based information networks, community outreach, dialogue with government agencies, opportunities to vet industry and state produced information, and use of specialized expertise on social and economic as well as environmental aspects of natural gas development.

A group of attorneys specialized in environmental law has been particularly important in developing legal arguments which position the regulation of industrial HVHF shale gas development by localities in the context of a more fundamental legal issue, that of "home rule". This positioning has broadened support for the communities engaged in legal action over their attempt to regulate HVHF, on the basis that a broader principle might be threatened by state supersession.

In New York, local resistance has only been compounded by threats from the industry to sue localities. In Pennsylvania, support for communities seeking to regulate HVHF has expanded in the wake of attempts by the Commonwealth to deny communities that had challenged Act 13 in court any impact fees from drilling in their localities.

The power of this movement, and its ability to strategically manage how the debate over HVHF is being framed, has been recognized in a white paper addressed to the oil and gas industry by Control Risk, an international risk management firm, and summarized as follows:

The industry argues that environmental concerns are misplaced and based on misperceptions fuelled by Gasland. Yet simply attempting to discredit Gasland has been ineffective for a few key reasons. First, anti-fracking grievances are broader and deeper than water contamination. They also encompass health and safety concerns and issues of economic development, cultural integrity and political legitimacy, which pertain directly to the question of who wins and who loses from gas development. Secondly – and crucially – companies have lost public trust by discounting the legitimacy of grievances, prioritising trade secrets over transparency and engaging governments rather than communities. Finally, the industry has underestimated the sophistication, reach and influence of the anti-fracking movement. It is not simply 'NIMBY-

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



ism' masquerading as environmentalism, but a diverse coalition of ideological and vested interests unlikely to be swayed by industry-funded studies or glossy public relations campaigns.

From The Global Anti-Fracking Movement: What It Wants, How It Operates, and What's Next, a report published by Control Risk, London, December 2012

HVHF shale gas development is more complex and contentious than the vertical natural gas drilling activity of the past (which continues even in New York State) because of its more intensely *regional* and *industrial* character. HVHF shale gas extraction and its infrastructure spreads out across a whole region, the public costs are significant, and the economic risks to drilling communities are exacerbated by the boom-bust cycle associated with all fossil fuel extraction. In addition, there is a danger that this kind of resource extraction will crowd out other industries, damaging the longer-term economic prospects of the region. HVHF development can take place in or adjacent to densely populated areas with more diverse economies, where it is more likely to compete with existing employers (including the public sector) for the available labor supply, and trouble the daily lives of more people in some way, if only because there are more people to trouble.

All of these factors raise questions about the distribution of costs and benefits of HVHF shale gas drilling in US regions, and it is these issues have been brought to the fore by the actions of hundreds of local governments in the Marcellus shale gas development area, which lies under large parts of four eastern US states and extends into two more.

Our research results indicate that caricatures of “pro-drilling” and “anti-drilling” communities misrepresent the richness of the debate at the local level and the reasons behind local legislative actions. An endorsement of state regulation does not mean approval of unfettered industry development of shale gas resources, and a moratorium does not mean unequivocal opposition to HVHF natural gas extraction. Indeed, a few New York communities have passed resolutions in support of state regulation while *also* passing a moratorium on shale gas development. While advocates interpret a moratorium as an indication of a stand against fracking, it often means a community is seeking more information before making a decision. The spectrum of concerns and legislative responses is broad, in sharp contrast with the narrow discourse on HVHF shale gas development reported in the media.

Our findings indicate that local governments do not pass legislation to restrict or support shale gas development because a fringe group has had its way, nor because the majority of citizens clearly disapprove or approve of it. Rather, at least in the communities that we have surveyed, they do so because many citizens are worried about the consequences, unclear about how the risks and costs will be distributed, or skeptical about the ability and willingness of either the State or the industry to look out for their interests.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



References

- Christopherson, S. and N. Righor. 2012. "How Shale Gas Extraction Affects Drilling Localities: Lessons for Regional and City Policy Makers." *International Journal of City and Town Management* Volume 2, No. 4: 350-368. Available at:
<http://www.greenchoices.cornell.edu/development/marcellus/articles.cfm>
- Control Risks. 2012. *The global anti-fracking movement: what it wants, how it operates and what's next*. London: Control Risks. Available at:
http://www.controlrisks.com/Oversized%20assets/shale_gas_whitepaper.pdf
- Cotton, M. 2013. "Shale Gas—Community Relations: NIMBY or Not? Integrating Social Factors Into Shale Gas Community Engagements." *Natural Gas & Electricity* Vol. 29, Issue 9: 8-12. Available at:
<http://www.naturalgaselectricitynews.com/article-print-page/nimby-or-not-integrating-social-factors-into-shale-gas-community-engagements.aspx>
- Edelstein, Karen on <http://www.fracktracker.org/maps/ny-moratoria/>, as quoted in the *Ithaca Independent*, "Stats: New Yorkers Reject Fracking 9-to-1" by Ed Sutherland, August 17, 2012. Available at: <http://www.ithacaindy.com/2012/08/17/stats-new-yorkers-reject-fracking-9-to-1.html>
- Fracktracker. Website. <http://www.fracktracker.org/maps/ny-moratoria/>.
- Joint Landowners Coalition of New York. 2012. Reso #####: *Accept Draft Supplemental Generic Environmental Impact Statement to Develop Standards to Ensure the Safe Development of Natural Gas Resources based on the Expertise of the DEC*. Available at:
<http://www.jlcny.org/site/index.php/town-resolutions-efforts-and-landowner-info/1347-town-resolution-to-support-nydec-efforts-and-findings>. Downloaded March 22, 2013.
- Kay, D. and N. Bills. 2007. *Owners of Idle Agricultural and Forest Land in New York State: Results of a Mail Survey*. CaRDI Reports, Issue Number 1/March. Ithaca NY: Community and Regional Development Institute, Department of Development Sociology, Cornell University. Available at:
<http://cardi.cornell.edu/cals/devsoc/outreach/cardi/publications/loader.cfm?csModule=security/getfile&PageID=205636>
- McAdam, H S and D. Boudet. 2012. *Putting Social Movements in their Place: Explaining Opposition to Energy*. Cambridge: Cambridge University Press.
- Reilly, S. 2012. Pressconnects.com. (July 10) Available at:
http://www.pressconnects.com/article/20120710/NEWS01/207100393/Broome-towns-nclink_check=1. Downloaded January 20, 2013.
- Sovacool, Benjamin K. 2008. "The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change." *Stanford Environmental Law Journal*, 27: 397-476.
- USDA Economic Research Service. 2012. Rural-Urban Continuum Codes Documentation.
<http://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation.aspx#.UU8mnY5h5US> Updated July 5, 2012. Downloaded March 22, 2013.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
 Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu



Xian, Sherry, D. Hearn and Y. Miller. *Empire State Poll 2012 Report: Natural Gas Drilling*. New York Opinion Index. Empire State Poll. Ithaca NY: Cornell University Survey Research Institute. Available at: <https://surveys.sri.cornell.edu/sri/esp.reports.cfm>.

Acknowledgements

We would like to acknowledge the thoughtful and arduous assistance of Molly Riordan in designing and constructing the community database that laid the basis for our work. We would also like to thank The Heinz Endowments and The Park Foundation for their support of this project.

CITY AND REGIONAL PLANNING

Cornell University · 106 West Sibley Hall · Ithaca, New York 14853
Tel: (607) 255-4331 · Fax: (607) 255-1971 · www.crp.cornell.edu

