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PLANNING GONE HOG WILD: MEGA-HOG FARM IN A MOUNTAIN  
WEST COUNTY

by

Jeffrey M. Sanders

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

Department of Geography

Brigham Young University

August 2007

BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Jeffrey M. Sanders

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

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BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Jeffrey M. Sanders in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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## ABSTRACT

### PLANNING GONE HOG WILD: MEGA-HOG FARM IN A MOUNTAIN WEST COUNTY

Jeffrey M. Sanders

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Master of Science

Lacking the natural amenities of “New West” counties, some rural communities have attempted to attract land use activities that are normally seen as undesirable. One example of these undesirable industries is the hog concentrated animal feeding operation, or CAFO. While a number of studies have explored the socio-economic and environmental aspects of hog farms, few studies have focused on the planning process and evaluated its effectiveness in dealing with the threats and challenges that a CAFO poses. This qualitative study used interviews, observations, public meeting minutes, and other written sources of data to evaluate whether or not a rural, western community, Beaver County, Utah, was able to successfully plan for one of the largest hog operations in the United States. The evidence suggested that the majority of planning efforts failed in the short-term, but were more successful in the long-term. Despite any relative success, the proposal generated intense controversy in the small community. Crucial to any

planning achievement was the input and guidance provided by the state environmental agency. This research highlights the need for long-range planning as well as the importance of public participation in the planning process.

## ACKNOWLEDGEMENT

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## Chapter 1

### INTRODUCTION

Situated on the high desert plains of southern Utah, Beaver County is located 200 miles south of Salt Lake City. The birthplace of the outlaw Butch Cassidy and home to a legendary ghost town, the inhabitants of the county are proud of its western heritage and its being a place where the Old West can still be found. Mining and agriculture are a way of life that has existed for nearly a century and a half since Mormon pioneers and miners first made their way into the Beaver Valley and the surrounding mountains. However, as the mines, ranches, and farms of the county have gradually disappeared due to broad economic changes, a new major industry emerged at the end of the century: industrialized pork production. Far from the traditional family farm, the concentrated animal feeding operation<sup>1</sup> (hereafter referred to as CAFO) that exists in Beaver County is a highly integrated operation that oversees the production and transportation of millions of pigs per year destined for the markets of the West Coast and Pacific Rim. Its corporate structure and industrial working conditions are a dramatic shift from the traditional economy of the past.

Beaver County, like many other rural western counties, has struggled as economic restructuring forces have heavily impacted the traditional rural economy. Mining, ranching, logging, agriculture, once all integral parts of the rural economy and lifestyle, have decreased in importance due to a variety of reasons. As a result, local leaders have sought other nontraditional ways to stimulate income and growth. In the case of Beaver

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<sup>1</sup> Concentrated Animal Feeding Operations is a term reserved for the largest Animal Feeding Operations, any operation that confines and concentrates animal populations and their wastes. Federal regulations define a CAFO as an animal feeding operation that confines more than 1,000 animal units, or confines between 301 and 1,000 animal units and discharges pollutants into water of the United States.

County, Utah, local leaders in 1992 approached the largest hog producer in the world about the possibility of locating a pig farm in their county.

From a larger standpoint, Beaver County and its pig farm are one example of rural western counties that have attempted to attract land use activities that are normally seen as undesirable. Examples of such land uses (typically referred to as NIMBYs (“not in my backyard”) or LULUs (“locally unwanted land uses”)) include large scale land uses such as mega scale corporate farms focusing on cattle, pig, chicken, turkey, beef or dairy production; large power plants; regional prisons; municipal waste management sites and hazardous waste disposal sites. While the resultant economic activity associated with siting such an activity may be beneficial, the societal and environmental effects may be negative and long-lasting.

The purpose of this research is to focus on the interaction between industrial pig farms and the rural West. Situations similar to Beaver County have occurred in several communities across the region. While there are a number of significant studies that analyze the socio-economic and environmental impact of mega-hog farms in rural areas, no study attempts to analyze the planning process itself and evaluate how effective local governments are in minimizing negative public externalities and successfully regulating the CAFO over time. The case study used in this research will also analyze the planning process involved in receiving public comment, establishing appropriate zones and the regulations associated with such zones, the role of various jurisdictional levels (State, County, Town), and the attitudes and perceptions of those directly involved in the planning process and their perceptions of its relative success or failure.

Various accounts and anecdotal evidence (DeLind 1998; Noh 2000; Dry 1997) suggest that small rural counties lack the means and experience in dealing with land uses of the magnitude and scope of a hog CAFO. By inviting these industries to their community, they are risking consequences that will severely alter the landscape of these places for generations. The short-lived (or sometimes non-existent) economic benefits of such uses will quickly disappear and the community will be stuck with an ugly, undesirable, and harmful development that many residents will come to resent. The author of this report believes that this research will result in such a conclusion for Beaver County. In short, the community is just too small, too inexperienced, and too ill-equipped to properly plan for Circle Four Farms. It is hoped that this study will assist other rural communities in similar situations to understand the issues and importance of planning.

## Chapter 2

### LITERATURE REVIEW

#### Introduction

Structural changes in the economy of the United States in the late twentieth century have changed the economic opportunities available for rural residents (Galston and Baehler 1995). Increased international competition has lessened the ability of extractive industries such as ranching, farming, logging, and mining to sustain rural economies. Instead, these “Old West” economies are being replaced by “New West” economies that are based on preservation of environmental amenities such as tourism, retirement, and second homes. Associated with these economic changes are changing patterns of population and growth. Shumway and Otterstrom (2001) found that New West counties are attracting a disproportionate share of population and income relative to other western counties. These authors hypothesize that if this trend continues, “the rural Mountain West will find itself increasingly divided between high-amenity and high-income locations and other, less favored locations” (p. 500).

This dichotomy of rural “haves” and “have-nots” has been of growing concern to researchers, leaders, and citizens of the West. Most directly it affects those rural western communities that are not naturally endowed with amenities to compete in the New West economy. Lacking natural amenities, some of these rural communities have looked for other possibilities to bolster their economy as traditional industries wane in importance. Some areas have attempted to attract land use activities that are normally seen as undesirable. Examples of such land uses (typically referred to as NIMBY’s [“not in my backyard”] or LULU’s [“locally unwanted land uses”]) include large scale land uses such

as mega scale corporate farms focusing on cattle, pig, chicken, turkey, beef or dairy production (CAFOs); large power plants; regional prisons; municipal waste management sites and hazardous waste disposal sites. While few people would argue against the necessity of these land uses in modern society, generally people and communities are in opposition to having a NIMBY in their immediate vicinity. NIMBY's of the type mentioned above are typically large in size, noisy, ugly, dangerous, and polluting (Popper 1981). However, for reasons discussed below, in some rural communities NIMBY's are turning into YIMBY's ("yes in my backyard").

The characteristics and impacts of NIMBY's cause genuine concern for citizens and leaders in most communities and they understandably go to great lengths to avoid the siting of one in their community. A perceived threat to the health and safety of residents often forms the basis for much of the local resistance to NIMBY's. Residents fear the possible negative effects of air, water, and soil pollution of large animal farms and waste sites while other communities worry that their safety would be jeopardized from a new prison. There are other concerns too that research has linked with NIMBY's and other unwanted land uses. There is evidence that various types of NIMBY's produce negative secondary effects such as lower property values and increased out-migration (Palmquist, Raymond, Fritz, and Vukina 1997; Abrams and Lyons 1987; Nieves, Hemphill, and Clark 1991). Residents concerned about the long-term viability of their communities are alarmed at the possible long-lasting and far-reaching impacts of NIMBY's. What happens when the NIMBY exhausts the facility or resources of the area and moves to another location? The community could be stuck dealing with the remaining abandoned site that often poses significant environmental hazards (Popper and Greenberg 1994). A further,

perhaps more damaging, effect these industries can have is the stigma that can be created from a harmful land use such as a NIMBY. A strong association between a community and a particular land use can create an image that is difficult to change and can be harmful in attracting residents and future economic growth to the area (Noh 2000).

Despite these risks, some rural western communities continue to actively recruit NIMBY's to their community. One example of a NIMBY that has diffused to the rural West is the hog concentrated animal feeding operation (CAFO). The trend towards industrialized hog production took root in North Carolina during the early 1990s, far from the traditional hog states of the Midwest. The trend include an overall reduction in the number of farms, an increase in the size of farms, and economic concentration in the industries that supply inputs and purchase commodities from farms (Donham, Wing, Osterberg, et. al. 2007). Where there were once more than one million hog farms in the United States in the 1960s, there are now 67,000. Further, the largest 110 operations constitute 55% of the nation's hog inventory (USDA 2005).

Coupled with the integration and concentration of the pork industry has been a change in the spatial arrangement of hog farms. The pork industry has reached beyond its traditional Heartland region to locate in new areas such as the southeast, the mountain states, and the west south central states. In the Mountain West, a region with historically very little swine production, hog inventory has grown threefold since the mid-1960s (USDA 2003). While the total output of Mountain West farms remains minimal in comparison to that of the United States as a whole (6.4 percent of the nation's pork production), it nonetheless indicates a significant trend in the location of pork.

Mo and Abdalla (1998) believe there are four principal reasons why hog production has increased in the Mountain West:

1. Natural Endowment. The western climate provides a much more stable location for the siting of a pig farm. The drier, disease-free environment of the West ensures less risk of disease and environmental catastrophe.
2. Economic Factors. The proximity of the western pork producers to the large population centers of the West Coast. Pork grown in the West is one day closer to these markets and is able to take advantage of lower transportation costs, a cost that is becoming relatively more important in industrialized pork production (Mo and Abdalla 1998).
3. Business Climate. In many instances, the West has shown to be much more accommodating to industrial hog farms. Several local governments in the region have sought to recruit pork producers to their land-rich municipality using traditional economic development tools such as tax breaks to attract them (Roe, Irwin and Sharp 2002).
4. Regulatory Variables. Speculation has suggested that environmental regulations are more lax in the West with a popular culture that emphasizes limited government involvement. This has succeeded in drawing pork production facilities to the region (Dry 1997, Drabenstott 1998)

While there are a number of significant studies that analyze the socio-economic and environmental impact of mega-hog farms in rural areas in general, and in the Mountain West, little research has been done to evaluate the planning process itself and determine how effective local governments are in dealing with the impacts of a CAFO by means of

that process. This is particularly true in rural western communities where those local governments have actively recruited the CAFO to the area. Before examining the planning process and the tools available to deal with CAFOs, this review will first describe the environmental, social, and economic dangers of this industry.

### **Environmental Concerns**

Environmental dangers are usually the biggest cause of concern for communities and attract the most attention in the media (Schwab 1998, Reisner 2005). The cause of the environmental threat from hog CAFOs is not so much a matter of hogs creating waste, which has happened since the domestication of the hog, but rather the magnitude and geographical concentration of so much hog waste. As put by one agricultural scientist, the problem is the “piling up [of] too much stuff in one place” (Ikerd 1998).

Probably the most devastating environmental impact of hog farms is odor. Odors from swine operations are complex mixtures of gases, vapors, and dust. Most odors stem from detection of volatile organic compounds associated with dust particles and gases. Some 168 odorous compounds have been identified in swine waste (Veenhuizen 1996). The smell that results from the waste of thousands of pigs is not the typical farm smell that rural residents accept, and even celebrate, as a way of life. Rather, the concentrated, powerful odor generated by hog CAFOs has the strength to dramatically affect the lives of those that live in its path. The following complaints, two from residents in the Midwest and the other from a Beaver County farmer, provide a glimpse of life living in close proximity to a hog CAFO:

I get tired of closing my windows. I get tired of taking my clothes off the line. I get tired of having my kids come in and say, ‘Mom, it smells so bad I can’t play outside.’ (Reisner 2005)

The stench from nearby hog farms is sometimes so bad that Barbara Dunham takes her sheets off the clothesline, ushers pool parties inside and shuts her windows. With a 'smell so thick you can taste it,' she believes that the two large-scale farms, which she can see from her living room window, have driven down her property's value. (Reisner 2005)

It totally changed our lifestyle; you couldn't have picnics or BBQs or work out in your yard. The boys would go out to change the water and start dry heaving (James, B. 2006).

The effects of swine odor may extend beyond the disruption of normal everyday life. Medical and social scientists are gathering evidence that suggests odors pose actual threats to the mental and physical health of neighbors, CAFO employees, and others in the immediate vicinity of the facilities. The authors of a 1995 report (Schiffman, Miller, Suggs, and Graham) find that people living near intensive swine operations with odor problems experience increased levels of tension, depression, anger, fatigue, and confusion compared to comparable subjects not located near swine facilities. Another study done by Thu et. al. (1996) developed a survey to measure physical symptoms of residents that lived near a hog operation and those that did not. Interrelated symptoms such as nausea, wheezing, running nose, and muscle aches were clustered together. In each of the clusters the neighbors of the swine operation showed increased frequency of symptoms. However, Okun (1999) points out that these studies need to be conducted with larger study populations to validate their preliminary findings before any conclusive determinations can be made. Other studies have also shown similar physical ailments of CAFO workers (Donham 1993, Donham, Merchant and Lassise 1990), although these concerns are dealt with through other avenues of regulation.

The hog industry is sensitive to odor complaints and has devoted a lot of effort and research to come up methods to control it (Schwab 1998). However, it seems unlikely that odors will ever be completely eliminated from hog CAFOs. Odors from swine

operations vary with locations, the size and type of swine operation, production practices, season, temperature, humidity, time of day, and wind speed and direction (Smith 1995). This complex equation makes it difficult to predict or plan for odor mitigation. Some basic site selection practices can help to minimize the odors experienced by residents. Distance is the greatest protection a farm can take to insulate residents from offensive odors. Veenhuizen (1996) notes that hog odor is more noticeable than other livestock odors and observes that their odors are often noticeable up to three miles away, making for a recommended four-mile buffer between hog farms and residents. This is a difficult and expensive proposition for eastern and Midwestern states, but a feasible option for western states. Other site selection considerations include direction of prevailing winds, the orientation of building, storage, and treatment facilities, and the topography, vegetation, and other meteorological conditions (Miner 1995).

In addition to odor, air pollution is a concern of hog CAFOs. The same winds that distribute odors also carry chemicals such as ammonia, carbon dioxide, hydrogen sulfide, and methane. Of these compounds, ammonia is a particularly treacherous chemical because it figures into the creation of acid rain. Deposition of acid rain is known to contaminate the soils and vegetation, a condition that occurs in parts of Europe where animal agriculture is heavily concentrated (Thu 1996). In eastern North Carolina, an area that has many hog CAFOs, it is suspected that ammonia emissions from poultry, swine and dairy operations have contributed significantly to the deposition of ammonia and ammonium in local soils and surface waters (Paerl, Mallin, Donohue, et. al. 1995).

The threat of water pollution is another concern CAFOs pose to rural residents. Liquid manure management has become the operation of choice for many large livestock

facilities (USDA 1996). This method involves mixing manure with water and then flushing the resulting slurry into vast open-air pits called lagoons. Large farms can contain numerous lagoons, each extending to several acres in size. The bottoms of lagoons are lined with clay or plastic (Bonner, Moore, Thomas, et. al. 2003), which can crack and leak, enabling the sludge to seep into soil and groundwater (EPA 1998). Older lagoons rely on the self-sealing properties of soil and the waste itself, but inevitably release some manure into the surrounding landscape (Warrick and Stith 1995; Huffman and Westerman 1995; Barrington and Broughton 1988).

Surface water pollution can also occur as a result of flooding and overflows. Surface water discharge from CAFOs is closely monitored by the federal government in order to be compliant with the Clean Water Act. However, accidents do occur. Bad weather such as hurricanes and severe rainstorms can result in flooding and overflowing waste ponds. Some of the worst accidents have occurred in North Carolina, home to the industrialized hog industry. In 1995, for instance, a 25-million gallon hog waste spill in North Carolina resulted in a massive fish kill and contaminated drinking water (Satchell 1996). A few years later in the same state, images of floating hog carcasses and waste were seen around the country as a result of torrential rains and flooding caused by Hurricane Floyd.

The potential human health impacts of environmental contamination as a result of hog CAFOs are serious and need to be adequately addressed by planning and public health officials. In 2000, the Utah Bureau of Epidemiology conducted research on the health of neighbors surrounding the focus of this research, Circle Four Farms. Hospital discharge records from Milford were examined and compared with two comparison populations in the region, in addition to statewide averages for Utah as a whole. The purpose was to

determine if the Milford records indicated higher rates of respiratory and diarrheal illness during the years 1992 to 1998 (when the swine CAFO was constructed and became operational) compared to other communities. The findings showed an increase in both diarrheal and respiratory illness cases in Milford during the time period. “The results of this investigation found evidence that suggests elevated incidence of diarrheal and respiratory in Milford as compared to Parowan, Panguitch, and the State of Utah during the time period of 1992 through 1998” (Keller and Ball 2000:7). While researchers could not directly attribute the illness to the CAFO, the evidence suggests good cause for concern and careful regulation from regulatory bodies.

### **Social and Economic Concerns**

As previously discussed, the promise of new jobs and investment in the local economy prompts many communities to seek hog CAFOs, especially communities that face economic hardship. However, for communities that already consist of numerous small farms, a large producer might cause more economic harm than good. Research done in several Midwestern states shows that the local economy benefits from increasing the number of farmers and not increasing the volume of the commodity produced (Gomez and Zhang 2000; Durrenberger and Thu 1996; Abeles-Allison and Conner 1990). This research concluded that the larger operations are displacing more economic development than is being created. A related impact occurs as the social makeup of the farming community also suffers as long-time farmers are forced to move or to sell the farm.

However, the situation is different for western communities that are recent entrants in the hog industry. These areas lack the family-farm economic infrastructure that

dominates in the Midwest. Consequently, there are few small farm producers to displace when the large producer comes to town. Instead, CAFOs present another challenge for rural western communities: their overwhelming size and scale. At one point, the anticipated impact of the CAFO in Beaver County, Utah would result in nearly 2,800 new jobs and hundreds of millions in investment and improvements (Utah Governor's Office of Planning and Budget 1996). Impacts of a CAFO are similar to what any small community experiences when a large facility, project, or employer moves into an area: increased demand in infrastructure and roads, an influx of employees, contention between different social groups, and possible environmental hazards.

Population change is perhaps the most evident result of a rapid growth community. Rural communities, in particular, are prone to experience rapid population growth due to in-migration of workers and their families in connection with a large project or new job growth (Hunter, Krannich, and Smith 2002). To begin with, small towns usually lack the number of workers required for a large-scale project and workers come in response to the excess labor demand. Even if the town does have a large available workforce, they usually lack the skills and training that many jobs require. The isolation of rural towns also contributes to the amount of migrants. A small town where workers have few alternatives to live due to isolation will grow much faster than a town close to a larger community or in an area where workers have several options to reside in similarly sized towns. Secondary growth and linked-industry employment resulting from a large project also impact a rural community. Although a larger proportion of indirect workers is likely to come from the local population than is true of direct workers (Wieland, Leistritz, and

Murdock 1977), the extent of such multiplier effects may be substantial and require extensive in-migration.

Related to the population growth challenge is the toll on the social and psychological well-being of the local residents. Boomtowns, a special type of rapid growth community, have received much attention on the topic of social well-being. Boomtowns usually occur in small, energy-dependent towns that experience an explosion of growth due to the discovery of a nearby energy source or the opening of an energy plant. The event is generally short-lived, ending as quickly as it began as soon as the energy source disappears. Much of the research on boomtowns has taken a “social disruption” perspective (Smith, Krannich and Hunter 2001). Studies done during the 1970s and 1980s describe the adverse social consequences of boom growth for dozens of rural communities throughout the northern Great Plains and the intermountain West (Smith, Krannich and Hunter 2001). Many of these changes were attributed to a collapse of the established informal social structures that are often observed in rural communities, and to a failure of new formal institutions and structures to provide adequately for residents’ social integration, social control, and well-being (Cortese 1982; Cortese and Jones 1977; Little 1977).

Another difficulty that rapid growth rural communities face is providing and financing for public services and infrastructure such as roads, water, sewer, health and police. The basic problem of rapid growth infrastructure is the immediate and extensive need for new facilities prior to the generation of a sufficient new tax base. Compounding this issue is the uncertainty surrounding any major project concerning its duration in the community and the anticipated infrastructure requirements necessary to adequately

satisfy the long-term needs. If the project is developed and the impact projections prove accurate, the community's tax base will increase over time as a result of new plants, home, and business structures associated with the project (Luken 1974). However, there probably will be a three- to five-year lag between the need for expanded services and facilities and sufficient growth of the tax base (Murdock and Leistritz 1979).

One particularly difficult issue for some communities, including Beaver County, is the effects of jurisdictional disparities. Most communities are reliant on property taxes as a major source of revenue. A new project, such as an energy development or CAFO, would result in millions of dollars of new revenue for the jurisdiction over the lifetime of the project that would be used to offset the added costs of the project. However, if the increased taxes are received by one taxing jurisdiction, and the majority of the population impact is felt by another jurisdiction, the population-impacted community is certain to have serious financial problems (Murdock and Leistritz 1979).

### **The Planning Process and Tools**

The issues described above are extensive and, in many cases, impossible to adequately address by a small community. Even in the best of situations, these problems require solutions that can only be reached by using a broad range of resources available to rural communities. Community citizens, local leaders, and professional staff can all contribute expertise and knowledge to assist in planning for hog CAFOs. This section will explore the planning process and will then provide a description of the tools available to local communities through the planning process to respond to the issues raised by hog CAFOs.

Planning and plans are ordinary aspects of life, business, and government. Planning is a future-oriented activity that conveys the idea of getting from here to there. Put within the context of local government, planning and the planning process have a variety of meanings and purposes. Planning addresses the issues and problems of growth or decline and other trends that are affecting the community (So and Getzels 1988). It strives to protect the health, safety and welfare of the community and its citizens. Planning not only addresses problems in a community, it also influences the way a community perceives its problems and guides its choice of solutions (Wildavsky 1973).

The rational comprehensive planning model, as the name implies, applies rational decision making to planning. This is arguably the closest thing planners have to a planning paradigm (Seasons 2003) and most planners follow this model as evidenced in the many plans and the plan-making process which involve scientific instruments such as forecasts, analysis of issues and concerns, impact studies, and goal statements (Perks and Jamieson 1991). So and Getzels (1988) describe the rational planning model as a process that occurs in five major steps:

1. Basic goals. Local planning determines basic community goals by asking questions such as: Do we want to grow? Do we want to be a center for high-tech industry?
2. Study and analysis. Information such as land use, population and economic trends, and physiographic features are necessary in the planning process.
3. Plan or policy preparation. A plan is prepared for the community as a whole or for a segment of it. It is a basic statement of how the community will develop and in what direction.

4. Implementation and effectuation. A variety of tools are used to implement the plan. These include zoning ordinances, subdivision regulations, capital improvement programs, and other general guidelines.
5. Monitoring and feedback. This last step determines how well the plans and policies are being carried out, whether the goals were realistic, and whether the study and analysis foresaw new occurrences. Feedback may become the basis for a redesign of the plan.

While the planning process here is described in sequential order, the actual process is not nearly so formal. In practice, separation between the steps is often blurred or doesn't exist at all. A variety of factors influences the degree to which each step of the planning process is followed. Naturally, a jurisdiction with a short history of planning will have limited expertise and resources to fully follow each one of these steps while more sophisticated areas have the ability to invest time and money into an extended process.

What constitutes a “successful” planning process? How does one define success when a community is composed of so many diverse interests and stakeholders? As in any process, the success of the whole is dependent upon its individual parts. For instance, a well written and comprehensive plan is worthless if based on faulty statistics and trends. Likewise, the best implementation practices will only be so effective if there is no monitoring and feedback to ensure that the plan is realistic and is accomplishing what it is intended to do. A successful planning process will result in a plan that engages the community and creates meaningful change. Unfortunately, planners and citizens both comment on the number of plans that do little else besides gather dust on government shelves (Altshuler 1965; Clawson 1971). There is even some research that questions the

ability of planning to have any effect on development outcomes (Brody and Highfield 2005; Brody 2003).

However, the prevalence of planning departments across the country and the plans that they produce suggest there is some benefit to planning. Using the planning process to create plans that are successful in bringing about governmental action on the issues they address is the challenge to the planning profession. While several researchers have focused on better implementation practices (Berke, Backhurst, Day, et. al. 2006; Baer 1997), Burby (2003) tackles the question of how to make “plans that matter” to people (p.33). His research concludes that stakeholder and public involvement produces not only better plans, but also encourages higher rates of implementation. Going along with this, it is also likely that public involvement improves the other aspects of the planning process—namely, establishing basic goals, study and analysis, and monitoring and feedback.

Public participation, then, is of paramount concern in creating a successful planning process. Public involvement happens in a variety of ways. Public hearings, mandated by the regulatory process, occur in city halls and other government buildings and offer a formalized method for the public to offer criticisms or support for the development. Other forms of participation include attending another informal meeting, signing or circulating a petition, and calling or writing an elected official.

Public hearings have the potential to be a powerful force for community citizens. Political leaders are sensitive to how they are perceived by their constituents and feel an obligation to represent their community. Other non-political organizations are also forced to be accountable to the public or they could face damaging repercussions. Public

hearings also take advantage of lay knowledge of the citizens in decision-making. This author has been involved in numerous hearings where the public was able to present solutions or point out risks that were not apparent until that point. Lastly, participation improves public support for policies (Bickerstaff and Walker 2001). Community citizens feel empowered when they are able to play a decision-making role. This engenders a responsibility and determination within the community to make the action one that is successful.

The success of the public process depends on several factors. Mackenzie and Krogman (2005), in their study of four communities facing an impending hog CAFO, found that four interrelated areas of the public participation process have a pronounced effect on the trust engendered between the community and the developers, thereby influencing the perceived fairness and balance of power of the proposal and reducing conflict. The first of these is the timing. When the public is involved early and often in the process there is a likely chance that conflict will be decreased. Informal meetings prior to applying for a development permit provide the public and the developer an opportunity to answer questions and alleviate concerns in a non-contentious environment. The alternative is for a developer to obtain a permit without any input from the public and then to make it public, the 'Decide, Announce, Defend' approach to development (Beierle 1999). The only recourse the public has at this point is an appeal that can quickly develop into a contentious issue devoid of any meaningful dialogue between the opposing sides.

The second factor of public participation is adequate information sharing. When the public feels that the developer and government officials are upfront and honest with

their knowledge of the development, the potential for conflict is reduced. Residents are especially concerned with government officials whom they see as inadequately informed yet who clearly support the proposed NIMBY. Some of the government officials involved in the study, on the other hand, acknowledged that they sometimes were hesitant to share information with some members of the public. One official stated, “Our experience was that some of the opponents came to the open house to gain bits and pieces of information that they could then twist and use later against the project” (Mackenzie and Krogman 2005:519).

The third factor is the accessibility of the process. While developers often feel the appeal process is too open and one that results in frivolous petitions, some community residents feel that the time and cost of filing an appeal are much too high. Laurian (2004) found that a significant reason why more people don't take part in public hearings is because of lack of awareness the meetings were even occurring. Even when the public is aware of public meetings, their schedule can preclude them from attending the meetings. Effective public participation starts with good public awareness. A public that feels the process is accessible is less likely to take a dispute to the court, a result that is overall disadvantageous to all parties involved.

The final factor of the public participation process is accountability of public institutions and policies. In their study, the authors found a general distrust by the public of government personnel whom they believed showed bias in favor of permitting the large-scale hog facility. This can be especially true of state or regional agencies that can be given the responsibility of increasing the agricultural production of the region. Also,

many residents reported low levels of trust in environmental policies to protect the water, soil, and air of communities.

These factors represent patterns in public involvement processes that are associated with heightened and diminished conflict over the siting of a hog CAFO. These researchers found that the public participation process can be effective, in certain circumstances, in dealing and resolving concerns between the community and CAFO proponents. However, other researchers have questioned how meaningful the process is while pointing out its flaws (Flyvbjerg 1998; Kaminstein 1996; Laurian 2004; Tauxe 1995). In light of the enormous resources that agencies devote towards community input, surprisingly few people participate, and those that do are unrepresentative of the broader population (Thomas 1995). One ethnographic study of the public participation process found that certain groups of people were systematically marginalized by the process (Tauxe 1995). It tended to favor those that were accustomed to the formal, bureaucratic style of the meetings and hearings, and left little recognition for the many diverse interest groups within the community that stand to be impacted from the development. Another obstacle to meaningful public debate within a rural community is the hesitation many local residents feel to voice their concerns about an impending NIMBY. Every small community is filled with complex networks of relatives and friends, and many people hesitate to criticize a development that has the strong backing of one of those relatives or friends (Bailey, Faupel, and Holland 1991).

While many communities across the country have recognized the importance of professional planners and the planning process, historically planning in many rural communities has been virtually non-existent (Daniels, Keller and Lapping 1995). Part of

this lack of planning is attributable to the suspicion and resistance to planning efforts that exist strongly in some rural areas. It wasn't until the 1970s that small towns began to recognize the value of planning. As is often the case, the failure of many planning efforts in rural communities can be attributable to limited and inadequate planning staff and regulatory processes (Schwab 1998).

Given this reluctant attitude towards planning, how effectively are rural planners able to prepare their communities for a hog CAFO? Are rural places able to adequately protect the health, safety, and welfare of its residents? Unfortunately, planning for the environmental, economic, and social impacts of hog CAFOs is a daunting task for even the most well-equipped local staff and officials. However, there are some basic planning tools that most communities have available to deal with CAFOs.

Zoning is typically the regulatory tool of choice for planners. Zoning is used in nearly every municipality across the United States and is essentially a process by which the residents of a local community examine what people propose to do with their land, and decide whether or not they will permit it (Garner and Callies 1972).

One of the most basic ways zoning deals with differing land uses is separation of uses. Districts are created that are intended for one particular use, whether that use is residential, commercial, industrial, or agricultural. The idea behind separation of uses is that similar uses grouped together will geographically limit the area of impact and reduce dangerous impacts on residential areas. For instance, a factory will be limited to an industrial zone where other industrial uses are located. This will reduce human contact with dangerous industrial pollutants and accompanying noises, odors, and equipment. Some communities will go further and impose specific separation standards. These

standards can establish minimum separation distances between certain incompatible uses regardless of their right to operate as permitted uses in certain zones. The required distance assists in controlling particularly harmful or annoying side effects of the land use. In the case of pig farms, odors from the animals can spread for miles around. Limiting pig farms to areas that are located great distances from residential or commercial districts would decrease conflict between different uses.

Another zoning strategy employed by planners is conditional use standards. A zoning ordinance can establish certain standards that must be met by the proposed use before it can be permitted. A planner simply determines whether or not the use complies with those criteria. Some communities also allow for other conditions to be placed on the use by the zoning authority to reduce negative impacts of the use. Another type of standard used by some communities to limit offsite impacts is performance standards. Performance standards are typically used to monitor industrial uses. Levels of acceptable noise, dust, vibration, odor and sewage are determined and the use must comply with those standards. While many CAFOs are not of an industrial nature, enforceable standards of odor, air quality, and water quality can be very useful to a community that is hesitant about the impacts of a CAFO.

It is important to distinguish that zoning is primarily a tool that is prospective and preemptive. It has limited control over existing land uses and instead is used to shape future development (Schwab 1998). Once a particular use is properly permitted, it is not possible to create new zoning laws and make those applicable to existing land uses. For instance, if a community ever comes to regret the a CAFO, no zoning ordinance will allow them to make up for their mistake and force the operation out of the community.

To be effective, each of the zoning tools mentioned below needs to be enacted prior to approval of the CAFO. Unfortunately for many rural communities, the need to enact such ordinances is not anticipated or is not possible given resource constraints.

Another issue regarding zoning is that of technical ability to review site plans and enforce regulations. In each of these zoning strategies described above, community leaders need to consider the technical and personnel requirements to effectively oversee and monitor the situation. A performance standard that relies on technical expertise will be difficult to implement without adequate staffing. A cash-strapped rural community seldom has the resources to effectively enforce a complex zoning ordinance. CAFOs pose the classic problem of small communities gearing up their regulatory capabilities to handle a land use much larger in scope and impact than previously experienced (Schwab 1998). Further, they seldom provide the revenue windfall necessary to support any large expansion in planning and zoning staff or creating one that previously did not exist (Center for Rural Affairs 1995; Thompson and Haskins 1998).

While this particular evaluation focuses on the local response to a hog CAFO, it is important to realize that there is a broader regulatory context outside of local planning. In many ways local jurisdictions lack the authority to regulate CAFO operations. For instance, environmental safeguards are handled at the federal level. The primary legislative basis for environmental regulation of CAFOs is the Clean Water Act, which specifically cites these operations as point sources of pollution. These requirements were revised in February 2003 in response to the growing number of CAFOs in the United States. The Environmental Protection Agency (EPA) regulates CAFOs through a permitting system that sets limits on the amount of waste that can be discharged as well

as sets other requirements such as management practices and record-keeping necessities. The EPA has approved most states to run their own regulatory and permitting projects based on rules given at the federal level. The agency given this responsibility in Utah is the Utah Division of Water Quality.

State laws can also affect the regulation of CAFOs. In fact, in some instances state regulations preempt local zoning rules. This is the case in some states where the legislatures have passed laws that exempt agriculture from local planning and zoning. Since CAFOs are classified as agriculture in most areas (a designation subject to controversy), even the most basic permitting is prohibited. In other states, laws are designed that prohibit corporations from owning farms. While neither of these situations is the case in Utah, Circle Four Farms is affected by a law passed in 1994 by the Utah State Legislature. This bill, designed to protect farmland from suburban sprawl and farming operations from public nuisance suits, has assisted Circle Four in expanding its operations in Utah (Kratz September 13, 1998).

Within this framework, local communities are able to create regulations and processes as well as coordinate with these other agencies to protect its residents from possible negative impacts of CAFOs.

### **Other Communities and Hog CAFOs**

There is evidence that small communities are overwhelmed by the magnitude of hog CAFOs and ineffective at following a respectable planning process. DeLind (1998) found that local planning efforts were grossly inadequate in dealing with a hog CAFO in the community of Parma, Michigan. The community suffered numerous harmful and dangerous environmental impacts as a result of the CAFO. The planning process failed

to hold the company accountable for their indiscretions so that the environmental threats will linger for years to come even though the company went bankrupt long ago. The planning process failed to provide the local population a voice to their concerns in the small community. The little local political influence and weak permitting process resulted in a situation where residents discovered the new CAFO only after the cement had been poured. To worsen the situation, state regulating agencies were slow to hear the complaints of the community and suffered from insufficient regulations and lack of expertise in enforcing the provisions that existed. The residents reported feeling disrespected and ignored by government officials, deliberately bypassed in the decision process, and shared a sense that government had failed them. Only after years of protests and lawsuits by local grassroots organizations, and the eventual bankruptcy of the hog operation, were residents able to enact positive regulations (DeLind 1998).

Other research supports the situation that is described by DeLind. Durrenberger and Thu (1994) conducted numerous interviews in North Carolina and point out several instances where they viewed the planning process as nonexistent or corrupt and futile. They reported cases where residents received no notice of the construction of hog facilities and have little or no opportunity to raise questions or voice concerns. This lack of respect for the residents' concerns and their frustration with the channels of redress created a tense and stressful situation within the community. The researchers also found evidence of widespread intimidation and the erosion of democratic political processes. This resulted in county officials that "either had little regulatory power or were afraid to use it" (Durrenberger and Thu 1996, p. 20). What little regulation did exist was widely disregarded and ignored.

The experience of these two communities provides little hope for small communities planning for a hog CAFO. Successfully planning for these industries seems to be beyond the ability of the majority of rural communities. However, the experience of Beaver County differs from these communities in a few important ways. First, the community invited the CAFO to locate its operations there. The other two communities either had no choice or were not even aware that a hog CAFO was coming to town. Possibly this invitation might result in a positive situation where the hog company and the community communicate openly about expectations and possible negative impacts.

Secondly, the events described in the communities above occurred several years prior to Circle Four Farms in Beaver County. Local officials had very little knowledge of CAFOs, nor were they able to consult with other communities to learn their experiences. Federal and state environmental regulations were also in their infancy and weren't capable of responding to new technology and modes of operations. It would be years before federal and state environmental regulations would respond to the potential negative impacts associated with hog CAFOs.

Third, Beaver County is located in a part of the country that has some of the least densely populated territory in the United States. Perhaps the relative isolation of the Mountain West will result in a better planning process where few neighbors are impacted and where CAFOs present fewer environmental dangers. Perhaps hog CAFOs are better neighbors when there are no other neighbors around!

Perhaps these characteristics and others will assist the community in effectively dealing with the myriad issues and potential hazards of hog CAFOs. If successful, other

rural communities might be emboldened to actively recruit similar land uses to promote economic development.

## Chapter 3

### THE SETTING

Beaver County, Utah, is a sparsely populated county located approximately 200 miles south of Salt Lake City along Interstate 15 (see Map A). The county's rectangular boundaries extend 90 miles in length from the Nevada border in the west to Piute County in the east, and about 30 miles north to south. Its physical characteristics are that of a high desert plain with several mountain ranges that are typical of basin and range territory. The Milford Flats area, located near the center of the county and the site of the majority of Circle Four pig farms, has an elevation of nearly 5,000 feet. Annually, the population areas receive only about 8 inches of water. The high elevation and dry climate create a vegetation cover that consists mainly of sagebrush, juniper, and pinyon.



*Map A: Map of Beaver County*

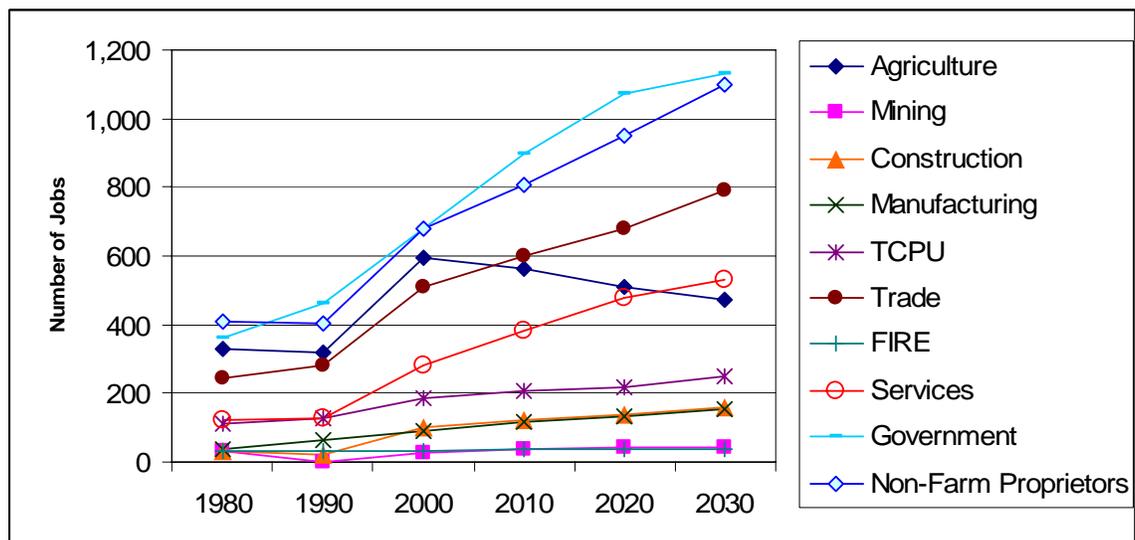
The 2000 Census estimates Beaver County's population at just over 6,000. This represents a 25% increase from 1990, a dramatic increase compared to previous rates of growth. The recent population increase has resulted in a more

heterogeneous population. In 1990, 80 percent of the county’s residents were born in Utah. This decreased to 70 percent in 2000. The number of Hispanics in the county more than doubled, and the percentage of the population that speaks a language other than English at home went from 3.8 percent to 8.3 percent.

Traditionally a mining and agricultural community, the county has watched those industries become less and less important in the New West economy. In 1990, mining accounted for 0% of the workforce, down from 10% in the early 1970s (Utah Governor’s Office of Planning and Budget 2007). The following graph, based on employment projections, shows a continued shift from agriculture and mining and a rise in non-farm proprietors and government.

*Employment Projections by Industry*

(Source: 2002 Baseline Projections, Governor’s Office of Planning and Budget)



This structural shift in the economy has fundamentally changed the landscape for Beaver County and other similar western communities (Shumway and Otterstrom 2001).

In an effort to promote the economic welfare of the county and its towns, local county and town officials had created an economic development committee expressly for the purpose of courting employers and business to the areas. However, despite their best effort, success was limited. Retail establishments struggled to pay their employees, the local hospital was operating in debt, and real estate continued to lose value (Wunderlich 2006)

One of those committee members was Larry Sower, a local minerals company owner. Mr. Sower had previously been involved in a study undertaken by the county to gauge the feasibility of locating a large-scale chicken broiler facility in the county. The results of that study outlined how the nature of the agricultural industry had changed drastically in recent years. The industry was no longer one of small farm operators diffused broadly across the United States. Instead, the agricultural industry was changing to a global business where the input, production, and marketing activities occur on an international scale (Welsh, Hubbell, Carpentier 2003). New methods of ownership and production have made animal farms resemble a highly efficient factory that has more in common with industrial uses than with traditional agriculture. Today's concentrated animal operations require large capital facilities, workers, and a lot of open space—inputs all available in Beaver County.

On a cold January day in 1992, a train loaded with live hogs from Iowa bound for California stopped in front of Larry Sower's office. In his hands was a copy of Forbes magazine that featured an article that profiled Smithfield Foods, one of the largest pork producers in the world, and its growing hog business and its methods of integrating hog production (Peterson 2006). It occurred at that moment to Larry Sower that if large-scale

chicken broilers could locate to Beaver County, so could hogs. Immediately he wrote a letter to Smithfield Foods and extolled the advantages of raising hogs in Beaver County. That was the beginning of Circle Four Farms in Beaver County.

For the county, local officials saw a potentially lucrative industry that could provide badly needed taxes and jobs. The company representatives that visited the area also quickly recognized the advantages and favorable resources of having an operation in Beaver County. Railroads that were important to the mining industry were still accessible and connected the county to the remainder of the continent. These railroads would provide an avenue for shipping the thousands of tons of feed that are required by the pigs. The county is also located in a semi-arid environment that reduces the risk of both disease and weather-related catastrophes. Further, Beaver is one day closer to the population centers of the West Coast markets than the Midwest and is able to take advantage of lower finished product transportation costs, a cost that is becoming relatively more important in industrialized pork production (Mo and Abdalla 1998).

The original plan of Circle Four Farms was to build a completely integrated operation that began at hog conception and ended with butchering and packaging. To do so would require an expensive processing facility to be built in addition to the animal production facilities. This business plan would have ended up pumping \$425 million into the local economies (McClure 1993) and would have resulted in 1,500 new employees (Dodge City News January 13, 1993). These are staggering numbers for any city, especially so for a rural community, and would have turned southwestern Utah into the agricultural center of the Intermountain states. However, Circle Four soon changed their business plan as the cost for building the facilities grew. Instead, the hogs would be

raised in Beaver County and then shipped to a processing plant in California and sold under the Farmer John name. Nonetheless, the raising of hundreds of thousands of hogs per year still remained an enormous project that would provide increased tax revenues, new employment, and change the landscape of Beaver County.

County officials seemed to understand the far-reaching impacts of such a land intensive operation in their county. Company and civic leaders held informational meetings with the community before any permits were issued. In effect, these meetings became a forum where citizens were able to express their support or opposition to the pig farms (Peterson 2006). County officials were able to report on their research, company officials were asked questions, and concerns were raised. An informal vote was taken, and nearly everyone in the crowded auditorium stood up to express support and their desire for the county to continue pursuing Circle Four Farms. Circle Four also conducted meetings for just the local farmers to discuss possible contract hog rearing (Dodge City News 1992).

County officials were so upbeat about the development that they provided incentives and helped in negotiating with local farmers for land and water rights (Carter February 17, 1998). Additionally, state government threw their support behind Circle Four and viewed it as a shining example of rural economic development (Dodge City News November 4, 1993). The Utah Transportation Commission took half a million dollars away from a highway project in Iron County to pave the road to the hog farm (Van Eyck 1998). Further, the state legislature helped in paving the way by passing legislation that protected the company from nuisance suits (Kratz September 13, 1998).

In the early 1990s CAFOs were still a relatively new method of animal production found in very few states outside the Midwest. Consequently, very little regulation existed at any level of government. It certainly did not exist in Beaver County, a small rural county far from the Midwest. Similar to other small towns, Beaver County had an outdated general plan and zoning ordinance. Limited staff and budget and few development pressures hadn't demanded anything more. Consequently, when Circle Four first came to the area, the zoning ordinance did not address CAFOs at all. The company encouraged the County to address this deficiency in the zoning ordinance and waited for the County to put a viable conditional use permit process in place since the county did not have one (Peterson 2006). Beaver County responded by consulting with the Five County Association of Governments (an organization that provides planning assistance and other services for the five southwestern counties of Utah), hiring a professional planner, rewriting their general plan, and rewriting their zoning ordinance. The barns and other production facilities of Circle Four were almost entirely built in unincorporated Beaver County. However, their proximity to Milford caused the greatest impact to the residents of that town, as will be discussed further below.

The first conditional use permit approval on record is dated October 1995. Earlier permits were approved but no record can be found in the files of Beaver County. These approvals list the conditions that were required of a conditional use permit. Included among the conditions for approval were:

- The proposed use would not impair the integrity and character of the land use district in which it is to be located
- The subject site is physically suitable for the type and intensity of land use being proposed
- The proposed use is compatible with the land uses presently on the subject property.

- There will not be a harmful effect upon desirable neighborhood characteristics
- There will not be significant harmful effects upon environmental quality and natural resources
- The negative impacts of the proposed use are mitigated

These findings, including others, all had to be met in order to gain conditional use approval.

Circle Four Farms began construction in late 1993 and finished their first complex a couple of years later. The barns associated with Circle Four are not the buildings normally associated with traditional agriculture. These barns consist of multiple long, low-lying metal buildings set on concrete foundations.



*Photograph showing one of the dozens of barns containing hogs*

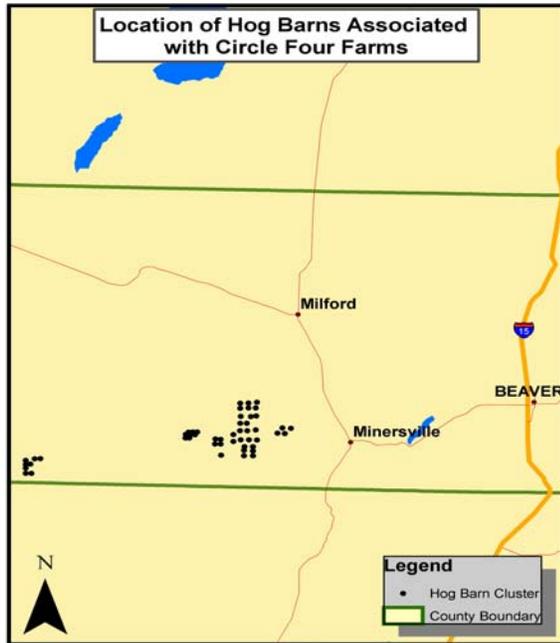
The barns are climate controlled and the venting equipment protrudes from the sides and ends. Elevated bulk feeder tanks rise above the barns. Inside, the barns consists of rows of holding pens with slotted floors that allow the waste to wash into the nearby waste lagoons. Feeding pipes, power lines, and automated watering systems fill the ceilings and walkways between the rows of pens.

The barns are geographically separated for health reasons, which segregate the animals into farming units with the associated hog populations—a



*Feed mill in Milford*

brood sow farm, a nursery farm, and finishing farms. Circle Four eventually built three complexes and spread across the Milford Flats up to the southern border of the county (see Map B). The company also recently finished construction of a large feed mill in Milford to process the enormous amount of feed imported by rail into the county.



*Map B: Location of Hog Barns*

As was mentioned previously, the citizens of Beaver County and Milford were generally in favor of Circle Four Farms coming to town. In fact, most of the bitterness and resentment centered on farmers who refused to sell their land to the company (Kratz September 15, 1998). However, the honeymoon was soon over for Smithfield Foods. It was not long after production started that complaints started to surface. The majority of concerns were centered on the

odors of the large farm which resulted from the enormous amount of pig waste. The waste was flushed out of the barns into giant open pits where evaporation and bacteria reduce the waste over time into sludge. The pits were lined with clay and plastic liners to prevent seepage into the underground aquifer.

At times, the ability of the odors to travel great distances surprised even the managers of the firm. “There have been a couple of occasions, in the morning or evening, where we smelled them in town,” reports Katie Elmer, Circle Four’s environmental programs manager. “That is a good nine miles away” (McMahon 1998). The worst of the

odors was experienced by the residents that lived on the Milford Flats, an area situated relatively close to the barns. One respondent stated that “it totally changed our lifestyle; you couldn’t have picnics or BBQs or work out in your yard. The boys would go out to change the water and start dry heaving” (James, B. 2006).



*Photograph of one of the open pit lagoons containing hog waste*

Local and state officials attempted to intervene and alleviate the odors. Locally, government officials responded by requiring a condition on local permits that Circle Four respond to “unreasonable odors”. The company had to demonstrate a “reasonable effort to mitigate the negative impact” of the odors. The Utah Department of Water Quality also began including odor mitigation requirements in connection with their groundwater permits, even though technically they lacked the authority to do so (Ostler 2006). Circle Four was sensitive to the negative publicity that the bad odor was raising and even some of their worst critics acknowledged that the company was doing what they could to control the smell (James, K. 2006). Circle Four tested a variety of means to alleviate the bad smell. These methods included a floating cap on top of the lagoons to trap the smell, experimenting with the volume of the lagoons, and varying the methods of sludge removal (Ostler 2006). The company went so far as to document the experiences of “smell monitors”—citizens stationed at various places around the county—set up in an effort to understand the conditions of the odors. Unfortunately for the company and the citizens that had to endure the horrible odors, it took years for the smell to diminish

despite Circle Four's best efforts. Eventually the odor did decrease, a result likely due to the natural biotic cycle of the bacteria breaking down the waste. The author stood at the very edge of one of the lagoons during the hottest time of the day during October and was surprised by the lack of an overpowering smell.

Environmental worries also concerned local citizens, particularly air and water pollution. Many of the residents of Beaver Country draw their water from wells that pump water from the large aquifers beneath the surface. Many in town were suspicious of the waste lagoons and their ability to prevent seepage of waste into the aquifer. Indeed, in 1998, Circle Four reported that engineers had started to repair leaks found in two of the farm's evaporative lagoons (May 1998). Further, in 1996, a groundwater contamination resulted when wastewater was accidentally siphoned from one of the waste lagoons into one of the farm's water supply wells, potentially polluting other nearby wells (Kratz September 14, 1998).

Utah's water is regulated by the Utah Division of Water Quality (DWQ). When the company first came to the state, the DWQ had one of the most stringent groundwater protection programs in the country (Ostler 2006). Monitoring wells were dug next to each waste lagoon and specific numeric standards in regards to the bacterial count had to be met. The manure lagoons were lined with clay and plastic to prevent seepage, a precaution that exceeded the standards of many municipal waste systems. The company initially complained about the strict and expensive requirements. The manager of DWQ was even questioned several times by the state legislature in connection with the stringency of the review (Ostler 2006). However, in the long run, the tough rules and ability to closely monitor groundwater most likely resulted in insuring Circle Four against

costly lawsuits by providing the ability to demonstrate the lack of groundwater pollution (Ostler 2006).

Today, while there are many vocal opponents, the majority of citizens remain positive about the corporation (Kratz September 13, 1998). In the minds of many citizens of Beaver County, the jobs and taxes are proof enough of the economic benefits of Circle Four Farms. As one Milford citizen states:

I've got 6 kids and all 6 of my kids live here, and I'm sure they wouldn't be here. I have one son who was a plumber in Salt Lake and basically he came down here and went to work and he does all the plumbing for Circle Four now. I've got another son who works for him as an apprentice, so there's two of them. I've got one of them that's a truck driver for Circle Four. I've got a daughter who's a beautician who moved from Parowan over here. I've got one who's a railroad engineer. And basically it would probably be one of the kids who would be living here if it weren't for Circle Four (Wunderlich 2006).

Likewise, many other interviewed residents also remarked about the new jobs and its revitalization of Milford. Circle Four has also been good for Beaver County. An economic analysis done by the Governor's Office of Planning and Budget concluded that Circle Four has been able to increase the county's tax base and employment (Utah Governor's Office of Planning and Budget 1996). Indeed, the unemployment rate dropped from 4.1 percent in 1990 to 3.5 percent in 2000 and the rate of personal income growth exceeded the rate of inflation (Utah Governor's Office of Planning and Budget 2007).

However, some residents of Milford and the county aren't so quick to credit Circle Four with economic improvement. While the company has certainly brought jobs, the majority of the jobs are low paying and many employees drive in from other towns. Additionally, the migrant labor force that provides much of the workforce has resulted in

a tremendous strain on human services such as health care, schools, and police (James, K. 2006).

The coming of Circle Four to the area was a turbulent period for Milford and Beaver County. It was a conflict that oftentimes pitted citizens against elected leaders, and even neighbor against neighbor. At one particularly contentious county commission meeting, one of the commissioners became so enraged that he suffered a debilitating stroke (Carter February 17, 1998). In fact, the contention reached such a point that the LDS Church, to which the majority of local people belonged, advised its members to “fast and pray” to repair the rift in the community (Williams 2006). Today, time has helped heal many of the scars in the community. “This is a small town,” mentioned one citizen. “People get tired of contention, they don’t want to fight, they don’t want the bad feelings...the bad vibes...so they just let it go” (Williams 2006).

Today, twelve years after Circle Four built their first facilities in the county, the company has become more of an integral part of the community. While there still does remain a certain level of discontent with the company, public hearings for groundwater permits are hardly what they used to be and oftentimes go uncontested. The catastrophic social and environmental impacts that were predicted by some opposition groups have yet to materialize. What role did the planning process play in shaping the landscape of Circle Four today? Did local citizens have an open forum to discuss their concerns and the future of their community? The next chapter will present and discuss the results of these results of this research.

## Chapter 4

### **METHODS**

#### **Introduction**

The purpose of this chapter is to present the research design, the study's participants, the methods for collecting the data, and the methods used for the analysis of the data. This chapter also describes the efforts to increase dependability and trustworthiness of the data results.

#### **Design**

This research is an evaluation of the planning process in Beaver County. Evaluation is an activity that involves judging the value, merit, or worth of something. Formal evaluation is defined as a form of 'disciplined inquiry' (Lincoln and Guba 1986: 550) that applies scientific procedures to the collection and analysis of information about the content, structures and outcomes of programs, projects and planned interventions. Patton (1986) states that

Program evaluation is the systematic collection of information about the activities, characteristics, and outcomes of programs for use by specific people to reduce uncertainties, improve effectiveness, and make decisions with regard to what those programs are doing and affecting (p. 14)

As a form of inquiry, evaluation is very much action oriented. Its purpose is not to discover new knowledge, but rather to improve the methods in which knowledge is used to inform and guide practical action. Evaluators rely heavily upon existing social science research methods and methodologies. Even though the end result may differ, evaluation research should still be judged by the same standards to ensure research is accurate and reliable. What distinguishes evaluation research is not the methods used, but the purpose to which the methods

are put (Babbie 1995). There have been calls within the planning profession for more evaluation and monitoring (Seasons 2003; Baum 2001; Christensen 1985). Planners are often uncertain about the efficiency, effectiveness, or impact of their activities. Regular and consistent use of evaluation will provide planners with an improved sense of outcomes and impacts of their interventions and provide clearer definitions of success or failure in specific contexts (Talen 1997).

This research has used a qualitative design in its methodology and analysis. Qualitative methods are often used in evaluations because they tell a story by capturing and communicating the participants' stories (Patton 2002). The planning process is complex and multi-faceted and involves a wide array of agencies and individuals making decisions that affect the lives of a jurisdiction's citizens. Local politics, attitudes, and circumstances combine to make the planning process and outcome a unique experience. Patton (2002) states that qualitative findings in evaluation illuminate the people behind the numbers and put faces on the statistics, all in an effort to deepen understanding. While the planning experience of Beaver County is unique, an analysis that evaluates the basic characteristics, successes, and failures of the process will provide insightful lessons that can be adapted to other communities.

### **Data and Analysis**

#### **Time Frame**

Since planning is a continuous process that constantly ongoing and changing, a time frame needs to be established. For the purpose of this research, the first years of planning and regulation of Circle Four Farms are the most pertinent and interesting. These first years provide an idea of how Beaver County reacted to the coming of the pig

farm and its first attempts to regulate the operation. An adequately long enough period of time will provide a good idea of how that regulation changes and evolves over time. For this study, the time frame will be the first nine years of Circle Four's relationship with Beaver County, from 1992 to 2000. It was in 1992 that Circle Four was approached by the local community. By 2000, Circle Four and the community had become accustomed to each other. The company had stopped building facilities in Beaver County and was exploring expansion in other counties. Interviews and public meeting minutes indicate that much of the controversy associated with Circle Four had waned by 2000.

I analyzed data from various sources. The primary sources of information are interviews conducted in 2006 with local officials (both appointed and elected), industry representatives, and local citizens. These interviews were able to provide me with insight into the planning attitudes and processes that occurred in Beaver County during the relevant time frame. A second source of primary information comes from field notes and observations. Secondary sources of data come from public meeting minutes and articles that came from newspapers in Milford, Southern Utah, and Salt Lake City.

### **Interviews**

The interviews were conducted on-site in Beaver County and were audio recorded. The interviewees were chosen using an approach based on purposeful sampling guidelines provided by Patton (2002) to find information-rich cases for in-depth study. These people were identified as having direct contact and involvement in the Circle Four planning process. Their names were identified through either a review of historical documents or based on recommendations from other people involved in the process. I attempted to interview people from a wide variety of backgrounds in order to gain

multiple and information-rich perspectives. While many of those interviewed had some connection with the local government, some interviewed represented consumer and local activist groups (see Appendix 1 for a list of those interviewed and their role in the community). The number of respondents was based on the repetitive nature of the responses. Once it was clear that little or no new information was being generated, I stopped interviewing.

The interview was conducted in a semi-structured format. The questions were open-ended to allow for respondents' opinions and analysis to be included (see Appendix 2). The questions were based on my personal experience with planning issues, important issues identified from secondary sources, and from important issues reviewed in the literature review. As much as possible, the questions were designed to be simple and avoid introducing bias into the research. In preparing the questions, feedback from other planning experts helped in refining the interview questions.

The interviews, in most cases, were conducted on site. The respondents were provided with a brief explanation of the purpose of the interview. Given the controversy of the subject, careful measures were taken by the researcher to avoid appearing opinionated on the subject or to cast judgment on the respondents. Each interview, with the permission of the respondent, was recorded. All respondents were assured that their comments and names would remain confidential if desired.

As the interviews progressed, I provided feedback and summarizations to the respondents to ensure their comments were fully understood. Even though the same guide was used in all the interviews, the interviews were conversational in nature. While each of the main points on the interview guide was covered, the discussion varied depending

on the unique experiences and time constraints of the respondents as well. As the interviews progressed and new ideas and theories emerged, additional questions were asked to help explore these ideas. Immediately following each interview, notes were taken about the setting, the attitude of the respondent, and any other pertinent information. The interviews were subsequently transcribed. The transcripts of the interviews were mailed or emailed back to the respondents and appropriate corrections were made. In two instances the researchers re-interviewed the respondents to gather additional or clarifying information.

Naturally, there were some limitations associated with the interviews. First, since the event happened ten years ago, many of the specific attitudes and details have likely been changed and faded over time. Responses reflect the absorbed lessons and attitudes of the previous ten years. Secondly, some of the key people and officials involved in the events have long since moved on to other places or were not able to be interviewed. In some cases, their experiences would have been extremely useful in reconstructing the events of the previous ten years.

It is also possible that the respondents' answers were shaped by the presence of the researcher. Humans naturally tend to view their actions in a positive light and their memories of specific events reflect this tendency. Some of the respondents were likely sensitive to the opinion of an urban outsider. They naturally would not want themselves or their community to be portrayed as a backwater place inhabited by "hillbillies".

### **Observations and Field Notes**

During the numerous trips to Beaver County, copious notes were taken to record my thoughts and observations. Much time was spent in the local environment and

interacting with local citizens. One whole day was devoted entirely to observing the actual pig farm and its daily operations. The purpose of these notes and observations was to provide supplementary and contextual information in order to interpret the collection and analysis of the data.

### **Secondary Sources**

Secondary sources of data included articles and documents from a variety of sources. The Deseret News, based out of Salt Lake City, provided much of the background of the Circle Four Farms operation. This newspaper ran a series of articles that explored different aspects of the business. Additionally, local newspapers in Beaver County and St. George provided a closer glimpse of the community as well as local letters to the editor that provided valuable insights into local opinion.

Minutes from a county commission meetings, planning commission meetings, and Utah Department of Water Quality meetings were numerous and valuable. Unfortunately, the planning commission was not as vigilant in keeping minutes and none could be found from 1992-1994. The permits that were issued by these organizations were also useful in tracing the conditions that were imposed on Circle Four Farms.

### **Analysis**

Grounded theory (Charmaz 1995; Glaser 1992; Glaser and Holton 2004; Glaser and Strauss 1967; Strauss and Corbin 1990) is a methodology that provides a set of procedures for the systematic collection and analysis of qualitative data. Grounded theory research focuses on exploration and theory generation rather than theory verification (Glaser & Strauss 1967; Rennie, Phillips, and Quartaro 1988). It is characterized by use of the constant comparative method of analysis, with data and abstract concepts

constantly compared to each other, ensuring the development of an integrative theory that is firmly grounded in raw data. As themes emerge from coding, the researcher goes back over the data to ensure that it is coded in accordance with these themes. Data collection and analysis are conducted simultaneously, with emerging analysis and theory shaping subsequent data collection. Themes and categories from interviews were not defined beforehand and emerged from the data through a process of open-coding using the qualitative software MaxQDA.

The data was first read three or four times prior to coding. During this immersion the researcher took memo notes based on observations of the data. The data were then coded into descriptive categories in a process called open coding (Strauss and Corbin 1990). Open coding was conducted line by line to ensure thorough grounding and critical thinking about the data (Glaser 1978).

Axial coding was then used to examine the relationships between data (Strauss and Corbin 1990). This resulted in creating a series of codes that identified possible relationships between the data and created concepts and categories. Four core themes resulted from this process, themes that encompassed the vast majority of the data. These core themes are explored in the next chapter. Memos kept throughout the process were especially helpful at this point in the analysis. They were useful in generating ideas about the data, recording evolving hypothesis, and developing relationships between codes (Henderson and Bialeschki 2002). The last step consisted of using the constant comparison method in reviewing the codes with the data to refine the developed themes, identify disconfirming evidence, and find diversity in the data (Henderson 1991). The

coding analysis came to an end when new information tended to confirm the existing classification scheme and discrepant cases stopped appearing.

### **Trustworthiness of Qualitative Studies**

One of the most difficult aspects of qualitative research is that of rigor, the degree to which a qualitative study's findings are authentic and its interpretations credible. Lincoln and Guba (1985) believe that the key issue in qualitative research is trustworthiness. A trustworthy study is one that is carried out fairly and ethically and whose findings represent as closely as possible the experiences of the respondents (Steinmetz 1991). Below are several ways the trustworthiness of this research has been increased.

#### **Triangulation**

Data triangulation refers to using more than one data source to achieve a comprehensive understanding of a phenomenon and as a means of corroboration. When data from observations, interviews, and archival materials are convergent and support each other, the reader can be more confident of the study's observations and conclusions. This research used several different types of data to increase the trustworthiness of the study. By identifying concepts and ideas that emerged from reviewing multiple sources of data, I was able to focus on issues that were valid and important to the wider community.

#### **Peer Debriefing**

Discussing data collection and analysis with colleagues who are not intimately involved in the project is a valuable way to increase trustworthiness of the data. This allows the researcher to hear new perspectives about the data as well as to check for ways

in which personal bias might interfere with the data. In this research, another planning professional was asked to review the analysis of the data and the conclusions. His feedback was useful in checking the conclusions as well as brainstorming other alternatives.

### **Member Checking**

Requesting feedback from the respondents is another way to increase trustworthiness of the data. It is important to know if participants think that the essence of their experience has been accurately portrayed and that the conclusions are reliable. I asked several respondents to review the conclusions and provide feedback. Their comments resulted in further clarifications that amended portions of the conclusions.

### **Researcher Stance**

In qualitative research, the researcher is essentially the tool of analysis. Acknowledgement of the researcher's stance is important in raising the trustworthiness of the data and conclusions. I have three years of experience as a regional and local planner working for a variety of organizations, including that of a semi-rural western county. Those years of experience have provided a first-rate education concerning the in and outs of the planning process as well as the benefits and the downfalls of planning. While planners usually attempt to act as objective facilitators between the government agency and the applicant, research suggests that planners tend to be biased in favor of developers and growth (Calavita and Caves 1994). After all, plans and the planner are useless if there is no development occurring. A positive bias towards development might result in downplaying the negative reactions made by some respondents and emphasizing the

positive economic impacts and the arguments of the inevitability of growth made by the proponents of Circle Four Farms.

Throughout the interviews and during analysis, I have attempted to maintain an awareness of any possible bias towards the respondents and their responses to the questions. Also, I found it important to avoid categorizing respondents based on their socioeconomic background and prejudices. This proved difficult at times, especially since I have dealt with similar situations everyday in my employment. I attempted to maintain an “emotional middle distance (Weiss 1994) and remain neutral in my responses and reactions as the interview progressed.

## **RESULTS**

### **Introduction**

An analysis of the data resulted in four core themes that encompass the vast majority of the data. These categories are central ideas that have emerged from the data and have resulted from the participants' experiences and perceptions of the planning process. The four themes include:

1. Importance of state planning
2. Failure to Adequately Plan for Circle Four
3. Response of Planning to New Challenges
4. Divided Community

Each of these categories will be explored in detail in this chapter.

### **Importance of State Planning**

An important theme that emerged from the interviews was the importance of planning done by the Utah Department of Water Quality. This agency developed a reputation as the most involved review body. An engineer that assisted the company in designing its waste lagoons noted that "it is very accurate to say the most active regulators were state employees" (Player, G. 2006). Obviously, this agency had an essential role in protecting the groundwater and surface water in the community. It was a role the agency filled well compared to other similar agencies around the county. But their review was also important in terms of the local planning process. Employees of the DWQ are the first to admit the agency does not want to be involved in local planning issues. The director of that agency commented:

From the standpoint of water quality protection, the state had in place rules and regulations sufficient...yes the state could protect groundwater and surface water. It had nothing to do with planning and siting a facility with regards to a community...and shouldn't have that. They don't want the water quality agency deciding whether it's good for the community and whether it affects jobs or employment or growth and surrounding land owners. Those authorities lie elsewhere and those are the places that needed to address it (Ostler 2006).

A government water board is not interested in the social or political aspects of a project. Its review is strictly laid out in state law which clearly defines a scientific process and sets numeric standards that must be kept.

The DWQ could care less whether the social economic needs of the state were met by this facility because we didn't care about those things...our level of debate and involvement was related to that—the engineering that would meet water quality standards (Oster 2006).

However, as much as they tried to stay away, DWQ officials found themselves in the middle of the raging community debate over Circle Four Farms. “The local folks got involved very closely in the state water quality permitting”, stated one company official (Peterson 2006). Residents and activists attended the public hearing held by the agency and pressured the officials to help their cause. “The water quality permit became the vehicle to protest the development” (Ostler 2006). If some aspect of the hog farm caused concern among the residents, it would surface at the DWQ hearing, even if it was outside the purview of that particular agency.

People that didn't want a hog farm located near them were involving themselves in the process to try and stop it, although our process couldn't consider those needs (Ostler 2006).

Why did so many residents lobby the DWQ on issues outside of its jurisdiction? In short, the head of that agency believes that the residents felt that the state process offered the best opportunity for them to listen to their concerns.

Because people didn't feel they had a very good mechanism elsewhere, a lot of times the water quality issues got blended with other non-water quality issues. That's because the water quality had a public process, it had a permit...and the rest of it wasn't all that clear and identified at the county level, or they didn't feel it was receptive to them (Ostler 2006).

The state offered an experienced and sophisticated process in reviewing the permits in their jurisdiction. The review process was formalized and the public had opportunities to have their concerns heard. If they felt the process was unfair, the state agency also had a means to challenge and appeal those decisions. Residents appear to have been drawn to the state process and assured by it because they felt it was there that they had the best chance to effect change.

The data also indicates the state process might have been more receptive to public concerns. The DWQ seemed to have some credibility with the community in protecting its environmental resources and enforcing its rules. A critic of Circle Four Farms noted that "the only public hearing that I recall that really had any teeth in it is when they went for their discharge permit through the DWQ" (Williams 2006). Perhaps residents were also drawn to the neutral, scientific nature of the review done by the DWQ. A local resident and employee of Circle Four said:

The state regulations are very scientifically based, very factual. The local people are very emotional based. Yeah, I think we got regulations based on emotions from the local community (Wunderlich 2006).

Whatever the reason, the DWQ felt pressure to extend its sphere of influence beyond its normal parameters. The head of the state agency stated that, "we worked with the people that had concerns to the extent of our authority, and beyond" (Ostler 2006). By this he meant that the DWQ began to get involved in attempting to regulate the odor issue.

We spent a lot of time working with [Circle Four Farms] on odor issues. We ended up agreeing that there were some nuisance odor problems...so we worked hard with the company to see what could be done by actually stretching our rules as far as we could to help alleviate nuisance odors (Ostler 2006).

The agency assisted by developing regulations that guaranteed a minimum distance of at least a mile between the waste lagoons and the nearest farmhouses. The agency went further and “twisted their arms” (Ostler 2006) and required Circle Four to investigate better technology for dealing with the odor.

Circle Four Farms went along with the additional requirements, likely because the company was seeking the same goals of reducing the odor. In a sense, the DWQ was playing a game of bluff. The agency knew it couldn’t legally enforce some of the requirements that were being listed in the water quality permit.

They could have challenged us, they didn’t, because we clearly had no odor requirements. We did have a requirement that they use the best available technology. But that’s best available technology to protect groundwater. We kind of expanded that term to include protect groundwater and don’t cause and other problems. They didn’t ever formally challenge us on it and they tried several methods to control it. They already had more technology than the normal animal waste lagoon. But they wanted something too because they didn’t want the complaints (Ostler 2006).

In addition to these steps taken by the DWQ, the agency also became involved in the planning process in other ways. It became a force in intergovernmental corroboration. The agency worked closely with the planning and zoning officials from Beaver County to ensure that they were aware of any state permit that was being issued and to hear any concerns that they had. The agency also formed a committee to work with local officials on odor and complaint issues

so we could be better coordinated with the county planning and zoning process mechanism to provide information to the public on a regular basis,

a place where all issues could be thrown on the table whether it was water issues or odor or other concerns (Ostler 2006).

The director of the agency attributed any effort and success on its part in regulating odor and other issues as a result of local residents. The agency was pushed to take steps and enforce regulation normally beyond its limits.

It was really the local citizenry that drove the attempts to modify and incorporate the best technology. The DWQ had to work within the authorities of other people to address the needs. The county wasn't sophisticated enough to do that very well. We had to work and push them and try to form committees and get information out. At least that's what I felt at the time. I think they learned a lot over this process. But it was working outside of the water quality authority and working with others that may have authority and try to work through it (Ostler 2006).

While the DWQ appears to have been an unwilling advocate for community concerns, it nonetheless was an important part in the planning process of Circle Four Farms. Its sphere of influence was enlarged, if only for a short time. Its experience and objectivity in dealing with controversial issues became a magnet for local citizens, especially for those suspicious of local officials and processes.

#### **Failure to Adequately Plan for Circle Four**

One theme that arose repeatedly from the data is the inadequate planning done by Beaver County to prepare for Circle Four Farms. In many ways this was a predictable scenario: a local community with limited staffing resources and experience finds itself unable to prepare for and deal with the negative environmental and social impacts of a large corporate farm. The data from this research finds that this situation is largely true for the first few years of Circle Four Farm's time in Beaver County. Even local and company officials admit that the local planning staff were in "over their head" (Peterson 2006).

I think there were deficiencies there. It is a small county, they are not used to dealing with big developments. They are not used to dealing with politically hot issues. So, naturally in the course of the process of that, you could look back and say there were some deficiencies (Peterson 2006).

What does not fit into the expected scenario is the diligent and innovative ways in which a tireless group of local residents and company representatives responded to and adjusted for the challenges posed by the new set of circumstances in which the community found itself. That theme will be explored below.

The officials and residents of Beaver County were not prepared for the impacts or challenges posed by the new hog farm that was coming to their county. A former director of Circle Four bluntly stated, “what happened—the county was not quite ready for the project” (Adams 2006). In many ways Beaver County mirrored the bleak experience of Parma, Michigan discussed earlier. This includes extremely limited existing regulation, very little public discussion or input in the early stages of the permitting, and complaints by residents that their concerns were being ignored.

The company and local officials did hold a series of town-hall style meetings where it first floated the idea of a large-scale hog farm. However, from most accounts, either the company was not forthcoming with all the potential impacts or the local residents simply did not understand the degree of the effects. The county planner stated that

there was public hearings held and people came, there was probably two or three of those held to let the folks know what was going on. Everybody seemed to be OK with it. Of course, given the scope of the project, they probably didn't understand the code (Davis 2006).

Instead of a serious debate about odor and quality of life, the residents were instead overjoyed at the prospect of new economic development.

Well at the meeting all the farmers were there as well as all the townspeople and...they had people standing and cheering and saying we want our children to stay here and thank god some opportunity and development and all this propaganda. Great, we welcome you with open arms (James, B. 2006)

This idea was echoed by a consultant who helped design Circle Four Farm's lagoon system, Corrie Lynn Player. "Most everybody in Milford was just starving to death...most of the resentment came from people who refused to sell (land to Circle Four) at the price offered and wanted to hold out" (Kratz September 15, 1998).

However, there is evidence that suggests Circle Four Farms was not entirely forthright about the impacts of the development. In the debates that preceded the 1993 local elections, one of the candidates for Milford City Council, Brad Jefferson, called on Circle Four Farms to be more candid about their operating practices.

In view of the way that information has been sketchy and not completely forthright, I don't believe we should just throw open the doors of the city to Smithfield Foods...Smithfield should be held fully accountable and liable for any and all damages done to our water (Smith 1993).

Mr. Jefferson's complaints were based on reports of water pollution and odor associated with a Smithfield Foods-owned hog farm in Virginia. He pointed out that the company has received water quality violations in Virginia and that the company was not well received by the neighbors. "The stench is horrible," said one resident. "It is not all like the state-of-the-art operation described in its promotional meetings" (Smith 1993).

However, this was not known until after the initial meetings with Circle Four Farms. The positive response from those meetings with local residents resulted in quick action from Circle Four Farms. Once the company had decided to settle its operation in the county, a representative was given the task of reporting on the local regulations would

affect its approval. The report was not good for residents of Beaver County. The attorney for Circle Four Farms said:

The first thing the company asked was what are the county planning ordinances and master plan and so on. They asked me to review them and report back. So I reviewed them and my report back was that the master plan was pretty general and the zoning ordinance was woefully inadequate...Beaver County's ordinance was just lame (Peterson 2006).

The vagueness and inadequacy of the local ordinances could have allowed any company to basically do whatever they pleased in the county with little regard for even the most basic zoning practices. Fortunately for the county, the company was content to wait for the zoning ordinance to be improved and offered assisted in doing so.

Despite the initial informational meetings, and perhaps because of the delay in developing zoning ordinances, many residents soon forgot about Circle Four Farms and its plans for pig farms. Whatever the reason, some residents expressed shock and surprise when the company started operations.

And they told us at that [first] meeting that what they were going to do was, they had already purchased a small farm bordering ours and another little on further out, what they were going to do was put in one small unit, maybe 2,000 or 3,000 sow unit, let everybody kick the tires and see what they thought about it and then we see about how much they're going to grow. It went from that meeting to—boom! They had groundwater rights tied up, governor in their back pocket—true story...They got the conditional use permits from the county but the problem is nobody from the county or anywhere was that opposed until they were so big there was nothing you could do about it (James, K. 2006).

This sudden discovery of a fully operational hog farm immediately put many local residents at odds against the company and the officials that approved it and set the stage for mutual distrust over the next several years.

In terms of outside assistance and expert analysis, the county failed to seek much help. Given the novelty of hog CAFOs to the West, a wise step would have been to hire

an experienced expert to guide the county through this stage. However, the prevailing opinion by many local residents and leaders was that an industrialized hog farm would not generate more impacts than any other agricultural use. The county planner said,

We didn't hire anybody, really. Other than me consulting with different people that had some ideas. I mean, it's an agriculture area and...it's always been around here and that doesn't seem to bother anybody (Davis 2006).

Other comments made by county officials acknowledged that Beaver County's regulations were not up to par with other places. In referencing the opposition that Circle Four Farms encountered in Iron County, a more populated and sophisticated county, a company official said:

I remember the Iron County people were not the most friendly people, some of them. They put other restrictions on us. Like, our lagoons, we just basically in Beaver County we got just a 4' field fence around the lagoons with barbed wire. In Iron County, we had to put in 6' chain link with wire around it (Wunderlich 2006).

Some residents believe that county officials' claims of ignorance about the impacts of the hog farm were dubious. It only took a little research and preparation to realize that many other communities had the same pig problems that Beaver County had. Although they were refuted by many, some residents believed many local leaders simply looked the other way when confronted with environmental and odor issues.

And the local officials just absolutely refused to look at any of the problems. It was going to be different here because this is a different climate. We're a desert and the problems they had in other areas can happen here...they refused to look at the problems that came up in other areas. They refused to even consider there were problems associated with it (Williams 2006).

I was starting to read articles in my farm magazines about the negative effects of big hog operations were having on local communities and groundwater and so forth. And so I go to this meeting with a little bit of

skepticism, and you try to ask these questions, as it's like they didn't want to answer them. They just skirted them (James, K. 2006).

In addition to these comments, some residents complained that they felt powerless in fighting the pig farm project. They believed that the inaction of local officials was possibly due to pressure from a number of influential people that were supporting and backing the project. "It amazes me how they get where they're going and get what they want," said one resident (Kratz September 13, 1998). No matter how many issues were raised, the approval of the project was going to happen because of the support of these individuals.

When you can see that something is going to happen no matter what, it's best to not fight with it... it was just decided. I don't think the public hearings had anything to do with the outcome at all (Williams 2006).

We had a friend who worked for the governor, and he told us the governor had given Circle Four his personal telephone number and said if you have any problem getting in down there, just give me a personal call (James, B. 2006).

Whether or not these statements are true is unknown. However, what is significant is how these residents viewed the planning process and its effectiveness. These residents felt betrayed by their community and disenfranchised as American citizens. "For the first time in my life I remember feeling that we didn't live in a free county in America...we don't have a voice, they don't listen, they don't hear (James, B. 2006).

Another aspect of the poor planning deals with the county infrastructure necessary to meet the demands of the new pig farm. Miles and miles of road improvements were necessary to handle the heavy trucks that now traveled frequently on both desolate rural roads as well as the heavily used traffic routes. New residents and a water-intensive land use also meant long-term planning for increased sewer and water demands. Improved

social and health services to handle the new workers and their families were also required. By most accounts, Beaver County struggled to plan for these aspects.

There was one thing in the initial planning process that was not addressed. It had to be addressed afterwards—the roads... The roads were a huge issue... Yeah. I would have done more comprehensive planning, with respect to infrastructure (Adams 2006).

The [infrastructure] impacts, yes the state has come in with grants, but there has been a lot of county money going into roads and maintenance, increased sheriffs, bilingual teachers at the school because they brought in so many Hispanics. I daresay that if you want to do the research and pencil the math, it's cost this county far more than what's put in for tax dollars (James, K. 2006).

Coordinated efforts between the city and county concerning infrastructure impacts were another aspect of planning that inadequately addressed. While much of the new tax revenue went to Beaver County, the town of Milford was left to deal with the impacts. This speaks to the need for increased regional planning as well as individual city planning.

I think one of the things that we probably should have done is have maybe closer working relationship with the cities because that's where a lot of the impact went. People that were moving in, where they were going to live, how were they going to live, what kind of housing you had in the cities. We tend to think that's a city issue but again, if we had all got together and said if we approve this what is this going to mean to Milford. Are you going to have the housing available? What's it going to mean to your service level? Do you have the water? Is your sewer level capable of adding this kind of growth. Those kinds of things we could have done better. Not to say it's been a real issue in the cities, but its something that we probably should have considered (Adams 2006).

In many ways the experience of Beaver County in the beginning was similar to the case study of Parma. Small communities are at a natural disadvantage because of their informal processes and little experience. Certainly the county leaders learned a lot from their experience. In fact, when asked what he would do differently, one local leader said,

Today, with the way we've grown with staff, I think it would be reviewed more today that it was then. Now we have experience, and we've dealt with other types of growth. I think it would be more extensive. I don't think the review process back then was bad. I just think, from the county's perspective, we weren't geared to do the review that we would do today (Davis 2006).

However, despite the mistakes that were made in the initial planning process, many improvements were made in the years following the initial permitting. This is the focus of the next section.

### **Response of Planning to New Challenges**

While many of the ineffectual planning scenarios described above were expected, I was somewhat surprised at the numerous references made in the interviews to the successful long-term outcomes that resulted from the planning process. These references were made by nearly all of the respondents, regardless of whether they were a Circle Four critic, company official, or public representative. It is difficult to determine exactly when these positive results occurred, only that they occurred after the initial planning stage and happened as a response to the harmful impacts that were already affecting the community. The data suggest that this positive result was a product of the long-term efforts of three different groups: local citizens, the planning commission, and Circle Four itself.

The perceived long-term successful planning efforts are inseparably connected with the odor issue. It is this issue that attracted most of the attention of both the community and Circle Four Farms. As discussed previously in the literature review, the over-powering stench of the hog farms has the potential to affect nearby residents physically and psychologically. In the case of Beaver County, it appears that the strength of the odors emanating from the barns was even more than the company employees

expected. “I can tell you this, the smell issue was worse than they anticipated it would be” (Adams 2006). The odors did not begin immediately. It took a while for the sewer lagoons to fill up enough to the point of generating odors. The local planner noted that “for the first few years, everything was fine, and then we started to get odor issues” (Davis 2006). It wasn’t until the odor became unbearable at times that the community began demanding more review and regulatory action. As discussed in the previous chapter, two major conditions resulted in controlling the strength of the odors: 1) the creation of a distance requirement between the hog barns and residences, and 2) the improved design of the sewer lagoons.

Local citizens took a lead role in bringing about these two conditions. From the beginning, residents were alarmed at how close the initial zoning ordinance allowed hog barns to be built next to residences. It took a great amount of time and effort to create and put these two conditions into action. “We had to go to work hard and fast to get zoning ordinances changed to keep them out the distance that they are” (James, K. 2006).

Leading the charge to change this unacceptable condition was a group of farmers in the Milford Flats area who, reluctantly, became activists. This group of farmers began circulating petitions, talking to their local elected leaders, and attending planning meetings.

We didn’t have anything against Circle Four, we just wanted to be good neighbors and for them to be good neighbors. It was years of going to meeting after meeting, petition after petition (James, B. 2006).

Over time, these efforts proved successful in creating positive change. The constant petitions and pressure to do more likely resulted in outcomes that would not have happened otherwise. One incident, in particular, demonstrates the effect the local

residents had on the rules regulating the farms. This incident was related by the attorney for Circle Four Farms:

People presented a petition and said we want at least a 3-mile setback from the nearest house to one of these facilities. Larry [Circle Four Manager] turned to me because I was doing the land acquisition and said, can we do that? I said yes, land acquisitions are all outside the 3 miles, with the exception of one house that's 2.75 mile. He [Larry] said with the exception of that one house we can maintain 3-mile spacing. I was a little surprised Larry agreed to it so quickly...the whole idea...was driven by public objection to the farms being built closer to town and closer to the established residences on the Milford Flat areas south of Milford. So that redesign was quite significant in protecting the health, safety and welfare of the people because it created separation...it was a fundamental shift in farm design and development and it resulted directly from the planning process (Peterson 2006).

The success of the residents did not stop at the separation requirements. Citizens also had some success in causing Circle Four to incorporate new technology in reducing the odors. In summarizing the local land use planning process, the head of the state environmental department commented that "it was really the local citizenry that drove the attempts to modify and incorporate the best technology" (Ostler 2006).

Another group responsible for some of the long-term planning success was the local planning board. The planning commission is an appointed board consisting of volunteer commissioners who hear and vote on proposed permits. While this board seemed to have limited impact in the initial planning of Circle Four Farms, its influence and ability to require change grew over time. Not only did the planning commission become increasingly active, they also gained a reputation as an informed and credible board. One critic of Circle Four noted that "it was an active county planning board and they were knowledgeable" (Williams 2006).

The planning commission gained the respect of both the residents and the company by asking tough questions and demanding results. One company representative responded that the “planning commissioners [were] engaged...and they asked a lot of tough questions” (Peterson 2006). In addition to the citizen demands, the planning commission played a big part in requiring separation standards.

We actually created a zone called the A-20 FM...that would not allow any animal husbandry in this triangular zone... and it was a planning commissioner, we mitigated her concerns by creating this (Davis 2006).

In addition to separation requirements, the planning commission also challenged Circle Four to use the latest in odor management and to incorporate the latest technology in reducing odors. These requirements became a regular part of the conditional permitting process that Circle Four underwent to receive any additional permits (Peterson 2006). Going beyond odor management, the planning commission also took into account other factors that affected the community. A former Circle Four manager stated that the planning commission

held us to some very specific discussions on odor mitigation and transportation, where would the workforce reside, how much community preparation do we need. Those sort of things were brought up (Adams 2006).

Another important component of the successful planning outcomes was the company itself, Circle Four Farms. It is debatable how effective the citizen complaints and planning commission requirements would have been if they had been dealing with an unwilling and uncooperative company. The vast majority of the respondents viewed Circle Four as a conscious company that was sensitive to the needs and complaints of the community. Circle Four Farms seemed to understand that successful planning resulted in a win-win situation for both the community and for the company. Many residents

interviewed expressed appreciation in working with a company that, for the most part, attempted to respond to the complaints.

If you had a company that didn't care, they could come in—you'll get opponents who'll say this is crap—but the company did make a concerted effort to work with the county and the people at the county level that were charged with the responsibility of looking after the project were very appreciative of the company's willingness to work with them on those type of things (Adams 2006).

While this sentiment was not shared by all, one cannot dispute several of the actions that Circle Four did to reduce the odor concerns. In particular, as mentioned previously, the company willingly agreed to a three-mile separation distance between the hog barns and residences. This distance was unheard of at the time and sent shockwaves throughout the industry around the country (Peterson 2006). Additionally, Circle Four spend a lot of money to explore and implement new technologies to reduce the noxious compounds that were the cause of the odor. A former manager stated that “the company, they spent millions of dollars trying to mitigate that [odor]” (Adams 2006). Different methods included manure additives, covers, and aeration (McMahon 1998). One of the technologies involved covering the lagoons in order to trap the gases. One critic of the company recalled that,

Eventually Circle Four started covering the lagoons and trapping the gases that were the cause of much of the foul odor. And I will say when they started implementing new technologies and paving the road, it got much better and it has been better much since (James, K. 2006).

Despite the inadequacies of the early planning attempts connected with Circle Four Farms, the data suggest that the long-term planning efforts were much more successful in controlling the odor and other concerns. While the county initially was out of their league when it came to regulating the CAFO, the local planner said that the

community “worked through a learning curve” and adjusted to the challenges that were presented (Davis 2006). These efforts were not the result of one single entity or planning board, but rather the combined efforts of a broad collection of concerned citizens, government bodies, and a responsive company.

### **Divided Community**

Another theme that resulted from the data was the idea of a divided community. A project with the size and scale of Circle Four Farms does not come along often to a small community. While some groups are positioned to make significant financial gains from the project, other individuals and groups are threatened by the development. This tension between opposing groups is normal in any economic development project and provides the force and energy in the planning process to help create a better project. However, in extreme cases this tension can reach a boiling point and the resulting contention divides a community along economic, social, and religious lines. One resident summed it up by saying, “it’s like the devil came to Milford...this has split this community right down the middle, so’s one half won’t even talk to the other” (Carter, February 18, 1998)

Even twelve years after the initial permitting of Circle Four Farms, this conflict was still visible. Circle Four no longer draws the crowds of people they once did when they renew their necessary permits. However, this cannot necessarily be interpreted as indifference on the part of residents. One resident commented that “this is a small town. People get tired of contention. They don’t want to fight, they don’t want the bad feelings, the bad vibes, so they just let it go” (Williams 2006).

The community was split between those that were in favor of the hog farm and those that were opposed to it. Much of the divide in the community was based on the

geographical characteristics of the community—those in the Milford Flats were closest to the hog farms and would be affected most by any air and water pollution. Additionally, the data suggests that the divide was more than just geographically based, it was also split along economic lines.

Most people out here in the farming district were against it because they were the closest to it. And there probably a few people in town. I won't say a few—basically the railroad community was kind of against it...and so that kind of made the mix of people. The “fors”, people who needed employment, against people who had the good jobs in the farming district and the railroad (Wunderlich 2006).

One of the results of the divided community was the marginalization and ostracism of residents that were critical of Circle Four Farms. A small, vocal group, consisting mostly of local farmers, began publicly criticizing Circle Four Farms, the planning process connected to it, and local leaders that supported it. Whether or not the residents were correct in their criticism of the company and the local leaders is not the focus of this research. Rather, the intent here is to explore the theme of how this group reacted to the planning process and how they were viewed by others in the community.

Vocal critics of Circle Four felt that their views and concerns were not being considered in the planning process. Time and time again, they reported, they were ignored by local leaders whose job it was to protect the welfare of all of the community's residents.

For the first time in my life I remember feeling that we didn't live in a free county in America when this hit, they didn't listen. We tried talking to the higher-ups in the county, saying, what's going on? We can't even stay in our own home! What are we supposed to do, where are we supposed to go for the night? We can't breathe. And then there was illness. So I thought, this isn't America, we don't have a voice. They don't listen, they don't hear (James, B. 2006)

To make things worse, these residents reported that their concerns were met with derision and contempt by local leaders and company officials. They were accused of being uninformed, unqualified, and ignorant.

And we went to zoning and planning saying don't allow them to build more because it stunk. When you'd call and say it wasn't going to stink, it's really stinking. "Oh, you're smelling skunks", they'd say (James, B. 2006).

This is an example of how they treated us. I had been here eight years when they came, long enough to learn a lot of things about the valley—the aquifer, how it rises and falls, flows, things like that. They thought that they were going to be able to dig these big lagoons and just seal them with bentonite, and seal them, and have not any of that waste get into our groundwater. And I said, guys, there is no way. You're out there where it's rocky, porous, there's no way. "Oh you dumb farmers", they said. They just treated us like we were ignoramuses (James, K. 2006).

Quotes taken from interviews with government and company officials support the idea that the opposition was viewed as being full of "crazies", "wackos", and "nut cases". Some of the opponents of the hog farms were accused of only opposing the project because the company was uncooperative in purchasing land or buying a contract that would have enriched the individual (Carter 1998).

There were a couple that got their noses out of joints because they didn't sell. There were some loud protesters who hadn't sold when the farms began to expand. So the farms were just going all around them and they were asking astronomical prices for their land. So they got a little bent out of shape (Player, C.L. 2006).

In addition to facing scorn from local officials, the hog farm opponents also faced disagreement with their neighbors. Many community residents that were in favor of the project resented the allegations and fears of the opponents of the hog farm project. They viewed this group as troublemakers and agitators that were threatening a project that

stood to benefit the overall community. The following two quotes come from local leaders in the community, the local professional planner and an elected public official:

You have people who do not want change. They are comfortable in their little life and that's the way they want it to stay. And we have to weigh that out against all the other things (Davis 2006).

I don't care what kind of development you have, there's always going to be someone opposed to it...I attribute a lot of (the opposition) to just a change in lifestyle (Kratz September 15, 1998)

It was not strangers that arguing over the merits of the hog farm. In a small community like Beaver County where everyone knows each other, it was friends and family members that found themselves on different sides of the fence. Contention even became so intense at one point that the local LDS Church called "for a day of fasting and prayer to repair the rift" among its church members (Williams 2006). While neither group went so far as to commit crime or violence against the other group, tensions were high in the community. One resident went so far as to insinuate that certain opponents were coerced into dropping their criticism.

Then the intimidation took over...when you can see that something is going to happen no matter what, it's best to not fight with it... there were board members who were afraid of being sued personally (Williams 2006).

Not surprisingly, these residents felt that the planning process was flawed. Instead of empowering them as citizens, they felt disenfranchised and ignored. Instead of generating community understanding and goodwill, the process left a community whose deep divisions are still felt today.

## Chapter 6

### **DISCUSSION**

The four major themes that resulted from an analysis of the data are a description of the participants' experiences of the planning process in Beaver County. Based on these results, several issues and ideas can be discussed. The initial permitting of Circle Four Farms in Beaver County seems to be in line with the experiences of Parma and the rural communities of North Carolina. The general plan and zoning ordinance were weak and not useful as a resource or standard to guide future growth. Little or no expert assistance from other parts of the country were consulted to anticipate the impacts. The local government, in particular, failed to adequately address the odor issue as well as anticipate other infrastructure needs. There is evidence that residents were marginalized in the public hearings and their concerns ignored. Additionally, the community became bitterly divided (a division still felt today) as residents lined up in support or opposition to Circle Four.

However, there is evidence that the planning process was not the complete failure that was initially perceived. As time passed, residents that were previously inexperienced in planning matters became activist busybodies in organizing solid opposition to Circle Four Farms and its permitting process. The uproar over the noxious odors eventually resulted in pressure on Circle Four from local officials to implement newer and cleaner technologies to control the smell. The company itself and its employees began innovating and spending a lot of money to respond to the problem. Additionally the state regulating agency became highly involved in the planning process by exceeding its normal scope of review.

It is clear that the time frame of this research became an important aspect of the research data and results. For instance, if this research were conducted prior to 1996, the clear consensus would have been that the planning process had failed miserably in Beaver County. The odor from the farms was unbearable, citizens complained of being ignored and marginalized, and community leaders failed to consult outside experts. However, data collected up until 2000 paint a more positive picture. Government action appeared to be more successful in effecting change on behalf of its citizens and meaningful mitigation of the most harmful impacts occurred. The odor that had made life miserable for many was reduced and the planning commission became an important community overseer. Circle Four Farms itself was a significant reason for the improved situation by investing heavily into developing new technologies to deal with the odor.

This finding highlights the importance of the rational comprehensive planning model, and especially the last step in that process—monitoring and feedback (So and Getzels 1988). This planning paradigm, discussed in the literature review, describes the four steps of the planning process:

1. Determine basic goals.
2. Study and analysis.
3. Plan or policy preparation.
4. Implementation and effectuation.
5. Monitoring and feedback.

An analysis that compares this model with the permitting process of Circle Four Farms shows that these steps were poorly evaluated in the early years. There is little evidence concerning the first step, basic goals. Community leaders had failed to engage

their community in a visioning process that defined the goals and aspirations of the residents of Beaver County. What little visioning was done occurred only after Circle Four Farms and the community had started discussions. Put into this reactive state, the community was in no position to objectively address their collective goals.

The data suggest that a poor effort was made in studying and analyzing the hog farm. The county planner was clear in stating that very little outside expertise or counsel was sought (Davis 2006). This was not so much a result of having few resources to hire such assistance as it was a belief that the county did not need additional help. Circle Four Farms itself could have been more forthright in providing data and guidance to community leaders. Based on past experience, the company surely had to realize the potency and impact of the hog farm odors.

The policy that resulted from the study and analysis and the tools that implemented the policy were inadequate. While the state water quality regulatory board developed strict guidelines from the beginning, the local zoning ordinance resulted in immediate complaints from residences. The first barns were located much too closely to nearby farms and those residents felt the direct effects of the odor. While the conditions associated with the conditional use permits seem appropriate, the data suggests that the planning commission was unsuccessful in enforcing those standards.

Given the initial failures in the planning process, the last step of the rational planning model, monitoring and feedback, became an important consideration. This step describes the phase where officials and planners evaluate how well the plans are being carried out, whether the policies are successful, and what unexpected challenges have arisen. Feedback from residents in Beaver County was quick and forceful and left no

question that something else needed to be done and that new policies were needed. One elected official stated he knew by 9:00 A.M. if the odor was particularly strong that day because of the number of phone calls he received (Johnson 2006). New planning commissioners began holding the company to strict requirements and Circle Four Farms responded by investing money into exploring new odor technologies. Indeed, the whole planning process was repeated, with much better results this time, as a result of feedback and monitoring. This shows the repetitive nature of the planning process and the need for attentive community leaders and planners to adjust policies and implementation practices.

The extent to which public participation was utilized is another lesson highlighted by the results. The literature review discussed the findings of Burby (2003) who concluded that public participation was the key factor in not only producing better plans, but also encouraging higher rates of plan implementation. An analysis based on Mackenzie and Krogman's (2005) four components of a thorough public participation process shows that Beaver County and Circle Four Farms were only partly successful in this endeavor. The first component considers the timing of public participation. Early public involvement was initiated by Circle Four Farms and was used to inform the community about the proposal. However, the public's ability to provide input in its design and location was limited. Local farmers complained that the pig farm suddenly went from a vague concept on the drawing board to a fully operational business without any other information being shared. A process that would have engaged stakeholders early and often would have likely resulted in better planning and less conflict between residents and company.

Adequate information sharing is another important component in the public participation process. While there is no evidence of intentional deception in sharing information, it seems striking that the company did not forewarn the community more about the odor. Circle Four Farms representatives responded that the strength of the odors was unanticipated, although it seems that previous experience in the hog industry would have made it entirely predictable that odors would be a large issue. In the minds of those impacted most by the odor, this “forgotten” detail appears to have engendered distrust between the company and farmers. The farmers became suspect of any action taken by Circle Four Farms after that and contributed largely to the divided community that is present throughout the data.

The third factor is the accessibility of the process. The results of this research point out that the state water regulatory board became an important part of the planning process. In fact, the data shows that the “water quality permit became the vehicle to protest the development” (Ostler 2006). The director of that board believes this was the case because the process at the local level was unclear and unreceptive to residents’ complaints. For whatever reason, residents believed the best place for their complaints and concerns lay not in their local leaders, but in the state agency.

Lastly, the final component of the public participation process is accountability of public institutions and policies. Little trust existed between local officials and critics of the hog farm. This is again demonstrated by the importance and confidence the participants’ had in the state permitting process. Residents felt that no amount of protest at the local level would affect meaningful change.

While the role of feedback and monitoring proved its importance in creating a better situation, there is another equally important reason for the relative ultimate success of the planning process in Beaver County: the remoteness of the county. The last series of permits for barn construction was approved for a site located miles away from the other clusters of barns and residences. The isolation and vastness of this rural western community proved to be one of the most significant advantages in dealing with the mega-hog farm. Circle Four Farms, in effect, had a built-in pressure valve. When the heat and pressure became too difficult to stand, the company could simply move out further into the desert where the remoteness precluded most of the complaints over odor and groundwater. This benefit was not possible in locations of higher population density like Parma, Michigan and rural North Carolina, the two other communities whose planning process for a hog CAFO were evaluated. The immense geography of the Mountain West offers a clear advantage in this aspect.

In the end, even a relatively successful planning process is limited in its ability to reduce the impacts of a mega-hog farm. Communities need to determine whether or not hog farms, and other LULUs, are worth the short- and long-term impacts. The challenge for rural communities in a time of economic and technological change is to engage in a collaborative, highly participatory examination of what sort of community residents want to live in (Schwab 1998). Once a vision is defined, it is possible to measure proposed development of any kind against that vision, and to decide whether it meets or fails the expectations that the comprehensive plan has established.

## Chapter 7

### CONCLUSION

This research began with the hypothesis that the final conclusion would confirm that Beaver County was overwhelmed by Circle Four Farms. Beaver County would suffer the same fate as the rural communities of Michigan and North Carolina and be plagued with similar issues of odor, community division, and environmental degradation. The planning process, it was believed, would fail to address these basic impacts and, in the end, fail to protect the health, safety, and welfare of the community.

However, the data do not entirely confirm the initial hypothesis. It is true that the initial permitting seemed to fail in many aspects. The concerns of odor and infrastructure needs were not anticipated by government officials. In addition, some residents complained of being ignored. But later actions by the community, in response to the initial results, were more successful at mitigating the negative impacts. The hog barns were moved further from residential areas, the noxious odors decreased, and concerns over environmental harm were eased. This result was a product of continual monitoring and feedback, along with actions taken by a collection of concerned residents, an able state regulating agency, and a concerned company. While the planning process was instrumental in eventually dealing with the impacts of the mega-hog farm, the geography of the rural West also played an important role. The vast open space, devoid of human residence, ultimately allowed the company to expand outward and thus most conflict.

However, any relatively successful planning results did little to heal a community that was deeply divided over the permitting of Circle Four Farms. Even though Beaver County today is calm, resentment still remains in some corners of the community. Much

of this bitterness could have been avoided had the public participation process been more inclusive and complete in its assessment of the proposal. In the end, residents need to proactively engage themselves in a debate over the type of place they want their community to be and create the tools and ordinances to make that dream happen.

## Chapter 7

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## APPENDIX 1

### Respondents

Adams, Rob. Former manager of Circle Four Farms.

Davis, Craig. Planner for Beaver County/Economic Development Director.

James, Beth. Farmer.

James, Keith. Farmer.

Johnson, Chad. Beaver County Commissioner.

Noyes, Linda. Human resource director for Circle Four Farms.

Ostler, Don. Director of Utah Division of Water Quality.

Peterson, Warren H. Circle Four Farms attorney.

Player, Corrie Lynn. Partner Tahoma Companies, Inc, an environmental consulting firm.

Player, Gary. Partner Tahoma Companies, Inc, an environmental consulting firm.

Rollins, Richard. County commissioner, local businessman.

Webb, Jim. Environmental Resource Manger for Circle Four Farms.

Williams, Jan. Community activist (name changed for confidentiality).

Wunderlich, Ronald. Circle Four Farms Employee/Milford Economic Development Director.

## APPENDIX 2

### Interview Questions

(It is anticipated that not all of these questions will apply equally to each respondent. I will go into depth with follow-up questions where applicable)

These questions are applicable for the 1992-2000 time frame.

1. What kind of planning review was in place when Circle 4 first came to Beaver? What ordinances or review criteria applied?
2. How detailed were the reviews during the first year of permitting? What information was required for the permits? Any expert analysis or outside counsel? What were the concerns expressed by staff? What was staff's reaction to the pig farm?
3. What was the reaction of the Planning Commission and/or Board of County Commissioners to the pig farm developer? How intensive was their review? Did these groups place any conditions on the approval?
4. How did the public hearing proceed? Any meaningful feedback from the public? What concerns were expressed? How did the PC/BCC and staff react to those reviews?
5. What adjustments were made after official and citizen review? Did aspects of the proposal change as a result of these reviews? What conditions were placed on the permit?
6. How were additional, subsequent permits for C4 in this time period handled? Were they given stricter review? How were the public hearings?
6. Overall, how successful was the planning process in addressing public health, safety and welfare?