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Public Participation in Intractable Conflict: A Case Study of New York State’s High Volume Hydraulic Fracturing Policy Development Process and Stakeholder Engagement Outcomes

Nancy M. Pattarini

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Public Participation in Intractable Conflict:
A Case Study of New York State’s High Volume Hydraulic Fracturing Policy
Development Process and Stakeholder Engagement Outcomes

by

Nancy M. Pattarini

A Dissertation Presented to the
College of Arts, Humanities, and Social Sciences of Nova Southeastern University
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This dissertation was submitted by Nancy M. Patarini under the direction of the chair of the dissertation committee listed below. It was submitted to the College of Arts, Humanities, and Social Sciences and approved in partial fulfillment for the degree of Doctor of Philosophy in Conflict Analysis and Resolution at Nova Southeastern University.

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Dedication

To the participants in this study, all of whom were deeply committed to their cause, and sincerely desired a forum where stakeholders could hear and be heard.
Acknowledgments

I am delighted to formally acknowledge my dissertation committee, Dr. Neil Katz, chair, and committee members Dr. Elena Bastidas and Dr. Robin Cooper. Their guidance was steadfast from the formative stage of my research topic, to refining the research questions and articulating findings. A true collaborative process. Deep appreciation also goes to my research assistant, Lauren VanWagoner, for her superb attention to detail and being a great teammate on our field trip adventures.

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Abstract
The permitting process to determine whether high volume hydraulic fracturing (HVHF) should be allowed in New York State has been controversial and protracted. There have been intense disputes between those who see HVHF as an economic benefit and those who assert it will jeopardize health and the environment. Using the case study research method, perceptions of directly affected stakeholders regarding the issues, benefits and limitations associated with the public participation process were explored. Purposive sampling yielded participants from the natural gas industry, municipal governments, local landowners and residents. Data collection methods involved in-depth interviews, focus groups and document analysis. Since the HVHF conflict concerned a future possibility of environmental degradation, theoretical foundations included complex systems and green ideology, the enactment of power and social dominance, environmental conflict resolution, and principles of collaborative management. Findings demonstrate that the public participation process was embedded in a traditional top-down policy development approach that did not accommodate conditions of high uncertainty, nor did it allow for the broader and deeper discourse needed when development involves socio-economic and environmental justice issues. Implications include the potential to apply principles and methods of collaborative management typically used for natural resource management. In particular, the adaptive co-management approach provides a framework for managing issues that require problem solving over time, an essential missing element of the current HVHF stakeholder engagement process where diverse stakeholders identified issues of trust, empowerment, rights and fairness.
Chapter 1: Introduction to the Study

The topic of this dissertation is the ongoing controversy in New York State over the possible introduction of high-volume hydraulic fracturing (HVHF) — in short-hand referred to as hydrofracking — and how stakeholders have been engaged in the policy process to determine if or when the practice will be allowed. This advanced method for extracting natural gas from deep underground shale beds can hold significant revenue potential for energy companies as well as others who can profit by extension. At the same time the potential for health and quality of life consequences has struck fear in many communities, especially in target development areas of the state. This study is intended to contribute to the body of case examples of controversies that emerge when economic opportunities are accompanied by environmental risk. It specifically focuses on stakeholder perceptions of the effectiveness of the public participation methods used in New York State’s HVHF policy and permitting process.

The case study centers on the conflict associated with the Marcellus Shale region that runs along the southern tier of New York State. Drawing on previous analyses of public participation and environmental dispute resolution processes, the study applies the disciplines of conflict analysis and conflict management to the public participation process that has been employed by the state. Public participation methods have had limited success in mitigating conflict over the issues associated with hydrofracking, and there is substantial evidence of conflict escalation over the course of policy development. Some hydrofracking opponents were appeased by the state’s moratorium — and now ban — on granting permits to energy developers, but the data in this study show that the issue is far from any permanent resolution.
The What, Why and Why Not of Hydrofracking

The practice of horizontal drilling and hydraulic fracturing is legal in New York State and is a long-standing method of extracting natural gas from below ground reservoirs. Horizontal drilling means a well is first drilled down vertically and then curved and drilled horizontally to reach a natural gas deposit. The benefits are greater access to the gas-bearing rock formation and less need for multiple above ground wells. Hydraulic fracturing is the process of injecting water mixed with sand and chemicals under high pressure into these rock formations to break them up and release greater amounts of gas (NYS DEC Marcellus Shale, 2012). Especially abundant sources of natural gas have been discovered in shale rock, with one of the largest being the Marcellus Shale region that runs from Ohio and West Virginia northeast into Pennsylvania and southern New York (See Figure 1.)

It is estimated that the Marcellus formation contains more than 400 trillion cubic feet of natural gas, with the potential to become one of the largest developable regions in the USA (eia, 2011; Arthur, Bohn and Layne, 2008). However, due to the depth and tightness of this type of shale, gas extraction was not effective or economical until advances in gas well development technology in the mid 1990’s. The method used today, referred to as “high-volume” hydraulic fracturing (HVHF) has become a lightening rod issue among those who see rewards and risks should the practice ever be permitted in New York State.
In a series of investigative news stories published by The New York Times the drilling practice was referred to as this century’s gold rush (Urbana, 2011). Proponents of natural gas drilling cite economic as well as national security and environmental benefits (COEJL, 2013). HVHF is popular with energy companies because the technology allows them to tap into vast new reservoirs of natural gas that are otherwise difficult to reach. Many political leaders see it as a way to create jobs and become less dependent on foreign oil. A number of environmental scientists are promoting hydrofracking as a way to help eliminate green house gasses such as carbon dioxide, while some communities that have been struggling in a poor economy are anxious to take advantage of this new economic development opportunity (McCrea, 2010; Marcellus shale gas drilling divides communities, 2011). HVHF also has become highly controversial due to environmental
and safety concerns. An average well can use over 4 million gallons of water and generate large amounts of wastewater and brine. And while a hydraulically fractured well will produce only about a third of the wastewater per unit of gas recovered as a conventional gas well, natural gas production in the Marcellus region has increased over 500% (State Impact, 2013; Oil and Gas Online, 2013). Communities in potential drilling areas worry about the capacity to adequately treat wastewater that is generated during drilling, the potential for toxic spills, and other hazards related to the daily trucking of such materials. Additional concerns of residents, landowners, and environmental advocates include the possibility of well and aquifer contamination, and lowering of property values (Urbana, 2011). The many dynamics of this dispute indicate that a more collaborative and sustainable environmental conflict management process is needed.

From critical implications for managing environmental conflict, to improving the policy making process and more adequately meeting diverse stakeholder interests, the full dynamics of the hydrofracking controversy are far too broad to be explored in a single case study. However, by viewing issues through a conflict management lens, this research has the potential to yield insights that ripple across multiple domains. In spite of what appear to be irreconcilable differences over HVHF, it is the premise of this study that integrating a more robust and ongoing dispute resolution process with traditional public participation methods used in policy making may positively inform the parties and achieve a better alignment of interests over time.

The remainder of this chapter discusses the tension that can exist between economic and environmental interests, and how differences have evolved into conflict over the practice of HVHF. Evidence is offered through an initial case analysis based on
Wehr’s (1979) conflict mapping guide, an essential first step to understanding the nature of the hydrofracking conflict from a conflict management and resolution perspective. Discussion then turns to the theoretical foundations and conceptual framework for the study, which help inform the choice of research method and foreshadow potential conflict management approaches. The chapter concludes with the underlying assumptions of the study, its scope and limitations, and the researcher’s assessment of the significance of the phenomenon beyond the topic of natural gas exploration.

**Background**

The potential for environmental concerns to intersect and conflict with economic interests is especially heightened with extractive industries such as oil and natural gas. An extractive industry is typically defined as one involved with a non-renewable natural resource. Multiple challenges include quality of life impacts when a major industrial operation enters a community; the potentially irreversible physical impact on land due to drilling; and the hazardous nature of the chemicals used in the extraction process (Ali and O’Faircheallaigh, 2007). At the same time our economy and quality of life rely on energy generation, and the industry generates significant wealth for shareholders, landowners, and host communities. Given this specter of risk and reward, defining the HVHF controversy as strictly an environmental conflict would be flawed. Analysis of the issues must begin with expanding the definition of environmental conflict by making a distinction between conflict that emanates from a struggle over scarce resources, and situations that constitute an environmental *cause* of conflict. Libiszewski (1992) defines environmental causes of conflict as environmental degradation — situations in which a “human-made environmental change [has] a negative impact on human society” (p. 4).
While the HVHF case certainly involves issues related to resource access and landowner rights, stakeholders are primarily embroiled in debate over the potential for environmental degradation resulting from drilling practices and related management.

Thus, Chapter 2 delves into theories and concepts that can help us better understand conditions that lead to this type of intractable conflict, including the challenges posed when attempting to develop policy within a complex system. It also is essential to look at the role of public participation and the policy dispute resolution process. Importantly, relevance to the proposed case study lies in the timing and integration of these two disciplines. This is a fine distinction but an important one. Public participation typically occurs in the policy development process, with the primary goal of establishing policies that reflect stakeholder interests. Policy dispute resolution, including the specialized area of environmental conflict resolution, is typically activated when a significant dispute or crisis is manifested in some manner. While the policy process is designed with an end goal, new information and emerging conflicts can make it a prolonged endeavor. Likewise, public participation processes can begin and end formally but often continue outside of the policy process when concerned stakeholders and dedicated interest groups are dissatisfied with outcomes. The literature review culminates with discussion of emerging models of ECR, particularly those designed to link government management with community decision-making, especially when managing risk and balancing interests must be an ongoing endeavor. In the HVHF dispute, it is the different opinions and data on potential risks that have turned the policy process into a contentious debate, pitting communities against developers and even neighbors against neighbors. *The gap in process effectiveness is a problem solving continuum to support*
policy and permitting deliberations under conditions of uncertainty related to long-term environmental risks. A preliminary conflict map follows.

**Historical and Contemporary Analysis — Preliminary Conflict Map**

There has been a wide range of propositions on the origins of conflict, among others a belief that the tendency is innate in human instinct, or that conflict is provoked by certain types of social structure, or that conflict in society is natural and predictable (Wehr, 1979). Regardless of paradigm, the prevailing best practice in the field of conflict analysis and resolution is the use of a framework for analysis when studying specific conflict situations. The following preliminary analysis of the high volume hydrofracking (HVHF) policy conflict employs Wehr’s (1979) Conflict Mapping Guide and other conflict assessment and analysis tools that help illuminate the unique character of this controversy. Understanding the history, context, parties, issues, and other conflict dynamics is essential to informing the literature review process, as will be discussed later in this section.

**Conflict History**

**New focus on an old practice.** As described earlier, hydrofracking is the process of injecting water mixed with sand and chemicals at high pressures to break up rock formations and release natural gas. Although the practice of hydraulic fracturing is decades old, the technology has continuously advanced. Today, high volume horizontal hydraulic fracturing (HVHF) allows developers to extract previously unreachable deposits of natural gas and these deposits are vast (Arthur, Bohm, and Layne, 2008; eia, 2011). As a result, the interest of energy extraction companies to access these deposits has surged in recent years. Increasing market demand for energy and pressure to become
less dependent on oil imports helped spur natural gas production as the United States of America (USA) entered the new millennium. The number of active natural gas wells in the USA almost doubled from close to a half million in 1990 to a million wells by 2009 (Urbana, 2011). This expansion is being further accelerated by the development of advanced extraction technologies, including methods used in horizontal hydraulic fracturing.

Along with expanding energy production there also has been increasing awareness of issues such as global climate change, water and air pollution, and the importance of wastewater management. This has provided a new lens through which people view the rapid expansion of energy production, especially when it is in their own back yard. With this heightened awareness of the impact of industrial growth on the environment, reports of well contamination caused by HVHF in other states has fueled opposition to allowing the drilling practice to be employed in New York State. Thus far New York has taken a relatively cautious approach to energy company requests to begin drilling operations. Even so, the permitting process remains complex and controversial. Throughout the multi-year process, those in support of this new economic development opportunity and those strongly opposed have been engaged in intense pro- and anti-hydrofracking activities. State lawmakers, private natural gas exploration companies, and local citizens are in a tug of war over whether, and to what extent, HVHF should be allowed. State and community leaders have been receiving volumes of feedback from directly affected stakeholders and the general public vocalizing a range of opinions. Definitive data on the impact of hydrofracking is proving elusive and the disagreement among the parties remains intense.
Federal and New York State governments have spent the last several decades working to define and improve environmental regulations, with especially intense efforts over the last few years. In 2011 the EPA began a multi-pronged study of the potential impacts of hydrofracking on drinking water resources. The study looked at five stages of the hydraulic fracturing water cycle — water acquisition, chemical mixing, well injection, flowback and produced water, and wastewater treatment and waste disposal (EPA, 2011; EPA, 2012). In June 2015, the EPA stated in its findings that:

- The potential exists for hydrofracking activities to impact drinking water resources.

- No evidence was found that hydrofracking activities have “led to widespread, systemic impacts on drinking water resources in the United States,” (EPA, p. ES-6, 2015).

- Some specific instances of well contamination were found, but the number “was small compared to the number of hydraulically fractured wells,” (EPA, p. ES-6, 2015).

The EPA’s 2015 report also cited several limiting factors that could have influenced their findings including insufficient comparative data on the original quality of the drinking water source; the limited number of long-term studies on this phenomenon; other contaminating factors in the study area besides hydrofracking; and not having complete information on hydrofracking activities,” (EPA, 2015, p. ES-6). This last may be referring to the position of some natural gas developers that their extraction process involves some proprietary information that must remain confidential for competitive reasons.
New York State’s Department of Environmental Conservation (NYS DEC) began its environmental impact study in 2008, and in 2012 requested that the New York State Department of Health (NYS DOH) assess the potential impacts of hydrofracking on human health (Campbell, 2012). The DOH released the findings of its Public Health Review Process in December 2014, concluding that HVHF should not be allowed in New York State “Until the science provides sufficient information to determine the level of risk to public health from HVHF to all New Yorkers and whether the risks can be adequately managed…” (NYS DOH, 2014, p. 8). NYS DOH also noted “absolute scientific certainty regarding the relative contributions of positive and negative impacts of HVHF on public health is unlikely to ever be attained” (NYS DOH, 2014, p. 8). The DOH recommendation, while founded on the extensive data gathered in its study, also illustrates the uncertainty that exists in the energy production arena. Such uncertainty without an ongoing process for alignment of interests virtually guarantees a pathway for conflict escalation. The push-pull of environment and economic policy can too easily be swayed by events such as extraordinary economic pressures and shifts in political power.

NYS DEC issued a draft Environmental Impact Statements in 2008 and a revised EIS in 2011, responding to extensive comments and input from the general public and key stakeholders. DEC cited concern about the potential for significant environmental and health risks, and proposed more stringent mitigation measures that industry would have to follow. However, in its final Supplemental Generic Environmental Impact Statement (SGEIS) issued in April 2015, NYS DEC concurred with the Department of Health in terms of uncertainty regarding the potential for significant risk. DEC further observed that the proposed mitigation measures had become so extensive that they would
“substantially increase costs to industry, which would likely negatively impact the potential economic benefits associated with high-volume hydraulic fracturing” (NYS DEC, 2015, p.2).

Further thwarting the approval of HVHF in New York State have been court decisions in lawsuits among potential developers, landowners and municipalities. For example, in Matter of Wallach v. Town of Dryden and Cooperstown Holstein Corp. v. Town of Middlefield, the state Court of Appeals (which in New York is its highest court) upheld lower court rulings that local governments could use their zoning and land use authority to ban hydrofracking (Wallach vs. Town of Dryden, 2014; Cooperstown Holstein Corp. v. Town of Middlefield, 2014). However, the intractable nature of this conflict is evident in the new wave of lawsuits and other pro-fracking efforts to allow HVHF in some manner in New York State. Residents in depressed areas of the state are disappointed in losing the potential for jobs and economic growth, while many landowners prohibited from selling or leasing their land feel their rights are being violated. Polls over the last few years have shown a fairly even split between anti- and pro- hydrofrackers across New York State, although within some HVHF target areas anti-frackers are a majority (Marist Poll, 2011; Campbell, 2014). This still leaves a substantial number of stakeholders — businesses, community leaders, economic development agents, and landowners — dissatisfied and even disenfranchised from the process. New York State’s Business Council contributed to development of more stringent HVHF regulations and believes “fear and misinformation have won the day,” with Business Council President and CEO stating “We are confident that today’s decision will ultimately be reversed” (Reisman, 2015, par. 9).
Conflict Context

Stressful context amplifies debate. In many ways the hydrofracking controversy is typical of the challenges that arise when a commercial enterprise launches an initiative that has potential impact on people’s quality of life and the environment. However, in this instance the stakes are higher than usual. Worries over the potential dangers of the drilling practice and aspirations of generating huge amounts of revenue are set against the backdrop of a region that has experienced significant economic decline and a country that has experienced vulnerability due to dependence on foreign oil. For many, having such a lucrative industry waiting at the New York State border has heightened the urgency of the permitting process and likewise a concern that policy makers will make precipitous decisions.

The energy extraction industry also brings with it the challenge that host communities are subject to potential risk over the lifetime of drilling operations and beyond. Modern drilling practices involve relatively new technologies, so there is not a great deal of definitive scientific data on the long term effects of drilling or the chemicals used in the extraction process. Furthermore, transparency is limited. Disclosure requirements have been proposed at the federal level only in the last few years, and state regulations on the matter vary widely. Many energy companies are reluctant to disclose data on chemical content on the grounds that formulas are proprietary and give them a competitive advantage (The Wilderness Society, 2015; Congressional Research Service, 2012). In addition, while regulatory oversight lies with government agencies, energy companies must be trusted to manage day-to-day operations including safety and risk management practices. The challenges posed by hydrofracking will continue to evolve
over time, as will the frustrations and fears of the parties. The situation raises the question of whether a different approach to stakeholder engagement could lead to a more productive policy development process, and avoid stalemate when long term conditions cannot be predicted.

**Conflict Parties**

**Competing interests.** Wehr (1979) defines conflict parties as “decisional units which are directly or indirectly involved in the conflict and have some significant stake in the outcome,” (p. 19). The term ‘stakeholder’ also is commonly used today, and similarly applies to individuals or groups whose welfare and interests may be directly affected by a conflict and its outcomes. As this case study focuses on the Marcellus Shale region of New York State, the conflict parties consist of the potentially affected communities in that area, hydrofracking developers, and the policy making and regulatory arms of government. Underlying the call by key stakeholders to allow or deny hydrofracking is a myriad of diverse interests (Spector, 2015). Policy makers must wrestle with how to balance business interests with environmental concern, property rights with community rights, and governing responsibility with being responsive to constituent demands. The following assessment of the conflict parties provides additional insight on these challenges.

**Primary parties.** Primary parties are individuals or groups who appear to have incompatible goals and become actively engaged in pursuing and defending their cause (Wehr, 1979). In this dispute the primary parties fall into three general categories. One major group is energy companies and industry associations that are advocates of the new drilling technology. Another is environmental groups and affected communities fighting
against hydrofracking. The third significant group is comprised of the New York State and federal governments, and their regulatory agencies. These entities must follow regulatory and policy making protocols while endeavoring to balance the interests of their constituents.

Pro hydrofracking groups include energy companies and investors such as Shell, Chesapeake Energy and PSMG LLC, as well as national and regional advocacy groups like the American Petroleum Institute, Joint Landowners Coalition of New York Inc., Marcellus Shale Coalition, and EnergyInDepth, a coalition of independent petroleum producers. These groups have lobbied aggressively to be permitted to start hydrofracking in New York State, promoting it as a necessary move to become less dependent on foreign oil (Gallucci, 2011). And of course, the new drilling technology represents a significant revenue generating opportunity. There also are a number of elected officials and community residents who are proponents of hydrofracking, seeing it as a great boost for state and local economies by creating jobs and bringing in new industry. (Hakim and Confessore, 2011). In addition, some interest groups are finding themselves on the opposite side of certain issues more than they normally might be. A number of environmental scientists are promoting hydrofracking as a way to help eliminate greenhouse gasses such as carbon dioxide (McCrea, 2010; Marcellus shale gas drilling divides communities, 2011).

Opposition groups range in their positions from demanding no hydrofracking under any conditions to a cautionary call to prohibit this type of drilling until more study is conducted and better safety protocols can be developed. Many communities in the case study area are concerned about property devaluation and destruction of the natural
landscape (Marcellus shale gas drilling divides communities, 2011). Content analysis of news reports and web sites shows organizations such as Toxics Targeting Citizens, Campaign for the Environment, RochesterEnvironment.com, Sierra Club Atlantic Chapter, and Gas Drilling Awareness for Cortland County (GDACC) are primarily concerned with the potential destruction of vital water supplies, and protecting human health and the environment (Steffy, 2013; toxicstargeting.com, 2015; GDACC, 2015).

At the center of this ring of diverse stakeholders are the state and federal government and associated regulatory agencies. Balancing the interests of constituents on both sides is a complex challenge given the lucrative nature of energy production and the necessity to turn around the state’s history of decline. Furthermore, the Governor has enjoyed positive relationships with environmental groups and has an interest in remaining sensitive to their concerns (Urbana, 2011). The regulatory agencies, including the NYS Department of Environmental Conservation (NYS DEC) and the federal Environmental Protection Agency (EPA) and Department of Environmental Protection, are responsible for investigating new initiatives that impact the environment, setting policy, and enforcing regulations. However, the strength and breadth of mandated regulations can be influenced by many factors including differences in federal and state legal authority, application of local laws and ordinances, political parties in power, and mobilization of activist groups.

Secondary and interested third parties. Hydrofracking is of national and international interest, so even within the context of New York State and its southern tier there are additional levels of stakeholders. This includes secondary parties, defined as those who are not directly involved yet could be indirectly affected by the outcome of a
dispute, and other interested third parties (Wehr, 1979). Other New York State communities have taken a keen interest in activities in the southern tier, as well as communities in other USA states that are keeping an eye on the policy process and how residents are mobilizing to represent their interests. The energy extraction industry as a whole has a stake in how hydrofracking policy develops in New York. This could influence how restrictive regulations may become in other states, including the potential for widespread bans on HVHF. Other stakeholders who are likely watching this drama with interest are those who could benefit financially by having a major, highly lucrative industry enter the market.

Core Issues

**Battle of risks versus rewards.** As discussed above, the context of the hydrofracking conflict is characterized by insufficient fact-based data to satisfy some of the stakeholders’ safety concerns. At the same time values-based issues range from the position that environmental protection should be paramount in hydrofracking policy development, to the belief in individual legal rights to lease or sell property to energy developers or benefit through other means. At the micro level these issues are being addressed through scientific studies to ascertain the impact of hydrofracking, and being tested in the courts as communities seek to establish bans on hydrofracking within the boundaries of their municipalities. At the macro level these issues take on a more interest-based character, with economic fortune and governmental power converging in the policy process, and social groups conflicting over the legitimacy of each other’s views. Discerning the interests of conflicting parties is key to understanding the drivers of conflict and discovering potential solutions that will be meaningful and lasting. Interests
are a stakeholder’s underlying concerns and needs, whereas a position is a fixed point of view or attitude (Katz, Lawyer and Sweedler, 2013; Katz and Pattarini, 2008).

The parties in this conflict each face the challenge of making their case in a manner that advances their interests. The challenge facing pro-hydrofracking groups is how to gain acceptance of this new drilling practice and alleviate consumer fears. A fundamental question for the energy companies seeking permits is how to fulfill the corporate mission of meeting shareholder interests, and fulfill responsibilities to help meet the country’s energy needs. The opposition groups representing environmental and other community-based interests are faced with a major tactical challenge. It is likely they are acutely aware of the greater power and substantial resources of the pro-hydrofracking contingent. Their question is more along the lines of how to gain influence over policy makers. From an issues perspective, New York State government and its regulatory agencies face the greatest pressures. The strongly expressed needs of their constituents, the leadership mandate to revitalize the state economy, and limited and conflicting scientific data on a new technology have all come into play at once. Overarching these factors is the responsibility to make decisions that are in the overall public good. The Governor’s office, elected representatives in the state Senate and Assembly, and the regulatory agencies each must address similar questions. How to determine if risks are minimal and/or manageable? How to balance the larger population need for low cost energy with local interests? How to take advantage of substantial economic benefits? How to produce reliable data and effectively monitor drilling operations?

Unfortunately, most of these questions are not being addressed in a dialogue among the parties. Rather, the issues appear to be locked in the strict hierarchical
structures of government and regulatory processes, and communication is mostly indirect and filtered through the media and self-generated informational vehicles such as interest group web site and blogs.

**Conflict Dynamics**

**Data, disclosure, and doubt.** From a conflict analysis perspective, the hydrofracking controversy in New York State is affected by dynamics of trust, values, and power. This includes the public’s confidence in the energy developers, the sometimes competing values related to producing clean energy versus protecting natural resources, and the tensions caused by power differentials among policy makers, influencers, and those who are on the receiving end of policy outcomes.

The availability and disclosure of data regarding hydrofracking technology and practice have been a particular source of tension among the parties. In the early stages of the permitting process, news articles emerged that alarmed the public and contained the ingredients for a major dispute (Urbana, 2011; Coin, 2011; Kaplan, 2012; Navarro, 2012; DeWitt, 2013). The public’s confidence that energy companies could safely manage this new technology was shaken when stories of well contamination and improper waste disposal in other states came to light. Also, fundamental issues of trust arose when a media investigation revealed that both the energy companies and regulatory agencies chose not to disclose the results of scientific studies and facts related to chemicals used in the process (Urbana, 2011). Lack of trust deepened to a competition of value systems, with many environment groups springing into action against hydrofracking proponents, resulting in the state issuing at least a temporary moratorium (Urbana, 2011). In addition, and somewhat unique to this issue, is the emergence of conflicting values among
environmental groups, with some environmental specialists favoring an increase in natural gas drilling as a more sustainable and environmentally friendly energy source (McCrea, 2010).

Power differentials have also been a root cause of this controversy. Folger, Poole and Stutman (2009) define power as “the ability to influence or control events” and also the ability to access resources that can persuade others to change actions or behavior (p.140). Power plays a multidimensional and influential role in conflict and also varies according to how a party chooses to exert it at different stages of conflict. In this case both the government and regulatory agencies have direct authoritative power, while the energy companies have indirect but substantial economic power. The anti-hydrofracking groups primarily have indirect local power, but some of the larger ones such as Campaign for the Environment and Environmental Advocates of New York have been able to grow their membership and raise enough funds to get the attention of their elected officials (Environmental Advocates of New York, 2011).

The hydrofracking controversy exhibits two aspects of public policy discussed by Birkland (2011) that relate to power — the tensions created by conflicting policy agendas and the serious problems that can arise when there is a power monopoly. Concerns have been raised that the federal government has somewhat curbed the EPA’s authority when it comes to hydrofracking, which in turn affects state regulatory oversight procedures (Urbana, 2011). In 2010 an exception clause was introduced into in the EPA’s regulatory oversight authority, stating:

….The protection of USDWs [Underground Sources of Water] is focused in the Underground Injection Control (UIC) program, which regulates the subsurface
emplacement of fluid. Congress provided for exclusions to UIC authority (SDWA § 1421(d)), however, with the most recent language added via the Energy Policy Act of 2005: “The term ‘underground injection’ ... excludes the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities” (EPA, 2010).

The weakening of some of the EPA’s regulatory oversight and the accelerated environmental review process that is occurring in several states is evidence that environmental policy has the potential to become subordinate to economic policy. However, the EPA statute also notes how states can have separate regulations related to hydrofracking, which accounts for the more conservative and deliberative approach being taken in New York State compared to several others.

The hydrofracking dispute also exhibits characteristics of a power advantage in the form of a policy monopoly by the energy industry. Birkland (2011) defines a policy monopoly as “a fairly concentrated, closed system of the most important actors in a domain, who dominate or monopolize policy making” (p. 177). Environmental groups have succeeded in the early stages to influence state government and regulatory agencies to conduct more due diligence on the impact of hydrofracking, but for interest groups the opportunity to contribute to the policy discussion is relegated mostly to participation through the public input process.

**Conflict escalation — economic need and environmental awareness.** Pruitt and Kim (2004) define conflict escalation as situations where one party is able to exert greater pressure on the other party, or when the overall intensity of the conflict increases. Over
the past three years the hydrofracking issue in New York State has transformed from a light to heavier conflict and also from a dispute involving a few parties to a larger state and national debate. Pertinent to assessment of the public participation process is the extent to which the parties have resorted to litigation to assert their positions.

**Framing of the conflict: the parties’ different perspectives.** Lewicki, Gray and Elliott (2003) define framing as the process of how people shape, focus and organize their view of the world. Framing can influence many aspects of an environmental dispute such as how issues are defined and how people take action, as well as serve as a catalyst for mobilization (Lewicki et al, 2003). In this hydrofracking controversy the parties have adopted frames that reflect their interests and also their view of the other parties. There is evidence of several different frames being employed — from identity, characterization and power frames that are shaping how the parties communicate, to risk, gain-loss and conflict management frames that are influencing the way the parties view the process and methods of resolving differences.

The government and regulatory agencies are in strong identity and power frames, having the authority to prohibit or allow hydrofracking in New York State, and if permits are granted, set the conditions for operation and oversight. At the same time the state’s concern for risks to human health is pitted against a dire need for economic development. This tension of needs is illustrated by the Governor’s call for expanded environmental review while setting an aggressive deadline for a final report to determine its safety (Hakim and Confessore, 2011). Activist groups and representatives from potential host communities have expressed strong identity and characterization frames. Some identify themselves as environmentalists and scientists while others call themselves watchdog
organizations. Characterization of the other parties reflects a range of perspectives. Hydrofracking opponents have referred to “tricks” employed by the media, and to pro-fracking groups as “enemies of the environment” and “enemies of the state” (energyindepth.org, 2011; savethegreenplaces.com, 2011). Defenders of hydrofracking contend that opponents are ignoring science and using fear tactics to turn the public against drilling (McCrea, 2011). Power frames identified in this controversy relate to four frame categories as defined by Lewicki, Gray, and Elliott (2003) — authority/positional, resources, expertise, and coalitional/relational. State and federal governments and regulatory agencies operate within the authority/positional frame as they are the recognized decision-makers. However, from a resource frame perspective some may view energy companies as close to or equal in power given their substantial financial resources and extensive advocacy network that can help promote their interests with the decision-makers.

The expertise frame is a very important dynamic in this case, but one that is complicated by differences of opinion and lack of trust over who is the recognized authority when it comes to understanding the technology. While there is a presumption that energy companies are the experts, most are not willing to fully disclose the chemical makeup of the hydrofracking materials they use or operational data. Similarly the public relies on the regulatory agencies to develop protocols that will protect people and the environment, but at the present time the agencies may not have all the relevant data to guide them. Further clarification of the expertise frame will be a necessary part of a mutually agreeable resolution to this conflict. The fourth power frame category that is evident in this controversy is coalitional/relational. Members of interest groups on both
sides recognize the influence that can be leveraged with elected representatives. For example, anti-hydrofracking groups likely recognize the power of the American Petroleum Institute, while the energy industry is likely aware of the successful efforts of Environmental Advocates of New York in keeping hydrofracking on a conservative course in terms of policy-making (Navarro, 2011).

Risk frames and gain-versus-loss frames are center stage in the hydrofracking controversy. Advocates of the new drilling technique tend to minimize the risks, pointing to benefits being realized by hydrofracking initiatives elsewhere. These same parties see far greater gain by producing a cleaner form of energy and creating a source of revenue and jobs. In fact, the gain side is so lucrative that investor groups actively purchased lands in the targeted drilling region in New York, even though the permitting timeframe remained undecided (sellmarcellus.com, 2011). The view of risk from the property owner and environmental perspective for many is quite the opposite. Concerns are centered on issues of human health and welfare should drinking supplies become contaminated. And monetary compensation is considered more fleeting than impairment or loss of natural resources and personal property.

Identifying conflict management frames provides insight into how disputants view conflict and how it should be managed. Four types of conflict management frames as defined by Lewicki et al (2003) dominate the hydrofracking debate. The fact-finding and authority-as-decision-maker frames are the domain of the regulatory agencies and government. In several iterations if its environmental impact review, the NYSDEC articulated both environmental policy and regulatory recommendations specific to hydrofracking. This includes commitments to rigorous oversight and holding drilling
companies accountable for disclosure of technical information (NYSDEC, 2011; NYSDEC, 2012; NYSDEC, 2015). The Governor and other spokespersons in state government have committed to a decision-making policy that balances safety and caution with economic opportunity (Hakim and Confessore, 2011). Two additional frames — appeal to political action and appeal to market economy — accurately reflect the contest of interests between environmental and property owner groups and the energy companies and their advocates. Activist groups against hydrofracking fought hard and won a state-mandated moratorium on the permitting process until more research could be conducted. At the same time, the opportunities presented by energy companies wishing to invest in New York State, combined with the market pressures to generate new revenue and jobs, have kept environmental reviews on a relative fast track.

Alternative Routes to Resolution

Alternative routes to solution of the problem — conflict intervention and management attempts. As noted earlier, efforts to address issues related to hydrofracking have been conducted mostly in a hierarchical fashion, which is fairly typical given the structure of government and its responsibility for regulatory oversight. This has included efforts to engage stakeholders with differing viewpoints through a variety of mechanisms. In 2010 the EPA held four public hearings across the country, including one in the City of Binghamton in the southern tier region of New York where hydrofracking would occur. The hearings in Binghamton were attended by stakeholders representing all sides of the issue, and were characterized by formal statements inside the meeting facility while protesters displayed signs and chanted outside (EPA hears various opinions on hydrofracking, 2011). The goal of the EPA was to gather information that
would help in the design of its upcoming study. In addition to the EPA hearings, NYSDEC Commissioner Joe Martens stated that the DEC has “studied the experiences and regulations in other states, considered more than 13,000 public comments and engaged independent researchers to examine potential socioeconomic and other local impacts” (Campbell, 2011). Then in June 2011, New York State Governor Andrew Cuomo directed the NYSDEC to complete a second draft of its environmental review by early July 2011, an aggressive schedule in the opinion of some stakeholders (Campbell, 2011). The second report outlined where the hydraulic fracturing process could and could not be used, prohibiting it in certain watershed areas and on state-owned lands but permitting it on private lands. It also called for a number of new operational and mitigation requirements. These included establishing minimum distances to drinking water supplies; avoidance of floodplains; additional requirements for construction of well casings that prevent the migration of gas into aquifers; mandatory disclosure of data related to hydrofracking chemicals; and new wastewater disposal, air quality control, and storm water management regulations (NYSDEC Revised Draft SGEIS, 2011). Response to this second report was mixed, with some environmental groups still calling for a continuation of the moratorium until a federal Environmental Protection Agency (EPA) study was completed. NYSDEC held eight public hearing sessions in 2011 to gather comments on the revised draft SGEIS (NYSDEC, 2011). As a result of intense interest in the issue, DEC issued a new set of procedures for public meetings “to ensure that as many speakers as possible have an opportunity to verbally provide comments at the hearings” (NYSDEC, 2012). The state also has taken legal action to determine if energy companies are properly disclosing information related to the risks of hydrofracking to
their investors. The Attorney General’s office has issued subpoenas to companies that have indicated interest in drilling in New York State (Lovett, 2011).

Preliminary case analysis reveals that the parties hold a number of positions and interests that a conflict management approach would need to address if a successful resolution is to be achieved. These can be summarized as follows:

Having representation in decision-making and in oversight of drilling operations

- Avoiding and managing potential risk
- Gaining access to factual, reliable data
- Achieving economic and business interests
- Establishing credibility and trust

All of these elements apply to each stakeholder to some degree, but because of the distribution of power and resources it is not a level playing field. The parties appear to be in a very hierarchical structure, with the state/federal governments and regulatory agencies at the top. Closely following the government agents are energy companies and their advocates, and lastly, the environmental and community-based interest groups.

While the moratorium and now proposed ban appear to give hydrofracking opponents the upper hand, the government’s decisions are reversible, leaving the public’s interests still dependent on the idiosyncrasies of political decision making. In their review of alternative approaches to conflict management, Carpenter and Kennedy (2001) outline a number of characteristics of effective strategies that are applicable to this case.

Representation in decision-making and oversight require an approach that the key parties will view as fair and impartial, while meeting economic and business interests will require shifting from hard line positions (prohibit or allow hydrofracking), to learning
how to view the conflict as a problem to be jointly solved. As described in Weeks (1992), an essential step in conflict resolution involves identifying individual and shared needs. In this case, the parties would benefit from a process designed to help them recognize the several different points of view and creatively build upon shared needs.

Access to reliable data and understanding how to determine potential risk are closely related issues that have caused the most angst among the different parties. Tensions have been heightened due to lack of scientific data, delays or failure to share data, and continuing elements of the unknown because the high volume drilling practice is a new technology without enough history of performance to fully judge its safety. From a conflict management perspective, this points to another essential element of problem solving, the need to agree to legitimate criteria for evaluating issues and what will constitute an acceptable solution. By agreeing to objective criteria, the parties also can achieve a greater balance of power as well (Wilmot and Hocker, 2011). For HVHF this would include agreeing to qualified sources of information, how the information would be shared, and in what types of forums.

An overarching concern that deeply affects all the parties is establishing credibility and trust. There are two characteristics of effective conflict management that can help parties build trust and could benefit this case’s process. One is encouraging and providing a forum for the parties to meet face-to-face to try to resolve differences, and the other is to allow the parties to help shape the resolution process (Carpenter and Kennedy (2001). A step in the right direction came in NYSDEC’s 2011 report, which proposed creation of an advisory panel that would be made up of environmental, industry, and local government representatives, but it does not detail any other mechanism for engaging
additional interest groups or community representation (Marcellus Drilling News, 2011).
The Hydraulic Fracturing Advisory Panel was established in July, 2011 with the stated purpose of developing recommendations for “implementing a system of oversight, monitoring and enforcement” (Gallucci, 2011; Marcellus Drilling News, 2011).

**Next Steps — Further Conflict Analysis Needed**

The intent of the preliminary conflict map above is to provide context and a conflict management perspective on the nature of problems surrounding HVHF policy development in New York State. It begins to identify a gap in process effectiveness, which is a problem solving continuum to support policy and permitting deliberations under conditions of uncertainty related to long-term environmental risks. With this launch point, the case problem may be more clearly defined and research questions formulated.

It is hoped this case study research has yielded valuable data to illuminate conflict regulation potential, inform intervention strategies, and suggest a method for more productive short and long-term engagement of stakeholders.

**Problem Statement**

The conflict-based problem that this study addresses can be summarized as follows. The permitting process to allow high volume hydraulic fracturing (HVHF) for natural gas extraction in New York State has been controversial and protracted, with escalating factors emerging in 2010 (NYS DEC, 2014; Sourcewatch, 2014). There is intense conflict between those who see HVHF as an economic benefit and those who assert it will jeopardize health and the environment. New York State agencies have endeavored to establish regulatory policies to address health and safety concerns and have invited public input. That process has been characterized by anti- and pro-
hydrofracking protests, legal action by potentially impacted municipalities, criticism of the thoroughness and transparency of studies being conducted by regulatory agents, and a protracted policy development process (Urbana, 2011; Kaplan, 2012).

Controversy over economic development initiatives that involve the potential for environmental risk is not new, nor is the practice of engaging stakeholders in policy development (Beierle, 2003). Public participation in policy making has been expanded to include many forms of involvement, from traditional public meetings to community advisory groups, and from public education brochures to interactive web-based meetings. And yet, intense conflict at the interpersonal and group level persists. Preliminary case analysis shows that current approaches to stakeholder input tend to concentrate more on the period leading up to policy formation, which is inadequate for situations where it is not possible to fully predict future environmental and community impacts. The unpredictability of HVHF’s future impact is a major contributing factor to what has become a seemingly intractable conflict. Further research is needed to better understand the core issues fueling the HVHF debate and how stakeholders perceived the public participation experience.

Key concepts to be explored include the nature of conflict in response to environmental degradation, public participation as a dispute resolution process, and adaptive co-management as an environmental conflict management model. In terms of model development, collaborative strategies for resolving environmental disputes provide a valuable lens for assessing the possible alternatives to stakeholder participation in the HVHF issue. Co-management is typically associated with the management of common pool resources and is founded on principles associated with linking government
management with community decision-making (Plummer and Armitage, 2005). This case study seeks to explicate whether such linkage also might be applied to the HVHF policy-making process to more effectively address conflict emerging from fears of environmental degradation.

**Purpose of Study**

The purpose of this case study was to explore the perceptions of a sample of stakeholders affected by the HVHF permitting process in New York State regarding the benefits and limitations of the public participation process. The important context is the potential of environmental degradation when there is a lack of data to make a definitive determination of risk. The dispute surrounding the practice of HVHF was analyzed through the application of conflict resolution theory and mapping instruments. The perspective of the various stakeholders was explored, as well as the critical issues that permeated the dialogue among government, industry and community members.

**Research Questions**

1. *What are the core issues influencing the controversy over HVHF permitting in New York State?*

2. *How do stakeholders in New York State’s HVHF policy debate evaluate the benefits and limitations of the public participation process?*

3. *What factors affect how stakeholders perceive the value of the public participation experience in New York State’s HVHF policy and permitting process?*
Theoretical Foundations and Conceptual Framework

The HVHF policy development process is governed by federal and state regulations, and characterized by escalating tensions among the parties. Yet, public input remains a procedural activity, without much evidence of a conflict management component. Why is this? Perhaps because a great deal of the debate swirls around questions of potential risk — difficult to predict long term impacts of HVHF on human health and the environment. The observable phenomena surrounding the HVHF conflict do not concern an environmental crisis per se but rather a future possibility, and the many and complex variables that have been put into play to manage, mitigate, or eliminate that potential risk. To help explain factors that may have led to the current situation, this study builds from theoretical foundations in complex systems and green ideology, the enactment of power and social dominance, and aspects of the policy process where all of these converge. Additionally, the concepts of stakeholder engagement and collaborative decision making relate directly to the research goal of exploring whether principles of ECR are applicable to an environmental governance challenge such as New York’s HVHF policy and permitting process.

Complexity, Ideology and Power

Complexity Theory seeks to account for the dynamics of multiple interactions but from a systems perspective. Johnson (2007) defines complexity science as “the study of the phenomena which emerge from a collection of interacting objects” (p. 3). This is manifested in society when we see individuals or groups that are acting independently, yet are having a significant collective impact even though there is no central influencing or controlling force. The HVHF controversy presents like characteristics, with the parties
engaged in policy making, economic development, and self interests acting independently while also operating within an organized system. At the same time, what appear to be disparate interests have combined to maintain a system that aligns with complexity theory — a system on the edge of chaos, with “growing and changing patterns that never settle down – regions of connected order in a sea of chaos” (Cleveland, 1994).

Green Theory relates to the HVHF conflict from the perspective of a modern and complex green ideology that engages in economic, political and social issues. Green ideologies address the complex challenges that arise when human actions cause environmental degradation, and when economic and social impacts are integrally entwined (Kassman, 1997). There is a sense of prescience in how the HVHF controversy is playing out along similar complex and interwoven issues — growing social protest against the potential damaging effects of drilling and related operations, and the politics of energy and economics. Green Theory and Complexity Theory can substantively contribute to deeper understanding of the conflicts that have arisen in the HVHF case. Specifically, the research sub-questions regarding the inability to predict future environmental impacts, and how conditions of uncertainty affect stakeholder perceptions of the value of the public participation processes being used for hydrofracking policy development. Essentially, is it possible to embrace the chaos and allow that conditions of uncertainty are the norm, and that HVHF stakeholder interests must be allowed to exist and evolve within that space?

Inherent in government decision making is the bureaucratic process, while a common instigator of conflict is the influence of power, or lack thereof. Thus, a third aspect of analyzing the HVHF controversy is the consideration of power relationships
and social dominance, and how those influences play out in the policy process. Weber’s
classical theory of social domination deals with legitimate domination, a power
relationship in which there is probability that certain commands will be obeyed and there
is some level of voluntary compliance (in Lemert, 2010). Much of the conflict in the
HVHF case has been triggered by the hierarchical nature of government policy making
and the strictures of the regulatory process. Stakeholders on both sides of the issue have
sought to get their interests into the policy debate through the participation avenues
opened to them, and also sought representation by taking legal action. Understanding
power dynamics is important to the first research question in this study, which helped
identify issues such as influence of power on policy decisions, and to the third research
question that shed light on stakeholder perceptions of their individual and group power.

Given the above factors of complexity, green ideology and power, it also is
important to consider the policy process and the framework of common purpose in
dealing with environmental policy and dispute resolution. Since the 1970s there have
been major changes in environmental policy driven by a global interest in reducing
environmental and natural resource risks (Durant, Fiorino and O’Leary, 2004). Advances
have been made in many areas such as substantial reductions in the use and disposal of
toxic chemicals. In spite of these accomplishments, the political and social actors in
today’s environmental policy arena believe the regulatory process has become too
reactive and bureaucratic. The call for change stresses the need for policy design that is
less focused on compliance with rules and regulations and more aimed at achieving
desired results. A new paradigm in the environmental policy process would consist of a
partnership of government, industry, and civil society “imbued with a results-based sense
of common purpose” (Durant et al., 2004, p.4). Proponents of this new paradigm hold that, by design, the current bureaucratic and highly structured model of the policy process leads to adversarial relationships and leaves no room for social learning. The second research question, which asks how stakeholders evaluate the benefits and limitations of the public participation process, allows us to look at the HVHF controversy through this lens of “common purpose” and explore how more collaboration and joint problem solving might mitigate the unique challenges that come with competing economic and environmental interests.

**Collaboration as a Vehicle of Governance**

Review of the history of policy development and policy dispute resolution reveals a steady learning curve, from responding to stakeholder demand for participation, to dealing with negative consequences when participation lacked meaningful discourse, to gaining enlightenment as more collaborative processes yielded more satisfying and lasting results. That said, in spite of evidence that negotiation and mediation methods often prove less costly and result in higher satisfaction levels, some conflicts still elude resolution. Evidence continues to mount that some conflicts are intractable and cannot be resolved using a consensus-based approach alone (O’Leary and Bingham, 2003). Intractable conflicts typically are intense and persistent over time, and resist resolution through traditional avenues of consensus building, political interventions, or litigation (Campbell, 2003; Lewicki, Gray and Elliott, 2003). As will be discussed in depth in Chapter 2, a growing number of studies seek to understand the dynamics of conflicts that resist traditional approaches to resolution. ECR case study research and practice show that a common denominator affecting the emergence, intensity and duration of disputes is
the level of stakeholder participation as well as the parties’ conflict frames (Campbell, 2003; O’Leary and Bingham, 2003). Research also supports the contention that the more intractable the dispute the more essential it becomes to create opportunities to understand and potentially transform negative conflict frames (Lewicki, Gray and Elliott, 2003). One implication for the conflict management and resolution field is that better understanding of the relationship between frames and intractability can lead to development of more effective approaches that promote dialogue. As a result of these insights, there has been a decided shift toward results-based environmental governance, “involving stakeholders in meaningful ways in the oversight of governance decisions” (Durant in Durant et al., 2004, p. 179). The HVHF controversy exhibits many characteristics of an intractable conflict, and thus calls for understanding of collaborative governance and its potential to transform conflicts that resist resolution.

The value of public participation in decision making and potential of transforming dispute resolution into a learning process have been particularly embraced in the area of resource management. A range of collaborative management approaches has been developed that philosophically are based on the sharing of rights and responsibilities in governance (Armitage, Berkes, and Doubleday, 2007). The goal of these approaches is to link government and local communities, bringing greater equity and efficiency to the task of resource management. Collaborative management also can provide the opportunity for experimentation and learning, resulting in more decision making flexibility and acceptance of risk sharing. Particularly relevant to the present study is the concept of adaptive co-management, which is considered an “innovation in natural resource management under conditions of change, uncertainty, and complexity” (Armitage,
Berkes, & Doubleday, 2007, p. 5). Characteristics of an adaptive co-management approach include emphasis on stakeholder participation, especially the linking of government management with community decision-making. Inherent in its processes are flexibility and building the capacity to adapt and learn by experience. Adaptive co-management is especially applicable to issues that require problem solving over time.

While the context for adaptive co-management is typically associated with natural resource management, it is the premise of this study that all of these elements are relevant to governmental permitting processes associated with extractive industries. The three research questions interrelate in a manner that allows exploration into the linkage between government management and community decision-making and how it may correlate with the financial and emotional costs of the HVHF conflict. Preliminary case analysis shows that the HVHF conflict entails policy decisions hinged on technical data and risk assessments that can be altered by changes in the political landscape, and a process that has no provision for an ongoing deliberative process and continuum of involvement by stakeholders.

Taken together, these theories and concepts support the research query of whether adequate pathways exist to more effectively address the many questions with which the parties are faced. How do policymakers reconcile individual stakeholder interests with development that may be in the greater public good? When do, or should, broad economic interests trump the burden placed on communities that are host to valuable resources? Conversely when do, or should, community interests override individual property owners’ rights to lease or sell their property? And if that were not enough, how can any of these questions be addressed in a conflict management context when the data
to guide decision-making is incomplete and not fully predictable? Case study research and analysis of the HVHF conflict must examine the intersection of conflict management models and the use of public participation, with particular attention to root causes of conflict that can lead to a diminishing of process effectiveness. Data gathering through depth interviews and focus groups will provide the opportunity for meaningful dialogue regarding how well public participation methods have allowed the parties to address matters of interest and concern. This study approach also provides an environment for gaining stakeholder opinions and attitudes toward public engagement models and the roles of government and communities in decision making.

**Nature of Study**

The case study approach was chosen as the most appropriate research design to analyze the conflict surrounding High Volume Hydraulic Fracturing (HVHF). Case method allows for in-depth exploration of how the conflict has been managed over the past several years and the stakeholder engagement strategies that have been employed. Findings will be contrasted with emerging public participation methods and conflict resolution models.

Data gathering methods will include:

- **Document Review** — Public meeting transcripts and other relevant government policies, regulatory studies and reports
- **Key Stakeholder Interviews** — NYS policy makers, municipal leaders, community leaders, activist group representatives, and natural gas industry representatives
Focus Groups — participants will include individuals who live and work in the HVHF target areas, and who represent pro- and anti-hydrofracking positions.

A major purpose of data collection through document analysis will be to supplement field research findings and compare issues cited in meeting transcripts with In Vivo comments of participants. The goal of the in-depth interview and focus group research is to assess participant perceptions of the issues as well as gather feedback on various aspects of the public participation processes. This approach provides a triangulation of data collection and analysis, assisting the researcher in corroborating information and in comparing and contrasting viewpoints (Bowen, 2009). Data analysis will look for patterns in participant responses and identify whether there is consensus on points of process effectiveness and/or ineffectiveness. These findings will then be compared to aspects of the adaptive co-management model to discern whether principles of co-management might be applicable to the HVHF stakeholder engagement process. In this manner, the HVHF case study seeks to identify a gap in process effectiveness, which is a problem solving continuum to support policy and permitting deliberations under conditions of uncertainty related to long-term environmental risks.

Definitions

A number of terms used throughout this dissertation proposal have more than one meaning and therefore require clarification. These include the term ‘case study,’ which can refer to either a research method, approach or object of study, and the term ‘stakeholder,’ which has its roots in business management but is used as commonly today in the public participation arena. In terms of conflict types, it also is important to distinguish environmental degradation from conflicts over scarcity of resources. And
finally, an orientation to the co-management approach to decision making is essential to appreciating the research problem, particularly the challenges that emerge when the interests of government, community, and business collide. Following is further definition of each of these terms.

This research is designed as a qualitative inquiry into the HVHF controversy and will employ the case study approach. Case study research has been defined as “the study of an issue explored through one or more cases within a bounded system” (Creswell, 2007, p. 73). There are different opinions on whether case study research refers to the topic and situation to be studied, or whether it is the name of a research methodology. For this research I find it lends clarity to use the term case study to describe the methodology, and the HVHF controversy in New York State is the phenomenon explored. As a research method, a case study must draw from a wide range of sources such as documents, interviews, and observations (Creswell, 2007).

The concept of stakeholders emerged from the process of strategic management in business. Freeman (2010) defines a stakeholder as “any group or individual who can affect, or is affected by, the achievement of a corporation’s purpose” (p. vi). While in the corporate world stakeholders can include such groups as employees, customers and shareholders, the term is now commonly found in the practice of conflict resolution (O’Leary and Bingham, 2003; Rossouw, 2015; Mediate.com, 2015). In a conflict involving environmental issues, stakeholders typically include regulatory agencies, affected communities, private sector environmental experts, and the industry or industries involved.
Essential to the clarity of this study is making the distinction between conflict that emanates from a struggle over scarce resources and situations that constitute an environmental cause of conflict. There is a wide range of environmental conflicts related to resource management, especially in relation to depletion of hunting and fishing stocks (Ostrom, Dietz, Dolšak, Stern, and Weber, 2002). However, rather than issues of self-interest overriding the interests of a larger community, the HVHF conflict has grown from fears that the drilling practice will negatively impact human health and the environment. Libiszewski (1992) defines an environmental cause of conflict as environmental degradation — situations in which a “human-made environmental change [has] a negative impact on human society” (p. 4). The only nuance here is that the HVHF conflict context holds the potential for environmental degradation.

From a best practices perspective this research delves into the concept of co-management, which is characterized by “user participation in decision making” and the “linking of communities and government managers” (Armitage, Berkes and Doubleday, 2007, p. 1). While co-management is more typically associated with conflicts over resource management, this researcher is intrigued with how its principles appear to lend themselves to conflicts associated with extractive industries such as oil and natural gas. In particular, Armitage et al. discuss how adaptive co-management seeks to account for “conditions of change, uncertainty, and complexity” (p. 5). All of these terms are used to define and analyze the HVHF conflict. Discussion now turns to the assumptions and scope of the study to further research intentions and establish clear expectations of how this research will contribute to the conflict management body of knowledge.
Assumptions, Scope, Delimitations & Limitations

The high volume hydrofracking (HVHF) policy development process in New York State has played out across the mass media, on social media platforms, and in numerous face-to-face forums. The tenor of these reports and interactions convey the intense differences of opinion over whether HVHF should be permitted in the state. The most recent decision to ban the drilling practice is already being challenged in the courts, and inherent in the policy process is provision to rescind the ban. These things we can accept as observable or codified truth. On the other hand this study makes key assumptions that cannot be unequivocally demonstrated. One key assumption is, had a more robust conflict management approach been incorporated in the public participation process, tensions might have been reduced and positive perceptions of the policy process could have been increased. These assumptions are directly reflected in the research questions:

1. What are the core issues influencing the controversy over HVHF permitting in New York State?

2. How do stakeholders in New York State’s HVHF policy debate evaluate the benefits and limitations of the public participation process?

3. What factors affect how stakeholders perceive the value of the public participation experience in New York State’s HVHF policy and permitting process?

In terms of topic and scope, the HVHF controversy is a prime candidate for study given its protracted nature and the lack of definitive data to prove or disprove the safety of the drilling practice. It is a high stakes venture, with wealth and meeting energy supply
demands on one side and risks to health and environment on the other. In this researcher’s opinion conflict was inevitable, and as conflict escalated the limitations of the public participation and policy process became evident. The Marcellus Shale region along the southern tier of New York was a natural choice of geographic area for the study. Specifically, focus group participants will be drawn from representatives of interest groups within a five county region — Broome, Chemung, Chenango, Steuben and Tioga. This region has been identified as prime for drilling due to the extensiveness and depth of natural gas deposits embedded in the shale below ground (Hakim and Confessore, 2011). As a result, activism has been intense within the communities in this region. Interview participants will be sought from a broader geographic range and will include municipal leaders, other community leaders and state government policy makers. Given the qualitative nature of the study, not all stakeholders will have the opportunity to participate, nor will the broader New York population be included in the data gathering process. It also is important to note that, while public participation within the HVHF policy process will be analyzed, the study is not designed to explore broader aspects of policy theory and their relation to the policy process. The potential for transferability of findings is significant as there are a number of parallels between stakeholder perceptions in the HVHF situation and stakeholder perceptions related to other energy (wind and solar power, for example) and waste disposal initiatives (garbage and industrial waste). That said, it is unlikely that an emergent model would be appropriate to all public participation situations. Further, the data collected cannot be generalized to stakeholders outside of the prescribed study area, or to all other types of conflict involving environmental degradation. Another limitation of which a researcher must always be
aware is the potential for bias, both within the researcher as well as among the participants.

**Significance**

From a conflict management perspective the HVHF controversy has all the ingredients of an intractable conflict — a conflict that has “an extensive past, a turbulent present, and a murky future” (Lewicki, Gray, and Elliott, 2003; O’Leary and Bingham, 2003). The likelihood that controversy will persist is evidenced by the number of iterations that has already occurred in policy development, and by the litigation advanced on both sides of the issue that will likely keep resolution at bay. As a conflict that is intertwined with economic, political and social issues, it is hoped the HVHF case study will contribute to our discipline by the application of conflict theory, particularly conflicts influenced by complex systems and power relationships.

From a practice perspective, one of the most compelling reasons to study the New York State hydrofracking controversy is that it illustrates the trade-offs that often come with engaging stakeholders in policy making, especially when the issue at hand is of broad public interest. Beierle & Cayford (2003) conducted extensive analysis of multiple cases that yielded two critical findings. The good news was that effective problem-solving dispute resolution processes generated high satisfaction levels among participants. This was offset, however, by cases in which stakeholders who did not have a seat at the table were highly dissatisfied, causing barriers at the implementation phase. These findings indicate that simply broadening the public participation process will not necessarily lead to a satisfactory resolution of conflicting interests at the local level. This study has potential to provide insights on ways to increase the meaningfulness of the
public participation experience, and in doing so, contribute to the development of “good” policy that achieves broader stakeholder acceptance and support for implementation. Thus, one of the goals of this research is to explore whether principles of Environmental Conflict Resolution (ECR) used in the field of natural resource management are applicable to an environmental governance challenge such as New York State’s HVHF policy and permitting process. With continued advances in this area there is potential for transformative change — from a hierarchical power-based inclusion of the public in policy development to a learning-based engagement of stakeholders over the lifetime of policy development, and especially implementation.

**Chapter Summary**

From a policy perspective, high volume hydraulic fracturing (HVHF) is a case example of how well meaning goals can end up at cross purposes. One delivers potentially billions of dollars in investment and revenue, while the other is a guardian and protector of our fragile resources. It is a conundrum that society will increasingly face. Failing to capture the opportunity to tap into new lucrative industries may mean remaining vulnerable to population decline, unemployment, and escalating costs of living. Placing vital resources at risk may mean damaging people’s health, homes, community, and quality of life. As there is no crystal ball to fully predict the impact of emerging technologies, the current state of the HVHF controversy begs for a closer look at how to better manage the conflicting interests. The premise of this study is that a solution may lie in the approach to public participation, specifically, employing more collaborative conflict management strategies that take into account short and long term impacts on affected stakeholders. In order to explore potential solutions, it is important to
first consider theories and concepts that may help to better understand HVHF conflict dynamics, and also be aware of how the conflict management field has advanced in dealing with conflicts related to the environment. This discussion continues in-depth in Chapter 2.
Chapter 2: Literature Review

Introduction: Intractable Conflicts — The View From Theory and Practice

The permitting process to allow high volume hydraulic fracturing (HVHF) for natural gas extraction in New York State has been controversial, protracted, and continuously escalating since 2010. There is intense conflict between those who see HVHF as an economic benefit and those who assert it will jeopardize health and the environment. New York State agencies endeavoring to establish regulatory policies to address health and safety concerns have invited public input, but those efforts have fallen short in terms of satisfactorily meeting stakeholder interests on both sides of the issue. The unpredictability of HVHF’s future impact on health and environment is a major contributing factor to what has become a seemingly intractable conflict. The purpose of this case study is to explore the perceptions of a sample of stakeholders affected by the HVHF permitting process in New York State regarding the benefits and limitations of the public participation process.

This chapter takes an in-depth look at the research problem from both a theory and practice perspective. It is an opportunity to look back philosophically at the nature of the HVHF conflict and how environmental conflict management has evolved, and also an invitation to look forward with growing appreciation of the potential to more effectively manage contentious disputes. In fact, it is the intractable nature of this conflict that invites inquiry into several concepts that are elegant in how they interrelate.

1. The HVHF conflict environment as a complex system, and how those characteristics dovetail with the sociopolitical aspects of green ideology.
2. Power and social dominance, and the way these concepts play out in the complex yet highly codified world of energy policy development.

3. Public participation and public policy dispute resolution (PPDR), and how each seeks to provide an interest based, mutually satisfactory process for dealing with complex problems, but using different approaches and at different stages in the conflict.

This triad of perspectives serves as foundation for the primary objective of this literature review, a look at trends in environmental conflict management with emphasis on approaches that link government management with community decision-making.

**Literature Search Strategy**

A wide range of search tools were employed to ensure a comprehensive collection of informational materials, while the search strategy was built on the central interest areas of relevant theory, the policy process, public participation/PPDR, and trends in environmental conflict resolution. This allowed for later prioritization based on relevance, as well as supplying multiple sources to triangulate opinions and fact-based statements. Tangents off the central interest areas were indulged when insightful information was discovered, such as case studies dealing with management of common pool resources and environmental management efforts taking place in other countries.

**Iterative Search Process**

Using the search vehicles and sources listed below, the iterative search process was both horizontal and vertical. For example, searches were conducted across major terms such as “hydraulic fracturing” (and commonly found variations) using Google and Google Scholar, which yielded numerous media articles and interest group web sites and
social media platforms. Articles on “public participation” were searched using vehicles such as JSTOR, Alexander Street Press, Oxford University Press, ProQuest and Sage Publications. This was combined with vertical searches that led to more specific information and source materials. For example, a Google search of the term Hydraulic Fracturing produced the following search path:

- NYSDEC and EPA web sites
- NYSDEC and EPA status reports on policy development
- NYSDEC policy on public participation
- NYS DOH public review of high volume hydraulic fracturing for shale gas development
- American Petroleum Institute Community Engagement Guidelines

Horizontal and vertical searches were further supplemented by reviewing bibliographies of both digital and print sources in order to identify additional references and source materials.

**Search vehicles and sources**

- NSU course texts
- Additional purchased texts on the fields of study
- Alvin Sherman Library (NSU) and Bird Library (Syracuse University) on-site sources
- Alvin Sherman Library databases — NovaCat, Journal Finder, JSTOR, Alexander Street Press (Social Theory), Oxford University Press (Oxford Scholarship Online), ProQuest (ProQuest Social Science Journals), Sage Publications (Sage Research Methods), LexisNexus (LexisNexus Academic Legal), Dissertations
- Other Internet searches
  - Google
o Google Scholar

o Subject matter experts — energy industry, energy association, interest group, and NYS regulatory agency web sites and published reports

o Other university web sites for relevant material published by faculty and student researchers

o Social media — interest groups and other stakeholder Facebook pages and blogs

o Case law databases

• Discussions with faculty

• News media (print, radio and television reports)

• Discussions with community leaders in potential drilling regions

Search terms

• Hydraulic fracturing; Hydrofracking; High Volume Hydraulic Fracturing; HVHF

  o Extractive industries

  o Hydrofracking in New York State

  o EPA, Hydraulic fracturing

  o NYS DEC Hydraulic fracturing

  o Hydraulic fracturing/HVHF policy development

• Public Participation, Hydraulic Fracturing

  o Public engagement

  o Public input

  o Stakeholder engagement

• Environmental Conflict
Material gathered from the literature search was evaluated where appropriate according to Toulman’s (1958) method of argumentation. Content was reviewed to identify the author’s claim and the evidence offered to substantiate. If the data and claim were germane to the research problem, the material was further scanned for backing and the assumptions used to support the claim.
Key Theories and Concepts

The HVHF policy development process has been plagued with continuous and escalating tensions among the parties. Much of the cause can be attributed to questions of potential risk — difficult to predict long-term impacts of HVHF on human health and the environment. To explore this phenomenon as a research topic it is helpful to gain understanding of conflict dynamics when hard data for decision making is limited, and the conflict environment is complex due to differing interests and goals. Thus, the present study builds from theoretical foundations in complex systems and green ideology, the enactment of power and social dominance, and aspects of the policy process where all of these converge.

Conflict and Complex Systems

Given the entwining of economic and environmental issues of HVHF, the principles of Complexity Theory can contribute to our understanding of conflict dynamics. Complexity theory came of age in the 20th century and is described as having three roots — cybernetics, general systems theory, and system dynamics (Abraham, 2002). These systems of ideas became one larger system in the mid-1970s — the theories of complexity — and have continued to evolve. Johnson (2007) defines complexity science as “the study of the phenomena which emerge from a collection of interacting objects” (p. 3). This is manifested in society when we see individuals or groups that are acting independently, yet are having a significant collective impact even though there is no central influencing or controlling force. O’Leary, Nabatchi and Bingham (2004) argue that environmental conflict resolution (ECR) should be approached as a complex system, and that by understanding it as such, ECR has the potential to “become a major tool for
building a results-based sense of common purpose in environmental governance” (p. 342). However, the authors cite the need for much further research in this area, especially the importance of accumulating baseline data to inform ECR practice and theory.

Valuable systemic-level research is occurring in the ADR field, including studies involving labor disputes and identity-based conflicts. Similar studies are exploring the phenomenon of individual lawsuits that evolve into class action litigation (O’Leary et al., 2004).

The HVHF controversy is a case scenario in which the human agents engaged in policy making and economic development appear to operate within an organized system, and yet their actions have set in motion a myriad of other parties pursuing a myriad of interests. The resulting phenomenon is characterized by a collection of independently motivated agents that are having a collective impact on government decision making. At the same time, what appear to be disparate interests have combined to maintain a system that aligns with complexity theory — a system on the edge of chaos, with “growing and changing patterns that never settle down – regions of connected order in a sea of chaos” (Cleveland, 1994). Several other of Johnson’s (2007) key characteristics of complexity relate to the HVHF case scenario.

- *The objects’ behavior is affected by memory or feedbacks.* The increasing number of reports from other parts of the USA about risks associated with HVHF has been a continuous source of fuel igniting activist groups.

- *The system is typically open and appears to be alive.* Johnson (2007) defines this as a system that is influenced by the environment and evolves as agents interact and adapt to feedback. Companies seeking HVHF permits in New York State are
operating in a society that has become increasingly focused on environmental and health issues, and publics that have learned how to mobilize quickly through the use of the Internet and many forms of digital communications. The result is a complex interplay of continuously emerging interest groups acting both independently and collectively.

- The system exhibits emergent phenomena that are generally surprising and may be extreme. The primary parties in the HVHF case have a finite capacity to predict emerging issues. Economic and environmental policy makers operate in a world characterized by emergent phenomena including regulatory uncertainties, growing interests in renewable energy, military conflicts, and global shifts in energy demand (Mitchell, 2011). Quantifying the need for major expansions in gas drilling has proved elusive, and the phenomenal riches HVHF could bring to a community has not been enough to stem significant opposition. Further, in spite of many added measures to minimize risks, fear continues over the unpredictability of the damage that could be caused by hydrofracking.

Gerrits (2010) proposes that one should “assume a complex systems perspective” at the outset, acknowledging that the system is unpredictable (p. 19). He argues that public decision making should be analyzed from a co-evolutionary perspective, one that considers both structure and process. This approach abandons the assumption that control of the system resides with the decision maker in power, and can help explain when there are “unintended, unforeseen, and unwanted consequences of decisions” (Gerrits, p. 19). The concept of co-evolution — as well as companion concepts found in conflict management models — will be discussed further in Chapter 2 as it relates to this study’s
exploration of issues related to action group mobilization and perceptions of power. Further supporting how complexity theory relates to the present study is the notion of “viewing a single ECR case as a system in itself” (O’Leary, Nabatchi and Bingham, 2004, p. 344). It is not uncommon for environmental policy development to take place over a long period of time, and be associated with many conflicts emanating from stakeholders with strongly opposing views. As demonstrated in the HVHF conflict, New York State government and its regulatory agents have gone through a progressive series of environmental reviews and regulatory changes, while stakeholders deployed a wide range of counter measures in the form of protests and litigation. Likewise, attempts at conflict resolution can occur in multiple stages, inviting the view of ECR as a “process that functions over time as a system” for resolving individual conflicts, (O’Leary et al., 2004, p. 344). Complexity Theory relates specifically to RQ#1, which functioned to identify core issues that contributed to conflict escalation.

A limitation of complexity theory relates to its ease of adaptability to organizations. Levy (2000) states that principles of complexity cannot be “imported from the natural sciences and applied “off the shelf” to industries and firms (Levy, 2000, p. 82). More advanced concepts and analytical methods are needed that consider the differences between social and natural sciences. This includes achieving a deeper understanding of the characteristics of uncertainty in the social world, the role of human agency, and the nature of complexity among the interrelated economic, social, political, and economic systems (Levy, 2000). This limitation also is relevant to the present study given the intense interplay of economic, political and social interests. As a result, it is
helpful to augment the discussion of complexity theory with a discussion of green ideology.

**The Many Dimensions of Green Ideology**

Examining the HVHF case through the precepts of Green Theory provides insights on several causes of this conflict. With its roots in international relations theory, green ideologies address the complex issues that arise when human actions cause environmental degradation, and how economic and social impacts are integrally entwined (Kassman, 1997; Carter, 1999; Dobson and Lucardie, 1995). These characteristics are manifested in the complex and interwoven issues present in the HVHF controversy — the politics of dependency on foreign oil and gas imports, the economic rewards of tapping vast domestic energy reserves, and the ever-growing strength of social protests as the damaging effects of industrialization have come to light.

To fully appreciate the potential force of green ideology, one needs to view the phenomenon as both a social movement and a very organized political initiative. In particular, the green movement has evolved in a manner that has attracted a much more diverse group of followers, creating unique potential and unique challenges. Kassman (1997) discusses how modern green consciousness grew out of the civil rights, peace, feminist, and environmental movements of the 1960s. As such, advocates for green policies now possess a perspective that is characterized by the key elements of a formal ideology. According to theorist Andrew Dobson (in Kassman, 1997), this includes a description of the political and social world, a program for political change, and a vision of a preferable future.
Kassman describes current green philosophy as the belief that we live in a society of violence, environmental destruction, injustice and alienation. To green advocates, the dominant worldview is aggressive and individualistic, resulting in a limited view of the world. They believe society must move away from anthropocentrism — the view of mankind as “rightful exploiter of the earth” — and also break down social hierarchies that favor only certain groups (Kassman, 1997, p. 7). In a green utopia, decision making would reside at the local level, controlled by those who are directly affected by policies and practices, and disputes would be managed in non-violent ways. As a result, the “four planks” of the American green movement center on community, land use, peace and non-violence, and social justice (Kassman, 1997, p. 5). Rather than siloed environmental activism in which separate special interests each wage their own battle, we now have environmental issues woven throughout broader and more fundamental contexts. By placing value on community, the green call for change includes a cry to stop devaluing the old, the poor, and the marginalized. Instead, the Greens envision an interconnected and interdependent community that celebrates diversity and respects the environment. By putting the focus on land use, green advocates put a spotlight on materialism, consumerism and population growth, calling for better protection of lands, improved planning, and sustainable development. And by promoting peace, non-violence and social justice, Kassman believes environmentalists have established themselves as key authors of a future that is preferable to the current dominant ideological systems of the West.

For all these reasons, it is not easy to determine where green advocates fit in the political spectrum. Research data show that a majority tends to be ideologically on the left, but there also are many who are decidedly right in their political positions (Kassman,
Modern environmentalists can demonstrate moral conservatism, rural bias, and anti-corporate sentiments. They also can fiercely promote social rights and tolerance. Kassman aligns his thinking with that of historian Anna Bramwell, stating, “...the strength of the Greens’ conservatively oriented moral and cultural critiques, coupled with the power of the critical reasoning and argumentation inherent in the Greens’ use of the science of ecology, has created an ideological force that has the power to directly challenge both liberalism and communism” (Kassman, 1997, p. 7). The stakeholders who have been lobbying fiercely to prevent the permitting of HVHF in their communities exhibit many of the characteristics of the green movement, posing formidable challenges for New York State policymakers. Opponents are typically well informed and very skilled at using a wide range of communication vehicles to make their case. The ability to mobilize and build strength in numbers is evidenced by the manner in which groups have built large memberships and formed networks to collaborate and push issues forward (Northrup, 2014). The strong desire for local decision-making and control over community way of life also has spurred municipalities to take legal action and establish moratoriums on hydrofracking (Coin, 2015; (Wallach vs. Town of Dryden, 2014; Cooperstown Holstein Corp. v. Town of Middlefield, 2014). To further frustrate efforts to read the political tea leaves, surveys have shown that opinions in the USA have been split on the benefits and risks of hydraulic fracturing, although opposition has grown in recent years (Governing, 2012; Gesing, 2014). Understanding of green theory helps inform research sub-question 2b on stakeholder perceptions of the value of public participation processes. Contemporary public participation approaches must be prepared for a diversity of stakeholder political positions, while ascribing to an overarching green ideology.
Limitations of green theory in the context of contemporary green ideology relate to the credibility of the philosophies depending on one’s political point of view and value system. For example, Randerson’s (2009) article titled *Green movement ‘hijacked’ by politics* reported that environmental scientists in the UK lodged serious criticism of Greenpeace and other green campaign groups. They accused such organizations of operating like multinational corporations, pushing political agendas such as anti-globalization at the expense of important environmental causes. This demonstrates how environmental issues have become entwined with other social and economic causes and illustrates the complexity of the modern green ideology. Interestingly, this limitation only partially seems to apply to the HVHF conflict — some environmental scientists have been criticized for taking the view that natural gas generation is preferable to other forms of ozone-impacting fossil fuels, whereas political alliances and value systems seem to have merged when it comes to opinions on whether the state should grant permits to allow hydraulic fracturing.

**Power and Influence: Tug-of-War in the Policy Process**

The HVHF case is wrought with issues related to distribution of power, a concept with roots in Max Weber’s classical theory of social domination. In his 1909-1920 treatise Weber discusses legitimate domination, a power relationship in which there is probability that certain commands will be obeyed and there is some level of voluntary compliance (Lemert, 2010). He further defines three types of legitimate domination, one being that the validity of claims is based on rational grounds — a “belief in the legality of enacted rules and the right of those elevated to authority under such rules to issue commands (Lemert, 2010, p.118). Issues in the HVHF case are heavily derived from the
hierarchical nature of government policy making and laws that govern the regulatory processes. From a conflict perspective, Wilmot and Hocker’s (2011) concept of designated power — power conferred by position — also applies and is evident among the primary parties, from the power bases of government and industry to the mobilizing of large activist groups. However, Weber’s concern was that even with legitimate domination the actors with significant power are in a position to carry out their will despite opposition. He viewed power in the context of bureaucracy as being driven by authoritarian and economic interests (Sada, 2004). As such, he characterized the organizational power of the bureaucracy as “the source of the mechanizations and routinization of human life” and also as “a threat to the freedom of the human spirit” (p. 35).

Bachrach and Baratz (in Sada, 2004) further advanced this thinking with their analysis of overt power versus covert power, concepts that relate to the dynamics of policymaking. In terms of political decision-making, overt power is evident in the open process of discussing issues and determining courses of action, while covert power can be used to prevent discussion. We see this most often in relation to lobbying efforts to advance special interest initiatives and the concern of back door tactics to influence policymakers. Bachrach and Baratz describe this as the “organizing of what stays in and what is out” of discussion, a power strategy that defines the importance or unimportance of an issue for the public (p. 37). In the debate over the safety of HVHF, stakeholders on both sides of the issue have expressed dismay over how, in their opinion, the state’s High-Volume Hydraulic Fracturing Advisory Panel ignored essential information about the impacts of HVHF (Palmatier, 2015; ToxicsTargeting, 2015). Understanding power
dynamics is important to the second research question, which explores whether a conflict management approach that helps balance power differentials might also help mitigate conflict in HVHF policy development.

A limitation of social dominance theory, like other broad-based theories, is that one must be cautious in making assumptions when applying the theory to a specific community or organization. As put forth by Tugen (2010), while there is danger in assuming that human societies are pre-disposed to operate in hierarchies based on historical data, this may not hold true in the future. Tungen believes the same applies to evolutionary data — behavior patterns of the past are not necessarily relevant to the present. This limitation in social dominance theory applies to the HVHF case when looking at the historical record of public participation practices. While the bureaucratic hierarchy of actors appears fixed, opportunities for public input have been consistently expanded by the state’s regulatory agencies and the energy extraction industry (EPA, 2011; American Petroleum Institute, 2014).

**Changing Policy Paradigms: Compliance vs. Results**

The above factors of complexity, green ideology and power converge in the HVHF policy process, a saga that has shifted course so often over the years that it is valuable to consider the precepts of public policy and how environmental policy has evolved. The study of public policy, both theory and practice, is considered fairly new, although stemming from centuries of research on the science and philosophy of politics. Charles Merriam is credited with establishing modern policy studies in 1922, with much of the founding literature developed since the 1960s when Harold Lasswell promoted the formalization of policy science (Lasswell, 1971; Birkland, 2011). The term public policy
has been defined in a variety of ways, sometimes characterizing its goal and sometimes the nature of the process. Birkland (2011) focuses on the common denominator of being public versus private, and policy being “a statement by government of what it intends to do such as a law, regulation, ruling, decision, order, or a combination of these” (p. 9). Thus, public policy typically affects broad segments of the population, with government acting on behalf of the public.

While policies can be enacted quickly in times of crisis, the history of policy development in the United States has been one of constraint due to the constitutional system and ideological stability (Birkland, 2011). This has positive consequences in terms of allowing for careful deliberation of issues, but too much policy restraint has been blamed for inaction on such issues as civil rights and equality. Robertson and Judd (1989), formulated a history of American public policy with four eras — divided power, state activism, national activism, and national standards. It was in the fourth era beginning in the 1960s that the federal government set national standards for policy goals and the enforcement power of states grew significantly. Especially relevant to the present study was establishment of the Environmental Protection Agency (EPA) and the National Environmental Policy Act (NEPA). Public participation was an accepted component of environmental policy deliberation, but the seeds of tension between environmental and economic interests were immediately evident. The Trans-Alaska Pipeline, authorized in 1972 and developed in response to the oil crisis of the period, was heatedly opposed by pro-environment activists but was exempted from NEPA requirements (Birkland, 2011; Trans-Alaskan Pipeline Authorization Act; congress.gov).

The 1970s were a period of major changes in environmental policy driven by a
global interest in reducing environmental and natural resource risks (Durant, Fiorino and O’Leary, 2004). Advances were made in many areas such as substantial reductions in the use and disposal of toxic chemicals. In spite of these accomplishments, the political and social actors in today’s environmental policy arena believe the regulatory process has become too reactive and bureaucratic. Characterized as a “command-and-control regime,” the policies being generated are deemed to concentrate too much on technological solutions that will not address the complex environmental issues of the modern world (Durant et al., 2004, p. 2). The call for change stresses the need for policy design that places a higher priority on achieving desired results than simply compliance with rules and regulations. Compliance-based policies are believed to “inhibit flexibility, cause risk aversion among regulators and polluters, and diminish innovation,” while performance measurement allows for consideration of a broader range of influencing factors and stakeholder interests (p. 3). For example, many environmental issues today do not emanate from a specific polluter or causal source that can be monitored and simply fined for non-compliance. Rather, an issue such as greenhouse gas emissions has no single point of origin, involves many actors, and affects a broad range of stakeholders. This results-oriented philosophy aligns with Birkland’s (2011) view that goal setting in a complex policy environment also requires an understanding of causal theory, “a theory about what causes a problem and how particular responses would alleviate that problem” (p. 241). He holds that causal factors must be part of policy design in order to ensure the ability to measure performance, both in terms of effort and outcomes.

Other factors fueling the call for reform include recognition that many environmental issues require a more flexible approach to the policy process, one that
considers pollution prevention and allows decisions to be based on collaboration as well as data (Durant et al., 2004). A new paradigm in the environmental policy process would consist of a partnership of government, industry, and civil society “imbued with a results-based sense of common purpose” (p.4). Proponents of this new paradigm also hold that, by design, the current bureaucratic and highly structured model of the policy process leads to adversarial relationships and leaves no room for social learning. Political influences, the pressured environment within regulatory agencies, and the frustrations of other stakeholders who feel litigation is their best offense and defense, can all lead to inadequate environmental policies and intractable disputes. The challenges being experienced in the HVHF policy process reflect this need for a common purpose approach that goes beyond technical enhancements and allows for collaboration and problem solving.

While these aspirations for more effective approaches to policy design and process continue to evolve, existing environmental conflicts persist. With the particular challenges that come with competing economic and environmental interests, even the worthiest policy development guidelines can be difficult to apply. While economic policies are designed to address specific industries both in terms of regulating and promoting their advancement, environmental policies are typically characterized by social regulation that crosses industries and imposes production guidelines and restrictions. Policy analysis literature emphasizes the need to establish clear goals to guide policy development and provide a framework for designing and evaluating policy elements. Stone (2002) presents five goals or criteria for determining whether a proposed policy will effectively address the need or problem for which it is intended — equity,
efficiency, security, liberty, and community. While these concepts are open to wide interpretation and can change meaning over time, they serve as a baseline for policy deliberation. At the same time Stone notes that these goals also set the stage for different interpretations — a common battle scene of the policy arena. The HVHF conflict makes goal setting even more challenging given the intersection of economic and environmental interests. For example, the goals of efficiency and security are laudable from the perspective of less dependence on foreign fuel, but not so attractive if quality of life and the security of natural resources are threatened. Likewise, liberty seems self-evident and due to all, yet the interests of many — those whom would benefit from jobs, higher wages, and the spin-off economic benefits of industry growth — should not necessarily override the interests of individuals and communities that could forever be negatively impacted.

Adding to the challenge of the policy process is the increasing sophistication and expansiveness of stakeholder influence. Sabatier (2007) discusses research on policy networks and growing recognition that such networks represent a form of governance in which relationships are predominantly informal, decentralized, and horizontal. Network structures are “not only connected to specific policy outcomes…but also to the type of change…,” with the potential for change heavily influenced by the degree of concentration of power (Sabatier, 2007, p. 145). This is a significant shift from the traditional view that government is the primary player in steering policy decisions. Stakeholders on both sides of the HVHF issue exhibit fairly sophisticated network building. Oil and gas companies have an advocacy network of individuals and associations that generates millions of dollars to promote policies that are favorable to the
industry. Whereas a couple of decades ago the advocacy field was dominated by major trade associations like the American Petroleum Institute, today the support network includes property owners, industry coalitions, lobbyists, and issues-based educational organizations (for example, Joint Landowners Coalition of New York, Inc., Marcellus Shale Coalition, and Energy-in-Depth). Their combined efforts generate millions of dollars through community-based, web, and social media campaigns. Data on contributions made since the 1990 election cycle show that individuals and PACs have donated over $238 million to pro industry candidates and parties, with 75% of that money going to Republicans (OpenSecrets.org, 2011). Data also show that a significant percentage of contributions are being channeled to state-level candidates. Between 2003 and 2006, supporters of the oil and gas, electric utilities and coal mining industries contributed $58.3 million to state politicians and party committees (Moore, 2007).

Policy networks are becoming increasingly active on the anti-energy industry side as well. Pro-environmental policy organizations gave $2.1 million and alternative energy interests contributed almost $564,000 to state-level politicians in the 2003 to 2006 time period (Moore, 2007). Like energy industry advocates, pro-environmental activists are establishing a multi-dimensional network of advocacy partners. Groups like Americans United for Change have launched multi-state ad campaigns. MoveOn.org, which almost exclusively uses web marketing and e-commerce to drive online donations, has successfully motivated hundreds of thousands of small donors (MoveOn.org, 2011). Many groups like Toxics Targeting Citizens and Campaign for the Environment use community-based events to bring in speakers, raise money and build awareness around
issues close to home. These statistics illustrate the continuous tug-of-war between elected officials and the proliferation of interests that comprise policy networks today.

In summary, by considering relevant theories and concepts we are invited to view the HVHF controversy in two intriguing ways — as a policy development challenge operating within a complex system, and as an ECR case that is a complex system in and of itself. This brings us to the literature review and discussion of the unique challenges posed by conflicts that emerge from fears over environmental degradation.

**Literature Review**

Conflicts over environmental degradation can be triggered instantly when damage occurs, or develop at the earliest stages of the policy process when there is concern over the risk of environmental harm associated with a particular industrial process or development initiative. The present study examines the controversies surrounding New York State’s HVHF policy and permitting process, and stakeholder perceptions of the effectiveness of the public participation methods that have been employed.

Thus, the following literature review examines research and writings related to:

- Environmental Conflict Resolution (ECR) and the nature of intractable conflicts.
- The role of public participation in policy development and the parallel progression of public policy dispute resolution (PPDR).
- Emerging models of ECR, particularly those designed to link government management with community decision-making.

**ECR: At the Crossroads of Environment, Economics and Politics**

It is helpful to start with how experts in the field define and classify environmental disputes and environmental conflict. In ECR literature a distinction is
made between the terms “dispute” and “conflict.” A dispute is defined as a “dissention or controversy over a specific, bounded issue” while a conflict applies to more complex and longer term situations “overladen with historical and situational elements” (O’Leary and Bingham, 2003, p.46, n.2). In the present study, the HVHF controversy is characterized as a series of disputes as well as a larger, overarching conflict. It rises to the level of conflict due to the manner in which it has been influenced by past environmental policy disputes, and also because it deals with many elements that resist resolution. As discussed further below, it is the latter aspect of intractability that this research will explore, seeking to better understand the type of ECR model that might positively transform conflict dynamics.

O’Leary and Bingham (2003, p.4) define environmental conflicts as:

- Involving the environment, natural resources, public lands, or a combination thereof,
- Engaging multiple parties in decision making,
- Involving an issue directly related to an action or policy that can cause negative environmental effects, and
- Typically very public and involving government agencies.

Environmental issues often occur in the context of economic development initiatives, so it is not surprising that stakeholder groups in both camps will find themselves in conflict. Environmental groups are characterized as traditionally risk averse, taking positions against any action that could potentially harm the environment, and many have become highly organized political operations. While many environmentalists argue that benefits of development should not drive decisions on resource management and public policy,
stakeholders representing business interests tend to argue in favor of the gains to individuals and society (Susskind, 1981, Wines, 2014). The business case is that development generates wealth and opportunity, while impacts on the environment can be mitigated or corrected over time. As a result, developers and environmental groups approach the determination of standards with different risk orientations and time horizons, as well as different assumptions on how the environment will be impacted by a development project (Susskind, 1981; Susskind, McKearnan and Thomas-Lamar, 1999; Susskind and Ali, 2015).

Environmental conflicts can be categorized as upstream, midstream, or downstream (O’Leary and Bingham, 2003). Upstream environmental conflicts are those occurring at the planning and policy making stage, while midstream conflicts are defined as involving permitting and other administrative processes. Downstream conflicts revolve around compliance and enforcement. The HVHF scenario can be considered a midstream conflict as it was triggered in New York State when energy developers sought permits to begin high volume hydraulic fracturing in various regions of the state. However, key stakeholders such as the American Petroleum Institute see the advancement of hydraulic fracturing as very tied to the broader topic of energy policy development (Energy API, 2015).

Environmental conflicts can be triggered by disagreement over access to and allocation of fixed resources, including how to develop criteria to determine best use (Susskind, 1981; O’Leary, Nabatchi and Bingham, 2004; Meek, 2010). Disagreement over environmental quality standards and what is considered reliable data also are common sources of disagreement, and particularly germane to the present study of
HVHF. While the intent of government is to establish objective and impartial regulations, disputes continue to arise over the accuracy of the data being used for decision making. However, from a conflict resolution perspective, regulatory decisions cannot be made on hard data alone. Much of the complexity of environmental disputes is the “nearly inseparable conjunction of values and facts” (Susskind and Weinstein, 1980-1981, p. 319). Strong ideologies shape environmental disputes into much more than a scientific debate, making decisions based on even the most verifiable data unlikely to satisfy all stakeholders. Adding fuel to the fire over the last few decades has been the steady increase in environmental regulations, further intensifying disputes and generating conflict between environmentalists and developers.

**Toward consensus-based conflict resolution.** It became increasingly clear by the latter part of the twentieth century that efforts to achieve resolution through courts of law or other government administrative rulings were proving largely unsuccessful in satisfying stakeholders and generating effective policy. The need for an alternative approach was evident, and by the early 1980s both mediation and negotiation were being employed as an alternative to litigation (Susskind and Weinstein, 1980-1981). The USA Congress passed the Negotiated Rule Making Act in 1996, which called for government agencies to work with interest groups to negotiate proposed administrative rulings (Pub.Law 104-320). The popularity of using a more consensual approach to resolving environmental disputes also continued to grow, as did the need for even more effective means of engaging stakeholders. Evidence that ECR has been formally incorporated in the environmental policy development process includes the EPA’s $41 million commitment to an ADR program in 1999, as well as the use of dispute resolution
methods by many other regulatory arms of state and federal government before and since that time. In fact, the USA Congress established an Institute for Environmental Conflict Resolution in 1998 (O’Leary and Bingham, 2003). Leaders in the field argue that it is essential for stakeholders to have the opportunity for direct participation in policy development, and reach agreement on a method for calculating costs and benefits. Parties also must collaborate and agree on what will be considered credible data for decision making (Susskind, 1981; Susskind and Cruikshank, 1987; Moore, 1996).

Likewise, Porter and Brown (in Susskind and Ali, 2015) cite issue identification and joint fact-finding as critical to negotiating environmental policy, especially at the international level.

However, in spite of evidence over the past several decades that negotiation and mediation methods have often proven less costly and resulted in higher satisfaction levels among the parties, some conflicts continue to elude resolution, or revert to conflict after an apparent agreement has been reached. Evidence continues to mount that some conflicts cannot be resolved using a consensus-based approach alone (O’Leary and Bingham, 2003). In short, they possess all the ingredients of an intractable conflict.

**Intractable conflicts — new possibilities through reframing.** Why is it that after years of study and expansive stakeholder engagement efforts, the HVHF conflict in New York State appears far from over? While the state’s leadership at the present time has endorsed its regulatory agencies’ recommendations to ban HVHF, parties on both sides of the issue have filed numerous lawsuits. Some demand compensation due to a policy process that has cost drilling companies millions, and in at least one case, bankruptcy (Coin, 2013). Others claim violation of property rights, including one
stakeholder group calling for the secession of Upstate New York from the rest of the state (Spector, 2015; Goggin, 2015). And still others seek further protection from hydrofracking should a future state administration choose to overturn the ban (Northrup, 2014). Even considering some of the recent “wins” that appear to thwart pro-HVHF stakeholders, it is a further premise of this study that New York State is experiencing a false lull in HVHF-related disputes and that there are triggers on the horizon that could re-escalate into conflict. Tensions appear to have relaxed because several energy developers have been unsuccessful in legal battles over leasehold rights and others have simply given up on New York as a business investment. Some also take comfort that the price of natural gas has steadily declined in recent years making it a less lucrative venture (Hydraulic Fracturing Energy and Opportunity, 2015). However, this is a fragile foundation when considering the natural fluctuations in energy markets and the substantial power and influence that could be brought to bear should the market become attractive again with the promise of great wealth. Factors such as industry-driven production declines to reduce the glut of natural gas on the market and regulations that are resulting in closure of coal producing facilities are likely to impact demand and potentially reignite interest in natural gas production (eia, 2015).

In the field of Environmental Conflict Resolution (ECR), conflicts that fluctuate in intensity and elude resolution in this manner are not an uncommon phenomenon. Fortunately, there are a growing number of studies that seek to understand the dynamics of conflict that resist traditional approaches to resolution. As discussed earlier in the preliminary conflict map, how people shape, focus and organize (i.e. frame) their view of the world can influence many aspects of an environmental dispute. An in-depth study of
eight intractable conflicts — called the Interuniversity Consortium on the Framing of Intractable Conflicts — was conducted beginning in the late 1990s. The research goal was to better understand how parties involved in intractable conflicts viewed their opponents as well as their own role (Lewicki et al., 2003). The premise of the research was that the manner in which parties frame a conflict can heavily influence the ability to come to resolution. The researchers argued that one cannot make assumptions about a stakeholder’s point of view, and that “framing is a complex process in which disputants may hold multiple or even contradictory frames” (Lewicki et al., 2003, p. 20). The goal of the study was to address the need for more systematic frame analysis and add to the body of knowledge regarding the particular frames that lead to intractable conflicts. Research methods included qualitative and quantitative content analysis of documents, news articles, and interview transcripts. Some preliminary coding schemes based on previous research were developed to guide data analysis, along with open coding to accommodate other frames that emerged from the data. Unit of analysis was the “thought unit,” i.e. “the words, sentences or paragraphs used to express an identifiable thought” (p. 7). To ensure consistency in analysis, a coding guidebook was developed to provide the research team with coding protocols, examples of each code, and subcategories. Findings of the Interuniversity Consortium study provide insight on the nature of frames and their associated influence on the intractability of conflicts. The research primarily explored three frames — identity, characterization, and conflict management. Analysis showed that stakeholder frames could remain very stable over a long period of time and as a result reinforce conflict dynamics. On the other hand frame interactions and shifts in frames could have an up or down affect — by promoting or inhibiting stability of other
frames, or by changing as a result of positive or negative reinforcement.

The findings also offer considerable evidence for the way frame differences can lead to intractability. Differences are exacerbated when there are hidden, underlying issues and unrevealed interests, when parties are narrowly oriented to an adversarial approach to conflict, and when parties are locked into negative characterization frames (Lewicki, Gray and Elliott, 2003). An especially relevant finding in light of the HVHF conflict is in relation to disputes over hazardous materials. As exhibited in the HVHF controversy, the research showed that parties can hold very different risk frames and bring to the discussion widely differing definitions of risk. In the Interuniversity Consortium study, parties’ assessments of potential hazards varied depending on level and type of technical knowledge, as well as differences in culture and class. Researchers concluded that “until some common basis for describing and measuring risk can be agreed upon among disputants, conflict over toxic pollutants will likely remain intractable” (Lewicki et al., 2003, p. 419). The significance of findings lies in the suggestion that disputants’ frames “not only can change but may well be changeable under the right circumstances,” and that “frames may be transformed through mutually reinforcing, positive shifts in related frames” (p. 420). The implication for the conflict management and resolution field is that better understanding of the relationship between frames and intractability can lead to development of more effective approaches that promote dialogue. For example, when parties are locked in narrow conflict management frames that inhibit communication, Lewicki et al. (2003) suggest bringing the parties together to specifically explore conflict management, identity, and characterization frames, such as:
• Invite stakeholders to a meeting in which the parties share and discuss their whole story frame.

• Engage a facilitator to help the parties explore issues and gain understanding of how each may view the situation through a different lens.

• Work separately with each group, helping the parties to grow in acceptance of each other’s standing in the dispute and, in turn, increase understanding and manage expectations.

• Through separate interviews, identify frames being employed and then invite the parties to discuss which frames may be creating a barrier to resolution.

Lewicki et al. (2003) also outline several third party intervention approaches to explore framing and promote reframing including:

• Study circles that can be implemented community wide to explore issues.

• Listening projects that bring parties with different perspectives together in an interviewer-interviewee format.

• Mediation as a joint problem solving approach to understanding frames, with emphasis on healing relationships as well as reaching agreement.

All of the above mechanisms and third party approaches employ the understanding of frames to move conflicts off intractability and toward more productive fact-finding, problem solving frames. However, more empirical data is needed on what dispute characteristics contribute to intractability and how stakeholders define disputes that resist resolution (Campbell, 2003; Lewicki et al., 2003).

Role of Stakeholders in Environmental Governance

By the latter part of the twentieth century it was fully apparent that economic
regulation and social regulation not only intersected, but in the case of environmental and natural resources, often clashed. One historical root of the problem was legislation that tackled a series of environmental issues (air, water, other natural resources), but in doing so established numerous legal, technical and administrative functions within the responsible regulatory agencies (Durant et al., 2004). Although public participation often was a required component of regulatory processes, government procedures and accessibility made it difficult for the public to engage. This changed as the USA entered the twentieth century due to grassroots pressure and increased social awareness. The focus shifted toward results-based environmental governance, and government agencies were charged with “involving stakeholders in meaningful ways in the oversight of governance decisions” throughout the policy development process (Durant et al., 2004, p. 179).

The importance of reconnecting with stakeholders has become even more urgent in light of the increasing complexity of environmental governance. Not only must the USA reconcile domestic tensions when economic and environmental interests conflict, but issues of a global nature also must be considered. Runaway consumption and production patterns have elevated the call for sustainable development to the global level (DESA, 2013). Looming environment-related challenges include climate change and unmet energy needs, issues that are intricately entwined with economic and social issues as well. Income inequality, hunger, rapid urbanization, and financial instability are all critical challenges with global impact, and as a result will require collective, cooperative action (DESA, 2013).
Meadowcroft (2004) holds that the demand for sustainable development will more than ever require a deliberative democracy approach to policy making. In contrast to the mechanisms of voting and majority rule, a deliberative democracy process seeks to better represent the public’s interest by allowing citizens to be involved in thoughtful and collaborative dialogue, allowing for insights and a collective direction to emerge. Hallmarks of the process are reasoned discussion, public justification, and political equality, principles that he believes must be extended even further in the Environmental and Natural Resource (ENR) arena. In the context of ENR, the notion of public participation must move from citizen involvement during the policy process to group-based deliberative interactions that include government, business and civil society. Meadowcroft calls for a “results based sense of common purpose in environmental governance” (p. 183).

At the heart of this concept of expanded deliberative democracy is the need for meaningful public participation venues and processes when tackling environmental policy. As noted earlier, public participation has been a component for decades, but has not always been enthusiastically embraced by government agencies or risen to stakeholder expectations. Mechanisms have included public enquiries, referendums, citizen juries and advisory panels, covenants, negotiated regulation, and mediation (Meadowcroft, 2004). While these approaches have been critiqued in terms of their fairness, competence, transparency and accountability, Meadowcroft evaluates according to how well a process delivers on the deliberative ideal: representation, the quality of deliberation, the nature and significance of the decision, and representation. This last component — the extent to which participants are represented in the implementation
phase — is especially germane to the present study’s interest in conflict management models that link government management with community decision making. Such group-based processes not only provide greater opportunity to resolve apparent contradictions in decision making data, but also allow for social learning over time. It is important to note that a criticism of group-based processes is that it is limited to interested parties and therefore leaves out the broader citizenry.

Another approach to achieving a results-based sense of common purpose in environmental governance is civic environmentalism. DeWitt (2004) describes civic environmentalism as similar to deliberative democracy in its goal to bring more flexibility and citizen involvement to the policy process, but taking a bottom up approach to addressing the failings of bureaucracy. It is a collaborative process that typically involves a wide range of stakeholders who have come together in response to an environmental threat. DeWitt emphasizes the importance of understanding civic environmentalism in the context of American political theory, and its role as just one of four competing models of governance — interest-group governance, rational governance, populist governance, and civic governance. Interest-based governance is rooted in the traditions of American democracy and is based on the laudable goal of maintaining a separation of powers. DeWitt refers to interest-based governance as the “backbone” of the USA governing system, but one that also fostered the creation of a many layered and complex bureaucracy (DeWitt, 2004, p. 223). The rational governance model is more comprehensive in its approach to assessing and addressing public issues. As a result it lends itself to environmental challenges that contain many complex and interrelated factors. As a component of environmental governance the rational approach contributes

The third model, populist governance, is dubbed the conscience of environmental governance and is characterized by local citizen protests and common law action to address grievances (DeWitt, 2004). It is typically the purview of activist groups distrustful of big government and protective of local interests. In contrast, civic governance is driven by an ideology similar to populists, but exhibiting the ability to self-organize and mobilize in powerful ways. As such, the ability of civic environmentalism to build local social capacity makes it diametrically opposed to interest-group governance. Instead of a myriad of issue-focused government agencies and the accompanying influence of special interests, civic environmentalism movements cross boundaries and employ collaborative problem solving to address local issues. As mentioned above, the weakness in this collaborative approach is that the civic model is just one component of the American governance system, and that implementation of any proposed policy design is subject to procedural dictates of interest-group governance. The success of efforts by government to embrace civic environmentalism have varied, and its future will likely depend more on how effectively the current multi-model system addresses the challenges of achieving sustainable development (DeWitt, 2004).

As these energetic efforts to achieve effective governance show, environmental governance and environmental disputes have become almost synonymous. The common thread that links the two is the importance of public participation. Discussion now turns from stakeholder involvement in environmental governance to participation when environment-related disputes arise and conflict erupts.
Public Participation in Public Policy Dispute Resolution (PPDR)

Over the history of public participation practices in government, stakeholder involvement often has been viewed as playing a marginal role in helping ensure government accountability, and some consider it as a necessary evil. There certainly has been evidence that inviting public input can slow down the policy process and, by design, stall progress on important issues (Durant, Fiorino, and O’Leary, 2004). However, the number, intensity, and duration of policy disputes over the last several decades have reinforced the necessity of finding strategies to improve both the process and outcomes. Continuous and lengthy disputes come with a high cost, both in terms of damaging trust between government and its constituents and the tangible impact of litigation. Without judging the merits of options that run along a spectrum from consensus-building forums to litigation, two observations can be made. One, that a clear common denominator is stakeholder participation, from problem solving dialogue to more formal structured input. Second, research supports the contention that the more intractable the dispute the more essential it becomes to create opportunities to understand and potentially transform negative conflict frames.

One way to reconcile the roles of public participation and dispute resolution is through evaluation of processes and outcomes of the two disciplines. This can be stated from an ADR perspective as “What outcomes ought to be expected from specific case interventions?” (O’Leary and Bingham, 2003), and from a stakeholder expectations perspective as “What does it take for a decision to count?” (Creighton, 2005). Stephens and Berner (2011) holds that public policy dispute resolution (PPDR) and public participation possess many similarities in terms of goals, values, concepts, objectives, and
practices (p. 1). At the same time he contends that there are theory and method-based evaluations used in public participation that would benefit PPDR evaluation efforts. In terms of goals and values, both public participation and PPDR look for outcomes that show an increase in the perceived legitimacy of agreements, and evidence that in the decision making process there was willingness to consider different opinions and information. Both disciplines also strive for atmospheres that demonstrate open discourse, where stakeholders can contribute alternative approaches to solutions and feel recognized for their contributions. All of these desired outcomes hinge on how well stakeholders are represented and directly involved in deliberations and decision making, and the extent to which the process allowed for a learning and problem solving (Stephens and Berner, 2011). Additional similarities between public participation and PPDR lie in the use of third party facilitators and the acceptance by decision makers that stakeholders are legitimate contributors in informing and shaping resolutions. The third party role is viewed as essential in ensuring effective process design and management, while stakeholder involvement “for practical and moral reasons animates PPDR and public participation practice: there is a high expectation of some kind of influence” (Stephens, and Berner, 2011, p. 4).

That said, differences between the two disciplines also exist, the most distinctive being that in PPDR reaching agreement is paramount, while public participation efforts aim to have stakeholder interests more fully reflected in decisions (Stephens and Berner, 2011). This distinction in turn influences the breadth of stakeholders invited to participate, whose interests have standing, and who has representation authority. While in PPDR the selection of stakeholders is typically directed toward those most directly
affected and considered most capable of contributing to the issues at hand, the spirit of
public participation is to engage all affected stakeholders (IAP2, 2015). This in turn
affects decision authority. The primary parties in PPDR typically include regulatory,
compliance, and policy representation where decision authority is implicit, whereas in
public participation objectives focus on involvement and contributions with the intent to
influence decisions (IAP2, 2015). With these differences as context, an analysis of public
participation evaluation indicators yielded valuable insights on factors that could enhance
PPDR approaches and outcomes (Stephens and Berner, 2011). These include:

- Resources to participate, which can influence information exchange and
  comprehension.
- Combining inductively created criteria based on participant interviews and the
deductive social goals of both PPDR and the public participation fields.
- Expanding consultation, outreach and education.
- Value of the iterative nature of public participation processes.

Source: Stephens and Berner, 2011.

Stephens and Berner (2011) see all of these factors contributing to legitimacy of the
process, which they argue is “at the center of design and evaluation considerations” (p.
2). Similarly, Beierle and Cayford (2003) recognize the close interrelationship of public
participation and public dispute resolution, but from the interesting perspective that
dispute resolution is itself a method of public participation, a perspective they believe can
lead to insights beyond the tradition of comparing resolution approaches to litigation. The
authors conducted an evaluation of 239 cases, comparing dispute resolution with other
forms of public participation. A distinction was made between dispute resolution methods
that were consensus based and information-sharing type practices such as public meetings and advisory committees. Analysis was based on five public participation social goals:

- Incorporating public values into decisions
- Increasing the substantive quality of decisions
- Resolving conflict among competing interests
- Building trust in institutions
- Educating and informing the public


The coding scheme consisted of more than 100 attributes related to context, process and outcomes. The research objective was to explore how public participation contributed to dispute resolution and what factors constituted success.

Findings revealed both strengths and shortcomings of public dispute processes. In small-group settings the consensus-building approach proved more effective in achieving the social goals of public participation, but this success did not translate to the general population. This was because the use of public outreach and education activities was limited, and participant groups were not necessarily representative of the broader public (Beierle and Cayford, 2003). As a result, consensus-based dispute resolution processes run the risk of generating solutions that are limited from a values and priorities perspective. The overarching implication is that “using dispute resolution as a form of public participation entails a tradeoff between success in achieving the social goals and the social significance of the achievement” (p. 54). This view aligns with the earlier discussion regarding policy recommendations that have support of the negotiating parties.
but later fail in implementation when subject to the scrutiny of a broader range of stakeholders. Literature on collaborative management points to possible ways of mitigating these shortcomings.

**Evolving Approaches to ECR and Potential of Collaborative Management**

The value of public participation in decision making and potential of transforming dispute resolution into a learning process have been particularly embraced in the area of resource management. As discussed earlier in this chapter, the top-down “command-and-control” governance of the first half of the twentieth century proved inadequate (Durant, Fiorino, and O’Leary, 2004, p. 2). Lengthy disputes and dissatisfied stakeholders spurred development of theories and methods to better understand conflicts over access to and sustainability of land, water, wildlife, and other natural resources. Rather than viewing environmental challenges through the lens of site and situation-specific issues, environmental governance is understood today as involving complex systems, clashing ideologies, and power imbalances that all get in the way of effective policy making and lasting conflict resolution and management. Central to the development of models linking government management with community input are the narratives of co-management and adaptive management.

Co-management is one of several collaborative management approaches that are philosophically based on the sharing of rights and responsibilities in governance (Armitage, Berkes, & Doubleday, 2007). The co-management approach is designed specifically to link government and local communities, and while the degree of power sharing may vary, the goal is to bring greater equity and efficiency to the task of resource management. Co-management arrangements have even become codified in law, and are
believed to “democratize decision making, foster conflict resolution, and encourage stakeholder participation” (Armitage et al., 2007, p.3). A critical aspect of co-management and other forms of collaborative management is that they recognize the unique challenges when dealing with conditions of uncertainty. Many environmental management challenges are highly complex, consisting of evident impacts to resources and the stakeholders whom rely on those resources, but not necessarily accompanied by definitive measurements of risk or actions tied to predictable outcomes. Through trial and error in the governance process, thought leaders have come to recognize that “systematic learning and innovation” are key to more effective management, and that it can be achieved by engaging stakeholders in a more decentralized, participatory manner (p. 4).

The adaptive management narrative addresses the learning component of collaborative management and is defined as “a tool to frame the philosophical, methodological, and practical challenges of natural resource management” (Armitage et al., 2007, p.4). While designed as a structured process involving stakeholders, inherent in adaptive management is the opportunity for experimentation and learning, and as a result more flexibility in decision making and acceptance of risk sharing. The definition of adaptive management has evolved over time but is generally characterized as being a long-term community-based system, a learn by doing process, self organizing, with the objective of developing policy options and performance criteria (Armitage, et al., 2007).

As these narratives of co-management and adaptive management matured, research and experience pointed toward another essential element of resource management and its affect on communities, that of resilience. Examples such as resource depletion related to hunting, fishing, and ecosystem degradation raised awareness that
resilience — the “capacity of a system to absorb disturbance without flipping into a qualitatively different state” — is a counterpoint to the notion that traditional science-based solutions can solve social-ecological solutions (Armitage et al., 2003). While from an economic standpoint efficiency and optimization are designed to yield the things society needs and wants, the outcome can instead reflect little of the broader values of the citizenry and indeed result in irreversible damage. Resilience thinking recognizes and accepts the inevitability of change, and in doing so requires a systems perspective that takes into account the linkage between humans and nature (Walker, Holling, Carpenter and Kinzig, 2004; Walker and Salt, 2006). Two elements that underlie the concept of resilience thinking are:

- Understanding that while it is natural for the state of social-ecological systems to vary, they also have thresholds. Too much change, which Walker and Salt (2006) refer to as a regime change, and there can be an irreversible and negative shift in structure and behavior. Resilience, therefore, can be established as the distance to the threshold.

- Being aware of the adaptive cycles of social-ecological systems and how they change over time. Without this awareness human action can cause a system to cross a threshold, negatively impact system dynamics. Walker and Salt (2006) define four phases of the adaptive cycle — rapid growth, conservation (system becomes more strongly interconnected), release (a disturbance that damages the system), and reorganization (pp. 76-77). The significance of these phases in terms of policy and management interventions is that, while the first two phases contribute to system stability, the latter two is a period of uncertainty and holds
the “greatest potential for the initiation of either destructive or creative change…” (p. 82).

It is this recognition of the need for resilience that led to the development of adaptive co-
management, which is considered an “innovation in natural resource management under
conditions of change, uncertainty, and complexity” (Armitage, Berkes and Doubleday,
2007, p. 5). Characteristics of an adaptive co-management approach include a focus on
stakeholder participation, especially the linking of government management with
community decision-making. Inherent in its processes is the concept of adaptive capacity,
“an aspect of resilience that reflects learning, flexibility to experiment and adopt novel
solutions, and development of generalized responses to broad classes of challenges”
(Walker et al. in Armitage, 2007, p 68). While the context for adaptive co-management
has typically been associated with natural resource management, it is the premise of this
study that many of its principles are relevant to permitting processes associated with
extractive industries. Adaptive co-management is especially applicable to issues that
require problem solving over time and holds the potential for:

- Reducing tension over policy conflicts through power sharing and more
decentralized decision making on issues that directly effect local community
livelihoods.

- Establishing trust through more effective communication and greater
transparency.

- Helping communities grow in adaptive capacity— learning to live with
uncertainty and change while promoting sustainable social,
institutional/organizational and ecological systems (Armitage et al., 2007).
Stakeholders in the HVHF conflict would benefit from each of these principles as they deal with policy decisions that are hinging on competing technical data, and risk assessments that can be altered by changes in the political landscape.

**Summary and Conclusions**

In summary, historic and current literature on ECR and public policy dispute resolution tells of the tremendous progress that has been made in recognizing the value of more collaborative approaches that directly involve stakeholders. However, the journey from theory, to models, to enactment in the policy process is still long and incomplete. From the natural resource management perspective, Berkes, Armitage and Doubleday (2007) hold that the current system of resource management is facing a crisis of confidence, and that the extreme complexity of issues and tension over competing values will test the system’s legitimacy and power. Also, while there is great potential in the adaptive co-management approach, the authors contend that its theories and practices “are not easily translatable to into the language of policy makers or the process of policy development” (p. 318). More work must be done to transition from theory to practice in the policy arena in order to make adaptive co-management accepted and actionable. This includes more research to better understand the policy conditions needed to enable adaptive co-management.

Then there is the question of how the state of environmental governance relates to policy development and implementation. In spite of the significant growth in development of mediation techniques and use of mediation to resolve policy disputes, much less data exist on the value mediation brings to the parties and whether it leads to better policy (O’Leary and Bingham, 2003). For example, while numerous studies have
tested participant satisfaction of dispute resolution processes, Coglianese (2003) argues this is not a suitable criterion in relation to public policy. First, the nature of the policy process is that it deals with public issues, so participant satisfaction will not necessarily correlate with the opinions of the broader public. Second, participant satisfaction with outcomes does not mean that the process generated good policy. Further, what we know about dispute resolution efforts comes primarily from cases of “discrete phenomena,” individual disputes with settlement as an end point (O’Leary and Bingham, 2003). As the literature on intractable conflict shows, there are far too many disputes that evade resolution, fluctuating in and out of intense conflict but showing little hope of reaching consensus on critical issues.

So, on the natural resource management side we have collaborative approaches that are ideal when dealing with complexity and uncertainty, yet they face challenges due to reliance on certain policy conditions, especially those related to meaningful public involvement. Conversely, we have increasingly robust public involvement in environmental policy development that often yields disappointing outcomes under conditions of complexity and uncertainty. This study seeks to learn from both of these phenomena, applying the underlying theories and current practices to the HVHF conflict and exploring process effectiveness under conditions of uncertainty related to long-term environmental risks. As discussed in the following chapter, the case study method has been chosen as the most effective means of gathering data to illuminate conflict regulation potential, inform intervention strategies, and suggest a method for more productive short and long-term engagement of stakeholders.
Chapter 3: Research Method

Introduction

Reconciling interests regarding High Volume Hydraulic Fracturing (HVHF) in New York State is by no means at an end. While state government has gone to considerable lengths in trying to engage diverse stakeholders and fulfill its governing responsibilities, the combination of risk uncertainties and broad benefits of HVHF are likely to continue fueling tensions. As a result, intervention is not too late. The purpose of this case study was to explore the perceptions of a sample of stakeholders affected by the HVHF permitting process in New York State regarding the benefits and limitations of the public participation process. More specifically, the study sought to understand the type of conflict management approach that might hold positive transformative potential for environmental policy making in the energy extraction arena. Based on data gathered through focus groups, key stakeholder interviews, and document research, the dispute surrounding the practice of HVHF was analyzed through the application of conflict resolution theory and mapping instruments. Primary research goals were to:

- Discover stakeholder perceptions regarding the extent to which New York State’s HVHF public participation process is meeting the interests of stakeholders.
- Explore whether principles of ECR used in the field of natural resource management are applicable to an environmental governance challenge such as New York State’s HVHF policy and permitting process.

Chapter 3 provides a review of the research questions and description of the selected research tradition. Insights on the researcher’s personal and professional background relevant to the study topic also are provided. The methodology section
defines both the geographic and participant scope of the study, which focused on the territory in New York State where natural gas deposits created opportunity for extraction via high volume hydraulic fracturing (HVHF). It also provides an overview of data collection instruments and data analysis plan. The chapter closes with strategies to lend both internal and external credibility to the study, along with words on ethical procedures that were employed to protect participants as well as the integrity of the findings.

**Research Design and Rationale**

This research endeavor was designed as an exploratory study centered on the public participation aspects of New York State’s HVHF policy development process. It sought to discover stakeholder perceptions on the extent to which the public participation process met stakeholder interests. More broadly it explored whether principles of ECR may be applicable to the type of environmental governance challenge that has played out in New York’s HVHF initiative. Data inputs were sought from three aspects of stakeholder opinions:

- What they viewed as core issues influencing the HVHF controversy
- How they evaluated the benefits and limitations of the public participation process
- What factors affected how stakeholders perceived the value of the public participation process

As a qualitative study an interpretive perspective was applied. This approach is conducive to the study of human behavior, allowing for the influences of environment as well as each individual’s subjective reality (Willis, 2007). Denzin (1994) describes interpretive studies as emphasizing “socially constructed realities, local generalizations, interpretive resources, stocks of knowledge, intersubjectivity, practical reasoning, and
ordinary talk” (in Willis, 2007, p. 161). As such, interpretivism required exploration of the meaning of the HVHF conflict from the point of view of the participants, which in turn informed analysis of conflict management models that may contribute to de-escalation and resolution of the controversy. Interview and focus group participants in this study shared many perspectives. Some held a decidedly pro- or anti-fracking point of view, and others viewed the phenomenon through an evaluative lens of how to ensure HVHF would not harm the environment. Especially important was how participants related their lived experience, such as how it affected their daily lives, shaped their values, and triggered emotions.

The case study was chosen as the most appropriate research strategy to analyze this particular conflict. The term “case study” as used in this research follows Yin’s (1994) definition of empirical inquiry that “investigates a contemporary phenomenon within its real-life context” and in which “the boundaries between phenomenon and context are not clearly evident” (p. 13). The method allowed for deep analysis of the HVHF controversy, with exploration into the nature and impact of actions related to policymaking and attempts to address stakeholder interests. Field research for this study entailed trips to communities across six counties in the southern tier of New York, sometimes meeting in coffee shops, sometimes at people’s homes. Although the state ban on HVHF was already in place, it was evident that the experience for many was still raw. For the Researcher, it was meaningful and informative to observe the contrast of close knit towns and villages existing alongside stretches of open land where fracking might have taken place, as well as emerging economic development efforts in some parts of the region but struggling communities and homesteads in other parts.
There is a long history of the case study method in ECR research. For example, it has been used to study the effectiveness of ECR techniques in site-specific and policy-level disputes (O’Leary, Nabatchi, and Bingham, 2004); to study the relations among disputing groups (Bingham, Fairman, Fiorino, and O’Leary, 2003); to deeply explore the dynamics of conflict frames (Lewicki, Gray and Elliott; 2003); to understand the unique challenges of intractable conflicts (Lewicki et al., 2003) and to assess potential of the co-management approach to natural resource management (Armitage, Berkes, and Doubleday, 2007). The data gathered in these and many other case analyses have contributed greatly to the body of knowledge in both the environmental conflict and policy dispute resolution fields. At the same time, there is a call to move beyond the traditional approach of experimental research on negotiating dyads and measurement based on settlement and satisfaction, and instead invest in more modeling of the aggregate (Bingham et al., 2003). This means recognizing the complexity of ECR within its context of groups of people, taking into account not only the conflict environment, but also the diverse histories and cultures of the actors. As a result, success in dispute resolution cannot be viewed as simply a transaction, rather, it is “a plan of action over time that affects the environment and thus members of the general public not at the table” (p. 337). The present study of the HVHF conflict endeavored to contribute to and extend knowledge in this arena by drawing on both of these lessons from past researchers. The case study method allowed for in-depth analysis of an intractable conflict in a specific industry — energy extraction — with the aim of bringing new insights on conflict management approaches conducive to the policy process and conditions of uncertainty. At the same time, this study sought to go beyond the specific conflict context and take the
broader view of the HVHF controversy as a complex system, thus the underpinnings of complexity theory, green ideologies, and related concepts. Particularly noteworthy in this study was learning how the phenomenon evolved over time, with tensions increasing as the regulatory and public input processes progressed. In the course of field research, much was learned about the state’s repeated efforts to gather public input, and what it was like for people on the regulatory and local municipality side to manage a continuously changing field of data on HVHF. Likewise, participants living in potentially affected communities described how the exhilaration of mobilizing to get their interests heard was dampened by the inability to access reliable data and the stress of confrontations with the opposing side.

Of course it also is important to note the limitations of the single case study approach, beginning with recognition that findings typically cannot be generalized to a larger population or other cases. The potential also exists that, once engaged in data gathering, the researcher may find that the case context or issues have shifted, thus making the research questions no longer appropriate (Yin, 1994). It is for these reasons a preliminary conflict map was prepared. Other limitations are that case studies can be lengthy endeavors, generating an unmanageable amount of information (Yin, 1994). In regard to this study, the importance of having relevant and focused research questions was reinforced throughout the field research and data analysis phases. First, the three questions were different yet strategically interrelated, which promoted a natural flow of conversation with participants. In addition, each question was directly pertinent to the purpose of the study. As a result, while indeed a great volume of data was collected, there was a relationship logic that facilitated coding and analysis. I am grateful to my
committee who, at the dissertation proposal stage, suggested ways to further focus and refine my research questions to align more closely with the study purpose.

**Role of the Researcher**

Two primary data collection methods were depth interviews and focus groups, which placed me in the role of both observer and facilitator. By conducting the initial case analysis and the fact that I live near the region of study, I had become acutely aware of the strong sentiments among stakeholders on both sides of the HVHF issue. Therefore I needed to conduct data gathering in a manner that I would in no way be construed as a participant-observer with a bias in a particular direction. In other words, emotions are so high regarding HVHF that it would not be unusual for some participants to be suspicious of the motives of the study. With clear explanation and full transparency regarding research goals, this concern was managed as effectively as possible. However, early on in participant recruitment it was evident that people were still deeply concerned about HVHF and wary of being asked to speak about it. As a result, less people showed up for focus groups than I hoped for, while reaching the desired number of private interviews proved more successful.

In terms of my personal and professional background relevant to the present study, in many ways the choice of research topic reflects a personal journey, one that began when I was a young girl and continues to this day. My father worked for a natural gas transmission company, supervising hundreds of miles of pipeline and several transmission facilities. His experience traveling the lines, handling property owner concerns, and protecting operations from potential risk were part of our regular conversations, as were the many magazines articles on the industry and related
government policy that he would share with me. Through the decades since, I have spent time as a consultant and business leader with dozens of community groups — involving hundreds of residents — hearing their legitimate, deeply rooted concerns and frustrations about potential industrial development, in some cases literally in their back yards. I also have assisted corporations with community outreach and public education, facilitating face-to-face meetings and large group dialogues to introduce a development project and gather stakeholder input. Academically, this has been a journey of increasing insight, first as a public relations practitioner, and then as an issue and crisis communications manager. Throughout that period I always felt the inadequacy of the process and communications techniques, as if our efforts were always just skimming the surface of what the audience really wanted to say and wished to hear. This led me to embrace the rewarding field of conflict management and resolution. The accumulation of these insights guided my choice of research design, while my awareness of these past experiences helped guard against bias in the data gathering and analysis process.

**Methodology**

The Marcellus Shale region along the southern tier of New York was a natural choice of geographic area for the study as it had been identified as a prime location for HVHF drilling. As the context also includes the policy and permitting process at the state level, participants also were sought from the fields of environmental protection and regulation.

**Participant Selection Logic, Instrumentation and Data Collection**

The preliminary conflict map presented in Chapter 1 contributed greatly to the process of identifying potential case study participants. Key aspects of the selection logic
and instrumentation included the use of purposive sampling and data gathering through document analysis, focus groups, and key stakeholder interviews.

**Focus Group Research**

Focus groups are defined as a collective activity designed to “explore people’s experiences, opinions, wishes and concerns” (Barbour and Kitzinger, 2001, p. 5). It was considered particularly appropriate for the present study as it provided a forum for exploring participant points of view and hearing their lived experiences in relation to the HVHF controversy. Especially valuable was the manner in which individuals framed the HVHF conflict, and how individuals within the group agreed, disagreed or even changed views in the course of interaction with each other. An important caveat is that, while these focus groups deliberately consisted of individuals espousing a pro-, anti- or neutral position on HVHF, the Researcher needed to be vigilant in investigating influencing factors. Barbour and Kitzinger, 2001, explain this need for depth and insight as considering “how the group context and broader cultural and institutional features operate to encourage or suppress the expression of certain points of view” (p. 6).

Focus group participants were drawn from representatives of interest groups within six counties in that region — Broome, Chemung, Chenango, Otsego, Steuben and Tioga. A purposive sampling approach was employed. (Weiss, 1995) describes purposive sampling as effective when the research objective is to maximize range and variation, obtaining “instances of all the important dissimilar forms present in the larger population” (p. 23). For the HVHF case analysis, it was essential to bring forth different points of view in order to gain insight on the types of collaborative and problem solving approaches that might prove most effective. Five focus groups were conducted, yielding a
total of 18 participants. Two focus groups consisted of individuals who self-identified as “pro-HVHF” and two consisted of individuals who self-identified as “anti-HVHF.” The fifth focus group was comprised of three participants who identified themselves as neutral in that their primary mission was to promote environmental protection through education and information. Participant positions and affiliations were verified both through membership in an interest group organization and through an initial screening questionnaire. Using a multi-stage, clustering procedure, the recruitment process involved contacting the interest group organization leadership to either obtain names of members or engage the assistance of the organization in distributing invite letters. This was followed by mailing an invitation letter to prospective participants, using a sample size of at least 12-15 prospects for every focus group to achieve adequate participation. To help promote participation, introductory meetings with interest group leaders to explain research goals preceded the recruitment process. As noted earlier, many whom my Research Assistant and I attempted to recruit were reluctant to participate, some due to a continuing lack of trust related to the state’s process, some due to fatigue with talking about HVHF and the public participation experience.

Focus group protocol materials and data collection instruments included:

- Introductory letter and telephone script explaining the research goals and why they were chosen (for use with key contacts and interest group leaders)
- Participant recruitment letter
- Invitee tracking form
- Participant consent form
- Focus group questions
Focus group participant profile form to be administered during the focus group session and collected to supplement analysis.

Data capturing tools, including digital recorders (if participant group agreed to being recorded) and large note pads to capture input and observations.

**Stakeholder Interviews**

The contribution of depth interviews relevant to the present study was the opportunity to gather descriptions of an individual’s experience related to a certain issue, as well as perspectives and interpretations on how and why certain events occur (Weiss, 1995). The collective input of interview participants allowed for integration of multiple perspectives and, integral to the HVHF research objective, a holistic view of the phenomena as a system and “description of the many sectors of a complex entity and how they go together” (1995, p. 10). A limitation of qualitative interviews is that results cannot typically be reported with statistical validity, such as a quantitative survey with uniform questions and limited response options. On the other hand, the qualitative interview allows for broader and deeper information to be gathered and a more organic exploration of topics between interviewer and interviewee (Weiss, 1995).

A purposive sampling approach was again employed for the key stakeholder interviews. Participants included residents and property owners from the six-county study area, as well as individuals with past experience relative to HVHF, such as NYS policy makers, municipal leaders, NGO representatives, and natural gas industry representatives. Similar to the focus group recruitment experience, some people were cautious about discussing the issue, and others stated they were tired, had done enough. However, the goal of 20 completed interviews was achieved, with representation across the various
viewpoints and backgrounds. Participants were recruited by sending invitation letters, which were followed up with a telephone call. Sample criteria included the leadership or management role of the prospective participant in either the policy process, local governance, NGO, or corporation engaged in HVHF. Given the qualitative nature of the study, not all stakeholders had the opportunity to participate, nor was the broader New York population included in the data gathering process. The advantage of the depth interview approach was the ability to explore a rather complex subject, gathering historical information while measuring awareness and opinions. The interview format also allowed the Researcher to probe into unanticipated areas of discussion if considered relevant to the research (Creswell, 2007). A limitation of the depth interview approach is that they are time intensive and results could be biased due to the researcher’s presence. Also, being qualitative in nature the results cannot be generalized to a larger population.

Key participant interview protocol materials and data collection instruments included:

- Introductory letter and telephone script explaining the research goals and why they were chosen
- Participant consent form
- Introductory and closing statements, including verifying informed consent and assuring confidentiality at the beginning and reiterating purpose and confidentiality at close
- Interview guide including questions and issues to explore
- Data capturing tools, including digital recorder (if participant agreed to being recorded) and expanded interview guide with notes sections
• Questionnaire (mini-survey to be administered at end of interview if possible to supplement analysis)

The combination of focus groups and individual interviews yielded a cohort of 38 knowledgeable stakeholders.

**Document Analysis**

Given the nature of this study — analysis of an intractable conflict involving government, private industry, and communities — it was essential to supplement the focus groups and individual interviews with written evidence through document analysis. A primary source of data was transcripts of NYS DEC public meetings. From the researcher’s perspective, advantages of document analysis are that it can yield technical data and statements of a broad range of stakeholders, and typically is easily accessed via Internet and manual searches (Creswell, 2007). A cautionary note for researchers is that documents may not always be complete or include accurate information, or may be copyrighted content requiring permission of the author (Creswell, 2007). Two factors greatly facilitated data collection and analysis. First, quality of the NYSDEC transcripts was very good; a professional transcriptionist captured verbatim the comments of those who signed up to speak. Secondly, the Researcher’s codebook developed for field research served as an initial guide for identifying HVHF-related issues mentioned in the public meeting documents.

**Data Analysis Plan**

The above approach provided a triangulation of data collection and analysis, assisting the Researcher in corroborating information and in comparing and contrasting viewpoints (Bowen, 2009). To support construct validity, data analysis began with coding,
which is considered as a critical link between data collection and their explanation of meaning. (Saldaña, 2013; Cooper, 2009). Coding was conducted during and after the data gathering phase, allowing new insights to emerge and the depth of information to be captured. Codes for the HVHF study emerged as single words or short phrases that related to the focus of inquiry. For example, health and economic impact codes predictably were identified, but numerous, more explicative codes were discovered as well. Codes were then “clustered according to similarity and pattern” to create categories of responses (Saldaña, 2013, p. 8). The result was a set of seven code categories: Health & Safety, HVHF Practice, Socio-economic & Environmental Justice, Government Process, Developer Outreach, Information & Data and Public Participation Process. In addition four themes emerged — Trust, Empowerment, Rights, and Fairness. Pattern matching was then applied to participant responses to identify whether there was a correlation between the observed pattern and the theoretical and conceptual premise of the study. In this manner, the HVHF case study identified gaps in process effectiveness suggesting the potential for enhancements that would more effectively link government management and community decision making.

**Issues of Trustworthiness**

Throughout the process of research design and method development, there was a commitment to validation strategies that helped ensure the ultimate usefulness of the study findings. In this qualitative study, effort was made to establish credibility, transferability, dependability and confirmability. Creswell and Miller (2000) define validity as evidence to “determine whether findings are accurate from the standpoint of the researcher, the participant, or the readers of the account” (pp. 195-196). For the
present study, several strategies were employed to check the accuracy of findings. As
noted earlier, triangulation was a key aspect of data collection and analysis and included
the search for multiple sources as evidence and support of claims. Creswell (2007) also
suggests member-checking by taking the final report or sections of content back to
participants, but this was not feasible for the HVHF study given the geographic logistics
and difficulty in reassembling participants. However, the Researcher employed reflective
listening and checking techniques, playing back to the participant what was heard to
ensure both the terminology and essence of the experience were recorded accurately.
Additionally, it was important to be transparent regarding data that may run counter to
the research questions or premise of the study. This required the Researcher to recognize
that even contrary findings are rich with possibility, either in revealing another dimension
to the conflict, or in inspiring the next study to advance our field, or both. Just such a
challenge was presented in the HVHF study with what appeared as a discrepant case.
While the majority of participants were consistent in citing structural and contextual
issues with the public participation process, one group made statements in support of the
public information meetings on HVHF. Upon further exploration, these participants made
a distinction between positive experiences at the early stage of the public meeting
process, and latter stages when the process deteriorated and tensions grew over potential
impacts of HVHF.

**Ethical Procedures**

Ethical considerations in research in general, and specific to this study, included
obtaining institutional permission from the IRB and incorporating ethical procedures in
all aspects of research design and execution. Key ethical considerations revolve around
the treatment of human participants. Following committee approval of the dissertation proposal, the Researcher obtained approval of the Institutional Review Board for Research with Human Subjects (IRB). In addition, the Researcher remained cognizant of Creswell’s (2007) ethical guidelines:

- The research problem should identify a benefit to the individuals being studied.
- The purpose of the study must be transparent and clearly explained in the purpose statement.
- Participants have the right to participate voluntarily and right to withdraw, and also to full disclosure of the research process. The HVHF study focus group and interview participants were briefed on these rights, including study procedures, right to ask questions and obtain a copy of results, commitment to confidentiality, and the projected benefits of the study.

Gaining informed consent is one of the pillars of research ethics. As noted by Mauthner, Birch, Jessop and Miller, 2002, this is not as simple as passing around consent forms or obtaining the blessing of an ethics board. Particularly with a qualitative study, it is not always possible to know how events and circumstances will play out. Therefore it can be difficult to articulate exactly what a participant is consenting to, and/or to predict the exact nature and extent of participation. The prevailing wisdom of these authors and many other research scholars today is that ethical principles such as informed consent must be an ongoing commitment throughout the research process. The responsible researcher will not just seek consent, but will continue to inform and negotiate consent as the research study progresses. While a top priority was ensuring that people fully consented to being part of this study, securing written consent posed a formidable
challenge very early in the recruitment process. When presented with the IRB Consent Form most candidates backed out, reacting negatively to the formal look and length of the document. As study findings now support, the HVHF controversy affected people deeply, leaving many with feelings of distrust, and some with concern about being labeled pro- or anti-hydrofracking. This was brought to the attention of the IRB Office and an Amendment to the study was requested. The IRB Office granted the Amendment and confirmed the study remained exempt. Instead of individuals having to sign a consent form, the Researcher was allowed to verbally review confidentiality and other aspects of consent and personally sign and file a form for each participant. With this change in approach the recruitment of interview and focus group participants proceeded more smoothly. All data collected in the focus groups and key stakeholder interviews were considered confidential, with no names or specific organizations associated with findings. A numbering system was used when transcribing field notes. Once transcribed, data were stored in locked files.

**Summary**

The methodology for this study resulted in detailed and robust data to inform the research questions. Particular care was taken with the research instruments and in participant recruitment to explore the conflict dynamics from both a systems and conflict management and resolution perspective.
Chapter 4 Results

Introduction

The purpose of this case study was to explore the perceptions of a sample of stakeholders regarding the public participation process that has occurred thus far in the HVHF policy development and permitting process in New York State. The dispute surrounding the HVHF initiative was analyzed through the application of conflict resolution theory and conflict mapping instruments. Research questions allowed for the discovery of how stakeholders defined issues associated with the phenomenon, how stakeholders evaluated the public participation process, and what factors affected stakeholders’ personal experience when engaging in public participation activities. The three primary research questions were:

1. **What are the core issues influencing the controversy over HVHF permitting in New York State?**

2. **How do stakeholders in New York State’s HVHF policy debate evaluate the benefits and limitations of the public participation process?**

3. **What factors affect how stakeholders perceive the value of the public participation experience in New York State’s HVHF policy and permitting process?**

This chapter presents the data collection and data analysis process employed, along with detailed findings. Results are organized by research question in order to first understand the issues associated with the phenomenon. With this backdrop, the relevancy of the findings in RQ2 and RQ3 take on greater meaning. For example, issues related to access to data are expressed as integral to the value and experience of the public
participation process. Similarly, issues related to feelings of empowerment and ability to mobilize were key influencers on attitude toward the HVHF policy development process. In addition to organization by research question, data coding results are presented by category and code terms or phrases, and further analyzed by prevailing themes expressed by participant cohorts and as a total group.

**Setting**

No personal or organizational conditions were identified that could have influenced interpretation of study results. However, as discussed in Chapter 3, there were challenges at an early stage of the study that needed to be addressed to ensure the ability to recruit an adequate number of participants. In reaching out to an initial list of prospective participants, the majority expressed interest in the study and enthusiasm about being interviewed. Then at the IRB Consent Form review stage most candidates backed out because they were uncomfortable with the legal nature of the form. This was brought to the attention of the IRB Office and an Amendment to the study was requested. The IRB Office granted the Amendment and confirmed the study remained exempt. Instead of individuals having to sign a consent form, the Researcher was allowed to verbally review confidentiality and other aspects of consent and personally sign and file a form for each participant. With this change in approach the recruitment of interview and focus group participants proceeded more smoothly.

**Demographics**

Purposive sampling was used to identify and recruit interview and focus group participants. The objective was to have representation from individuals who self-identified as either for or against allowing HVHF to be permitted. A third group sought
was individuals who did not ascribe to a position on HVHF but had interest in the phenomenon based on organizational mission — such as members of an environmental protection group — or had professional background in the regulatory and permitting process. There was a total of 38 participants, who self-identified their positions as follows. (Also see Table 1 and Table 2 below.)

- 24 identified themselves as a member of a group actively engaged in taking a position on how the state should rule on HVHF
- 7 identified as actively engaged on their own in taking a position on how the state should rule on HVHF
- 7 did not declare a position on HVHF but contributed valuable insights and opinions based on their roles as educators, researchers, or professionals experienced in the field of energy regulation and permitting.

Table 1

*Description of Interview Participants*

<table>
<thead>
<tr>
<th># of Participants</th>
<th>Description</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Resident/Property Owners</td>
<td>In Favor of HVHF</td>
</tr>
<tr>
<td>3</td>
<td>HVHF Action Group Members</td>
<td>In Favor of HVHF</td>
</tr>
<tr>
<td>6</td>
<td>HVHF Action Group Members</td>
<td>Against HVHF</td>
</tr>
<tr>
<td>2</td>
<td>Energy Industry Association</td>
<td>Gas Industry</td>
</tr>
<tr>
<td></td>
<td>Representatives</td>
<td>Advocacy</td>
</tr>
<tr>
<td>2</td>
<td>Environmental Protection</td>
<td>Environmental</td>
</tr>
<tr>
<td></td>
<td>Advocate Representatives</td>
<td>Advocacy</td>
</tr>
<tr>
<td>4</td>
<td>Regulatory/Development</td>
<td>Neutral</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td></td>
</tr>
</tbody>
</table>

20 total Interview participants. Of the 12 resident/property owner representatives, six were against HVHF and six were in favor of HVHF. Of the remaining participants, four represented advocacy groups and four had backgrounds in the regulatory and economic development fields and chose to not declare a position on HVHF.
Table 2

*Descriptions of Focus Group Participants*

<table>
<thead>
<tr>
<th>FOCUS GROUPS</th>
<th># of Participants</th>
<th>Description</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>FG#1:</td>
<td>3</td>
<td>HVHF Action Group Members</td>
<td>Against HVHF</td>
</tr>
<tr>
<td>FG#2:</td>
<td>4</td>
<td>Resident/Property Owners</td>
<td>Against HVHF</td>
</tr>
<tr>
<td>FG#3:</td>
<td>4</td>
<td>HVHF Action Group Members</td>
<td>In Favor of HVHF</td>
</tr>
<tr>
<td>FG#4:</td>
<td>4</td>
<td>HVHF Action Group Members</td>
<td>In Favor of HVHF</td>
</tr>
<tr>
<td>FG#5:</td>
<td>3</td>
<td>Environmental Protection Advocate Group Members</td>
<td>Undeclared</td>
</tr>
</tbody>
</table>

18 total focus group participants, seven against HVHF, eight in favor of HVHF, and three representatives of an environmental protection group who chose to not declare a position on HVHF.

The geographic area of interest was the Marcellus Shale region of New York State which was the area of high interest to gas developers. Candidates for focus groups were sought from among six potentially affected counties in that region — Broome, Chemung, Chenango, Otsego, Steuben and Tioga. Depth interview participants were sought from within this same southern tier region as well as a broader geographic range in order to include individuals with backgrounds in energy policy development, environmental action groups, and the natural gas industry. Residents from all six counties are represented in this study.

**Data Collection**

**Depth Interviews and Focus Groups**

The Researcher conducted all interviews and focus groups and used a questionnaire protocol form to guide data capture (see Appendix B). Data were recorded as written field notes and further annotated with observations immediately following each session. No electronic recordings were used as the Researcher wished to create as comfortable an environment as possible for participants. The three primary research
questions were asked of all 38 participants. For those who experienced the phenomenon from a policy or regulatory perspective, RQ#2 and RQ#3 were framed from their perspective. Each was invited to share views on the benefits and limitations of the public participation process as they observed it (RQ2), and on factors they believed affected the value of public participation (RQ3). The five focus groups and 13 of the interviews were conducted on site at the participants’ choices of location. This included private meeting rooms at community centers and local NGO offices, private areas at local restaurants, and often at a participant’s home. Seven interviews were conducted by telephone. Research was conducted between July 2016 and August 2017. Focus groups lasted approximately 90 minutes, while telephone interviews ranged between 45 and 60 minutes in length.

**Document Review**

Analysis of transcripts from six public meetings conducted in by NYS DEC in the southern tier region between November and December 2008 served to further validate interview and focus group data, and particularly yielded insights on stakeholders interests and issues at the early stage of the regulatory review process.

**Data Analysis**

A pre-study codebook was developed based on Saldaña’s (2013) approach and included an initial list of coding methods that seemed to align with the research questions. Since the greater interest was to hear how each interview and focus group participant expressed her/his lived experience, the bulk of the codebook was advanced during and post data gathering. Once this dataset was compiled, findings were aligned with appropriate coding methods. Regarding document content analysis, source materials were searched and coded for comments relating to HVHF and the public participation
process. Saldaña defines ontological questions as dealing with the “nature of participants’ realities” and designed to explore “personal, interpretive meanings” (p.61). Thus the coding methods selected for RQ#1 and RQ#3 included Structural, In Vivo, Emotion, Values and Versus, plus a Process assessment for RQ#3. RQ#2 was designed from an epistemological perspective to “explore participant actions/processes and perceptions found in the data” (Saldaña, 2013, p.61). Accordingly, coding methods for RQ#2 data included Process and Evaluation. As with RQ#1 and RQ#3, In Vivo, Emotion, and Values coding methods also were essential to bring forth more accurately the meaning and intentions of participant comments.

**Code Categories and Codes**

Applying the above coding methods resulted in identification of 30 first level codes and 106 sub-codes, which were then analyzed for any similarities and patterns. Many codes were self-evident such as specific health concerns and structural process issues. Others came forth due to the manner in which participants described beliefs and emotions associated with their experiences. Ultimately, seven categories emerged from interview and focus group results (see Tables 3-9):

- Health & Safety
- HVHF Practice
- Socio-economic & Environmental Justice
- Government Process
- Developer Outreach
- Information & Data
- Public Participation Process
Interview and focus group data coding resulted in five codes and nine sub-codes related to health and safety issues.

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1: Health &amp; Safety.</strong></td>
</tr>
<tr>
<td>1a. Fracking fluid “contaminating drinking water”</td>
</tr>
<tr>
<td>• Non-disclosure</td>
</tr>
<tr>
<td>• Well impacts</td>
</tr>
<tr>
<td>• Injected</td>
</tr>
<tr>
<td>• Transported</td>
</tr>
<tr>
<td>• Stored</td>
</tr>
<tr>
<td>• Disposed</td>
</tr>
<tr>
<td>1b. “Water usage” impact on water resources</td>
</tr>
<tr>
<td>• Stream flows</td>
</tr>
<tr>
<td>1c. Potential impacts on “air quality”</td>
</tr>
<tr>
<td>• Methane gas</td>
</tr>
<tr>
<td>1d. Levels of “radioactivity”</td>
</tr>
<tr>
<td>1e. “Fear of the unknown”</td>
</tr>
<tr>
<td>• Safer drilling</td>
</tr>
</tbody>
</table>

Interview and focus group data coding resulted in two overarching codes and nine sub-codes related to HVHF developer practice impacts.

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 2: HVHF practice impacts.</strong></td>
</tr>
<tr>
<td>2a. “Construction” impacts</td>
</tr>
<tr>
<td>• Trucking</td>
</tr>
<tr>
<td>• Road impacts</td>
</tr>
<tr>
<td>• Disruption</td>
</tr>
<tr>
<td>2b. “Operations” impacts</td>
</tr>
<tr>
<td>• Noise</td>
</tr>
<tr>
<td>• Visual impacts</td>
</tr>
<tr>
<td>• Earth tremors</td>
</tr>
<tr>
<td>• Testing</td>
</tr>
<tr>
<td>• Disclosure</td>
</tr>
<tr>
<td>• Ethics</td>
</tr>
</tbody>
</table>
Table 5

*Interview and focus group data coding resulted in five codes and 28 sub-codes related to socio-economic and environmental justice, the largest code category emerging from the study.*

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 3: Socio-economic and environmental justice.</strong></td>
</tr>
<tr>
<td><strong>3a. Different socio-economic perspectives</strong></td>
</tr>
<tr>
<td>• Greater good</td>
</tr>
<tr>
<td>• Job creation</td>
</tr>
<tr>
<td>• Needed income</td>
</tr>
<tr>
<td>• Risks</td>
</tr>
<tr>
<td>• Disruption</td>
</tr>
<tr>
<td>• Crime</td>
</tr>
<tr>
<td>• Money influences</td>
</tr>
<tr>
<td>• Duplicity</td>
</tr>
<tr>
<td>• Transparency</td>
</tr>
<tr>
<td><strong>3b. Environmental degradation</strong></td>
</tr>
<tr>
<td>• Water usage impact on water resources</td>
</tr>
<tr>
<td>• Wildlife</td>
</tr>
<tr>
<td>• Wetlands</td>
</tr>
<tr>
<td>• Forests</td>
</tr>
<tr>
<td>• Invasive species</td>
</tr>
<tr>
<td>• Mitigation and management</td>
</tr>
<tr>
<td><strong>3c. Need for “public input on decision-making”</strong></td>
</tr>
<tr>
<td>• Public benefit</td>
</tr>
<tr>
<td>• Pilot project</td>
</tr>
<tr>
<td>• Alternative energies</td>
</tr>
<tr>
<td>• Fracking build-out</td>
</tr>
<tr>
<td><strong>3d. Infringement of rights</strong></td>
</tr>
<tr>
<td>• Invading land</td>
</tr>
<tr>
<td>• Eminent domain</td>
</tr>
<tr>
<td>• Fracking bans</td>
</tr>
<tr>
<td>• Burden on homeowners</td>
</tr>
<tr>
<td>• Freedom to sell</td>
</tr>
<tr>
<td><strong>3e. “Dependence” on health of local or regional economy.</strong></td>
</tr>
<tr>
<td>• Foreign competition</td>
</tr>
<tr>
<td>• Poor economy</td>
</tr>
<tr>
<td>• High taxes</td>
</tr>
<tr>
<td>• Need for jobs</td>
</tr>
</tbody>
</table>
Table 6

*Interview and focus group data coding resulted in five codes and 26 sub-codes related to the government policy development process, the second largest code category emerging from the study. Data represent issues cited by participants that relate to the policy process outside of public participation activities.*

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 4: Government policy development process.</strong></td>
</tr>
<tr>
<td>4a. Power imbalance</td>
</tr>
<tr>
<td>• Being heard</td>
</tr>
<tr>
<td>• Mobilizing</td>
</tr>
<tr>
<td>• Community representation</td>
</tr>
<tr>
<td>• Getting advice</td>
</tr>
<tr>
<td>• Going to court</td>
</tr>
<tr>
<td>• Money influences</td>
</tr>
<tr>
<td>• Conflicting interests</td>
</tr>
<tr>
<td>• Downstate influence</td>
</tr>
<tr>
<td>• Politician influence</td>
</tr>
<tr>
<td>4b. Ability to “trust” what elected officials are saying</td>
</tr>
<tr>
<td>• Influences on elected leaders</td>
</tr>
<tr>
<td>• Public opinion</td>
</tr>
<tr>
<td>• Skeptical</td>
</tr>
<tr>
<td>• Basis for decisions</td>
</tr>
<tr>
<td>4c. Differing opinions among federal, state, and local government officials</td>
</tr>
<tr>
<td>• Federal and state regulators differ</td>
</tr>
<tr>
<td>• State and local governments differ</td>
</tr>
<tr>
<td>• Inconsistencies</td>
</tr>
<tr>
<td>• Conflicting policies</td>
</tr>
<tr>
<td>• Adequacy of controls</td>
</tr>
<tr>
<td>• Process constraints</td>
</tr>
<tr>
<td>• Need for collaboration</td>
</tr>
<tr>
<td>• Potential for expansion</td>
</tr>
<tr>
<td>4d. Capacity of regulators</td>
</tr>
<tr>
<td>• Ability to enforce regulations</td>
</tr>
<tr>
<td>• Understaffed</td>
</tr>
<tr>
<td>• Lack resources at local level</td>
</tr>
<tr>
<td>4e. Government process decisions</td>
</tr>
<tr>
<td>• Going for industry-wide permit</td>
</tr>
<tr>
<td>• Need for discussion and debate</td>
</tr>
</tbody>
</table>
Table 7

*Interview and focus group data coding resulted in two codes and four sub-codes related to issues encountered as gas developers conducted outreach to communities in the potential HVHF drilling area.*

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 5: Gas developers’ outreach to communities.</strong></td>
</tr>
<tr>
<td>5a. Fairness</td>
</tr>
<tr>
<td>• To developers</td>
</tr>
<tr>
<td>• To landowners</td>
</tr>
<tr>
<td>5b. Accountability of developers</td>
</tr>
<tr>
<td>• Disclosure</td>
</tr>
<tr>
<td>• Shielded</td>
</tr>
</tbody>
</table>

Table 8

*Interview and focus group data coding resulted in three codes and 14 sub-codes related to issues participants encountered when seeking information and data on HVHF practices and impact.*

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 6: Information and data shared with public.</strong></td>
</tr>
<tr>
<td>6a. Getting reliable data and information</td>
</tr>
<tr>
<td>• Substantiating data</td>
</tr>
<tr>
<td>• Disproved, outdated data</td>
</tr>
<tr>
<td>• Doing own research</td>
</tr>
<tr>
<td>• Unknown factors</td>
</tr>
<tr>
<td>• Not enough data</td>
</tr>
<tr>
<td>• Getting comprehensive data</td>
</tr>
<tr>
<td>• Verifiable data</td>
</tr>
<tr>
<td>• Timeliness of data</td>
</tr>
<tr>
<td>6b. Confidence in data used for policy development and decision-making</td>
</tr>
<tr>
<td>• Credible authority</td>
</tr>
<tr>
<td>• Trust in source</td>
</tr>
<tr>
<td>• Disagreement on criteria</td>
</tr>
<tr>
<td>• Conflicting information</td>
</tr>
<tr>
<td>6c. Continuously emerging data</td>
</tr>
<tr>
<td>• New potential impacts</td>
</tr>
<tr>
<td>• New studies</td>
</tr>
</tbody>
</table>
Table 9

Interview and focus group data coding resulted in two codes and 8 sub-codes that describe the participant experience at state and other locally sponsored public meetings designed for information sharing and gaining feedback from stakeholders.

<table>
<thead>
<tr>
<th>Categories, Codes and Sub-codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 7: Public participation process.</strong></td>
</tr>
<tr>
<td>7a. Public participation “meeting format”</td>
</tr>
<tr>
<td>• Lack of time</td>
</tr>
<tr>
<td>• Ran late</td>
</tr>
<tr>
<td>• Far to travel</td>
</tr>
<tr>
<td>• Not well attended</td>
</tr>
<tr>
<td>7b. “Meeting decorum”</td>
</tr>
<tr>
<td>• Early stage better</td>
</tr>
<tr>
<td>• Dysfunction</td>
</tr>
<tr>
<td>• Need for reasonable forum</td>
</tr>
<tr>
<td>• Ineffective</td>
</tr>
</tbody>
</table>

**From Categories to Themes**

With the above foundation of categories and codes, analysis turned to identification of any patterns that might constitute a common theme. Figure 1 shows how multiple categories overlapped in the thematic areas of trust, empowerment, rights, and fairness. **Trust** issues were pervasive across participant views on health concerns, the government process experience, and challenges associated with accessing, understanding, and being confident in data related to HVHF. A lack of **empowerment** was expressed in relation to both the government regulatory process and to public participation opportunities that were made available, especially in relation to having their voices heard. Both anti-fracking and pro-fracking participants cited personal **rights** infringements regarding land use, from the right to lease land for fracking to the right to ban fracking within municipal lines and altogether at the state level. Last but not least, **fairness** was a recurring theme that was applied to multiple stakeholder groups. This included lack of
fairness to property owners wishing to sell or lease their land; to property owners and residents against drilling in their community; and to developers whom participants felt were deprived of the opportunity to address community concerns. Themes are discussed in greater depth in the results section of this chapter.

<table>
<thead>
<tr>
<th>THEMES</th>
<th>CODING CATEGORIES</th>
</tr>
</thead>
</table>
| Trust    | • Category 1: Health impacts  
           | • Category 2: HVHF practice impacts  
           | • Category 4: Government policy development process  
           | • Category 5: Gas developers’ outreach to communities  
           | • Category 6: Information and data |
| Empowerment | • Category 2: HVHF practice impacts.  
               | • Category 4: Government policy development process  
               | • Category 7: Public participation process |
| Rights   | • Category 3: Socio-economic and environmental justice  
           | • Category 5: Gas developers’ outreach to communities |
| Fairness | • Category 3: Socio-economic and environmental justice  
           | • Category 5: Gas developers’ outreach to communities  
           | • Category 7: Public participation process |

*Figure 2. Four major themes served to represent the seven coding categories.*

**Discrepant Cases**

The discrepant, or negative, case is one in which some of the data does not support or may even seem to contradict patterns found in the course of data analysis (Creswell, 2013). Among the total number of depth interview and focus group participants, 10% of participants made statements in support of the public informational meetings on HVHF. On its surface this represents a pattern that is contradictory to the remaining participants who cited structural and contextual issues as described earlier. However, further exploration with participants identified a turning point at which the
public participation experience took a decided shift from positive to negative. Participants described the process as deteriorating and becoming dysfunctional as opposition group protests became more organized and vocal, and as tensions grew over disagreement on potential impacts of HVHF. Viewing the data in total, even participant feedback that initially appeared contradictory ultimately fell in line with the pattern of frustration and dissatisfaction associated with the public participation experience. Specific trigger points and factors that contributed to the escalation of the HVHF conflict are discussed later in this chapter.

**Evidence of Trustworthiness**

Creswell and Miller (2000) define validity as evidence to “determine whether findings are accurate from the standpoint of the researcher, the participant, or the readers of the account” (pp. 195-196). Several strategies were employed in this study to verify the credibility, transferability, dependability, and confirmability of findings. To ensure the participants’ views were understood and recorded as accurately as possible, the Researcher employed reflective listening techniques and often played back what was said to check meaning. This was especially important in the focus groups, where it could not be assumed that all participants held the same views. In contrast, transferability of research findings could not be fully established at the outset of the study. The Researcher felt it was essential to maintain focus on the HVHF controversy and observe whether the data would yield insights that opened opportunity for transferability. This now appears possible given the richness of data related to the public participation process, in the context of how collaborative approaches may help enhance outcomes. Implications are discussed in Chapter 5.
In terms of dependability, the HVHF controversy was indeed an ever-changing landscape leading up to and throughout the study period. Several milestone events occurred prior to field research, including the state’s decision in 2015 to place a full ban on fracking. Field research began in 2016, so the state ruling was still very fresh in people’s minds. It was clear that dependability would rely on the strength of the research questions, a participant pool that included individuals with varied perspectives on the phenomenon, and strict adherence to asking questions in a consistent and uniform manner. As the data show, strong opposing views also came with significant similarities in how participants viewed the issues and how they valued and experienced the public participation process. Likewise, confirmability of results relied heavily on triangulation — checking multiple sources of information and gathering data using a variety of methods. Prior to field research the Researcher applied conflict mapping to the HVHF phenomenon (see Chapter 1). Review of media reports and web sites yielded valuable information and insights related to conflict dynamics. This was followed by field research including depth interviews and focus groups, as well as public meeting transcript analysis.

**Results**

The following report of results is organized by research question in relation to code categories and/or themes in order to provide meaningful context. The section begins with core issues identified in the course of depth interviews, focus group discussions, and through document research. RQ#2 and RQ#3 results delve into more specific value and evaluation-based data relating to the public participation process, which is the primary focus of this study.
RQ#1 Results

RQ#1 asks participants “what are the core issues influencing the controversy over HVHF permitting in New York State?” RQ#1 data are presented below in three forms.

1. Comparative analysis showing the number of participants who cited core issues under a particular code category.

2. List of specific issues. For the purpose of relevance to this study, data are presented according to how many individual issues were cited, not how many times an issue was repeated by a participant.

3. Issues grouped by the themes of trust, empowerment, rights, and fairness. These are the concepts that were found to prevail across all code categories.

**Core issues comparative results.** Viewing the data from a comparative perspective by code category helps to gain an understanding of the nature of participant concerns and how often those issues were common among the cohort. A majority of the 20 interview participants identified the government regulatory process followed by public participation, reliable data, and socio-economic/environmental justice issues as top areas of concern, with half also naming healthy and safety impacts. All 18 focus group participants cited the government regulatory process as a key area of concern. This was followed by the same issues as cited by interview participants but with slightly different percentages — reliability of data, public participation, and socio-economic/environmental justice. Data are presented below followed by examples of how participants articulated these issues based on personal experiences and observations of others affected by HVHF.
Interview participant results (also see Figure 3):

- Aspects of the HVHF government regulatory process — 90% (18)
- Aspects of the HVHF public participation process — 80% (16)
- Accessibility and reliability of data — 75% (15)
- Socio-economic/environmental justice issues — 55% (11)
- Health and safety impacts — 50% (10)
- HVHF developer outreach issues — 35% (7)
- HVHF developer practices issues — 25% (5)

Focus group participant results (also see Figure 4):

- Aspects of the HVHF government regulatory process — 100% (18)
- Access to and reliability of data — 89% (16)
- Aspects of the HVHF public participation process — 72% (13)
- Socio-economic/environmental justice issues — 67% (12)
- Health and safety impacts — 45% (8)
- HVHF developer outreach issues — 45% (8)
- HVHF developer practices issues — 22% (4)

The manner in which participants described issues tended to align with their points of view on HVHF, and yet frequently were expressed using similar terms.

Pro-fracking participants:

- “The DEC process was very rational, they looked for facts. Then it all changed, became political.”
- “The decision was not based on science.”
"Findings should be reported fairly, not biased. Show both sides, allow community to work through pros and cons."

"Public participation was just a method to cover the government's back."

"Land right now isn't worth anything, wanted something to pass onto my kids."

Anti-fracking participants:

"The state based decision on where most votes come from."

"It was ultimately a political decision, which is dangerous because next governor could change it."

"Some regulators went out and checked wells, really did something; others way over relied on industry for data."

Formal government outreach did not start until people heard about it and had started grassroots action.

"Farmers are living marginally, and their taxes are enormous."

Participants who chose not to declare a position:

"Turned out the state could not politically support it."

"It all became political; the outcome became secondary to the process."

"Risks were too unknown to proceed."

"The softer sciences are a challenge getting definitive data."

"Piecemeal approach is wrong; had to go back repeatedly for information."

"Developers had their own interests and have moved on in this case; but this could have really done harm to local people who would have benefitted."
Figure 3. Interview participants’ assessment of HVHF-related issues by code category.

Figure 4. Focus group participants’ assessments of HVHF-related issues by code category.
Combined interview and focus group results:

Looking at the combined interview and focus group results, a majority of the 38 participants expressed issues with the government regulatory process, the public participation process, and with data access and reliability. (While these categories were identified by noteworthy margins, we keep in mind the significant number of issues cited in relation to socio-economic/environmental justice as found in comparative data presented later in this report.) Combined interview and focus group results were as follows (also see Figure 5):

- Aspects of the HVHF government regulatory process — 94.7% (36)
- Accessibility and reliability of data — 81.5% (31)
- Aspects of the HVHF public participation process — 76.3% (29)
- Socio-economic/environmental justice issues — 60.5% (23)
- Health and safety impacts — 47.4% (18)
- HVHF developer outreach issues — 39.5% (15)
- HVHF developer practices issues — 23.7% (9)
Specific core issues. To further illustrate findings, the following data identify the individual issues that were cited by participants.

Addressing health and safety impacts:

Concerns about health and safety impacts represent some of the most common codes identified at the early stages of conflict mapping and during field research. Participants described health concerns related to potential fracking impacts on water, air, and other aspects of the environment:

Pro-fracker — “We started developing our own safety provisions and requirements. We were just as concerned as anyone about protecting the environment and about safety.”

Anti-fracker — “We just don’t know what the outcome will be with water impacts.”
However, deeper exploration revealed that some participants were concerned about gas industry reluctance to disclose the types of chemicals used in fracking, and about negative fracking impact reports coming from other states. There also was skepticism about the commitment to safer drilling practices without specific details on how this would be achieved:

Pro-fracker — “Municipalities struggled with “what’s the right thing to do.””

Anti-fracker — “We were concerned about the collateral damage drilling can do to rural communities.”

From these findings it became reasonable to infer that having more and reliable information was an overarching issue, resulting in an additional coding category. The study yielded the following list of health and safety issues related to HVHF:

- Lack of transparency regarding fracking fluid content/use of contaminants
- News from other states about well impacts
- Potential for well and/or aquifer contamination
  - When injected
  - When transported/toxic materials spills
  - When disposed
  - When stored
- Potential impacts on air quality
  - Concern over release of methane gas
- Fear of the unknown — what safer drilling would look like

Addressing HVHF practice impacts:
Closely related to health concerns were participant views on the impact of HVHF construction and operation activities. Concern about noise, road damage and visual impacts were accompanied by the need for transparency and disclosure on siting and drilling practices, and well testing:

Anti-fracker — “The process started with ‘safer drilling’ talks, what that would look like, but it was not just about drilling.”

Pro-fracker — “There were problems with drilling sites in other states where wells were impacted.”

Participant comments fell into two aspects of HVHF — during initial construction of wells and associated support infrastructure, and during operations.

- Impacts during construction
  - Trucking impacts — road deterioration
  - Disruption — construction of pipelines and compressor stations
  - No prior notification to surrounding property owners when siting well on private property (past experience)

- Impacts during operations
  - Noise
  - Visual impacts — multiple well pads
  - Potential for earth tremors
  - Need for more aggressive testing around well sites.
  - Need for all drilling practices to be known
  - Proposal to launch a pilot project — would raise ethical issues if not all data known
Socio-economic and environmental justice issues:

One of the most extensive lists of issues emerged from participants’ reflections on the broader socio-economic and environmental justice impacts that could come with the introduction of HVHF. These philosophies and beliefs were frequently presented as competing interests — that of jobs and income versus risk; relief from economic hardship versus threats to the environment; and the benefit of low cost, abundant natural gas versus commitment to alternative energies. Examples follow.

Pro-fracking participants:

- "The bottom line is that renewable energy alone wouldn’t meet the country’s needs." “Benefits looked to far, far outweigh the risks.”
- “Local landowners can’t compete with Mexico and Canada. We have poor communities and pay high taxes.”

Anti-fracking participants:

- “We hear similar problems related to solar, wind turbines and cell towers, from both sides. All want alternative forms of energy, but people will still fight against them. Makes you wonder.”
- “I used to agree with developing services that were a public benefit; now I’m torn, thinking less and less that it’s good.”
- “Is my environment for sale?”

Specific issues in this area include:

- Different socio-economic perspectives
  - Disagreement over what is the greater good
  - Job creation and needed income vs. risks
• Social and economic impacts of absorbing influx of workers and managing associated disruption and crime such as prostitution rings, gambling, etc.
• Saving a town — promises of millions
• Importance of reducing reliance on foreign energy
• Duplicity of banning fracking but accepting/buying natural gas from neighboring states
• Dealing with climate change
• Ability to access large gas reserves; lucrative industry
• Transparency of motives — caring about environment or just anti-industry/NIMBY?

• Protecting people from potential environmental degradation
  • Water usage impacts on water resources
    — Competition for water
    — Impacts on stream flows
    — Potential for existing water-intensive industries to be affected
  • Impact on wildlife
  • Destruction of wetlands
  • Impacts on forests
  • Potential for spread of invasive species from one watershed to another
  • Ability to mitigate or manage potential impacts of HVHF

• Need for public input on decision-making
  • What and who defines a ‘public benefit’
  • Conducting a pilot drilling project
o Alternative energies
  — Not enough effort to develop alternative energies
  — Alternative energies good but need something else in the interim
  — Take advantage of government incentives to develop alternatives

o Impacts of fracking build-out, beyond drilling

• Infringement of rights
  o HVHF an invasion of private lands
  o Unfairness of eminent domain
  o Local bans on fracking
    — Right to lease own land
    — Enactment of New York State’s Home Rule
  o Burden on homeowners living in proximity to land leased for drilling
  o Freedom to sell mineral rights

• Dependence on health of local or regional economy
  o Competition with Mexico and Canada
  o Affects of poor economy
    — Personal financial needs
    — Business financial needs
    — Municipalities struggling to provide services
    — Some people with limited education
  o Relief from high taxes
  o Need for more and better jobs

Government policy development process issues:
A dominant pattern shared by the majority of participants related to frustrations with various aspects of the HVHF policy development process. Interview and focus group participants identified money and political power as affecting their ability “to be heard” and causing them to seek legal representation. Participants also were very aware of the political negotiation side of HVHF policy development and how decisions could be swayed by industry and voter influences — “We needed to consult a lawyer to protect our interests.” “National, state politics, that’s what local people are up against.” This was manifested early in the process when a decision was made to establish a Generic Environmental Impact Statement (GEIS), rather than an environmental impact study for every drilling permit request. This was viewed as influenced by gas industry lobbyists. The NYS Governor’s Executive Order to ban HVHF was viewed similarly, in this case as “a political decision that got in the way of full discussion and debate.”

An equally significant pattern emerged in relation to multiple regulatory agencies charged with investigating and recommending whether or how HVHF should proceed in New York State. Once again, participants on both sides of the conflict as well as some holding neutral views voiced concerns about the following issues:

- Lack of integration of environmental and health policies
- Differences of opinion between state and federal regulators
- Differences of opinion between state regulators and local municipality officials
- Need for more effective inter-agency cooperation
- Adequacy of proposed regulatory controls

Other significant policy development process issues were:

- Dealing with power imbalance
- Being heard when presenting or submitting comments
- Being able to mobilize in order to influence policy
- Wanting more community representation on EPA scientific advisory board
- Not having resources available at local level to get independent advice
- Needing to go to court; having to get legal representation
- Money influences
- Foreign company influences
- Federal government’s support of gas industry
- New York City/downstate driving policy

- Role of state elected officials
  - Ability to trust what they are saying
  - Elected leadership influencing policy
    - Oversensitive to public opinion/voters
    - Stalling for time
  - Skeptical of basis for decisions
    - Decision dependent on who is in political leadership
    - Decision not based on science
    - Credibility of state’s Advisory Council

- Capacity to fully establish, implement and enforce regulations
  - Regulating agency understaffed (DEC)
  - Lack of resources at local level
    - Local municipalities’ ability to apply state permitting regulations
- Regulators burdened with permitting process challenges (complex, multiple players)
- State and local government process decisions
  - Decision to go for industry-wide permit vs. by individual developer
  - DOH leadership change happening in conjunction with decision on ban made people suspicious.
  - Bans got in the way of full discussion/debate among members of the community
- Issues related to gas developers’ outreach to communities and landowners:
  Concerns related to gas developer activities were fewer in number but warranted a separate category due to the focused nature of comments. Participants spoke to a variety of issues in the context of fairness and accountability. A particularly interesting aspect of study findings is the existence of deeper layers of conflict within the pro- and anti-fracking stakeholder groups. For example, among pro-fracking participants, while interest in leasing land was high there also was concern about getting a fair lease deal. Some learned that their lease offers were lower than what had been offered to Pennsylvania landowners. Complex contracts and confusing land lease laws also made property owners feel at a disadvantage when negotiating. A corollary among anti-fracker participants was dismay over not finding out about neighboring lease deals until after they were executed. Gas industry representatives also felt a lack of fairness related to the permitting and public participation processes. This included frustration with what was viewed as a costly and prolonged process that intertwined scientific review with political influences. These participants saw the end result as missed revenue opportunities for both companies and
local communities. Industry representatives also complained about having little
opportunity to address community concerns by presenting the safeguards and oversight
practices that would be employed. The following participant comments show a similarity
of sentiments, albeit from different positions on HVHF.

Pro-fracking participants:

- “I felt the land lease deal being offered was in their [developer’s] favor.”
- “Some property owners shared their land lease contracts so others could see
terms.”
- “Lease negotiations were conducted by contractors of energy developers who
were not liable for their representation.”
- “There is money at the end of the rainbow but must remain a skeptic.”
- “Some landowners were offered thousands of dollars an acre while others were
offered hundreds.”
- “State needed to help to protect landowners.”

Anti-fracking participants:

- “I was struck that multigenerational farmers, historically independent people and
distrustful of big business, were willing to sign over property for such a low
price.”
- “Some drilling company people were unprofessional.”
- “There were confusing and changing interpretations of land lease laws.”
- “There were landowners and farmers who were less interested in making money
and more interested in not being taken advantage of by the drilling companies.”
- “Eminent domain was a major issue; there were terrible stories out of PA.”
• “Elected municipal leaders were promised a lot of money that would save the town economically; they would not entertain discussion of banning.”

Industry Association Reps:

• “Industry could prevent or mitigate [HVHF impacts] so could still develop what’s necessary for society.”
• “Never got a chance to explore alternatives. Could have looked at ways to clean water, use extra cement casings.”
• “Every process, from building construction to farming, has a negative environmental impact.”
• “If not for hydrocarbons, none of what we have would be here.”
• “There was lack of knowledge in concepts of radiation, earthquakes, water contamination (what and how), and chemicals (how they work).”

Both pro- and anti-fracking participants also wished for more accountability on the part of developers. There was significant concern over non-disclosure of chemicals used in fracking, as well as dissatisfaction that some developers sent sub-contracted drilling companies to represent them at the local level. The need for more fairness and accountability was expressed as issues from both the industry and landowner perspective.

• Issues of fairness
  o Lack of fairness to developers
    — Little opportunity for developers’ to address concerns
    — Impacts of permitting process delays/lost revenue
  o Lack of fairness to landowners
    — Getting fair lease deal from developers
— Confusing land lease laws
— Complex leases
— Unfairness to landowners
— Making people sign non-disclosures

• Issues of Accountability
  o Developer reluctance to disclose chemicals in water used for fracking
  o Developers shielded by subcontracted drillers

HVHF-related information and data issues:

A recurring complaint among participants was access to and reliability of data. Both pro and anti-fracking participants emphasized the need to do their own research, especially as it related to the HVHF experience in other states. This included traveling individually and in groups to areas of Pennsylvania where hydrofracking has been taking place. Through discussions with landowners and other townspeople, some participants heard words of caution about dealing with gas developers and felt they received good advice about negotiating land leases. Others felt they received valuable first-hand accounts of water contamination problems and were able to see what well pads and drilling operations looked like. Nevertheless, the time, money and effort required to travel for information was felt as a hardship. An additional drain on participants was needing to spend time seeking information from contacts at state agencies, subject matter experts at universities and NGOs, and other sources.

Efforts to self educate often led to another set of concerns related to data reliability. There was general disagreement among participants regarding who was the most credible authority. Both pro and anti-fracking participants also expressed worry
over data they considered incomplete or inconclusive. All of these factors affected participant confidence in how policy makers were using data for decision-making. At the same time, many participants empathized with the NYS DEC team charged with developing HVHF regulations, citing the volume and complexity of data as well as the continuously new emerging information.

Pro-fracking participants:

- “Studies can be bought and paid for by outside parties.”
- “We went beyond opinions, we went with facts.”
- “Needed to sort out facts from opinions.”

Anti-fracking participants:

- “Gas companies could not officially say hydrofracking will not harm our water.”
- “The industry was not forthcoming on details.”
- “DEC’s biological impact studies were credible, straightforward, but the state’s decisions were not based on facts.”

Specific issues cited in relation to information and data were:

- Getting reliable data and information
  - Impacts on health were not well substantiated
  - Environmental issues were blamed on fracking but later disproved
  - Developers relied too much on data from past alternative drilling practices, not HVHF
  - Some state decision-makers cited outdated studies
  - Needed to do own research
  - Needed to hold own informational forums
o Many unknown/yet to be discovered factors

o State agencies did not share enough data with the public

o Data not comprehensive enough — only listed problems if occurred when drilling was being conducted, not pre- or post

o Needed data that could be verified and duplicated

o Timeliness — more detailed data on HVHF came on the scene after land leases were signed

• Confidence in data used for policy development and decision-making

  o Couldn’t tell who was most credible authority

  o Not trusting data coming from state

  o Government should not have done the education on HVHF (potential conflicts of interest)

  o People disagreeing over what should be criteria for evaluation and decision-making

  o Regulators should have sought more information from other states

  o Not enough weight given to existing data on past drilling practices

  o Conflicting information about experiences in other states

• Continuously emerging data

  o New potential impacts were continuously emerging and needing to be studied

  o New data was becoming available and needing analysis

  o Public education process needed to be restarted several times because of new data

Public participation process issues:
Issues related to the public participation process ran along two contexts, the experience of participants during the public hearings period and retrospective attitudes of participants following announcement of the ban. The following comments reflect how participants viewed issues at the pre-ban period.

Pro-fracking participants:

- “The stuff the antis are saying just generates fear.”
- “The anti-fracking side was more interesting to [media] readership.”
- “They [environmental lobbyists] work with emotion and fear.”

Anti-fracking participants:

- “We had fears about how fracking once allowed could expand.”
- “We saw the destruction in PA.”
- “Climate change was on the back burner for a lot of people, but biggest problem was increased drilling activity and promoting fossil fuel consumption.”

Participants who chose not to take a position:

- *There were a lot of community concerns to consider.*
- “Perception is reality for some people.”
- “There needed to be someone to represent stakeholder interests, but all needed to listen.”
- “Scientists tried to stay out of the bickering; they didn’t want to make an absolute decision.”
- “Municipalities had a lot of concern about impacts.”
- “Biggest concern was capacity at the state level to enforce the regulations.”

Industry association reps:
• “Some who were protesting were non-informed environmental activists.”

• “Concern was not the environment. It was more to shut down oil and gas development.”

• There was poor public attendance at State meetings in early stages. Only industry attended. No one else thinking about it.”

• “The pushback was ‘just stop’ not just ‘proceed safely’.”

• “They [anti’s] called us slave owners.”

Specific issues associated with the public participation process were expressed as follows:

• Meeting format
  o Lack of time to engage
  o Ran too late
  o Too far to travel for those living in rural areas
  o Not enough participation
    — Not enough young people participating

• Meeting decorum
  o Early stage much better; later the process deteriorated
  o Dysfunctional meetings
  o Distractions by attendees
  o Bad behavior
    — Was allowed
    — Was exhibited
  o No forum for reasonable debate
• Ineffective in obtaining community input
  — Lack of feedback from state on public input

• Meeting content value
  o People did not back up assertions with data
  o Complex information on science and drilling process
  o No chance for input on infrastructure such as road networks and public safety

• Fairness — influences on balanced discourse
  o Too much media influence; one-sided coverage
  o Participant testimony too one-sided
  o Pro-frackers had financial support to attend meetings
  o Anti-frackers has sponsors and funding to make their case in Albany
  o Needed someone trustworthy to represent interests

To recap, a total of 138 specific issues were identified, with the greatest number of issues cited under the categories of socio-economic and environmental justice (34) followed by government policy development process (26). This contrasts with the data presented earlier that was analyzed by code category, in which the government policy development process ranked first and socio-economic/environmental justice ranked fourth. Implications are discussed in Chapter 5. Reflecting on the HVHF experience once the ban was announced, most participants characterized the issues as not entirely resolved. The following comments from across the participant cohorts reflect a lack of closure on HVHF in New York State, as well as the seeds of further conflict.

• “Whether fracking is ever looked at again, it will depend on political leadership.”
• “The ban was not enough; only deals with HVHF, what about low volume fracking?”

• “Surprised it didn't go through; thought some form of drilling would be approved.”

• “Permitting of HVHF could be revisited when it is realized how much opportunity has been lost.”

RQ#1 study findings are also significant in the way participant comments on data closely correlated with the other major coding categories. In particular, data access and reliability issues were integral to the public participation experience. This interrelationship of issues is discussed at greater length in RQ#2 and RQ#3 findings, where stakeholder perspectives were explored in terms of public participation process benefits and limitations, and factors affecting the value of the public participation experience.

**Core issues by theme.** In order to further assess the significance of these findings, data are considered through a third lens — the four coding themes of trust, empowerment, individual rights, and fairness. From this perspective all seven coding categories may be considered as interrelated.

**Issues of trust:**

Issues of trust spanned all seven categories. Participant trust in gas developers was tested when drilling companies declined to publicly disclose details on the chemicals used in fracking in order to protect their proprietary processes. Directly affected stakeholders believed disclosure was essential to evaluating health and safety risks. Developers did agree to disclose chemicals to the NYS DEC in the permit application.
However, feelings of distrust were exacerbated when residents said they were approached by subcontracted drilling companies instead of the developer’s own employees. Participants said their confidence also was shaken when they were assured that fracking was low risk, but then heard of well contamination in other states. The practice of HVHF — daily operations from drilling to transporting and treating waste — carried too many unknowns for some. Many participants against fracking and even those who wished to remain objective became concerned when they heard the state was considering a pilot HVHF drilling project. They questioned, how could the state consider a pilot project if not all data on HVHF were known? — “There was no presentation of data on how drilling would work.” “Detailed facts about HVHF came out after leases were signed.”

Thematically this concern segued to sentiments about the overall government policy development process. This ranged from a general distrust in what they were being told by elected officials, to more specific concerns such as:

- Credibility of state’s Advisory Council on HVHF
- Ability to fully establish and oversee/enforce regulations
- Fears that fracking once permitting could expand
- Volatility of policy decisions when dependent on who is in political leadership

Issues related to receiving information on HVHF and especially data on HVHF impacts also significantly affected trust levels. Even participants on opposite sides of the HVHF controversy asked questions such as:

- “Who is the most credible authority?”
- “Who determines criteria for evaluation and decision-making?”
• “How can we trust that decision makers will use the most accurate and reliable data in determining policy?”

• “How can we be sure that all known data is being shared with the public?”

• “What is fact and what is opinion?”

These questions were also applicable to the public participation process. They manifested in participants not trusting speakers who did not back up assertions with data, and also in feelings of intimidation at the complexity of data presented. Participants said it was difficult to know what to believe when the science was too technical for many to understand.

Issues of empowerment:

Feeling marginalized was a frustration shared by both pro- and anti-frackers, and thus begins to illustrate the roots of conflict. For example, many participants felt a disparity of resources, claiming the other side had more sponsors and funding to mobilize, to secure legal counsel for advice and representation, and to lobby at the state level. The overarching sentiment was that the government and public input processes should empower stakeholders to fully participate, not erect barriers. Power imbalance was another stress point. There was a pervasive feeling that HVHF policy was being driven by political influences and money, causing residents in directly affected communities to feel they were at a significant disadvantage in having their input seriously considered by regulators and other government representatives.

Pro-fracker — “Follow the money.” “Needed to join a coalition in order to get legal representation (too costly for individual property owners.”
Anti-fracker — “*Money and politics win over ethics, health, safety.*” “We would be more empowered if could connect rural neighborhoods.”

Issues of individual rights:

Some of the strongest lines were drawn along issues of individual rights, pitting action group against action group, community against community, and at times, neighbor against neighbor. Pro-fracking participants voiced the right to sell or lease their own land, while others voiced the right to not be subject to HVHF impacts. Gas industry representatives held to developers’ rights to perform their corporate charge — to meet society’s energy supply demand — and also be allowed a respectful forum for responding to community concerns.

Pro-fracker — “*State should pay landowners for the mineral rights they took away with the ban.*”

Anti-fracker — “We’re being sacrificed for big business.”

Industry association rep — “*Industry never got chance to talk about what industry could do make it right.*”

Issues of fairness:

The above themes of trust, empowerment, and rights each contributed to the essential notion of fairness. This dominated issues related to socio-economic and environmental justice, starting with a fundamental disagreement over what defines a public benefit and who should be the judge of what is fair to stakeholders. At a grassroots level, many participants felt the odds were stacked against them.

On getting a fair lease deal:
Pro-fracker — “We started by advising people – don’t lease yet. We wanted protection.”

Anti-fracker — “People in PA were paid more money per acre.”

On who would benefit most:

Pro-fracker — “Smaller landowners saw no direct benefit.”

Anti-fracker — “People found out by surprise that others had leased their land.”

Comparisons of participant views unite as compelling societal challenge questions. Tap abundant sources of natural gas to meet current energy needs, or wait for further development of alternative energies? Bring relief to people struggling with low or no job opportunities, or burden communities with an influx of workers and the associated disruption that can come with gas drilling? In each alternative someone gains, someone loses. Another conflict frame was ‘new industry versus existing industries’ in relation to fair access to water resources. The HVHF process under consideration required large volumes of water for drilling operations, causing concern that such demand could potentially harm other water intensive industries. Both pro- and anti-frackers had much to say about issues of fairness.

In summary, issues associated with the HVHF conflict that were identified through RQ#1 were analyzed through three lenses. First, a comparative analysis that presented the issues according to code category. This served as an indicator of the broad types of issues participants cited, the top three of which were the overall government regulatory process, public participation, and HVHF data. Second, a count of specific issues revealed that the most extensive list of issues was associated with socio-economic
and environmental justice concerns. Finally, the third lens turned to the themes of trust, empowerment, rights, and fairness. Theme analysis suggests that there were no silos of issues — that multiple patterns are present in the way participants expressed the core issues influencing the controversy over HVHF permitting. With this baseline of issues, analysis turns to the interrelated research questions #2 and #3.

**RQ#2: How do stakeholders in New York State’s HVHF policy debate evaluate the benefits and limitations of the public participation process?**

**RQ#3: What factors affect how stakeholders perceive the value of the public participation experience in New York State’s HVHF policy and permitting process?**

These questions yielded data most germane to the purpose of this case study, which was to explore the perceptions of a sample of stakeholders regarding the public participation process that has occurred thus far in the HVHF policy development and permitting process in New York State.

**RQ#2 Results**

RQ#2 explored how participants evaluated the benefits and limitations of the public participation process based on their direct involvement, and in some cases based on their perspective as an educator, researcher, or professional in the fields of environmental protection, energy regulation and economic development. Data are presented first as process descriptions by participant group — those who self-described as in favor of fracking or against fracking, and those who chose to not declare a specific position on HVHF. These results are supported by participant feedback that offers context and insights into stakeholder values, attitudes and beliefs, as well as their overall evaluation of the public participation process.
**Pro-fracking participant interview and focus group results.** For participants who took a stance in favor of HVHF, benefits of the process included the substantial number of public meeting opportunities, particularly those hosted by NYS DEC, which is the regulatory agency for environmental issues in the State. Participants praised NYS DEC for including a wide range of stakeholder groups and allowing public comment at each meeting. The early stage of the process was described as unbiased and a period of open exchange — “Each side presented expert opinions.” This included the state publishing regular notifications online, issuing notices and updates via the media, providing several avenues for the public to submit comments, and then responding to comments and posting reports on the NYS DEC website. Participants also took advantage of other learning opportunities including attending a Federal Energy Regulatory Commission (FERC) scoping meeting, presentations hosted by the gas industry, and informational meetings hosted by local municipalities. Self-education and group activities also were viewed as an essential and beneficial aspect of the public participation process. This included establishing landowner associations, forming a local stakeholders advisory group, and conducting their own data gathering such as traveling to Pennsylvania and researching the HVHF experience there. The latter also was cited as a limitation given the demand that data gathering placed on participants’ time and energy. That said, most of the pro-frackers felt they made important contributions to getting health and safety concerns incorporated into policy.

Further limitations of the public participation process emerged as the study of HVHF became more intense and more complex. Participants described what they saw as an increasingly political process — “At first we were having open exchange [with the
state], but then it changed.” They stated that feedback on stakeholder input and questions diminished, and with that their satisfaction with the public participation process — “We got no feedback; comments fell on dead ears.” Participants also felt that credibility of data was affected, with transparency deteriorating over time and having no agreement on what would be considered credible data — “The process was non-biased in beginning. Then it deteriorated.” “There never was an agreement of the parties on what would be credible data.” “It was left to stakeholders to determine what was right, what was wrong.” These types of issues, which participants applied to both the state and some local municipalities, were attributed to a growing lack of structure and balance at meetings that made it harder for people to be heard. They felt that attendance grew so large at some meetings that it became impossible to have dialogue with presenters. Participants felt there was growing competition among attendees for the opportunity to speak, and that some local meetings were decidedly one-sided — “There was a river basin meeting where the pro-frackers had their microphones turned off but the antis would take forever to talk.” Not being able to hear multiple viewpoints, combined with no way to sort facts from opinion, left participants feeling they could not trust some of the information that became part of the public record. Several participants summarized in this manner — “Leave expertise with the state; they are the experts.” “The people who are the most impacted should have the most say.” “Public participation has been hijacked [by politics].” (See Tables 10 and 11).
Table 10

Result of process coding of interviews and presents pro-fracking participants’ evaluation of the benefits and limitations of the public participation process.

<table>
<thead>
<tr>
<th>Benefits and Limitations of PP Process — Pro-Fracking Interview Results</th>
<th>Benefits</th>
<th>Limitations</th>
<th>In Vivo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Meeting Opportunities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• DEC holding major public hearings and special seminars and presentations.</td>
<td>• Not getting feedback from presenters.</td>
<td>“DEC leadership was strong; they did a great job.”</td>
<td></td>
</tr>
<tr>
<td>• DEC allowing public comment.</td>
<td>• Not being able to discuss and debate the issues.</td>
<td>“Each side presented expert opinions.”</td>
<td></td>
</tr>
<tr>
<td>• DEC including a wide range of stakeholder groups.</td>
<td>• Not having agreement on what would be considered credible data.</td>
<td>“I attended because I wanted to speak to DEC officials, not just for crowd excitement.”</td>
<td></td>
</tr>
<tr>
<td>• FERC (Federal Energy Regulatory Commission) holding scoping meetings.</td>
<td>• Process becoming more political over time.</td>
<td>“At first having open exchange [with state], but then it changed.”</td>
<td></td>
</tr>
<tr>
<td>• Town and village municipalities holding local meetings.</td>
<td>• Not getting opportunity to hear and be heard.</td>
<td>“The process became increasingly political.”</td>
<td></td>
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<tr>
<td>• Industry representatives giving presentations.</td>
<td>• Not hearing multiple viewpoints</td>
<td>“Never had an agreement of parties on what would be credible data.”</td>
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<tr>
<td>• Public meetings well attended.</td>
<td>• Trying to understand complex information</td>
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<tr>
<td><strong>Other Government/Regulatory Agency Engagement Efforts</strong></td>
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<tr>
<td>• DEC publishing notifications online in a weekly environmental bulletin</td>
<td>• Not getting feedback [from state]</td>
<td>“Got no feedback; comments fell on dead ears”</td>
<td></td>
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<tr>
<td>• State using media to announce that people could write in comments.</td>
<td>• State not pro-active in making data available.</td>
<td>“The people who are the most impacted should have the most say.”</td>
<td></td>
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<tr>
<td>• DEC providing methods to submit written comments online, by email or by sending a letter via regular mail.</td>
<td></td>
<td>“Public participation has been hijacked [by politics].”</td>
<td></td>
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<tr>
<td>• DEC giving people adequate time to submit comments.</td>
<td></td>
<td>“It was left to stakeholders to determine what was right, what was wrong.”</td>
<td></td>
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<tr>
<td>• DEC responding to comments and posting reports on its DEC web site.</td>
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<tr>
<td><strong>Self Education &amp; Mobilizing</strong></td>
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<tr>
<td>• Finding information on DEC site.</td>
<td>• Needing to gathering own data at the local town and county level.</td>
<td>“Don’t feel part of New York.”</td>
<td></td>
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<tr>
<td>• Landowners Association staying in contact with DEC; passing on information to local communities.</td>
<td>• Having to seek information from the state.</td>
<td>“Roundtable meetings of community leaders were good.”</td>
<td></td>
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<td>• Visiting PA and researching the HVHF experience there.</td>
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</tbody>
</table>
Table 11

Result of process coding and presents results of focus groups with pro-fracking participants, specific to their evaluation of the benefits and limitations of the public participation process.

<table>
<thead>
<tr>
<th>Benefits and Limitations of Public Participation Process</th>
<th>Pro-fracking Focus Group Results</th>
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</thead>
<tbody>
<tr>
<td><strong>Public Meeting Opportunities</strong></td>
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<tr>
<td>- Able to attend public meetings.</td>
<td>Transparency of information</td>
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<td>- The information coming from the state was non-biased in</td>
<td>deteriorating over time.</td>
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<td>the beginning.</td>
<td>Having state government educate</td>
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<td>- Contributing to getting health and safety concerns</td>
<td>the public not effective.</td>
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<tr>
<td>incorporated into policy.</td>
<td>People signing up to speak and</td>
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<td></td>
<td>also signing up others to speak</td>
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<td></td>
<td>who were not there yet.</td>
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<td></td>
<td>Non-residents allowed to attend</td>
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<td></td>
<td>local meetings.</td>
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<td>Getting the opposition to present</td>
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<td></td>
<td>facts.</td>
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<td>Not allowing the community to</td>
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<td></td>
<td>work through pros and cons.</td>
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<td>“Leave expertise with the state;</td>
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<td>they are the experts.”</td>
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<td>“Our efforts had a positive effect</td>
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<td>on getting concerns incorporated</td>
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<td>into policy, specific to health</td>
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<td>and safety.”</td>
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<td>“The process was non-biased in</td>
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<td>beginning. Then it deteriorated.</td>
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<td>First-come-first-served rule for</td>
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<td>signing up to speak was not fair.”</td>
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<td></td>
<td>There was no public participation</td>
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<td></td>
<td>process.”</td>
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<tr>
<td><strong>Other Government/Regulatory Agency Engagement Efforts</strong></td>
<td></td>
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<tr>
<td>- Public hearings and town hearings were held and allowed</td>
<td>Local municipalities educating</td>
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<tr>
<td>comments periods.</td>
<td>the public not always effective.</td>
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<tr>
<td></td>
<td>“Must get the public involved</td>
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<td></td>
<td>and educate them.”</td>
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<td></td>
<td>“Show both sides of the issues</td>
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<td></td>
<td>and allow the community to work</td>
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<td></td>
<td>through pros and cons.”</td>
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<tr>
<td></td>
<td>“We found out a lot through</td>
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<tr>
<td></td>
<td>word-of-mouth.”</td>
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<tr>
<td><strong>Self Education &amp; Mobilizing</strong></td>
<td></td>
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<tr>
<td>- Finding out facts by self.</td>
<td>Questioning the credibility of</td>
</tr>
<tr>
<td>- State polling local municipal leaders for their</td>
<td>EPA studies.</td>
</tr>
<tr>
<td>position on fracking.</td>
<td>Having to travel to PA</td>
</tr>
<tr>
<td>- Getting independent experts to educate the public.</td>
<td>to see fracking towns.</td>
</tr>
<tr>
<td>- Learning by visiting PA.</td>
<td>Had to do too much on own to</td>
</tr>
<tr>
<td>- Bringing in speakers.</td>
<td>get educated.</td>
</tr>
<tr>
<td>- Finding information on own.</td>
<td>“Must get the public involved</td>
</tr>
<tr>
<td>- Hearing about public participation opportunities</td>
<td>and educate them.”</td>
</tr>
<tr>
<td>through the newspapers.</td>
<td>“Show both sides of the issues</td>
</tr>
<tr>
<td></td>
<td>and allow the community to work</td>
</tr>
<tr>
<td></td>
<td>through pros and cons.”</td>
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<tr>
<td></td>
<td>“We found out a lot through</td>
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<td></td>
<td>word-of-mouth.”</td>
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</table>

Pro-fracking participants on values:

RQ#2 data also reveal how the pro-fracking participants viewed the public participation process from a values perspective. Saldaña (2013) describes values coding
as a way to distinguish a person’s “values, attitudes, and beliefs, representing perspectives or world view” (p. 110-111). Values are represented in the way participants express what was personally important about a phenomenon, while attitudes emerge as participants shared thoughts about how a phenomenon has affected self and others. Beliefs are reflected as an interpretative perception of how the phenomenon should or should not be acted upon (Saldaña, 2013). Among pro-fracking participants, the themes of trust, empowerment, rights and fairness were prevalent.

Values — Empowerment and rights intertwined in values related to wanting more opportunity to provide direct input on policy. Pro-fracking participants felt they directly benefitted from the work of a local landowners association and a stakeholders’ advisory group, which facilitated information flow between the state and local communities and conveyed community interests for use in policy development. Also, public participation and public education were highly valued, with emphasis that all should have a chance to speak at public meetings. Additional values-based feedback included:

• People need to help regulators get the facts right; there needs to be more opportunity for local people to directly provide input.

• The local stakeholders advisory group was more involved compared to the state-formed advisory committee

• Education [of the public] is key. Data does not equal skill or understandable knowledge. Must have multiple ways and opportunities to get educated.

• Need people to not be afraid of government and take the initiative to get involved.

Attitudes — Trust and fairness concerns were reflected in pro-fracker participant attitudes regarding how they and others were affected. Aspects of the government and
public participation processes were cited as having a negative affect on residents, communities, and even the state regulators. Participants particularly noted a shift during the process, when both information sharing and open dialogue with the state decreased. With that, trust diminished as well, with some suspecting that NYS DEC hands were tied. The importance of having a fair process also was a recurring theme, especially in relation to public participation:

- Pro-fracking participants felt anti-frackers had advantages they did not, such as greater access to funding and ability to pay for professional representation.
- Pro-frackers felt they were thwarted in their efforts to be heard when some meetings were managed in a biased way.
- Government rulings during the regulatory process, especially the bans imposed in some local municipalities and then ultimately by the state, also were seen as obstructing stakeholder ability to fully discuss and debate the pros and cons of HVHF.

Beliefs — Reflecting back as well as ahead, pro-fracking participants felt strongly that data used for decision-making should be provided by experts. That said, they also believed DEC and FERC policies should be shaped by public opinion — “Have professionals work through pros and cons, let community members listen and voice their fears and questions, but have professionals provide the answers.” Above all, they held that stakeholders most directly impacted should have the most say.

**Anti-fracking participant interview and focus group results.** For participants who took a stance against HVHF, the public participation process was viewed as beneficial in that the early stages were bi-partisan and public meetings were well attended
— “The early stages were bi-partisan; being very careful to not make it a democratic or republican issue.” Participants noted that meetings hosted by NYS DEC helped them better understand the regulator’s task of both protecting the environment and regulating development. A caveat was that the meetings could run very late and the locations were a long distance for some to travel. It also was considered helpful that the state used media to announce that people could submit comments, and that political groups conducted surveys to get a reading on people’s positions. In addition to state-sponsored meetings, participants felt it was beneficial that local municipalities, private groups, and representatives of the gas industry hosted meetings, providing additional opportunities for residents to become educated on HVHF and ask questions. Multiple benefits were attributed to residents’ self-education and group mobilization efforts. Participants cited several positive aspects of group communication, including the use of social media, holding action planning meetings at the neighborhood level, and conducting their own informational forums for the community. Participants spoke of many hours devoted to grass roots letter writing parties, fundraising, and lobby days at the state capitol — “I recall at least a couple of hundred local neighborhood and small group meetings in the course of one year.” They believed this made it possible to make their case to the state — including urging investment in alternative energies — and ultimately have an impact on the state’s decision-making.

However, participants noted that a decided downside was the effort it took to obtain information and the complexity of the data being shared — “People had to work too hard to get information.” “People struggled to understand complex reports.” “Young people don’t have the time.” Also cited as a limiting factor was not having the financial
resources to hire professionals to help in building a strong case. Participants empathized with some of the local municipal leaders whom they said also spent a lot of time responding to inquiries from constituents. Further limitations of the public participation process were largely attributed to a shift in communication with the state and with the effort required to obtain data on HVHF. Participants felt the format of state meetings had become timed and restrictive, and that they received less and less response from government as the process progressed — “It didn’t feel like a participation process.” “Public hearings became a sham, just a show of public participation. Got the sense they were just going through the motions.” Similar opinions were attributed to some local meetings, including a tendency toward bias — *The [local municipality] meeting was one-sided; they had the opposition there.*” “An official removed fracking from the [local municipality] agenda.” Participants also expressed disappointment at politicians who were invited to their information-gathering meetings but did not attend. Gas industry motives also were questioned. Participants believed gas company scientists presented honestly, but “put a spin on the data, minimizing the risk.” (See Tables 12 and 13).
Table 12

Result of process coding of interviews and presents anti-fracking participants’ evaluation of the benefits and limitations of the public participation process.

| Benefits and Limitations of PP Process — Anti-Fracking Interview Results |
|-------------------------------------------------------------|-----------------|-----------------|
| Benefits | Limitations | In Vivo |
| Public Meeting Opportunities | | | |
| ▪ Early stages of process being bi-partisan. | ▪ Difficulty getting to public meetings depending on location | “The early stages were bi-partisan; being very careful to not make it a democratic or republican issue.” |
| ▪ DEC public meetings being very well attended. | ▪ Public meetings running late | |
| ▪ Attending Federal Energy Regulatory Commission [FREC] scoping meetings. | ▪ Needing to complain to elected officials in order to get chance to testify. | “The [County] meeting was one-sided; had the opposition there.” |
| ▪ Industry representatives giving presentations | ▪ Developer company scientists presenting honestly but putting a spin on it; minimizing the risk. | “Public hearings were a sham, just a show of public participation.” |
| ▪ [Developer] company scientists presenting honestly [see caveat under limitations]. | | |
| Other Government/Regulatory Agency Engagement Efforts | | |
| ▪ State using media to announce that people could write in comments. | ▪ An official removing fracking from the town council agenda. | “There was not a trust level [in the Advisory Council]; the reps constantly straddled the fence.” |
| ▪ Attending meetings hosted by local municipalities. | ▪ State Advisory Council not being effective. | “There should be more citizen oversight.” |
| ▪ Government outreach effort starting after grassroots actions had begun. | ▪ Government outreach effort straddling the fence. | |
| Self Education & Mobilizing | | |
| ▪ Conducting own informational forums. | ▪ Inviting politicians to local meetings but they didn’t come. | “The public definitely had an impact on the state.” |
| ▪ Attending meetings hosted by private groups | ▪ Lacking resources to hire professionals to help build a strong case | “Wish had better connection with [another community] — filed lawsuits there; they had lawyers.” |
| ▪ Democrat and republican groups doing survey to find out who was for and who against, and why. | ▪ Requiring huge amount of time and energy. | “Young people don’t have the time.” |
| ▪ Feeling comfortable with credibility of data when came from other community experiences. | ▪ Finding time and energy to participate. | “It’s a painful subject.” |
| ▪ Grass roots letter writing parties; creating template letters. | ▪ Some local municipality meetings being one-sided. | “Test drilling was done on private property without telling anyone; word spread like wildfire.” |
| ▪ Having an impact on the state’s decision-making | ▪ Feeling not completely comfortable with credibility of data when came from gas companies. | |
| ▪ Debating with industry reps | ▪ Attempting to establish one big anti-fracking action group, but not a good idea | |
| ▪ Neighbors mobilizing | ▪ Recalling a couple of hundred local neighborhood and small group meetings in the course of one year. | |
| ▪ Doing fundraising | ▪ Getting sued by a landowner; needing to go to court. | |
| ▪ Communicating [to state] our concerns about water contamination and other impacts | | |
| ▪ Pressing the point that investment in alternative energies is needed | | |
| ▪ Seeing articles, editorial opinions, and letters to the editor | | |
| ▪ Local groups communicating via Facebook. | | |
| ▪ Lobbying days at state capital. | | |
Table 13

Result of process coding of two focus groups and presents anti-fracking participants’ evaluation of the benefits and limitations of the public participation process.

<table>
<thead>
<tr>
<th>Benefits and Limitations of Public Participation Process Anti-fracking Focus Group Results</th>
<th>Benefits</th>
<th>Limitations</th>
<th>In Vivo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Meeting Opportunities</strong></td>
<td>Understanding regulator’s task of both protecting the environment and regulating development.</td>
<td>Format of public meetings not very beneficial because they were timed and restrictive.</td>
<td>“Another example of poor and untimely communications, like when people didn’t find out about an industrial wind project until after a town board had leased their land.”</td>
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<tr>
<td></td>
<td>Attending DEC –hosted meetings.</td>
<td>Industry officials stating “we’ve been doing this for 50 years.”</td>
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<tr>
<td></td>
<td>Developers sending legal representatives to meet with municipal leaders.</td>
<td>“Another example of poor and untimely communications, like when people didn’t find out about an industrial wind project until after a town board had leased their land.”</td>
<td></td>
</tr>
<tr>
<td><strong>Other Government/Regulatory Agency Engagement Efforts</strong></td>
<td>Local municipal leaders spending a lot of time responding to inquiries from constituents.</td>
<td>Getting less and less response from government as the process went on.</td>
<td>“It didn’t feel like a participation process.”</td>
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<tr>
<td></td>
<td>[Scheduling meetings] in Albany; attended [lobbying] day</td>
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<td></td>
<td>There were some who were [planning direct protect action].”</td>
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<tr>
<td></td>
<td>Since 2008, NGOs were …. [paying attention].</td>
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<td></td>
<td>….held teleconferences, began [organizing], formed a local coalition.</td>
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<td></td>
<td>Started holding protests and rallies.</td>
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<td></td>
<td>Participating in grassroots initiative; conducting our own community education</td>
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<td></td>
<td>Did fundraising to help finance protect effort.</td>
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<td></td>
<td>Getting information easier than others could.</td>
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<td></td>
<td>Making a local law to ban HVHF.</td>
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<td></td>
<td>Advocating that information be shared with residents.</td>
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<td></td>
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<tr>
<td></td>
<td>Building a landowner coalition.</td>
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<tr>
<td></td>
<td>Accessing information through government web sites.</td>
<td></td>
<td>“Was really surprised [at decision to ban]; it taught me how important politics means to the process.”</td>
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<td></td>
<td>Struggling to understand complex reports.</td>
<td></td>
<td>“People were up in arms.”</td>
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<tr>
<td></td>
<td>You had to really work at getting information</td>
<td></td>
<td>“People had to work too hard to get information.”</td>
</tr>
<tr>
<td></td>
<td>Importance of getting independent advice.</td>
<td></td>
<td>“People struggled to understand complex reports.”</td>
</tr>
<tr>
<td></td>
<td>Necessity of creating a special meeting for local residents.</td>
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</tbody>
</table>
Anti-fracking participants on values:

Values — Anti-fracking participant values were discerned in the way participants voiced what was personally important to them about the HVHF public participation process. They placed great value on the efforts of local anti-fracking action groups, especially how these individuals worked together to create opportunities for people to hear different points of view. There also were sentiments associated with rights and empowerment. They felt their communities had the right to fully understand the implications and impacts of introducing hydrofracking to their communities, and that residents’ ability to have a voice on the issues should not depend on how much money they had. Specific value statements included:

- It is important that the local actions groups brought disparate political views together.
- Education and information-sharing should be bi-partisan.
- People should not lose out on legal representation because of a disparity in resources.

Attitudes — Study data yielded numerous examples of how anti-fracking participants thought the HVHF process affected themselves and others. Years of NGO activity in the region along with NGO assistance in mobilizing was considered very important to local action group success — “Since 2008, NGOs were already active in the area, paying attention.” “We got state organizations on board, such as historic and cultural organizations; this got us recognized at the state level.” Participants felt that the combination of state-wide and local efforts helped influence government decisions on HVHF permitting. Other attitude statements included:
• It was important for landowners to build a coalition.
• Public input had an impact on the state’s decision.
• By mobilizing we were able to influence policy makers.

However, participants felt these achievements did not come without struggle. They described a public participation process that at times hampered their ability to have free and open discussion. Participants also stated that they were interested in information provided by the gas industry, but found it difficult to trust the accuracy of some of the claims. These attitudes were stated as follows:

• Local political leaders hampered open discussion of the issue.
• It was hard to trust industry statements about protection of water sources.
• There should have been more open meetings so residents and landowners could hear from knowledgeable people — subject matter experts such as engineers—and talk to NYS DEC.

Beliefs — The anti-fracking participants also shared perceptions on how the public participation process did or did not meet their expectations. They strongly believed that the overall process should have been more participatory, and that hearing from local residents should have been given priority over non-residents — “A lot of political factors were in play that complicated the public participation process.” “Local municipal leaders had a responsibility to get information out to residents.” “It was very difficult for local municipal leaders to manage the volume of inquiries from residents.” Participants also made a distinction between public participation opportunities and the actual policy making side of the process. For example, some tied the need for local activism to
weakness in the government policy process, while all felt that citizen action groups should be afforded low cost legal representation in order to intervene.

*Environmental protection advocates interview and focus group results.*

Participants in this group were identified as working in the field of environmental protection. They described their roles as researchers and educators, and their organizations as engaged in various aspects of environmental preservation, conservation, and resource management. In relation to HVHF, they described themselves as being unbiased from a political perspective, but having a responsibility to be diligent in identifying HVHF activities that could lead to environmental degradation. From this vantage point, participants were able to assess the benefits and limitations of the HVHF public participation process based on their personal perspective, and by witnessing the involvement of others. Several participants expressed pride in their organization’s information gathering and research efforts, especially the mission of providing scientifically gathered and analyzed data. They also described their organizations as playing an important role in getting information about the HVHF process to local municipalities and serving as a resource to residents and landowners. Regarding the HVHF public participation process, there was consensus that the state’s initial approach to engaging stakeholders via public meetings was good. Participants felt positively about the state’s efforts to educate people on how the regulatory process worked and on the environmental impact aspects of HVHF. Particularly meaningful was the state’s efforts to get information about HVHF to communities in the region where fracking might take place. However, focus group participants felt that public meetings were not enough —

“The state could have done more to engage the public, beyond the prescribed process.”
HVHF was hard for the average person to understand.” “Where is community representation on [state and federal] environmental advisory boards?” While there was a general opinion that government could have provided more opportunities for people to become educated on HVHF, participants commended local community members for their substantial time investment — “Consider that many are working full time jobs or have similar daily responsibilities.” “They took time to visit fracking sites and nearby communities in Pennsylvania in order to learn from their experiences.” At the same time, these environmental advocates saw a down-side to residents’ self-education efforts, wherein information at times was coming from “inherently biased sources.”

Similar to comments heard from the anti and pro-fracking participants, environmental advocate participants noted a shift in the public participation process from positive to negative — “The process should have been allowed to work; instead it became too political.” See Table 14.
Table 14

*Environmental advocacy group representatives’ evaluation of the benefits of the public participation process. Combined results of interviews and focus group results.*

<table>
<thead>
<tr>
<th>Benefits and Limitations of PP Process—Environmental Protection Advocates Interview and Focus Group Results</th>
<th>Benefits</th>
<th>Limitations</th>
<th>In Vivo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Meeting Opportunities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Regulatory policy development and engaging the public was good.</td>
<td>▪ People having to go back for more meetings to get updated data.</td>
<td>“Need to consider that many are working full time jobs or have similar daily responsibilities.”</td>
<td></td>
</tr>
<tr>
<td>▪ Getting information about HVHF to communities in the region where fracking might take place.</td>
<td>▪ Politics getting in way of the scientific and unbiased study of HVHF.</td>
<td>“Process should have been allowed to work.”</td>
<td></td>
</tr>
<tr>
<td>▪ Helping educate on environmental issues, environmental protection, and regulations.</td>
<td>▪ Politics interfering with regulatory policy development and engaging the public.</td>
<td>“Politics got in way of the scientific and unbiased study of HVHF. But DEC went through an exhaustive scientific study.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ People not getting chance to have input on issues like impacts of drilling operations on local infrastructure.</td>
<td>“Not sure if public input had an influence on outcome.”</td>
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<tr>
<td></td>
<td>▪ A lot of information coming from inherently biased sources.</td>
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<tr>
<td><strong>Other Government/Regulatory Agency Outreach Efforts</strong></td>
<td></td>
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</tr>
<tr>
<td>▪ Government establishing environmental advisory boards.</td>
<td>▪ State not providing enough opportunities for people to become educated on HVHF.</td>
<td>“State could have done more to engage public. Hard for the average person to understand.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Government environmental advisory boards not having enough local community representation.</td>
<td>“Where is community representation on environmental advisory boards?”</td>
<td></td>
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<tr>
<td><strong>Role in helping educate stakeholders</strong></td>
<td></td>
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<tr>
<td>▪ Being proud of efforts to help educate community members.</td>
<td>▪ Not enough baseline data on HVHF impacts for decision-making.</td>
<td>“I felt proud of our information gathering and research efforts.”</td>
<td></td>
</tr>
<tr>
<td>▪ Providing scientifically gathered and analyzed data.</td>
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<tr>
<td>▪ Getting information about the HVHF process to local municipalities.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>▪ Serving as a resource to communities and landowners.</td>
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<tr>
<td><strong>Community Stakeholder Activities</strong></td>
<td></td>
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</tr>
<tr>
<td>▪ Community members meeting frequently to review the permit review documents.</td>
<td>▪ Local stakeholders finding it difficult to be heard.</td>
<td>“People did not get the chance to have input on issues like impacts of drilling operations on local infrastructure.”</td>
<td></td>
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<tr>
<td>▪ Community members taking time to visit PA and learn from their experience.</td>
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</table>
Environmental protection advocates on values:

Values — The consensus among environmental advocate participants was that the regulatory permitting process must be conducted without bias, and that scientifically researched data was essential to decision-making. They felt positively about the studies that were being conducted, but expressed concern about political motives being allowed to interfere with implementation of outcomes — “Politics got in way, but DEC went through an exhaustive scientific study.” They felt the influence of special interests particularly affected the latter stages of the public participation process — “Stakeholders on both sides of an issue should be brought together to evaluate findings, join in the discussion, and take a stand if they desire to do so.” Some participants said it also was important to recognize that many stakeholders had concerns beyond health issues, and thus needed information and dialogue to be broader in scope. For example, they were aware that municipalities wanted input on infrastructure such as road networks and public safety. This aligns with a number of issues cited in RQ#1 results that related to impacts of HVHF build out.

Attitudes — Environmental advocate participants had first hand experience with how people in target HVHF areas were affected, particularly in relation to their ability to have direct input on issues. Regarding public participation and information gathering they found that opinions varied, with municipal leaders seeming more satisfied than residents and property owners. This was attributed to elected officials having greater access to government agencies, while residents and property owners faced challenges finding the time and resources to attend meetings.
Beliefs — From their environmental protection perspective, some participants reflected on the potential that the state could still allow a pilot HVHF site to be developed. Were this to be considered again, they believed all parameters would need to be defined and be agreed upon. This would include agreement on criteria and more quantitative data — “I would want more baseline data; there needs to be more testing at well sites.” Participants also reflected on what would be beneficial to stakeholders on both sides of the HVHF issue. This included the suggestion they look to coalition building to gain better recognition of interests, and seek qualified representation.

**Energy industry association representatives interview results.** Energy industry associations are present across the United States. As membership-based organizations their missions generally focus on representing the interests of oil and gas producers, contractors and other professional service companies necessary to production and delivery, and on customers who rely on fuel for quality of life and livelihoods. Two participants in this study were individuals with experience in natural gas industry association activities and had knowledge of the efforts to permit HVHF in New York State. Specific to the HVHF public participation process, they cited public education as one of the primary roles of industry associations. This involved conducting public education programs in counties and towns where drilling would potentially occur, such as bringing in subject matter experts as speakers and providing information on the natural gas industry and the practice of horizontal drilling. Property owners were also offered information on what to expect if they were contacted by a gas developer about their land, along with details on the drilling process. Associations played an advocacy role as well, providing input to the state on regulatory policy development and helping HVHF
supporters organize at the local level so their interests could be communicated more effectively. Association-sponsored meetings were viewed as productive and positive, as were the very early stages of public meetings. However, participants described the last six months of the public input process [before the HVHF ban announcement] as drastically different. Specifically, they cited how the complexity of information about HVHF processes made it increasingly difficult for presenters to share information — “People had trouble understanding the science.” See Table 15.

Table 15

*Energy industry association representatives’ evaluation of the benefits of the public participation process.*

<table>
<thead>
<tr>
<th>Benefits and Limitations of PP Process — Energy Industry Association Rep Interview Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
</tr>
<tr>
<td><strong>Public Meeting Opportunities</strong></td>
</tr>
<tr>
<td>▪ Conducting public education program in towns and counties where drilling would occur.</td>
</tr>
<tr>
<td>▪ Educating people HVHF and on what to expect if contacted about their land, about the drilling process.</td>
</tr>
<tr>
<td>▪ Helping gas industry advocate group put together an outreach group.</td>
</tr>
<tr>
<td>▪ Helping bring in speakers from gas industry.</td>
</tr>
</tbody>
</table>

Energy industry association representatives on values:

Values — Very much like the pro-frackers, anti-frackers and environmental advocates in this study, these energy industry representatives expressed how much they valued — and then missed — the opportunity to engage in discussion about HVHF. In the early stages, gas developers who hosted informational meetings were described as “armed with information” and study participants said they were committed to meeting
with people, listening, and answering questions. They described attendees in a similar way — “There were tons of people after the meeting who wanted to talk; seeking answers to technical questions, curious to learn.” As meeting dynamics changed, participants felt two important elements were lost—a forum for reasonable debate and the time to engage in discussion with stakeholders.

Attitudes — Participants felt that stakeholder meetings, those held by the state as well as those hosted by industry, could be very unpredictable depending on how many opposition groups attended. This left both presenters and attendees never quite knowing what to expect, and may at times have kept people from attending — “Meetings upstate tended to be more civil than downstate. As the meetings sites got closer to New York City they became more uncontrolled and unproductive.” Participants described the overall affect as causing a long and drawn out process for both presenters and attendees.

Beliefs — Industry association representatives believed the public participation process should have led to better outcomes, and could have for most stakeholders if different conditions had prevailed. First, they felt that informational meetings were poorly attended during the early stages of the process. They saw these as missed opportunities for people to become well educated on HVHF, but “no one was thinking about it yet.” Secondly, there was a general lack of knowledge in the concepts of radiation, earthquakes, water contamination (what and how), and chemicals (how they work). They believed that if presenters could have had the opportunity to explain those four in context of the industry, “there would be no concern; the potential for problems could be eliminated or mitigated.” Third, they believed it would have been better if the state had changed the process to meet needs of participants who wanted to learn, not
allowing meetings to be dominated by protesters — “People should have been told to come and present your methodology to improve this process, or stay out.”

**Regulatory and economic development participant interview results.** Participants in this group had backgrounds in environmental policy and permitting and economic development. Their experience provided them with first hand knowledge of the state permitting process, and how the introduction of HVHF could influence economic development opportunities and impacts. Regarding state sponsored public meetings, participants had positive things to say about the NYS DEC’s efforts to conduct large public meetings across the region where HVHF might occur, giving local stakeholders multiple opportunities to learn about HVHF and have input on the development of regulations. Participants noted that these meetings were very well attended by the public — “DEC had a full gymnasium of people for a scoping session.” In addition, DEC posted reports and responded to comments on its web site, and used its weekly environmental bulletin to post HVHF-related notifications. Observations of stakeholder groups included active lobbying at the state level, and residents on the local level relying on their municipal leaders to bring their interests to the attention of the DEC. Limitations cited by the participants related to meeting format and nature of the data on HVHF. Some felt that informational meetings with dialogue would have been better. See Table 16.
Table 16

*Regulatory and economic development background participant evaluation of the benefits of the public participation process.*

<table>
<thead>
<tr>
<th>Benefits and Limitations of PP Process — Regulatory/Development Interview Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>View on Public Meetings</strong></td>
</tr>
<tr>
<td>• DEC providing multiple methods to submit a response.</td>
</tr>
<tr>
<td>• People being able to submit written comments online or email or send a letter via regular mail.</td>
</tr>
<tr>
<td>• DEC holding public meetings across the region.</td>
</tr>
<tr>
<td>• DEC including a wide range of stakeholder groups: municipal leaders, industry, environmental groups and land owners.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>View on other Government/Regulatory Agency Engagement Efforts</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• State receiving a lot of feedback from pro-frackers as well as anti-frackers.</td>
<td>• New data was continuously emerging.</td>
<td>“It was an ongoing educational process.”</td>
</tr>
<tr>
<td>• DEC responding to comments and posting reports on its DEC web site.</td>
<td>• Challenging for DEC to keep up with volume of questions from stakeholders.</td>
<td>“The analysis picture kept changing from beginning to end draft [of the environmental impact statement].”</td>
</tr>
<tr>
<td>• DEC publishing notifications online in a weekly environmental bulletin.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>View on community stakeholder activities</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Flow of information from advocates or opponents to local municipal leaders to those leaders in turn bringing DEC.</td>
<td>• Difficulty getting a preponderance of evidence.</td>
<td>“Sometimes it’s difficult to get a preponderance of evidence. A principle of science is, the more we know, the more we don’t know.”</td>
</tr>
<tr>
<td>• Using lobbying groups to advocate for change in regs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hearing a lot about hydrofracking before it hit NY.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Other</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not inviting input from local economic development agencies because there was no specific project to work on.</td>
<td></td>
<td>“Would have thought [economic development agencies] would have been contacted as HVHF would be a huge influencer on the area’s economic development activities.”</td>
</tr>
</tbody>
</table>

Regulatory and economic development participants on values:

Values — Having experienced many different types of development projects with environmental impact potential, these participants noted how important and positive it
was that the state worked to engage all types of stakeholders, from gas industry representatives to local elected officials, landowners, residents and environmental groups. They felt it also was important that meetings were held where the regulation would have the most impact, not just because an area might or might not be a “hotbed” spot for protesters. In spite of the challenges the state experienced with some of the public meetings, these participants believed the participation process allowed for many points of view to be put on record — “There were truly strong arguments on both sides.” At the same time, one participant observed that not engaging economic development professionals in potential HVHF areas was a missed opportunity — “Would have thought economic development agencies would be contacted as HVHF would be a huge influencer on the area’s development activities.” “These agencies also could have played a valuable role in channeling and facilitating information at the local level.”

Attitudes — Participants saw stakeholder frustrations play out in the public participation process. They attributed some of this to the no-win situation when DEC had to impose time limits on people wishing to speak at public meetings. Having to choose between people having an opportunity to offer input versus having enough time to express their views was bound to cause tension. — “The difficulty in the hearings process was that interest was so high and attendance so considerable.” Participants especially pointed to the myriad of unknowns about HVHF as a source of the growing conflict between action groups, and a significant challenge to regulators who were faced by continuously emerging new data — “It was an ongoing educational process.” “The analysis picture kept changing from beginning to end draft [of the environmental impact statement].
Beliefs — While none of these participants speculated on whether permitting of HVHF would be revisited in the future, they were unanimous that engaging the public on permitting and policy in this arena will never be easy due to the difficulty in acquiring definitive data — “Sometimes it is difficult to get a preponderance of evidence.” “A principle of science is, the more we know, the more we don’t know.” Furthermore, participants distinguished HVHF from other types of development initiatives that hold the risk of environmental degradation — “HVHF is unlike a landfill siting or nuclear plant, where areas of concern are known. With fracturing, it was an introduction to a whole range of newly emerging concerns.”

RQ#2 Results Summary. The essence of RQ#2 — how stakeholders in New York State’s HVHF policy debate evaluated the benefits and limitations of the public participation process — is captured in the evaluative comments of the participants. Results show common views in relation to a process described as too vulnerable to political influence, and lacking the resources and structure needed to manage a task of such magnitude.

Participant views on political influences:

• Pro-frackers — “The policy process was working; then it became increasingly political.”

• Anti-frackers — “There were a lot of politics that negatively affected the policy development process.”

• Environmental protection advocates — “The regulatory process should have been allowed to work; too much political interference.”
• Regulatory/economic development specialists — “Policy decisions often get made on a political basis.”

• Industry — “The problem was who can influence political leaders.”

Participant views on public participation process:

• Pro-frackers — “Informational meetings would have been valuable had we been able to get feedback from presenters; there was no opportunity for dialogue.”

• Anti-frackers — “Public hearings should have accommodated the number of people who attended and wanted to speak.”

• Environmental protection advocates — “The state could have done more to engage the public, beyond the prescribed process.”

• Regulatory/economic development specialists — “The difficulty in the hearings process was that interest was so high and attendance so considerable that DEC had to impose time limits. This created tension.”

• Industry — “Would have been better if state would have changed the process to meet needs of participants who wanted to learn.”

There was less consensus on what might have increased the benefits of the public participation process. Some felt that public participation should be conducted and controlled primarily at the state level, while others felt that local municipal leaders have the responsibility to engage the public, making meetings and information easily accessible to residents. At the same time, participants acknowledged the challenges faced at the local level, such as having the staffing and budget resources to keep pace with the information coming from the state. Other suggestions included starting public education much earlier in the process and extending public hearings over two-to-three days.
Analysis of study results now turns to RQ#3 — factors that affected how stakeholders perceived the value of the public participation experience.

**RQ#3 Results**

RQ#3 examined factors affecting how stakeholders perceived the value of the public participation experience in New York State’s HVHF policy and permitting process. Some participants offered perspectives based on their direct involvement as a pro- or anti-fracking activist, and others shared their perspective as an educator, researcher, or professional in the fields of environmental protection, energy regulation and economic development. The first set of data presents the dynamics that were at play during public meetings and other stakeholder participation activities. These results are supported by In Vivo statements that help illuminate participants’ lived experience.

**Pro-fracking participants — RQ#3 interview and focus group results.** As discussed in results of RQ#2, there was consensus among participants that the public participation process changed significantly after the moratorium on HVHF was announced — “After the moratorium there were still opportunities for input, but less of a controlled process.” This was especially true in relation to the conduct of public meetings, where it became very challenging to manage the large number of attendees. From an experiential perspective, pro-fracking participants shared how they saw the breakdown in structure contributing to the inability to control attendee behavior:

- “Meetings enabled people to be disruptive.”
- “There was too much of raised signs, yelling and screaming, hostile people.”
- “There was some hysteria. Meetings became a circus.”
- “Extreme emotions got in the way of information sharing.”
• “Dialogue became dominated by feelings not substance.”

• “There was no open-mindedness; no willingness to listen and consider the other side.”

Some pro-fracking participants said they felt out-numbered and preferred the set-up at some meetings where pro- and anti-fracking attendees were seated separately. All pro-fracking participants concurred that disruptive behavior continued to escalate as the process progressed — both inside and outside the public meeting environment — and at times became offensive:

• “The anti-frackers got in everyone’s face. We were confronted with arguments like ‘do you want lights shining in your face from the trucks; do you want your daughter getting pregnant from workers.’”

• “Some pro-frackers became intimidated by the opposite side speaking out.”

• “[Meetings] allowed bad behavior, foul mouths; people made personally degrading remarks.”

• “I was personally cursed at; had vulgar gestures made at me.”

• “Some people had garbage thrown on their property.”

As disappointment in the participation process increased over time, optimism that the end result would fairly represent pro-fracking interests diminished as well. Participants stated that a major factor negatively affecting their public participation experience was local opposition group activities combined with outside anti-fracking influences. Participants saw opposition groups as being well-funded by non-local sponsors, and benefiting from support of down-state activists and influential spokespersons — “The antis went to all the local [municipality] board meetings.” “Six
buses came up from the city with anti-fracking people to attend a small town meeting.”

“When actors got involved that’s when the pros case plummeted.”

They also viewed media reporting as biased and skewing public perception of local sentiments about how fracking might move forward — “Media coverage was one-sided. They only came to DEC meetings for a small period of time and reported on that small bit, so it mattered who spoke first because they carried the most influence.” “One editor said he would use everything in his power to stop fracking.”

Anti-fracking participants — RQ#3 interview and focus group results. Anti-fracking participant views aligned with pro-fracking views in regard to the public participation experience becoming less productive and more disturbing at the latter stages of the process. Disruptive behavior was the most frequent complaint and was attributed to both a breakdown in meeting structure and aggressive behavior by opposition group attendees:

- “There was no code of behavior."
- “Meetings went out-of-control with intimidation and bullying.
- “People attending the meeting would use bad language, shout insults, raise placards behind people’s heads.”
- “Some pro-fracking attendees were physically and verbally intimidating, yelled verbal insults inside the meeting room.”
- “I felt threatened during encounter with a pro-fracker.”

Also similar to pro-frackers, the anti-fracking participants said that at times they felt outnumbered at public meetings. Some attributed this to gas industry tactics, which participants characterized as intimidating — “The opposition was bussed in for public
meetings.” “Gas industry paid people to attend; they wore orange shirts with pro-fracking messages on them.”

Anti-fracking participants cited other dynamics that contributed to both decreasing and increasing the value of the public participation experience. They described power imbalances due to an economically depressed region and difficulty in unifying efforts due to high unemployment, people in poverty, lack of education, meaning some people had fewer resources to participate than others. They experienced difficulty trying to unify efforts given many people in the region live in rural areas. Participants also noted that public meetings were uncomfortable for people who were not used to public speaking. At the same time several participants expressed how the experience gave them a sense of community, a rewarding feeling of coming together and being part of an important cause:

- “Getting involved was not just about protecting own interests, it was a real way of being part of the community.”
- “Community members were willing to become educated, do the research.”
- “We saw the issues as much broader than just the drilling; it was build out of pipelines and compressor stations that people worried about.”
- “People were up in arms.” “It became a tsunami.”

Environmental protection advocates— RQ#3 interview and focus group results. Self-described as researchers and educators, the environmental advocate participants were focused on helping gather, review, and share information on HVHF. They interacted with people on all sides of the HVHF issue, and were present at public meetings or local gatherings. From this vantage point, environmental advocate
participants shared their views on factors that led to stakeholder dissatisfaction, and also cited factors that affected them directly. One factor they felt influenced all stakeholders was the biased manner in which information was often presented, depending the party’s position. Participants believed this caused residents to be suspicious of what they were hearing and frustrated with the overall process — “Many were looking for someone to rely on for accurate information.” “Community members were seeking a champion whom they could feel they could rely on in a trustworthy fashion.” They also found the state’s public meetings challenging due to the speaking format and disruptive audience members — “It was difficult to be heard; there was a lack of willingness to listen.”

Energy industry association representatives — RQ#3 interview results.

Previously discussed in RQ#1 results, energy industry association representatives questioned the fairness of the public participation process from a few perspectives. As did pro- and anti-fracking participants, these industry association participants cited the breakdown in public meeting structure during the latter part of the process as a significant source of problems. They shared the following views in relation to both large regional and local meetings.

• “[At state meetings] everyone got two minutes to speak, but there were so many that by the time they were done there was no time left for others.”
• “People got sick and tired of waiting.”
• “Anti-frackers dominated the speaking time.”
• “Meetings were one-sided.”
Conduct of attendees also was an issue, marked by escalating disruption inside and outside of the meeting environment. Participants felt this interfered with the state’s and industry’s efforts to share information and discuss people’s concerns:

- “Meetings were very unprofessional and out of control.”
- “Meetings were unproductive and rowdy.”
- “It was a carnival atmosphere, with dancing in the parking lot with drums, costumes and props.”
- “Industry representatives were treated disrespectfully; they had a lot of information to share but participants disrupted their presentations.”

These industry association representatives vocalized particular frustration about some meeting attendees having a singular agenda, that of taking a position against gas drilling in any form — “If someone doesn't want to listen, doesn't want to believe, then they won’t accept any facts.” “They put up an emotional wall that was hard to penetrate.”

**Regulatory and economic development participants — RQ#3 results.** Based on professional experience and knowledge of the regulatory environment, these participants reflected on the public participation experience in terms of the far-reaching impacts such initiatives may have. They viewed HVHF as posing more than the usual challenges when engaging the public, given the tension between the prospect of an economic boon from drilling revenue and the potential risks of environmental degradation. Similar to comments made by the environmental advocates, regulator/development participants noted how information was being disseminated by
many sources that at times were biased, so people had no way to assess what was fact and what was not — “People were often receiving information second and third hand.” “Sometimes perception is reality. It comes down to a visceral level — you have your facts, I have mine.” Even more significant was the challenge posed by the continuous flow of newly emerging data on HVHF impacts:

- “The impact of [HVHF] is hard to prove because it’s a relatively new practice so the potential is more long term.
- “DEC had to go back and get comments on issues people hadn’t even thought about.”
- “The scope of public concern kept expanding. There was a continuous flow of comments.”

These participants joined other study participants in the general assessment that action group behavior disrupted public meetings, and that too many used the events only to make a case — “Some comments were valuable, but majority was people just taking a position.” “It was not helpful when people used their comments to just state a position. This got in the way of the information gathering purpose of public meetings.”

**RQ#3 results summary.** Data that emerged from RQ#3 were rich in detail on the factors that participants cited as affecting their public participation experience. For those who were directly affected community members, as well as those who participated or observed via their professional backgrounds and areas of expertise, effectiveness of communication had the most significant influence on how participants framed the value of having input on HVHF policy. Common themes among all participants was how aspects of the public meeting structure contributed to a loss of control, and how
individual behavior caused an escalation of conflict between opposing sides. The state’s interest in gathering input was thwarted by the very large number in attendance. Tensions grew as opposition group members became frustrated with the meeting process and with each other’s behavior. Over time, feelings including frustration and intimidation grew and value of the experience diminished. A noteworthy distinction was how participants characterized their own public engagement efforts. Pro- or anti-fracker, industry or environmental advocate, all expressed pride in their efforts to gather and share information about HVHF, and wished there had been more listening and learning among stakeholders. These results are corroborated by stakeholder comments identified through document analysis.

**Document Analysis Results**

As part of its environmental review the NYS DEC held six public scoping meetings in the southern tier region between November and December 2008:

- November 6th, 2008, Allegany Limestone Central School, Allegany, NY
- November 12th, 2008, Haverling Central School, Bath, NY
- November 13, 2008, Southside Central High School, Elmira, NY
- November 17th, 2008, Broome Community College
- December 2, 2008, State University of New York at Oneonta, Oneonta, NY
- December 4, 2008, Sullivan County Community College, Loch Sheldrake, NY

Scoping is a process that determines the topics that will be addressed in an environmental study. Input is sought from the general public as well as other agencies and information sources. Comments of 172 speakers were analyzed for content that indicated issues associated with the practice and impacts of HVHF. A data collection
The codebook developed for interview and focus group research was used as a guide. The same seven code categories proved relevant for the document analysis, and issues cited by speakers mirrored those identified in RQ#1 findings. See Table 17.

Table 17

*Results of analysis of transcripts from six (6) NYS DEC public meetings. Data are presented by the frequency of issues cited by code category.*

<table>
<thead>
<tr>
<th>Issue Category</th>
<th>Number of Issues Cited</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pro</td>
</tr>
<tr>
<td>Health impacts</td>
<td>2</td>
</tr>
<tr>
<td>HVHF practice impacts</td>
<td>9</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>52</td>
</tr>
<tr>
<td>Government process</td>
<td>48</td>
</tr>
<tr>
<td>Developer outreach</td>
<td>5</td>
</tr>
<tr>
<td>Information and data</td>
<td>6</td>
</tr>
<tr>
<td>Public participation</td>
<td>4</td>
</tr>
</tbody>
</table>

**Chapter Summary**

**Emotional costs of conflict.** How study participants experienced and evaluated the HVHF public participation process is best summarized by the emotions the phenomenon evoked and the conflicting positions that emerged. Goleman (1995) defined emotion in the context of data analysis as a phenomenon recalled or experienced by a participant or inferred by the researcher. Specifically, he explains emotion as “a feeling and its distinctive thoughts, psychological and biological states, and range of propensities to act” (Goleman 1995, p. 289). Results show several instances where participants experienced similar emotions in relation to public participation and to the state’s decision to place a ban on HVHF. Commitment combined with frustration was a shared experience for all participants. Participants struggled with complex, ever-changing data
and a communication environment that was not conducive to information sharing and
dialogue. At the same time, participants strongly believed they played an important role
in ensuring the issues surrounding HVHF became part of public discourse and HVHF
policy deliberations. There also were significant parallels in the way the public
participation process affected pro- and anti-frackers. Each side expressed a range of
emotions from feeling marginalized by the state process to being disrespected by
members of the opposition. Such parallels were even more striking when participants
reflected on how they felt upon hearing the state’s decision to invoke the ban on HVHF.
Whether hoping there would at least be a pilot drilling program, or feeling HVHF should
not be allowed on any terms, 21 of the 38 participants said they reacted with surprise,
shock, or disbelief at the state’s decision. Other pro-frackers described feeling devastated
and angry at the decision, while some anti-frackers experienced relief combined with
doubts about whether the ban will hold in the future.
Table 18

Study participants expressed a range of emotions and in several instances paralleled in the descriptors they applied to the public participation experience and reactions to the state ban.

<table>
<thead>
<tr>
<th>Emotions Expressed</th>
<th>Anti-fracking</th>
<th>Pro-fracking</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>On Public Participation Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frustrated, dissatisfied</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Committed</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Cynical, skeptical, distrustful, suspicious</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Marginalized, treated unfairly</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>No empowerment, lacking power</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Intimidated, threatened, fearful</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Fatigued, worn down, exhausted</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Insulted/offended</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Disrespected</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Pessimistic</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Uncomfortable</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Optimistic (at first)</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Annoyed/fed up</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energized, ready to fight.</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Ill, distressed</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painful</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenged</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disappointed</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td><strong>On Announcement of State Ban on HVHF</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surprised</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Shock/disbelief</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Doubtful, pessimistic</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Relieved [of anxiety]</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disappointed (missed opportunity)</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Sad, depressed</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betrayed</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devastated</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angry</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not surprised, what expected.</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disregarded (by state)</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Concerned, worried, cautious</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td>√</td>
<td></td>
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</tbody>
</table>

Furthermore, participants framed the challenges they faced in a manner that offers insights on the roots of conflict as well as the potential intractability of disputes over HVHF. All participants framed the process as a pro-fracking versus anti-fracking dispute.
Some empathized with directly affected stakeholders due to the complexity of the issues, while others felt that taking positions interfered with the process of information gathering and education on HVHF. The most common arguments posed by participants involved factors they viewed as being in direct conflict with each other — fracking can be managed versus fracking is impossible to manage; gain economic prosperity versus protect the environment. Once established as conflicting interests, these factors extended to a more personal level as groups mobilized — upstate New Yorkers versus downstate New Yorkers; rural residents versus urban/suburban residents; landowner right to lease for drilling versus resident right to be protected from drilling impacts. For this study’s participants, the public participation experience was a journey that shifted course over time, increased in complexity, and escalated in terms of inter-group and interpersonal conflict.
Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this case study was to explore the perceptions of a sample of stakeholders regarding public participation in the HVHF permitting process. Field research helped reveal the core issues influencing the HVHF controversy, how stakeholders evaluated the benefits and limitations of the public participation process, and factors that affected how stakeholders perceived the value of the public participation experience. Across participant groups, issues related to accessing reliable data were integral to the expressed value and experience of the public participation process. Also, issues related to feelings of empowerment, power imbalances, and ability or inability to mobilize directly influenced participants’ attitudes toward the HVHF policy development process. Major categories of issues identified by participants related to:

- Political nature of the HVHF government regulatory process.
- Barriers to effective public participation.
- Availability, complexity and reliability of data.
- Socio-economic/environmental justice issues.
- Known and unknown health and safety impacts of HVHF.
- Landowners’ concerns over being treated fairly by HVHF developers, and developers’ concerns about being given a fair opportunity to educate the public
- Community concerns over impacts stemming from HVHF drilling and future build-out.

Findings also showed that participants worried that the state’s regulatory agencies lacked the resources to provide adequate oversight given the complexity of HVHF
technology and processes. Factors that affected how participants valued their public participation experience were primarily related to the structure and decorum of public meetings. For example, meetings were so heavily attended that the first-come-first-served approach to signing up to speak was viewed as too restrictive and not allowing for a balance of viewpoints. This was exacerbated by the disruptive behavior of some attendees. This was just one of several factors that caused the HVHF conflict to escalate. Other developments that fueled controversy included developers being reluctant to disclose the chemicals being used in hydrofracking, lawsuits brought against landowners seeking to lease their property, and lawsuits brought against municipalities that ruled to ban HVHF. Over time, feelings of frustration and intimidation grew and value of the experience diminished. A noteworthy distinction was how participants characterized their own public engagement efforts. Pro- or anti-fracker, industry or environmental advocate, all expressed pride in their efforts to gather and share information about HVHF, and wished there had been more listening and learning among stakeholders.

Overall, the unpredictability of the future impact of High Volume Hydraulic Fracturing (HVHF) emerged as the most significant contributing factor to what has become a seemingly intractable conflict in New York State. Also, there was a demarcation point between the early stage of the HVHF permitting process and when the process became more complex and contentious. This was attributed to the state’s decision to pursue a Generic Environmental Impact Statement, rather than conduct an EIS for every permit request. Participants in the proposed drilling area saw this as losing even more ability to have a say on how HVHF would be conducted. In spite of the number of issues and level of controversy, participants on opposing sides do not appear to be
completely polarized. There exist shared interests as well as similar views on the benefits and limitations of the process, suggesting possible pathways to conflict management.

**Interpretation of Findings**

Study findings align with peer-reviewed literature from both a theory and practice perspective, with some exceptions. Theoretical foundations included complex systems, the enactment of power and social dominance, green ideology, and aspects of the policy process where these influences converged. The principles of complexity theory were reflected in the intersection of economic and environmental issues present in the HVHF controversy, which in turn dovetailed with the sociopolitical aspects of green ideology (Johnson, 2007; O’Leary, Nabatchi and Bingham, 2004). Findings show HVHF to be a complex case scenario in which the human agents engaged in policy making and energy development operated within an organized system, and yet their actions influenced the mobilization of numerous stakeholder groups with diverse interests. The concepts of power and social dominance are pervasive in participants’ feelings of being marginalized by the state and outnumbered by opposition groups. Furthermore, a root cause of the HVHF conflict may be viewed through the lens of green ideology, which deals with the complex issues that arise when human actions cause environmental degradation, and how economic and social impacts are integrally entwined (Kassman, 1997; Carter, 1999; Dobson and Lucardie, 1995). An important distinction of the HVHF case is that conflict escalated due to the *potential* of environmental degradation, not as a response to a degradation event in the study area. Stakeholders were engaged in the HVHF policy debate at a time when complete and definitive data on drilling impacts was not available.

From a practice perspective, there are many in the field of conflict management
who believe the policies being generated today concentrate too much on technological solutions that will not address the complex environmental issues of the modern world. The HVHF case mirrors what critics view as a bureaucratic and highly structured policy process, a model that by design will lead to adversarial relationships and leave no room for social learning (Durant et al., 2004). The HVHF process was conducted within a hierarchical structure from government administration to regulatory agencies, private corporations, and community-based stakeholders who would be directly or indirectly affected. All parties appeared to emerge from the public participation process with similar feelings of frustration, and many left with a sense of being marginalized and treated unfairly. These results indeed suggest that change is needed, including a policy design model that places a higher priority on achieving desired results than simply compliance with rules and regulations. Dural et al. (2004) suggest a new paradigm in the environmental policy process that would consist of a partnership of government, industry, and civil society “imbued with a results-based sense of common purpose” (Durant et al., 2004, p.4). The HVHF case suggests the need for such an approach and more, given the added complexity of the use of new technologies and the continuous stream of new data that is emerging as potential impacts are studied.

A number of characteristics of the HVHF dispute would appear to make it a candidate for environmental conflict resolution. Policy development and policy dispute resolution has matured over the past several decades, becoming more responsive to stakeholder demand for participation, and incorporating more collaborative, consensus-building processes to yield more satisfying results. However, the HVHF case has the added complexity of parties engaging in disputes over a range of issues, all occurring
within the time constraints of the policy development process. Furthermore, environmental conflict research continues to show that some conflicts are intractable and cannot be resolved using a consensus-based approach alone (O’Leary and Bingham, 2003). Intractable conflicts typically are intense and persistent over time, and resist resolution through traditional avenues of consensus building, political interventions, or litigation (Campbell, 2003; Lewicki, Gray and Elliott, 2003). Study data suggest that HVHF policy development in New York State has been and may continue to be embroiled by conflict in the sense that none of the participants in the study exhibited confidence in the sustainability of the current decision to ban HVHF, and all viewed the future of HVHF in New York to be at the whim of the political process.

And yet, data reveal the seeds of resolution if shared interests could be identified and acted upon — the desire to protect the environment; a distaste for engaging in a manner that demeans and insults at a personal level; acknowledgement of social and economic needs. What is missing in the HVHF case is a process that more effectively incorporates key stakeholder and community participation. As discussed in Chapter 2, the concept of adaptive co-management appears applicable to many of the characteristics of HVHF policy development, even though it has been applied mainly to the arena of natural resource management. Adaptive co-management is uniquely designed to function “under conditions of change, uncertainty, and complexity” (Armitage, Berkes, & Doubleday, 2007, p. 5). It places emphasis on stakeholder participation, especially the linking of government management with community decision making. Inherent in adaptive co-management processes is flexibility and building capacity to adapt and learn by experience — highly relevant to an extractive technology such as HVHF where the
science and safe practices are continually evolving. Adaptive co-management also provides a framework for managing issues that require problem solving over time, an essential missing element of the current HVHF stakeholder engagement process where communities worry about unknown future impacts. In summary, factors that may have alleviated the many stress points of the HVHF conflict align strikingly with characteristics of adaptive co-management that have evolved over the last two decades — power sharing, institution building, trust building, process, social learning, problem solving and governance (Armitage, et al. 2007).

**Limitations of Study**

As discussed in Chapter 1, a limitation of this study involves the distinction between studying policy making and studying the public participation process. While public participation within the HVHF policy process was analyzed, the study did not explore broader aspects of policy theory and its relation to the policy process. In addition, while the Researcher still holds that there is potential for transferability of findings, it is unlikely that an emergent model would be appropriate to all policy-related public participation situations. Further, the data collected cannot be generalized to stakeholders outside of the prescribed study area, or to all other types of conflict involving environmental degradation.

**Recommendations**

Research in the arenas of public participation, natural resource management, and environmental conflict has been robust and influential in improving collaboration among government, industry and community stakeholders. At the same time, HVHF policy development in this case study appears to be locked in a traditional top-down process that
does not accommodate conditions of high uncertainty, nor does it allow for the broader and deeper discourse needed when development carries socio-economic and environmental justice implications. Further research is needed to explore how successes achieved in natural resource management might be applied to extractive industries such as HVHF where public participation is restricted to input on permitting, and stakeholder interests are vulnerable to special interests and changing political climates. Given the case study data show a few hopeful paths toward mitigating conflict — such as shared interests related to protecting the environment — research at both the model and practice level is essential. This could include deeper analysis of co-management and adaptive management models, and also public participation process improvements such as the use of interest-based problem solving to help create the “reasonable forum for dialogue and debate” desired by so many of the participants. The interest-based approach to problem solving creates the space for parties to move from positions to interests and in doing so create the opportunity for creative solutions (Katz, Lawyer & Sweedler, 2013; Katz and Pattarini, 2008). Key principles of interest-based problem solving include achieving joint agreement on process and norms, mutual education and information sharing, understanding issues and attacking problems, not people, and focusing on underlying needs and fears as well as benefits and desires. Figure 6 and Figure 7 below illustrate the current steps in the NYSDEC environmental permit process, and how elements of an adaptive co-management approach could create a continuum of key stakeholder involvement over the life of HVHF development in New York State.
Figure 6. Current NYSDEC Environmental Permit Process

Figure 7. An Adaptive Co-management Approach to HVHF Permit Process

Figure 7 incorporates elements of the adaptive co-management approach, which would allow for the regulatory process steps to occur while enhancing the public input process both short and long term. In summary, the incorporation of co-management and other collaborative group processes, along with adaptive strategies, would be valuable enhancements to the traditional public participation process that was employed for HVHF in New York State.
Implications

Without a more productive approach to policy making and, specifically, to public participation processes, our society is likely to endure repeated cycles of conflict over energy development. The vision is not to have perfect agreement between negatively impacted stakeholders and the developers whom society relies on to deliver energy into our homes and businesses. Nevertheless, the potential exists to create a process that allows for:

- Consensus-building on criteria for decision making, meaningful dialogue, and long term cooperative management
- More productive and transparent exploration of issues and how individual interests may be balanced with the public interest.

In addition, case study results suggest that application of the adaptive co-management approach to an extractive industry scenario holds the potential to mitigate significant financial and emotional costs experienced with the HVHF conflict.

Conclusion

It would be simpler if a government ban or definitive data could resolve the level of conflict seen in this case study. Reality is that the problem is not simply HVHF, and technologies are evolving so rapidly that science is not likely to keep pace with energy development driven by consumer demand. Society will continue to be subject to the interplay of economics and the environment, and the pitting of some interests against other interests. Specific to the HVHF controversy in New York State, the historical record shows the cyclical nature of the energy industry, with supply and demand causing surges and pauses in gas exploration and other fuel and power sources (Rapier, 2018).
Whether it is hydraulic fracturing, crude oil or natural gas liquids — each brings with it the same range of impacts on communities and the environment. Investments in green energy are not faring much better in terms of achieving shared interests. As government responds to consumer demand by offering incentives for alternative energy development, NIMBY groups form to protest solar array fields and wind farms (McDermott and Orr, 2018).

As demonstrated in this case study, political influences, pressures placed on regulatory agencies, and the frustrations of stakeholders who see protest and litigation as their best and sometimes only defense, can all lead to environmental processes and policies that fail to garner the confidence and trust of those whom the policy is designed to serve. The challenges being experienced in the HVHF policy process in New York State should be a clarion call for a common purpose approach that goes beyond technical enhancements and allows for collaboration and problem solving.
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Appendix A: Depth Interview Guide

Note: Using a purposive sampling approach, participants will be recruited from government, industry, and NGO sectors that have played an active role in the hydrofracking permitting process. Potential participants include New York State policy makers, county, town and village municipal leaders, community leaders, and natural gas industry representatives.

1. Participating in the hydrofracking permitting process.
   a. What was/is your job function or representative role?
   b. What has that experience been like?

2. Controversy surrounding the hydrofracking permitting process.
   a. How would you describe the core issues?
      i. For your organization?
      ii. For yourself?
   b. What factors do you think are shaping opinions on these issues?

3. Type of public participation methods used in the hydrofracking permitting process.
   a. How would you describe the public participation process?
   b. What types of public participation opportunities were available?

   a. How do you think public participation contributes to the policy development process?
   b. What do you think could increase the value of public participation in policy making? [Explore format, timing, how input is introduced in the policy process, etc.]
   c. How would you rate the public participation process, from "met none of your [organization/department’s/community’s] interests" to "met all of your interests" on a scale of 1 to 7?
Appendix B: Qualitative Focus Group Protocol

Note: Participants will include individuals who live and work in the HVHF target areas. Three focus groups will be comprised of those who espouse a pro-hydrofracking position, and the other three will be comprised of those who espouse an anti-hydrofracking position.

1. Please think about the issues surrounding the hydrofracking permitting process in New York State.
   a. What are the core issues?
   b. What do you think about the core issues?
   c. How would you describe the factors that are shaping opinions on these issues?

2. Now please think about the public participation opportunities that were made available during the permitting process. What comes to mind? [Record List]
   i. How beneficial were they to you? (Facilitate discussion to focus on each type of opportunity)
      a. Why/why not?
      b. Please share some examples.
   ii. How would you rate your public participation experience, from "met none of your interests" to "met all of your interests" on a scale of 1 to 7?

3. What influence do you think the public participation process has had on hydrofracking permitting in New York?
   a. What evidence of public input do you see in the current policy?

4. Now let’s step back and think about the value of public participation.
   a. How do you think public participation contributes to the policy development process?
   b. What do you think could increase the value of public participation in policy making? I’m interested to hear your thoughts on:
      i. Format of the public participation opportunity (presentation dialogue, etc)
      ii. How public input is recorded/collected
      iii. When public participation opportunities are provided
      iv. Other________________
Curriculum Vitae

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Education
Pursuing PhD in Conflict Analysis and Resolution, Nova Southeastern University. Concentration in Organizational Communications. Current status ABD.
Master of Science, Communications Management, S.I. Newhouse School of Public Communications, Newhouse Independent Study Degree Program, Syracuse University, Syracuse NY (2006)
Bachelor of Arts, Public Relations, Utica College of Syracuse University, Utica, NY (1977)
Associate in Applied Science, Advertising, Design & Production, Mohawk Valley Community College, Utica, NY (1973)

Other Post-Graduate Studies:
The Power of Interest-Based Negotiations: Theory and Practice, Syracuse University, Spring 2006
Conflict Resolution in Groups, Syracuse University, Summer 2008
Leadership, Power and Authority in Groups, Syracuse University, Summer 2008

Selected Research:
“Public Participation in Intrac
“At the Crossroads: Communications and Public Figure Status in Libel Law” (2006)
“BOCES Media/Technology Services — From Vendor to Strategic Partner” (2003)

Consulting/Training/Workshops:
Has served as guest speaker, facilitator and consultant for national, regional and state organizations related to health and environmental protection, community planning and development, and issue management/crisis communication. Groups have included:
• Binghamton & Johnson City/BJC Sewer District
• City of Utica Master Plan
Nancy M. Pattarini (2)

Consulting/Training/Workshops (continued):
- Cornell Cooperative Extension, Rust to Green
- Cornell Cooperative Extension, Eat Smart
- Fulton County Economic Development Corporation
- Mohawk Valley Water Authority
- Montgomery County
- NYS Department of Public Service
- New York State Economic Development Council
- Oneida County Sewer District
- Oneida County Vision 2020
- Oneida-Herkimer Solid Waste Authority
- Safe Schools/Healthy Students — Escondido, CA and Oneida County, NY
- Utica Harbor Point Redevelopment
- Other for-profit and non-profit corporations organizations

Scope of professional consulting work has included:
- Identifying Strategic Publics
- Planning and Establishing Community Input Processes
- Facilitation of Community Advisory Groups and Steering Committees
- Interest-based Negotiation Training
- Collaborative Group Processes and Team Building Workshops
- Corporate Governance/Building Public Trust Consultation
- Building a Brand Culture: Workshops and Consultation
- Integrating Mission, Message & Marketing: Strategic Planning

Selected Published Articles:

*Interest-based Negotiations: A Powerful Approach for Framing the Consultant-Client Relationship.* Journal of Communication Management, Vol. 12, No. 1, 2008. Co-authored with Neil Katz, Ph.D., emeritus professor, Maxwell School of Citizenship and Public Affairs, Syracuse University, and Chair, Department of Conflict Analysis and Resolution, Graduate School of Humanities and Social Sciences, Nova Southeastern University

Honors and Awards:
- Named to the New York State Governor’s Economic Development Council — 2011
- Outstanding Alumni Award, Utica College — 2002
- Alumni of Merit, Mohawk Valley Community College — 1999
- Outstanding Alumnus Award, Raymond Simon Institute of Utica College — 1999
- State University of New York Alumni Honor Roll — 1998
Nancy M. Pattarini (3)

Professional Experience:
- President, CEO and Owner, Paige Marketing Communications Group, Inc., (dba The Paige Group) 2003 to present
- President, Paige Marketing Communications Group, Inc., 1998 to 2003
- Vice President/Marketing Services, The Paige/Smith Group, 1990 to 1998
- General Manager and Corporate Secretary, The Paige Group, 1986 to 1990
- Manager of National Sales Support, Mohawk Data Sciences Corporation, Herkimer, NY/Parsippany, NJ, 1980 to 1986
- Director of Public Relations, United Way of the Greater Utica Area, Inc., 1977 to 1980

Professional Practice Specializations:
- Stakeholder Engagement and Public Participation
- Conflict Resolution
- Issue Management and Crisis Communications

Professional and Business Affiliations and Activities:
Current and Past Activities:
- Issue Management Council (2012 to present)
- New York State Governor’s Regional Economic Development Council (2014 to present)
- Public Relations Society of America (1978 to present)
- Mohawk Valley Economic Development Growth Enterprises (Board Member, 2003-2009)
- Utica Industrial Development Corporation (Board Member, 2006 to 2009)
- Central New York Community Arts Council (Board Member, 2004 to 2008)
- Human Technologies Corporation (Board Member, 2003 to 2008, Board Chair, 2005-2007)
- Herkimer County Chamber of Commerce (Board Member, 2004-2008)
- Trustee, Utica College, 1998 to 2001
- Utica Area Chamber of Commerce (Board Member, 1992 to 1998, Board Chair, 1997-1998)
- Chamber Alliance of the Mohawk Valley (Founding Member, 1994)