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A CRITICAL EXAMINATION OF GREEN ECONOMIC DEVELOPMENT

AS A POST-DISASTER RECOVERY APPROACH:

THE CASE OF GREENSBURG, KANSAS 2007-2012

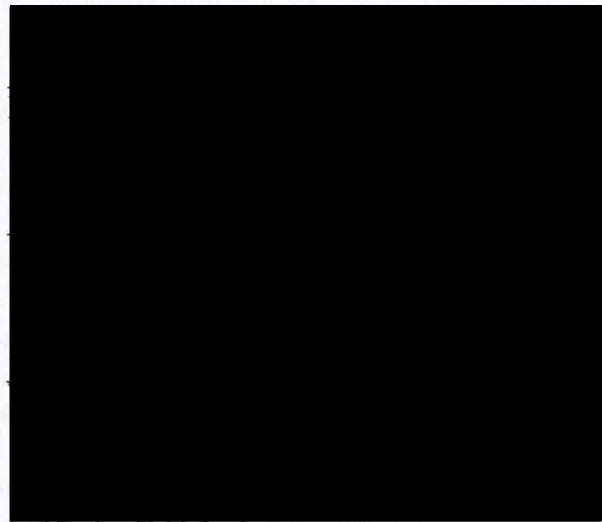
by

David Edgardo Leiva

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ABSTRACT

A CRITICAL EXAMINATION OF GREEN ECONOMIC DEVELOPMENT

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by David Edgardo Leiva

December 2013

In May 2007, an EF-5 tornado ripped through and annihilated 95% of Greensburg, Kansas, a town of about 1,500 people in the southwestern portion of the state. On the heels of the disastrous Hurricane Katrina federal response and with the promise of two sitting presidents to use all of the federal support available, the town vowed not only to “survive, but thrive.” Months later, Greensburg civic, business and elected leaders – with a host of external expertise – unveiled a recovery plan that not only set in motion the rebuilding of the two-square mile town but also offered the opportunity to become the first model green city in the United States. Media captured the daily struggles of Greensburg for years, and tourists, academicians, and elected officials have come from all over the world to witness how this small town has used sustainability practices. Today, the city boasts the most environmentally-friendly and architecturally rich buildings per capita in America. However, beneath the coating of eco-friendly public buildings and energy-efficient homes propped up by unprecedented financial, technical and federal support, brews a quiet storm of smaller tax rolls, higher taxes, an underused business incubator, empty business park, decreasing revenue streams, growing consumer debt, increased number of mortgages past due by 90 days, and a clock ticking until 2018

when homeowners must pay the full property tax rates that have been delayed by a decade. The population has not returned to pre-storm levels as predicted by the same group of leaders. The media no longer visits. Six years later, America's role model for the green technology movement looks more like a cautionary tale of outsider influence, misunderstood economic development principles, and a hint of buyers' remorse.

ACKNOWLEDGMENTS

A good friend once told me that any successful journey starts long before the decision to take the voyage. If so, then this thesis is 10 years in the making, and there are many people to recognize. First, I must acknowledge the role that Almighty God has had in this ongoing expedition that has taken me around the world and in perpetual evolution. It has been fun, unplanned, and nerve racking. I have lived the life of a dozen men as a result, and I am better for it.

I also must note the openness of the people I met in Greensburg, Kansas, a special thank you. They have endured the most through this, including the loss of 11 lives that fateful day in May 2007. The Department of Economic Development and Tourism gave me an opportunity to rethink, reinvent, and renew my spirit. Dr. Chad Miller showed extreme patience with me and this research. Dr. Brian Richard left for greener pastures at Northern Illinois University but not before having a beer at a local pub that changed the course of my life in 2011. Dr. Bill Smith insisted that the paper needed to be "air tight." I hope I did not disappoint. And, of course, thank you to Dr. Shannon Campbell, who read word after word and offered incredible insight and suggestions. I took all of them.

Thank you to Lt. Col. David Milling, Lt. Col. Richard Weaver, and Maj. Craig Sumrall for encouraging me to pursue an advanced degree and allotting the time for me to do it. A special thanks to the men and women of Camp Shelby Joint Forces Training Center, who were patient while we worked to reimagine the post.

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CHAPTER I

INTRODUCTION TO THE STUDY

Background

When the class of 2008 walks across the stage today, you will send a powerful message to our nation: Greensburg, Kansas, is back, and its best days are ahead. ... The leaders of your town understand that out of the devastation of the storm comes an opportunity to rebuild with a free hand and a clean slate. They envision a future where new jobs flourish, where every public building meets the highest environmental standards, and where the beauty of rural America meets the great possibilities of new technology. The community is dedicated to putting the “green” in Greensburg. And as you work to achieve this vision, the Federal Government will honor its commitments and continue to stand by you. (Bush, 2008, p. 636)

It has been five years since George W. Bush became the first president to ever give a high school commencement address as he did so for the Greensburg, Kansas class of 2008. The tornado that lasted 65 minutes, had a width of 1.7 miles, traveled nearly 29 miles, reached winds of 205 miles per hour, and annihilated Greensburg is now all but a distant memory except to those who experienced it. With several options on the table, the residents of Greensburg elected to rebuild, and they did so with the future in mind. Had they chosen to dissolve the city and move to neighboring towns, the populace would have been in fair company, joining at least 130 other cities that have dissolved since 2000 (Anderson, 2012).



Figure 1. Greensburg, Kansas Tornado 2007 (photo by Greg Henshall/U.S. FEMA).

As a result of leadership, innovation, and nearly \$100 million in reconstruction funding through various sources, today Greensburg is America's green city model according to the National Renewable Energy Laboratory, a federal installation funded by the U.S. Department of Energy. The federal agency says that the town of Greensburg serves as "a national model for green communities" (DOE, 2012a, p.1) because of nearly all light-emitting diode, or LED, streetlights; the use of utility-scale and distributed renewable energy; every public building meeting strict national sustainability standards; family homes adopting energy-efficient building codes; altering individual and commercial practices and behaviors; and spearheading the international discussion of the merits of rebuilding with posterity in mind (NREL, 2012). Others have also taken notice such as the online travel Web site, Budgettravel.com, who voted Greensburg one of the top 10 coolest small towns in America (Budgettravel.com, 2011). Simply put, Greensburg is an urban planner's vision of Utopia, a nod to other future city

developments that should take a cue from this Midwest town and consider that sustainable development is not actual improvement if the growth leads to the destruction of the environment (Howarth & Farber, 2002). For those who study rural communities in crisis and seeking prosperity, Greensburg serves as a beacon of hope. (Berkebile & Hardy, 2010)

The lessons learned in Greensburg could be transferred to thousands of struggling small towns across the nation. Even large metropolises are taking note and learning relevant lessons. Greensburg is redefining what is possible in rural America; it is serving as a model for the sustainable rural community for the sustainable rural community of the future. (Berkebile & Hardy, 2010, p. 39)

But the attention has since waned, and the future of this futuristic city appears, at least at the moment, uncertain. Celebrity Leonardo DiCaprio and others, who came in immediately after the storm, have long since moved onto other green projects while the directors from Planet Earth and ABC, along with the national media, have long since wrapped up production on their documentaries and stopped following the daily tasks of Greensburg's rebuilding. In 2012, a German eco-wall manufacturer walked away from negotiations after seven months, a big blow considering it was to employ about 30 people (Clement, 2012a). Then, the city entered into an agreement with a solar panel manufacturer in July 2012 that would have made them the first occupant of the industrial park, but the business site remains vacant more than a year later (Clement, 2012b). Moreover, a recent study has suggested that Greensburg's small school district – with less than 250 students and dependent on the federal government for 85% of its funding – could shut down as a result of Congress' inability to pass a budget (AASA, 2012). As

such, six years after an EF-5 tornado ripped through and destroyed 95% of Greensburg, this rural Midwest town of less than 800 people and about two-square miles sits on the precipice of continuing its pre-storm population decline en route to becoming extinct, a remarkable turn of events considering the vast amount of resources that were allocated to turn the rural area into a model for implementing green technology. All of these scenarios lead to the ultimate question of just how sustainable, in economic development terms, is Greensburg since taking a green economic development approach? One scholar has already opined that Greensburg is “inspiring,” but it should not be held as the model for post-disaster recovery (Rozdilsky, 2012, p. 10).

Conceptual Underpinnings for the Study

At the moment, this thesis examines three aspects: the growing costs and frequency of disasters; the post-disaster recovery effort for businesses and individuals; and the green movement as a plausible economic development approach. Each year, the cost of natural disasters sets new records, even when the number of disasters may be similar or less. In an effort to improve response and mitigate future catastrophes, post-disaster recovery efforts are being planned and executed, with the federal government playing the lead role by offering funding and technical assistance. Recently, green economic development – with a growing following of environmentalists, urban planners and international organizations – has captured the attention of government, academia, and popular media, while offering little understanding of the economic principles that support it. Instead, this type of development relies on a theoretical framework that is based on a holistic approach that measures growth with three pillars, or the *triple bottom line*: environmental protection, social equity, and economic development. They are referred to

as the three Es, credited to John Elkington's work that sought to introduce other accounting methods not typically considered (Elkington, 1994).

The pursuit of the triple bottom line is a framework for comprehending the scale for other green-related scholarship as it contributes considerably to understanding the literature and the various merits that cannot be measured in dollar terms alone. For instance, in a sort of scoring rubrics, Schilling and Logan (2008) summarize the literature to encapsulate the environmental, societal, and local economic benefits from 10 urban greening initiatives. Most of these projects, initiatives and undertakings achieve two of the three goals, but only increasing the access to healthy, local food captures all three Es so that the environment, society and local economy benefit from its pursuits (American Planning Association, 2007; Baroff, 2006; Hung, 2004). Meanwhile, the environment and local economy benefit when communities address flooding and reducing storm water runoff (Carroll, 2006; Kloss & Calaruss, 2006). Society and the local economy benefit from increased physical activity opportunities (Kahn et al., 2002). Separately, the environment benefits from reduced urban heat island effect (Hardin & Jensen, 2007); the social benefits occur when opportunities are provided to create community through social interactions (Coley, Sullivan, & Kuo, 1997); reduce Attention Deficit Hyper Disorder in children (Taylor, Kuo, & Sullivan, 2001); improve self-discipline in inner-city girls (Taylor, Kuo, & Sullivan, 2002); and reduce crime and domestic violence (Kuo & Sullivan, 2001b); while the local economy benefits from increased potential consumer spending (Wolf, 2005); and increased property values (Voicu & Been, 2008; Wachter, 2004; Wachter & Gillen, 2006) . Therefore, it must be clear that there are other metrics

considered by the federal government's principal agents of improving the nation's sustainability and energy efficiency standards.

Statement of the Problem

There can be conflict in the philosophies after a catastrophic disaster. Professionals of emergency management might see the need to quickly stabilize the tax base and resist comprehensive plans, innovations, and studies as they are "purchased at heavy post-disaster coin, a high cost in precious time and anxious uncertainty" (Haas, Kates, & Bowden, 1977, p. xxxiii). Compare that viewpoint with those of the planning profession who have had a lion's share of influence in this area, even teaming up with the U.S. Federal Emergency Management Agency (1998) to produce a recovery manual for local leaders, *Planning for Post-Disaster Recovery and Reconstruction*. The federal agency followed up with *Lessons in Community Recovery: Seven Years of Emergency Support Function #14 Long-Term Community Recovery from 2004 to 2011*. These works (2011) highlight the successes and lessons learned from long-term recovery efforts in 16 case studies nationwide, including Greensburg. In the aftermath of Hurricane Katrina, the planning profession staked its position, as Olshansky (2006) reminds us:

Post-disaster recovery is all about urban planning. This is not an area that we can leave to emergency managers, engineers, architects, the military, insurers, or bankers. Recovery, like planning, is all about creating livable, sustainable places for people to live and work. The fact that it takes place under extreme circumstances, and demands rapid action with severely constrained resources, requires the expertise that planners have to offer. (Olshansky, 2006, p.153)

Among the criticism of these principles is the omission of standing thoughts on how economic growth is influenced by four factors: the annual growth of resources available, such as human and physical capital and natural resources; the productivity of the resources and workforce; improvements in technology; and the efficient and improved use of the inputs. Productivity, measured in terms of labor, improves with equipment innovations and new skills and education. The process of economic growth can be improved should businesses and individuals consume less and save more over the long run; it contributes to growth in productive capacity (Hyman, 1994). Another measure shows that total consumer debt could be of considerable concern for Greensburg. During the first quarter of 2012, mortgage delinquencies in the city and Kiowa County were considerably higher as compared to national rates (Federal Reserve Bank of Kansas City, 2012). Furthermore, large grants, donations or tax deferrals have the ability to mask the financial wherewithal of the city. This leads to the potential for “inefficient local revenue decisions,” (Slack, 2005, p. 69) where large operating budget and capital costs pricing is being put off until later because it is currently being handled through outside contributions or some other third party. If other revenue streams, such as federal funding handle the costs, there might be no incentive to use volumetric pricing to reduce the demand for water (Slack, 2005).

Just how long it takes to see the benefits from green economic development is unclear and that level of uncertainty coupled with the expected timeframe of most disaster recoveries – 100 times the emergency period and 10 times the restoration period with symbolic betterment reconstruction potentially constituting two to three times longer (Haas et al., 1977) – should give some pause. It has not. In fact, the U.S. Government

Accountability Office noted that the federal response should conclude one year after the disaster (Czerwinski, 2012).

Purpose of the Study

Greensburg was founded in 1886 and named after a local stage coach owner, Donald R. Green, who established the company to meet the demand of passengers who were making their way through the prairies. The stage line became obsolete when the railroad made its way through the town years later. By 1888, a well was dug to provide water for the steam engines of passing trains. It remained a node between the towns of Pratt and Dodge City, losing population each year with only a portion of its economy coming from the long history of agriculture. In May 2007, the opportunity came to rebuild the town after the tornado by being innovative, and potentially, curing the other ailments of population decline. With no other considerable example to glean from, the novelty of this approach required a grander understanding of green economic development's implications and the tools necessary to implement it. Nearly all of the city's residents needed to be educated on what it would mean to turn Greensburg into a green city, the green economic development pursuits that it would bring and the benefits. In the case of this southwestern Kansas town, it was being educated, and with the whole world watching. The urban planners, architects, and federal regulators who encouraged the city's leadership, residents, and businesses to become a model city expected the novelty and environmentally friendly concepts to augment other recognized and generally-accepted economic metrics.

Research Question 1

Five years later, how well does Greensburg, Kansas, serve as a national model of green economic development as a post-disaster recovery approach in the context of a global market economy?

Hypothesis 1

The town of Greensburg and Kiowa County will regain its population as projected by the designers of the Greensburg comprehensive sustainable plan evidenced by sales tax increases.

Hypothesis 2

The town of Greensburg and Kiowa County will experience sustained housing prices for the newly built environmentally-friendly homes due to people moving into the city.

Hypothesis 3

The town of Greensburg will reach energy goals that save 30-40 % on its Leadership in Energy and Environmental Design (LEED-rated) public buildings compared to typical buildings of similar size, which will result in lower utility and water costs over the five-year period.

Hypothesis 4

Neighboring cities and counties will experience some minor declines to their financial health when the Greensburg population moves back to Greensburg.

Limitations, Assumptions, and Design Controls

There are limitations to this study ranging from the time span to the data collection efforts to the inability to study the metrics of surrounding towns and counties.

In terms of the time frame, five years of financial statements is not nearly enough data to come to any conclusion on whether green economic development is effective. Also, it is difficult to separate what impact the persistent economic recession had on recovery efforts, or what might have happened had the town chosen to pursue a different recovery approach (Sparks & White, 2013). This research included only one visit to Greensburg, and that restricted the number of contacts, particularly since it occurred five years after the storm, when so many of the people had long gone. Another limitation was the willingness and ability of key subjects, including the current mayor and city administrator, to answer specific questions. Lastly, the lack of resources curtailed the ability to contact people in other communities for more interviews.

Most of the reviewed literature tends to be favorable towards sustainability and the green movement as a whole, and the tone tends to show it. There are very few dissenters, and even fewer efforts to collect data from people who opposed the greening of Greensburg, particularly early on. As the tragedy reaches significant anniversaries, additional research is needed to fully assess the impact occurring in the fifth, tenth, and twentieth year anniversaries. Most researchers range from architects, urban planners, geographers, and emergency managers. According to several city officials, not one researcher made a public information request for the city's financial statements, nor did anyone ask questions pertaining to the fiscal strength of the city. This is an important point because most of the data gathered since the storm has come in the forms of interviews and surveys that only appear to have caught anecdotal snapshots of all the data that was actually available at the time.

Definition of Key Terms

Preparedness implies the degree to which an individual, organization, community, state, or nation is prepared to confront the challenges brought on by a disaster. *Response* includes the actions taken, such as search and rescue efforts, immediately following the disaster. *Mitigation* actions help reduce the impact and long-term risk to human life and property (Smith, 2004). Finally, *recovery* offers the most complex and ambiguous phase, particularly since it offers principles but no solid metric for measuring success and failure. As such, *sustainable disaster recovery* is a process undertaken by a range of stakeholders that goes beyond the basic reconstruction of the community, region, or state to its pre-disaster condition and allows for social, economic, and environmental factors to be achieved during the recovery to enhance the lives of the current population and future generation (Smith, 2004).

During the last 20 years, a new urban planning and transportation theory has evolved oriented around limiting growth through mixed-use developments and using walkways and bicycle-friendly streets to counter sprawl. The term *smart growth* includes 10 principles: mix land use; take advantage of compact building design; create a range of housing opportunities and choices; create walkable neighborhoods; foster distinctive, attractive communities with a strong sense of place; preserve open space farmland, natural beauty, and critical environmental areas; strengthen and direct development towards existing communities; provide a variety of transportation choices; make development decisions predictable, fair, and cost-effective; and encourage community and stakeholder collaboration in development decisions (Smart Growth Network, 2006). Though there are distinctions, confusion can be expected when other notable terms are

mentioned interchangeably and become synonyms: New Urbanism, New Community Design; Traditional Neighborhood Development; Triple Bottom Line of People, Planet and Profits; Three Es of Equity, Environment, and Economic; and Sustainable Development.

Even as the field of local and regional economic development continues to evolve, there has not been an adequate amount of research about how well the green economic development approach works within the frame of a global economy, or if the relatively new initiative should be considered as an economic development approach to begin with. First, Malizia and Feser (1999) make no mention of green economic development in their summary of the noteworthy economic development theories that shaped local and regional economies through the end of the millennium. Second, green economic development, sometimes referred to as sustainable economic development, takes many forms, and a strict definition has not been developed or widely-accepted (Chapple, 2008; Kates, Parris, & Leiserowitz, 2005).

A nearly universally accepted explanation of sustainability comes from a United Nations declaration – “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 45) Even without a clear-cut metric, many cities worldwide are drawing up and executing costly, idealistic master plans that incorporate sustainability in the midst of a worldwide recession, with little accompanying research that gives a definitive answer as to its merits and successes long-term in an era of deepening globalization. Many proponents of the green movement offer anecdotal and short-term evidence. Even more telling is that the literature is scant as to whether or not green development is appropriate

following an extraordinary destruction when there is a premium on decision-making, time, energy, and limited resources. The answer should be found in the field of economic development; however, part of the reason for the conflict is that this field is not a stand-alone academic discipline. Instead, theories on the best approach tend to be influenced by scholars who specialize in other areas such as business, city and regional planning, demography, education, economics, geography, public policy, political science, and sociology (Blakely & Leigh, 2010).

Summary

There were a very unique set of circumstances that turned an unlikely small Midwestern town into the national green city model. The opportunity to answer the questions that have puzzled researchers for decades were found in a town willing to reinvent itself. With Greensburg as the perfect case study, it provides an opportunity to see how to reverse population migration, how to harness other forms of energy, how to live sustainably, and whether this very idea could actually work. Greensburg was a laboratory, a chance to put all of these questions at bay, with a real, unobstructed answer. Greensburg did not have to rebuild a portion of its town; it had to start over completely. Six years after the storm and five years after completing the Greensburg Sustainable Comprehensive Plan, some measure of progress should be available, and hopefully, some of the questions closer to being answered.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

For decades the green movement, commonly referred to as sustainable development, has worked to separate itself from the other movements, trying even to find a suitable definition. Yet, there are a myriad of ways of defining and implementing green technology and sustainable development. Is it an economic development strategy, a goal, or a policy? If policy, how long should it last? By some measurements, like the Global Scenario Group, perhaps until the year 2050 (Kates et al., 2005). Scholars note the conundrum:

The identification of what constitutes competence in sustainability is still at a nascent stage. ... It is difficult to imagine creating an academic field that is neither anchored in a discipline nor an amalgamation of parts of different disciplines. Genuine sustainability (as opposed to eclectic or add-on approaches) is a problem-driven and solution-oriented field that derives its integrity from a holistic approach to problems that are multifaceted, dynamic, and not bound by traditional disciplines. A genuine approach to sustainability requires us to critically analyze and adapt methods and theories from other disciplines for their contribution to sustainability. Still, the field cannot arise from a void; it has to rely to a certain extent on established methods and concepts. (Wiek, Withycombe, Redman, & Mills, 2011, p. 8)

Even among the experts of this field, the definitions of terms such as *sustainable*, *sustainable city*, *green city*, *future city*, *Eco-City*, are vague and contradictory. The three

pillars of sustainability fall under social equity, environmental protection, and economic growth, an idea that was first raised in a United Nations conference in 1987 headed by Gro H. Brundtland, the former Norwegian prime minister (Lehmann, 2010). *The Brundtland Report: Our Common Future* gave the world its first crack at a definition: Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987). Other research suggests that the environment does not actually act as a pillar; it is “not a competing interest to be balanced with the economy, but rather an envelope surrounding human society and the economy” (Greenwood & Holt, 2010, p. 50).

Among economic developers, generally accepted economic development strategies tend to center around economic base theory, staple theory, sector theory, growth pole, regional concentration and diffusion theories, neoclassical growth theory, interregional trade theory, product cycle theory, entrepreneurship theory, flexible specialization, and as of late, Blue Ocean theory and creative class (Blakely & Leigh, 2010; Malizia & Feser, 1999). With the underpinnings of a strategy in place, policymakers can then pursue guidelines through legislation, tax incentives, and decisions on where to redevelop and reinvest land-use and growth since these tend to fall under the purview of local economic developers, and planners while disaster mitigation tends to remain the responsibility of emergency management. Yet, when a state or municipality adopts sustainability policies or legislation, disaster mitigation is rarely a component (Sun, 2011). Following disasters, the impetus is on a speedy recovery to pre-disaster form, even when there is a window of opportunity to rebuild stronger and provide comprehensive strategies. Savvy communities, which bring in multiple stakeholders and

scholars, actually improve the quality of life, enhance local economies, and improve environmental conditions (Smith & Wegner, 2007). However, those communities are rare.

Post-Disaster Recovery

Since 1988, the Belgium-based World Health Organization Collaborating Center for Research on the Epidemiology of Disaster (CRED) has maintained a worldwide database on disasters, recording the occurrence and impacts of more than 19,500 disasters dating back to 1900. In 2011, a mere 332 recorded natural disasters worldwide cost a record \$336 billion, according to CRED. In human terms, the disasters killed 30,774 people and impacted 245 million people across the globe. If it seems like there are more disasters now than ever before, that is merely the appearance. In absolute relative terms, 2011 was a better year than most. CRED reports that there are typically 384 disasters a year, and in 2010, the Haiti earthquake alone killed 225,000 people. In the United States, between 2000 and 2009, disaster costs were calculated at \$344 billion (Guha-Sapir, Vos, Below, & Ponserre, 2012).

Prior to a disaster, political leanings for and against are balanced with regards to mitigation. However, up to six months after a disaster, public opinion shifts toward mitigation. Yet, after 18 months, voters get disillusioned and apathy sets in, thus challenging any hope of community buy-in (Paul & Che, 2011).

Disaster recovery is the process of restoring, rebuilding, and reshaping the physical, social, economic, and natural environment following a disaster. Long-term recovery encompasses several reconstruction aspects so that the community returns to its prior state, while taking the opportunity to mitigate against future disasters (Eadie et al.,

2001). This process takes place within the four phases of emergency management widely recognized by FEMA: preparedness, response, recovery and mitigation. Theoretically, once an event has occurred, the process starts over with mitigation and preparation for the next unannounced event. However, the process is hardly seamless because disasters tax every facet of daily living and a return to normalcy conflicts with deliberate planning (Olshansky, 2006).

When the president declares a national emergency, at least 14 federal departments and agencies are responsible for administering dozens of recovery-related programs, many of which require the active participation of state and local governments that maintain the lead in disaster recovery (Czerwinski, 2012). Four agencies, however, play predominant roles including FEMA, the Department of Housing and Urban Development (HUD), the Small Business Administration (SBA), and the Economic Development Administration (EDA). HUD assists low-income families and provides Community Development Block Grants to counties and cities to support redevelopment. The SBA offers low-interest loans to business owners and homeowners. The EDA offers low-interest loans to nonprofit organizations that assist in community development.

In 2008, the EDA awarded \$2.3 million to rebuild Greensburg's Main Street infrastructure while the U.S. Department of Agriculture assisted in the building of the business incubator. "The coordinated response amplifies the efforts of EDA and underscores the importance of collaboration among federal agencies in terms of regional recovery efforts," said Jeff Finkle, president of the International Economic Development Council, in an interview (EDA, 2012, para. 17).

FEMA serves the principle responsibility of coordinating the federal response to major declarations of disaster, through the process known as *Emergency Support Function #14 Long-Term Community Recovery*. In 2011, FEMA released a report, *Lessons in Supporting Community Recovery*, which brought together seven years of examples and lessons learned that it would give public, private and nonprofit groups, or the “whole community,” as part of the National Disaster Recovery Framework. The organization states:

When a disaster event occurs, it shocks and changes the entire community system all at once. The amount of time it takes for a community to recover from a disaster event will vary, depending on the scale and timing of the disaster, the state and local community’s capacity to address recovery issues, and the influences of the larger region and economy. (FEMA, 2011, p. 51)

That report – and others authored by the federal government – offer holistic elements that run the gamut of housing, community involvement, business retention, and other aspects of recovery. However, they only skim over the economics of the ideas suggested for implementation. The report falls short of offering a suggestion for the best economic development approach a municipality or region should consider, a substantial problem since the disaster brings on different turmoil in a capitalistic society. The competitive system in the United States is constantly offering new markets and opportunities in an effort to reduce the turnover time of capital. When local economies are disrupted, individuals and businesses look elsewhere to shop, work, live, or start over. If a community decides to quickly rebuild but looks very similar to other areas and loses its distinctive sense of place – the very reason it attracted residents in the first place –

businesses and residents leave these “restless landscapes” (Knox & Mayer, 2011, p. 14). This is of considerable concern because complete restoration from catastrophic losses can take up to 10 years, (see Figure 2) and, in extreme cases, nearly 20 years (Haas et al., 1977; Kates, Laska, & Leatherman, 2006). Illustrating the point, the literature on the assessed value of single-family housing recovery after a disaster has historically mirrored the findings of Haas et al. (1977). However, damaged properties after 1992’s Hurricane Andrew still had not returned to their pre-disaster value in 1996 (Zhang & Peacock, 2010).

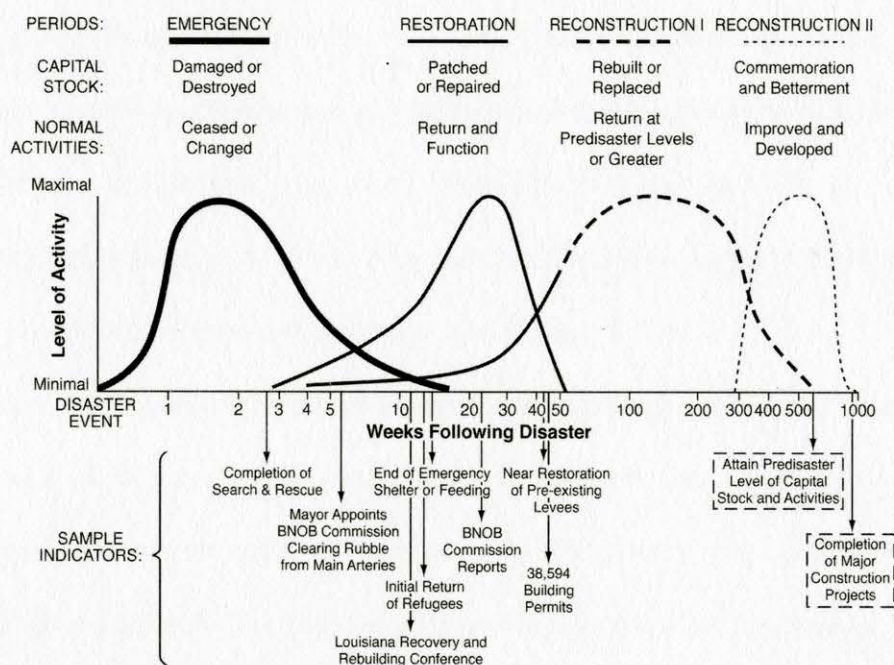


Figure 2. The Long-Term Recovery Period.

Even after the physical damage is cleared, aid to help the surrounding community recover has an equal impact to provide direct aid to businesses (Corey & Deitch, 2011). For businesses, population losses expressed in lost customer base and staff accounted for 21% of the variability in post-Hurricane Katrina organizational performance. The 1995 Kobe earthquake aftermath had similar findings with 12% fewer businesses six years

later, and a Gross Regional Product of 91% of pre-earthquake levels, much of which is credited to the population recovery a decade after the earthquake (Chang, 2010). But other economic sectors were not as resilient. The Port of Kobe, sixth largest at the time of the disaster, never regained its stature after being decimated and is now stabilized at half of its pre-earthquake cargo traffic (Chang, 2010). Jeffrey Sjostrom, president of the Galveston Economic Development Partnership, echoed the observation that business recovery is left to fend for itself while priority is placed on housing, infrastructure, social services, health care, and public safety (Sjostrom, 2011).

During these disasters, the wealthy may suffer losses, but their insurance, financial assets, and stable employment give them a protective wall against total loss that low-income families do not have. Even when the middle class and wealthy experience greater absolute losses than the poor, the poor lose a greater percentage. Their recovery is prolonged, and years of progress are washed away (Wisner & Luce, 1993).

FEMA's aid focuses on these shorter-term issues aimed at making individuals whole by filling gaps that its own resources cannot accomplish. The aid does not address problems of long-term vulnerability, often found in certain groups, who had issues pre-existing the disaster (Bolin & Stanford, 1998). For instance, the 1994 Northridge, California earthquake cost nearly \$35 billion with federal aid constituting \$11 billion in assistance for Los Angeles and Ventura counties, but the amounts did not alleviate some of the hidden long-term structural economic issues for low-income residents (Bolin & Stanford, 1998). These disasters set back communities and cities decades. Globally, these disasters are even worse as cities in poorer countries usually suffer more when their losses are measured either as a proportion of GDP or in terms of access to safety nets,

including insurance, which usually leads to rerouting meager resources from improvements underway elsewhere (Parnell, Simon, & Vogel, 2007).

These problems and market inefficiencies take decades and centuries to evolve and resolve, and seeking recovery more quickly than the same devastated city took to actually develop is an unreasonable expectation. When communities experience growth, it usually comes in five stages (Thompson, 1968), beginning with exporting a certain dominant product which serves as the basis for other economic activities. During the second stage, local production broadens, and the suppliers increase their markets. During the third stage, import substitution occurs. The fourth stage of growth occurs when the local economy is sufficient to serve as a *node*. During the fifth phase, the city is now sophisticated and a leader in certain industries. Jane Jacobs' own observation (1970) echoes that "a city grows by a process of gradual diversification and differentiation of its economy, starting from little or nothing more than its initial export work and the suppliers to that work" (p. 129). Blakely and Leigh (2010) purport the critical resources necessary for local economic development include materials – such as land, buildings, and location; infrastructure; human capital; markets; management; and financing. Once a city is established, city leaders work hard to encourage more people to move there in a self-fulfilling prophesy of creating more jobs, more revenue, better education, and better services in a race for a higher standard of living (Sun, 2011).

Those cities that emerge as the financial centers will increase their share of population and clout, beginning with the importance of supporting wholesalers specializing in export business. Small towns, such as Greensburg, then are left to an endless struggle to compete, yet lack the efficiency of capital, transportation, and labor

compared to larger, more established neighboring towns and cities. More likely, the larger firms, located in larger, regional areas, will operate branches in small towns, and export the towns' savings and capital back to the cities. Even with technology working to even the playing field, smaller towns start the race miles behind. The clustering of industries and businesses and city hierarchy theory explains the higher productivity of larger cities with all the semblance of cosmopolitan riches: international airports, state courts, entertainment venues, large hospitals, and universities. These venues are the workplaces of specialized professionals who can demand higher salaries. As a result, they tend to live in these cities, thus, taking a higher proportion of citizens with higher salaries.

Not every city aspires to become a megatropolis. Yet, there are some cities that cannot muster enough critical mass of institutional and social capital just to have a sustainable economy. In his book, *Beyond Smart Cities: How Cities Network, Learn and Innovate*, Tim Campbell (2012) identified six reasons why communities do not achieve a sustainable economy. First, natural disasters disrupt the social capital and institutional wherewithal to undertake learning on a systematic basis. Second, innovation is seen dubiously and blocks free and open exchange. Third, the push for new leadership and change agents destroys the continuity that was once there, and the institutional knowledge is lost. Fourth, poverty creeps into everyday life and suffocates new ideas, clouds political insights, and shapes the agenda. Fifth, not every citizen is informed or has the technical expertise to make sound decisions. Sixth, those who share the same streets, same language, and same climate, share nothing else.

Capitalism, Politics, and Recovery

It was the French philosopher Alexis de Tocqueville who observed that politics and economics are tied at the hip in America – one cannot move without influencing the other – for better or for worse (Scott, 2009). While some argue that coastal cities and those with cultural revolutions brought about by wealth disparities have gone on to become some of the world's greatest cities, there is something to be said about geography and technological development (Kennedy, 2011). In terms of the world's underdeveloped nations, underdevelopment has not resulted from the survival of archaic institutions and the existence of capital shortage in regions that have remained isolated from world history. Rather, underdevelopment is generated by the development of capitalism itself (Frank, 1994).

Capitalism, or the idea of a free market, has never been as pure in America as some proclaim. According to Harvard University professor Bruce Scott, who wrote the (2009) monograph, *The Concept of Capitalism*, the theories advanced by John Maynard Keynes, Milton Friedman, and most recently, Douglas North fail to take into account that politics has played an uneven role. Scott argues that the invisible hand of pricing mechanism operates with a visible hand of human agents in government that establish and maintain the institutional structures. Thus, capitalism, as an equation we only collectively seem to understand, goes beyond supply and demand, the competition to energize human actors, and accompanying prices to coordinate those actions (Scott, 2009). "The pricing mechanism cannot come close to achieving an optimal coordinating role absent the effective work of the visible hand of government, often through legislative

processes such as a parliament,” he writes (Scott, 2009, p. 39). Government must play a strong role, he concludes, as do nongovernmental organizations.

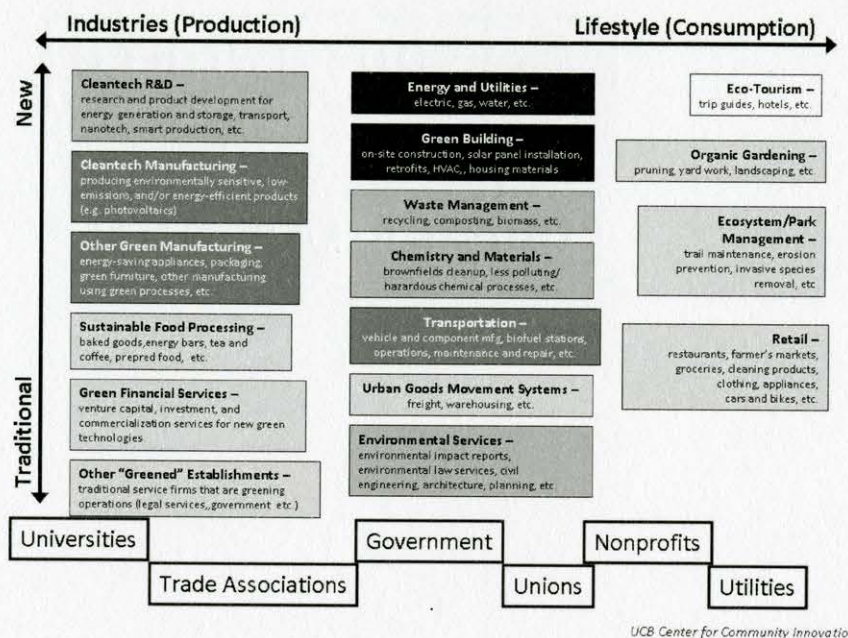
Social scientist Benjamin Timms adopted the term *disaster capitalism* in 2011 to explain how nongovernmental organizations (NGO) can subvert democracy – presumably unintended – by imposing neoliberal capitalist economic policies that come in the aftermath of a disaster. Timms suggests that Naomi Klein’s concept gives the proper framework of how governments recapture power under the auspices of catastrophes (Timms, 2011). The case study of peasant families being coerced to relocate from Celaque National Park in Honduras after Hurricane Mitch struck in 1998 demonstrates how disasters can be political opportunities. In this example, the NGO set up to manage the park was now responsible for implementing the removal policy. Since NGOs have a history of being able to receive funding, they fill the roles abandoned by weakened leadership and governments, and the potential exists for the NGO’s interests to conflict with the people they were intended to support (Timms, 2011). According to Timms, “the case of coerced relocation from Celaque National Park was not a strategy of last resort as the funding interests of environmental conservation organizations and the agro-export coffee industry were advanced over those of the victims” (Timms, 2011, p. 1375)

Green Economic Development

The Brundtland Commission’s definition in 1987 did not settle the debate. Instead, observers now refer to sustainable development as an oxymoron, fundamentally contradictory and irreconcilable, since scholars and practitioners have crafted, articulated,

and advanced their own terms, activities and agendas (Kates et al., 2005). The terms sustainable development and green development tend to be used interchangeably.

Chapple (2008) set out to provide a comprehensive meaning for green economic development identifying four dominant sectors: renewable energy; green building and energy efficiency technology; energy-efficient infrastructure and transportation; and recycling and waste-to-energy. Her survey of literature shows the range from traditional businesses, such as utilities and professional services, which are greening their operations, to newly emerging industries such as nanotechnology research, solar panel manufacturing, and eco-tourism as indicated on the vertical axis in Figure 3. On the horizontal axis, businesses move from those that produce green products, such as manufacturers and food processors, to those that sell green products or participate in the green lifestyle economy, such as farmers' markets and local park maintenance operators. Industries produce goods that can be exported and imported between regions while businesses revolving around lifestyle or consumption serve locals. Business categories located in the middle of the horizontal axis contain both production and consumption aspects. Green economic development occurs when businesses interact with and are influenced by the government agencies, universities, non-profit organizations, unions, utilities, and trade associations in the regional innovation system (Chapple, 2008). Defining green economic development takes many forms in the areas of renewable energy, green building and energy efficiency technology, energy-efficient infrastructure and transportation, and recycling and waste-to-energy.



UCB Center for Community Innovation

Figure 3. The Multiple Facets and Stakeholders of Green Economic Development.

Chapple's (2008) concept of green economic development, while anecdotal, is evidenced across the nation. In 2012, the owner of the New York City's Empire State Building commissioned a \$550 million green makeover to reduce the building's energy consumption by nearly 40% and yield \$4.4 million in savings. "It's less about doing the cool, trendy thing, and more about reducing expenses and operating more efficiently and effectively," says Cathy Stevenson, executive vice president and leader of commercial real estate firm Grubb and Ellis' sustainability practice (Moline, 2012, Quantifying Returns section, para. 5). Even with more push toward clean energy, green growth has two policy challenges: ecological scarcity of depleting resources and the funding. Edward Barbier (2011, p. 269) notes that "there remains a huge gap between the global benefits that humankind receives from ecosystems and what we are willing to pay to maintain and conserve them."



Figure 4. A Wind Turbine in Greensburg (photo by David E. Leiva).

The urban planning profession (Berke, 2008) has had the most to say about the evolution of green communities because the dimensions that have influenced city planning since the late 19th Century take their roots from such eminent works as Ebenezer Howard's *Garden City*, Frank Lloyd Wright's *Broadacre City*, and Le Corbusier's *The Radiant City*. The aspects include human health, natural systems, spiritual renewal, livability, and fair share (Berke, 2008). While the green movement has captured much more of the academic and popular culture attention, ideas such as The 15 Core Principles of Green Urbanism (Lehmann, 2010) are given more credence:

1. The city based on its climatic conditions and site context;
2. The city as a self-sufficient energy producer;
3. The zero-waste city as closed loop eco-system;
4. The city with closed urban water management and high water quality;
5. The city that maximizes landscapes, gardens and biodiversity;

6. The city of eco-mobility and an efficient low-impact public transport system;
7. City construction using regional materials and prefabricated systems;
8. The city with densification and intensification of existing districts;
9. The city of deep green building design and solar access;
10. The city with special concern for affordable housing and mixed usage;
11. The city of local food and supply and high food security;
12. The city of public health and cultural identity – A safe and healthy city;
13. The city of urban governance and sustainable procurement methods;
14. The city of education and training in a sustainable urban development;
15. Particular sustainability strategies for developing countries.

Criticism of Green Development

Four professors in a little known lecture at the University of Illinois in 2009 started the initial dismissal of the idea of green jobs, referring to it as a myth with particular emphasis on seven assumptions commonly used in academic literature and circulated as political talking points. Those seven include: (1) there is such thing as a green job; (2) creating green jobs will boost productive employment; (3) green jobs forecasts are predictable; (4) green jobs promote employment growth; (5) the world economy can be remade based on local production and reduced consumption without dramatically decreasing human welfare; (6) mandates are a substitute for markets; and (7) wishing for technological progress is sufficient (Morriss, Bogart, Dorchak, & Meiners, 2009). The authors contend that there is no agreement on the definition of a green job, and as a result, leaves advocates with the duties of enlisting interest groups to “work the political system” (p. 82) with inferior products and to make forecasts that enter in the

public debate. The data used to create calculations, they argue, are not only optimistic, but unfounded, and many of the successes claimed come as a result of subsidies, not marketplace success. They contend:

We are not arguing for our own alternative set of favored policy prescriptions, but for a different approach to the issue. By analyzing the problems with the green jobs literature's claims, we hope to persuade readers that the fundamental question is not whether to spend \$20 billion or \$400 billion of taxpayers' money on solar or wind power but who should decide how resources should be allocated: people in the marketplace or planners and politicians in Washington, D.C.

(Morriss et al., 2009, p. 7)

What if the new energy policies have little impact on the economy as a whole except where certain winners and losers might be directly affected in green growth and employment, environment, and sustainable economic development? For instance, no sound economic arguments exist to support the notion that green energy policies increase total employment, other than the expected employment jump in manufacturing wind turbines and other like products (Hughes, 2011). More so, the capital-intensive financial investments of these green energy sources strip any benefits in employment (Hughes, 2011). Green growth that attempts to link itself to employment or environment will not lift the poor out of poverty. In fact, it may require the loss of some environmental benefits to "keep the growth poverty elasticity high," or it will be very expensive with the poor paying the price of greening the Earth (Dercon, 2012, p. 16). With attention toward sustainability in economic development, the competition between the needs of agriculture, mining, tourism, and residential development continues to rise (Greenwood

& Holt, 2010). More aptly put, the authors of *Local Economic Development in the 21st Century* suggest that anticipating future environmental challenges creates considerable tradeoffs not considered previously (Greenwood & Holt, 2010).

The international perspective remains the green movement's chief ally and rival. Even in Germany, which has experienced a financial boom during the global recession, many of the nation's economic leaders are now signaling the need to end the European country's pursuit of clean energy and green economic development. In September 2013, the European Union's energy commissioner did not mince words. "We need industry," Günther Oettinger said. He goes on to say, "We cannot be the good guys for the whole world, if no one follows suit" (Evans-Pritchard, 2013, para. 13).

Significance of the Study

The green movement has been followed closely and promoted widely since the emergence of the U.S. Department of Energy. The federal government has clearly leaned toward sustainable movement in its many forms. Social scientific debates concerning urban development and disaster vulnerability reflect a wide variety of opinions from recognized authorities in academia and practitioners (Parnell et al., 2007). Therein lay the crossroads of post-disaster recovery and green development. The federal level is no different.

Established in 2009, the federal interagency Partnership for Sustainable Communities, consisting of the U.S. Housing and Urban Development, the U.S. Department of Transportation, and the U.S. Environmental Protection Agency leads discussions influencing local land-use planning. The partnership coordinates federal housing, transportation, water, and other infrastructure investments that prioritize six

principles of livability into federal funding programs, policies, and future legislative proposals. Those principles include providing more transportation choices; promoting equitable and affordable housing; enhancing economic competitiveness; supporting existing communities through strategies like transit-oriented, mixed-use development and land recycling; coordinating and leveraging federal policies and investment; and enhancing unique communities through healthy, safe, and walkable neighborhoods (Partnership for Sustainable Communities, 2012).

Missing from these discussions is FEMA, the principal agency mandated by Congress to handle recovery efforts. This agency also administers the National Flood Insurance Program, pre-disaster mitigation grants, and the Hazard Mitigation Grant Program funds available post-disaster. FEMA oversees the development and approval of state and local hazard mitigation plans under the Disaster Mitigation Act of 2000 (Sun, 2011).

The criticism of *Smart Growth in Dumb Places* asserts that redevelopment in disaster prone areas “is the antithesis of true sustainability,” a poignant point considering one in three of Smart Growth developments is exposed to flood hazards (Sun, 2011, p. 2159). During an emergency, FEMA and other agencies underwrite 75% of the costs for infrastructure rebuilding and flood insurance for residences. The unintended consequence of federal intervention is that local communities will allow developments to occur in the belief that the federal government will underwrite the expensive recovery (Lindell, Prater, & Perry, 2006). It can also lead to more expensive buildings. More than 200 federal, state, and local government agencies now require Leadership in Energy and Environmental Design, or LEED, certifications of buildings, a point-based rating system

that is awarded by the nonprofit U.S. Green Building Council. The council of architects, engineers, builders, and suppliers make up 89% of the voting membership, and only 1% consists of environmental nonprofits. Using the environmental prestige, more firms are entering green construction as noted by the jump from \$3 billion in 2005 to an expected \$122 billion in 2015, up 4,000% (Frank, 2012). The town of Greensburg hired Kansas City, Missouri-based BNIM Architects immediately after the storm for about \$1 million. Although buildings have been vastly more expensive to build due to the increased construction costs, by pursuing LEED certification and the city-wide initiative for sustainable design, 13 buildings save a total of \$200,000 per year in energy costs (NREL, 2012a).

In the immediate aftermath of the 2007 tornado, there were two schools of thought: One group led by a former mayor wanted to rebuild quickly, while the prevailing majority preferred building green and meeting LEED certification. Learning from the Hurricane Katrina response catastrophe, FEMA was very open to recommendations, supporting the town's green redevelopment plan. The 81 members who crafted the Greensburg Sustainable Comprehensive Plan convinced the town to push for 100 % of government buildings to meet LEED Platinum Standards (Smith & Cartlidge, 2011). The plan resulted in a slower recovery, with 20% higher building costs. The commercial retail strip took more than three years to build. A 15-bed hospital took about 30 months to build. Residents were left to shop for groceries and pharmaceuticals at the nearest town, some 30 miles away (Smith & Cartlidge, 2011). An average Greensburg home was valued at \$46,500 prior to the storm, but the changes to energy efficiency pushed them to \$120,000. Nearly two years after the storm, less than 200

building permits were issued, a key indicator of disaster recovery. At that rate, it will take eight years to reach pre-tornado population (Paul & Che, 2011).

The Greensburg Sustainable Comprehensive Plan was a very broad diagram for rebuilding that, at the time, may have appeared quite extensive and quite inclusive. From all indications, no one was identified as an economic developer. The Comprehensive Plan's optimistic tone took on many of the broadly connected economic goals and objectives used by the urban planning profession: where new businesses and industries should be encouraged; how public investment in infrastructure could induce private investment; what kind of new businesses and industries should be promoted; and specific recruitment efforts (City of Greensburg, 2008). In general, urban planning goals were liberal, and they happened to mirror what was written in the city's sustainable plan, and later used in FEMA disaster recovery documents:

Goal 1: Seek to increase employment opportunities and raise local incomes.

Goal 2: Attempt to diversify the local economic base by attracting new retail stores and manufacturing firms, while encouraging and facilitating the expansion of existing firms in the community.

Goal 3: Improve the mix of businesses on Main Street. Encourage new industries to locate in the industrial park at the south end of town.

Goal 4: Expand the local property tax base through increased economic development.

Goal 5: Obtain state or federal grants to improve local sewer and water systems in conjunction with the creation of a local industrial park.

Goal 6: Establish a low-interest loan pool with the help of local banks and businesses to aid in financing the start-up or expansion of local businesses.

Goal 7: Establish a non-profit economic development corporation to recruit prospective new businesses (Daniels, Keller, & Lapping, 1988).

These goals, generally speaking, do not easily translate into practical terms of success and failure, and since there is no single means of assessing the economic metrics of a healthy economy, the conclusion is much trickier. Scholars argue over the best methods of gauging whether local economic development is growing, stagnant, or in decline. Economic indicators remove the politics and ambiguity, giving several key figures something to ponder. For the public, an idea as to whether there is value; for financial institutions, an ideas as to whether to continue or consider investing; and for public officials, ideas as to whether to create opportunities to improve the programs.



Figure 5. Remnants of the 2007 Tornado in 2013 Greensburg (photo by David E. Leiva).



Figure 6. The Empty Greensburg Business Park (photo by David E. Leiva).

CHAPTER III
RESEARCH DESIGN AND METHODOLOGY

Introduction

This research project will use the case study methodology in order to explore the multi-perspectives with the intention of explaining the complexity of green economic development through the lens of Greensburg, a small isolated town in western Kansas that chose to rebuild in a costly, though eco-friendly manner. Because it is such a unique situation, with so many actors and subplots, the case study methodology is the most appropriate to gather a comprehensive picture of how it came to be. Through multiple sources, including documentation, City Council minutes, interviews, direct observation, and the city's financial statements from 2006 to 2012, the economic metrics defined by Greensburg will be analyzed to determine if the initial goals set out by stakeholders were met within the five year timeframe defined in the city's Sustainable Master Plan (Yin, 1994). The interviews in this methodology could reveal opinion on events and facts to corroborate previously gathered data, and direct observation during a site visit could confirm previously mentioned data. These multiple sources of data "triangulate" the evidence and increase its reliability (Tellis, 1997).

Nowhere in the federal government's studies was the possibility raised that a complete restoration could take another 15 years. The town of Greensburg is challenged with a slip in momentum. In 2011, the city administrator credited with leading the rebirth, resigned to take a position in Oklahoma. Months later, a new city administrator was fired after two months on the job. Then, in July 2012, the city hired the Center for Innovation in Arlington, Texas for five years at a total cost of \$161,000, to spur economic

development. The Center works with communities in searching and attracting technology companies (Clement, 2012a). The new city administrator, Ed Truelove, will work to increase business and residential recruitment over the next five years. “I see my job as increasing population and bringing industry to town,” Truelove said in July 2012 (Hanks, 2012, para. 14).

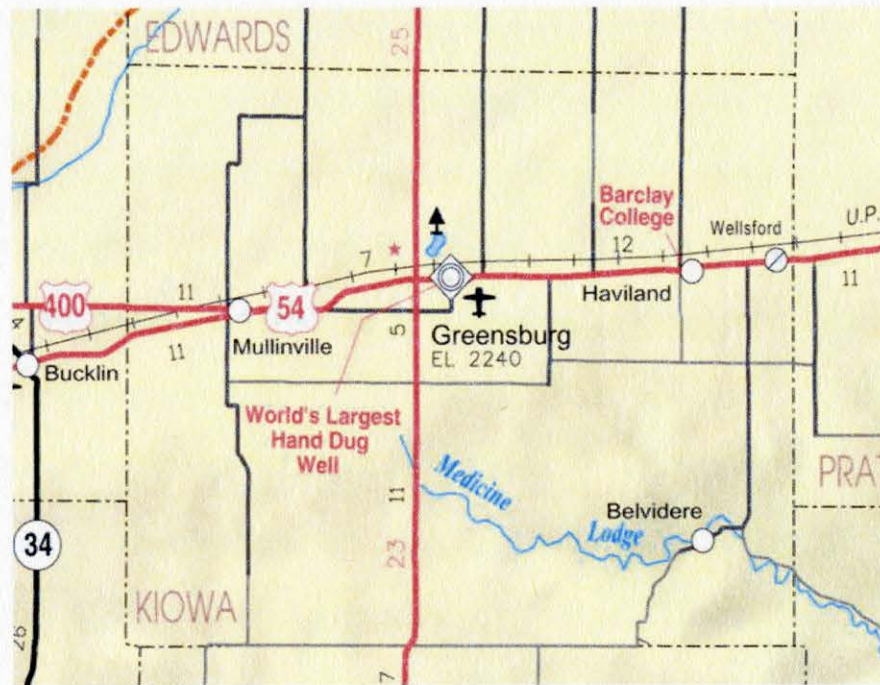


Figure 7. The Five Towns in Kiowa County (Kansas Department of Transportation).

In the 2007 Long Term Community Recovery Plan, Greensburg officials, who teamed up with FEMA to identify a litany of sustainable approaches and fees, adopted a six-prong initiative targeting commercial development interest: prepare an economic development strategy (\$177,000 estimate); rebuild Downtown Greensburg (\$1,620,000 estimate); establish business development assistance programs (\$700,000 estimate); create a business incubator (\$1,500,000 estimate); develop a communitywide wireless network (\$88,000 estimate); and develop a US-54 corridor design plan (\$90,000 estimate) (City of Greensburg, 2007).

The first initiative consists of three parts: creation of an economic development plan, development of a skilled workforce, and revitalization of the Chamber of Commerce. According to the planners, this strategy would help Greensburg retain and attract businesses, increase tourism, and foster a positive economic development attitude in the community. Considered an important tool, the Long Term Community Recovery Plan identified sustainable opportunities to promote businesses that incorporate sustainable practices: target business attraction efforts toward sustainable green businesses and industries or those that utilize sustainable practices; use a marketing plan to highlight sustainable construction in Kiowa County; and promote eco-tourism opportunities where possible. The plan defined a cost of \$97,000 to create such an economic development program (City of Greensburg, 2007).

The plan's workforce development section included *sustainable opportunities* to develop and provide training in sustainable building practices to help attract sustainable *green* industries to Kiowa County. It also sought to train Energy Raters to evaluate energy efficiency of construction projects. The creation of this workforce section was expected to cost \$50,000. The plan's revitalization of the Chamber of Commerce would need a part-time director at a cost of \$30,000; this person could help develop sustainable training and seminars for businesses (City of Greensburg, 2007).

Other key initiatives included rebuilding downtown through the use of a master plan at a cost of \$50,000. It defines sustainable opportunities to incorporate low maintenance and native vegetation in downtown design; to use grey water irrigation system for watering vegetation; to provide connections between important downtown elements by incorporating biking and walking paths; to include green elements within the

design guidelines to establish minimum standards; and to use solar power as a source for street lighting.

A year later, the town's comprehensive plan was modified to suggest leveraging the newfound notoriety Greensburg was receiving as an economic development tool, paying particular attention to attracting *green* businesses and allocating space for *green* start-ups at a business incubator (City of Greensburg, 2008). An important factor for Greensburg was to set high building standards and attract new building economies that support the community's goals. By developing new sustainable materials and technologies, rural communities also have the potential to attract scientific researchers and entrepreneurial manufacturers. The training and exploration of skilled craftsmen using sustainable materials could lead to exportable skill sets (City of Greensburg, 2008).

Problem and Purpose Overview

Even as Greensburg today struggles to return to its pre-storm population and economic condition, the federal government and a host of others continue to champion the merits of green economic development. These groups originally backed the town's change. However, in 2009, the Federal Emergency Management Agency announced it would end its housing program after pumping nearly \$100 million in aid for clean-up costs, housing assistance, uninsured losses, and rebuilding critical infrastructure (FEMA, 2009). Whether future communities will have access to this much funding is unknown and probably unlikely given the current state of fiscal affairs in this country. The Greensburg case is a disturbing precedent for the federal government tying up federal recovery dollars with green economic development approaches (NREL, 2012b). None of

the original members of the Recovery Plan appeared to ask more fundamental questions of the foundation of financial sustainability of this plan. Billman (2009) writes:

Energy affects all aspects of a community, and that is abundantly apparent when rebuilding after a disaster. Greensburg's unique situation of near-total destruction represented an opportunity to try alternative energy solutions on a community-wide scale, for which there are few precedents in the world. Pursuing a wide range of new energy solutions throughout the city has placed Greensburg in a leadership position not only among Kansas communities but also among communities throughout the United States and the world. In addition, becoming known as a leader in sustainable development may add to Greensburg's economic competitiveness and allow the community to take advantage of the upsurge of interest in green initiatives from many businesses and surrounding communities. We hope these efforts in Greensburg, Kansas, will inspire and assist other communities facing similar challenges. (Billman, 2009, p. 55)

Research Question

Five years later, how well does Greensburg, Kansas, serve as a national model of green economic development as a post-disaster recovery approach in the context of a global market economy?

Research Hypotheses

Hypothesis 1

The city of Greensburg and Kiowa County will regain its population as projected by the designers of the Greensburg comprehensive sustainable plan evidenced by sales tax increases.

Hypothesis 2

The city of Greensburg and Kiowa County will experience sustained housing prices for newly built environmentally-friendly homes from people moving into the city.

Hypothesis 3

The town of Greensburg will reach energy goals that save 30-40 % on its Leadership in Energy and Environmental Design (LEED-rated) public buildings compared to typical buildings of similar size, which will result in lower utility and water costs over the five-year period.

Hypothesis 4

Neighboring cities and counties will experience some minor declines to their financial health when the Greensburg population moves back to Greensburg.

Population and Sample

Greensburg is the county seat of Kiowa County. There are 105 counties in Kansas, with a total population of 2.9 million people (U.S. Census, 2013). The six contiguous counties to Kiowa County are Pratt, Barber, Comanche, Edwards, Ford, and Clark Counties.

Kansas Counties and County Seats

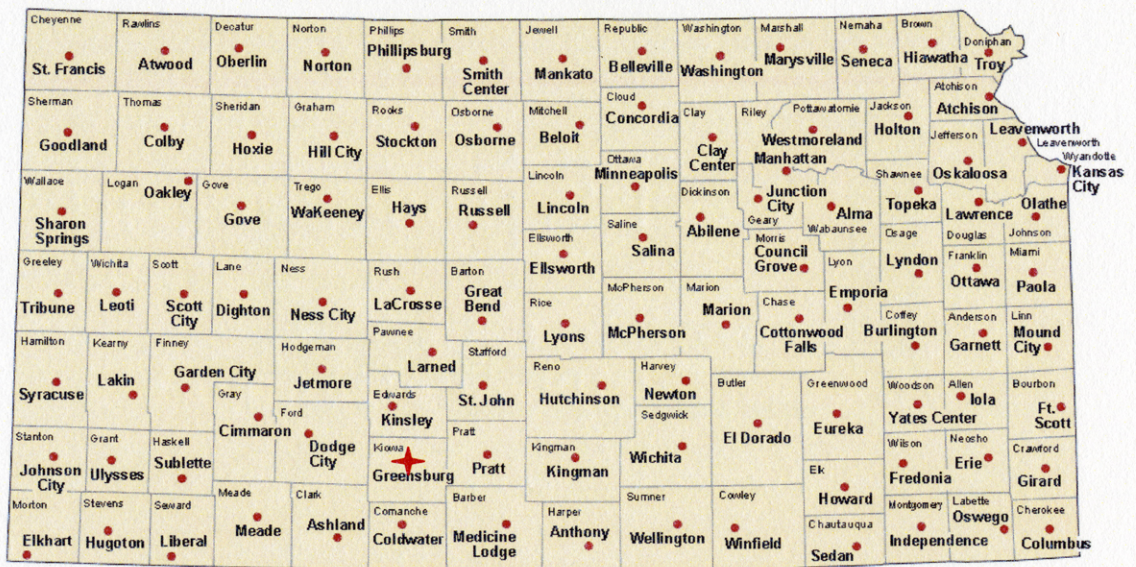


Figure 8. The Map of All 105 Counties in Kansas.

Measures were taken to separate Greensburg within Kiowa County. There were only a few instances where this was possible because of recorded data in the U.S. Census Bureau in 2012. However, 2013 U.S. Census figures no longer include Greensburg. Still, the data on file with the Institute for Policy and Social Research at the University of Kansas was available. With the population clearly smaller than the period prior to the storm, part of the hypothesis was that many people may have moved to neighboring cities. However, while some of the smaller towns did have some growth, overall the county lost population during the same period. Data was unavailable for smaller unincorporated areas of Belvidere, Wellsford, and Brenham.

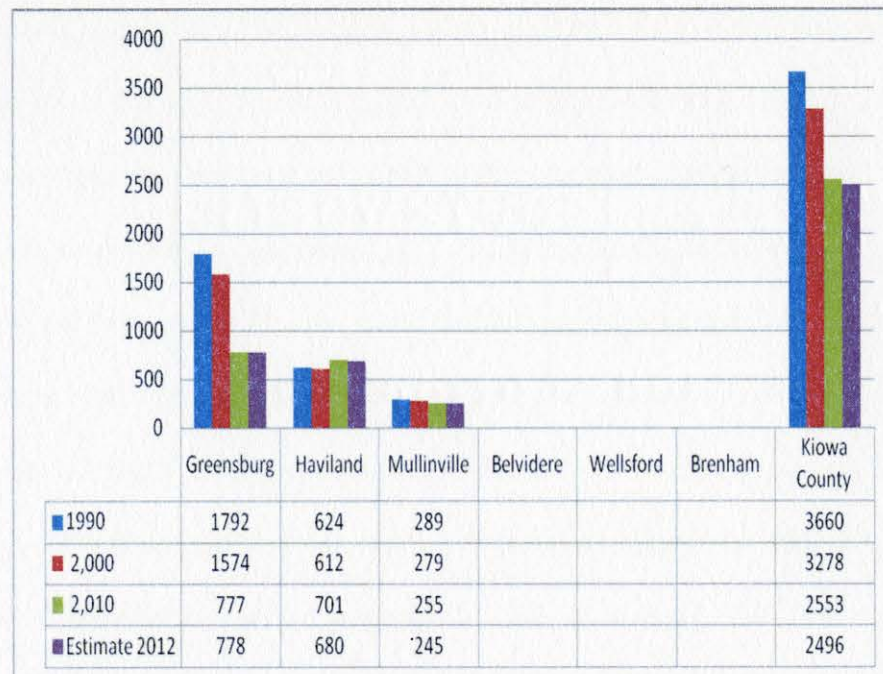


Figure 9. Population of Kiowa County's Towns from 1990, 2000, 2010 and Estimate 2012. "Population: Decennial Census: Total Population & Estimated Population," August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research.

Data Collection and Instrumentation

The data collected from the Institute for Policy and Social Research at The University of Kansas assisted greatly in the quantitative analysis of the quality of living in comparing Kiowa County to the six contiguous counties. The indicators offer the most objective synopsis of quantitative measures carried annually. Taken from the Kansas Statistical Abstract, the county profiles offer an opportunity to compare counties within the state of Kansas to create an overall grade of the economy, offering historical data in the process. In order to reach the overall grade, per capita market income, unemployment ratio, labor force-to-total population ratio, per capita transfer payments-to-per capita market income ratio, and population change were measured. The university's research arm indicated that the idea was derived from a 2004 EDA report that outlined different

ways of measuring economic distress (EDA, 2004). Although EDA contributed several million dollars to rebuild Main Street, it might have been more helpful to point out the report the agency had commissioned in 2004 that characterized the 400 counties nationwide, which had been in a perpetual state of distress for four decades. They tended to have similar problems of low income, high unemployment rates, low labor-force participation rates, and high dependency on transfer income. Several hundred other counties were no better off, sitting in the cradle of “economic insecurity and stagnation” (EDA, 2004, p. 159). These communities tended to be small, geographically isolated, agricultural economies with little else in terms of a diverse economy. Kiowa County was one of them. The EDA report noted the following:

The problems faced by such communities include but also extend significantly beyond the need for infrastructure to attract private-sector business investment. Many communities lack more basic elements, including a location conducive to integration with wider economic systems, a competitive natural advantage, effective civic capacity, adequate housing and municipal services, and effective schools. In many ways, these communities can be described as lacking elements that would make them “development ready.” (EDA, 2004, p. 159)

The Overall Economic Health Index adapted by the University of Kansas sought to express the degree to which the experience of individual counties deviates from national norms.

For the purpose of calculating *Per Capita Market Income Index* market income is defined as a total personal income minus personal current transfer receipts. The U.S. per

capita market income is in the denominator while the state PCMI in the numerator. A county with a higher PCMI than the U.S. average indicates it is healthier than the national average. This supports Hypothesis 1.

$$\text{PCMI} = \frac{(\text{Total Personal Income} - \text{Transfer Receipts})}{\text{Total Population}}$$

$$\text{Indicator 1} = \frac{\text{PCMI for County}}{\text{U.S. PCMI}}$$

For the purpose of calculating *Unemployment Rate Index*, the local unemployment rate is compared to the nation's rate. A county with a lower unemployment rate than the nation's rate would be given a higher score indicating a greater number of people working in the county as compared to the nation. This supports Hypothesis 1.

$$\text{Unemployment Rate} = \frac{\text{U.S. Unemployment Rate}}{\text{County Unemployment Rate}}$$

$$\text{Indicator 2} = \text{Unemployment Ratio} \times 100$$

For the purpose of calculating *Labor Force-to-Total Population Ratio Index*, the percent of an area's population not in the labor force is compared to the national average. A healthy LTFP score would indicate that there are not as many people in a household dependent on the labor of others to support them. This supports Hypothesis 1.

$$\text{LTFP} = \frac{(\text{Total County Population} - \text{Civilian Labor Force in County})}{\text{Total County Population}}$$

$$\text{Indicator 3} = \frac{\text{U.S. Labor Force Total Population}}{\text{County Labor Force Total Population}}$$

For the purpose of calculating *Per Capita Transfer Payments-to-Per Capita Market Income Ratio Index*, external sources of unearned income are calculated against

the Per Capita Market Income Index (Indicator 1). High amounts of this indicator are given lower scores because it indicates that the household income is tied to a subsidy, a form of public welfare. This supports Hypothesis 1 and Hypothesis 2.

$$\text{TPMI} = \frac{\text{Per Capita Transfer Payments}}{\text{Per Capita Market Income Index}}$$

$$\text{Indicator 4} = \frac{\text{U.S. TPMI Ratio}}{\text{County TPMI Ratio}}$$

For the purpose of calculating *Population Change Index*, 10 classes of population density for counties gauge an area's population change as compared to the average change for peer areas. This supports Hypothesis 1, Hypothesis 2, and Hypothesis 4.

$$\text{PCI} = \frac{\text{Local Percent Population Change} - \text{Average Percent Population Change for Peer Group}}{\text{Average Percent Population Change for Peer Group}}$$

$$\text{Positive: } 100 + \text{PCI}$$

$$\text{Negative: } 100 - \text{PCI}$$

County Peer Groups:

(1) Less than 5

(2) 5 to 10

(3) 10 to 20

(4) 20 to 40

(5) 40 to 80

(6) 80 to 160

(7) 160 to 320

(8) 320 to 640

(9) 640 to 1280

(10) Equal or greater than 1280

A survey was created to further understand local perception on the overall success of the sustainability plan, which would answer Hypotheses 1, 2, and 3. Using an 11-point set of economic indicators designed by three college professors for the International City Managers Association, the activities and functions of economic activity should be able to be extracted (Kotval, Mullin, & Murray, 2002).

A. Tax Base

1. Did green development and accompanying strategies directly help to expand the tax base?
2. Will this indirectly help to expand the tax base?
3. Will it help directly maintain the tax base?
4. Will this indirectly maintain the tax base?

B. Jobs Maintained and Generated

1. Will this directly result in new jobs?
2. Will this indirectly result in new jobs?
3. Will this directly save jobs?
4. Will this indirectly save jobs?
5. Will this generate construction jobs?
6. Will this help the unemployed?

C. Plant Investment

1. Will this result in the building of a new plant or the expansion of an existing facility?
2. Will this result in new jobs or job retention?

3. Will this add tax revenues to the community?
4. Will this strengthen an industrial cluster or bring a new technology to the community?
5. Will the unemployed, underemployed, or displaced workers be hired?

D. Loans Leveraged

1. Did the loan contribute to obtaining a conventional loan?
2. Did the loan stimulate the creation of a new company?
3. Did the loan stimulate the attraction or retention of a company?
4. Did the loan contribute to the creation of new jobs or the retention of existing jobs?
5. Did the loan revitalize a building and, therefore, contribute to #2, #3, or #4 above?

E. Improved Corporate Performance

1. Did the investments result in improved corporate performance?
2. Did the investment indirectly contribute to "linked" firms moving to or staying in the area?
3. Did the investment stimulate the creation of new markets, or new products?

F. Revitalized Properties

1. Did the investment result in a vacant building being occupied?
2. Did the investment result in companies and jobs being gained or retained because of the investment?
3. Is the property on a solid financial footing?

4. Is the building contributing tax revenues to the community?

G. Non-Traditional Jobs Gained

1. Did the investment provide jobs for minorities, women, new Americans, the chronically unemployed, and/or the displaced worker?
2. Did the investment provide jobs for the above workers that at least matched the prevailing wages in the community?
3. Did the investment provide jobs that provided at least basic medical insurance?

H. Land Assembly

1. Did the investment result in parcels that could not previously be developed becoming marketable?
2. Did the investment stimulate new construction, new or retained jobs, and/or new or retained tax revenue?

I. Inventions and Licenses

1. Did the investments result in bringing new inventions, licenses, or products to market?

J. Expansion of Infrastructure Capacity

1. Did the investment result in the expansion of infrastructure capacity?
2. What was the immediate return on investment?
3. What will the investment result in at build-out?

Additionally, a comparison between Greensburg pre-tornado data points to the same points five years later should serve as the foundation for the more pragmatic approach of determining how well Greensburg has recovered. These data points are

commonly used by metropolitan economic development organizations (Greater Oklahoma City Partnership, 2012).

The following areas would give a good indication of recovery for Greensburg and answer Hypotheses 1 and 2. They include:

1. Total population
2. Employment
3. Nonfarm employment
4. Average weekly earnings
5. Building permits
6. Residential sales
7. Federal Housing Finance Authority House Price Index
8. Apartment rent rates
9. Consumer Price Index
10. Major airport traffic
11. Tourism
12. Commercial real estate
13. ACCRA Cost of Living Index
14. Sales tax receipts

Semi-Structured Personal Interviews

Much of the data for this research was available in the city's financial statements. What could not be quantified through the archived data are the perceptions of Greensburg residents. To supplement the historical data, semi-structured interviews are to be conducted for this study – four of them during the visit – with individuals who were

recognized to have played critical roles in the community. If possible, it would be best to speak with members of the Greensburg Sustainable Comprehensive Master Plan who were acknowledged in the August 2008 document. Another set of questions were designed for key stakeholders whom were part of the planning process from the beginning. The questions were framed where only top decision makers could reply with any serious credibility. The interviews were then to be coded and searched for repeated idea to discover budding themes. The interviews were partly pre-arranged through City Hall officials. They were not confidential. The questions would consist of the following:

1. The experts who came here said the city's population would return to its pre-storm count by 2012. Any comments?
2. Does green economic development work?
3. Do you think out-of-town professionals misrepresented themselves to local residents?
4. Why do you believe more universities did not stay involved beyond the first couple of years?
5. When was the last time you saw celebrities who made regular appearances early on, such as Leonardo DiCaprio and the owners of Ben & Jerry's?
6. Do you believe out-of-town experts took advantage of the city's limited expertise?
7. What are your thoughts on the activities of Greensburg GreenTown?
8. What is the disposition of the Meadowlark House?
9. Do you believe the national media purposely avoids portraying Greensburg as a town that has not lived up to the expectations?

10. Do some visitors come here surprised to learn that a level of rebuilding and restoration continues?
11. Is the Greensburg of today worthy of emulation – its economy, its social structure, and its way forward?
12. You are very busy with all of your assigned jobs. How did you come to do it all?
13. What data is available on rental vacancies?
14. Are other researchers you speak with interested in the financial health of the city five years after the storm?
15. Are the expectations of Greensburg living green too high?
16. Are there any building permit figures prior to the storm?
17. Knowing how this would end up five years later, do you believe the Greensburg leadership would make changes to the recovery plan?
18. The rental market is a unique situation in Greensburg. Can you please explain?
19. In terms of the numbers, would you say there are more or less rentals since the storm?
20. Can you elaborate on the residential phenomenon? Land detection studies indicate that lots are bigger with fewer homes, homes are more expensive. How does that translate to you as a banker?
21. Would you say it is more expensive to live in Greensburg than any other part of Kiowa County?

22. How much of the success or failure of Greensburg do you attribute to green economic development?
23. Are the tax rolls, empty lots, and sparse activity troublesome to you? Do you expect this to change in the future?
24. What role does the city's 2008 comprehensive plan play in terms of economic development?
25. Can you point me to some documents that might help explain the direction that the town is now going to develop?
26. Do you believe that the urban planner is best equipped to deal with long-term recovery?
27. Is there anything that disappoints you, outside of jobs, things that didn't quite pan out?
28. How did someone assume that the population would be restored in five years?
29. Do you believe that economic development and business attraction played a secondary role to housing and infrastructure building?
30. Are city leaders or civic leaders revisiting the comprehensive plan written five years ago?

The data was analyzed using Thematic Analysis, searching for similar thoughts by different people interviewed. After transcribing the interviews, the responses were read and placed into initial coding. After being initially identified and labeled during the initial coding, the reoccurring idea helped locate the themes. The ideas started out more numerous than anticipated, and it made it slightly more difficult that every question was not asked of each person (Braun & Clarke, 2006). Because there were so few interviews,

categories were reached more easily, and the larger themes located. The repeating ideas were organized and used as a quote for emphasis where possible (Lofland & Lofland, 1995).

Secondary Research Data Collection

Academic journals were used to gather the literature written about Greensburg and Kiowa County following the storm. This led to some informal interviews with authors from different disciplines to gather insight. Textbooks on Greensburg were unavailable. Newspaper articles and magazine stories were available online. They provided useful insight to understanding the mood of the town's people. Most useful were the articles written by Kansas-based publications, including the *Kiowa County Signal*, *Hutchison News*, *Pratt Tribune*, and to a lesser extent, the *Kansas Daily Star*. One limitation is that many of the papers lacked extensive digital libraries.

Analysis of the city's financial statements from 2006 to 2012 offered the most comprehensive picture of the city's economic health. These numbers have been audited and submitted to the county and state of Kansas as required under state law. Using financial statements must take into account two other phenomena: the national business cycle and any structural shift in the economy regionally, statewide, and nationally (Blakely & Leigh, 2010). While generally compared to other similar towns, Greensburg's finances were unique because no other town in the United States had rebuilt completely as a green city. By using a five-year trend, some evidence might be readily identifiable. However, the next milestone study should include at least 10 years. Trying to revisit Greensburg earlier than 2000 only assisted with historical context, but it did little for the analysis.

CHAPTER IV

ANALYSIS OF DATA

Introduction

While most of the data that could be garnered came from the city's financial statements from 2005 through 2012, efforts were made to capture other aspects of the local economy. That proved difficult because it required intimate knowledge and expertise to decipher. The town of Greensburg had neither the expertise nor knowledge base to make some of the decisions it made, a major reason experts from outside the area were consulted. The data is presented first quantitatively, and where possible, interviews are intermingled to provide context to some of the decisions. The mayor and city administrator did not respond to specific questions that would have been within their purview. As a result, the 11-point set of economic indicators designed for the International City Managers Association were not answered. The town's size made it difficult to find data commonly used by metropolitan economic development organizations, such as the Greater Oklahoma City Partnership, because third-parties do not track small towns. Therefore, a baseline or comparables could not be determined.

Research Questions and Associated Hypotheses

The research question and four hypotheses were intended to expand the literature. Very little information was focused on the state of the economy and predictions for its future. Perhaps researchers were awaiting a decade to get some inkling as to its condition. Such a pause was unnecessary to get a snapshot of the current states. As the emergency management literature acknowledges that such recovery could take up to 20 years or 1,000 weeks, five years seemed to be an appropriate check of the pulse.

Analysis of Data

Research Question 1 – Five years later, how well does Greensburg, Kansas, serve as a national model of green economic development as a post-disaster recovery approach in the context of a global market economy? The answer to this question is elusive. In 2009, the U.S. Department of Energy said economic opportunities would open once a commitment to greener choices was made. A report from the federal agency said “Green recovery can set a new focal point for economic development, place emphasis on new green-collar jobs, and improve your community’s image, which in turn, can attract businesses and residents” (DOE, 2009, p. 3). That did not occur. As could be expected, the amount of cash peaked in 2008 with a windfall of \$6.2 million in tornado insurance after the storm. However, the city’s cash has since fallen significantly at a rate of 18% per year from its 2008 peak of \$11.4 million.

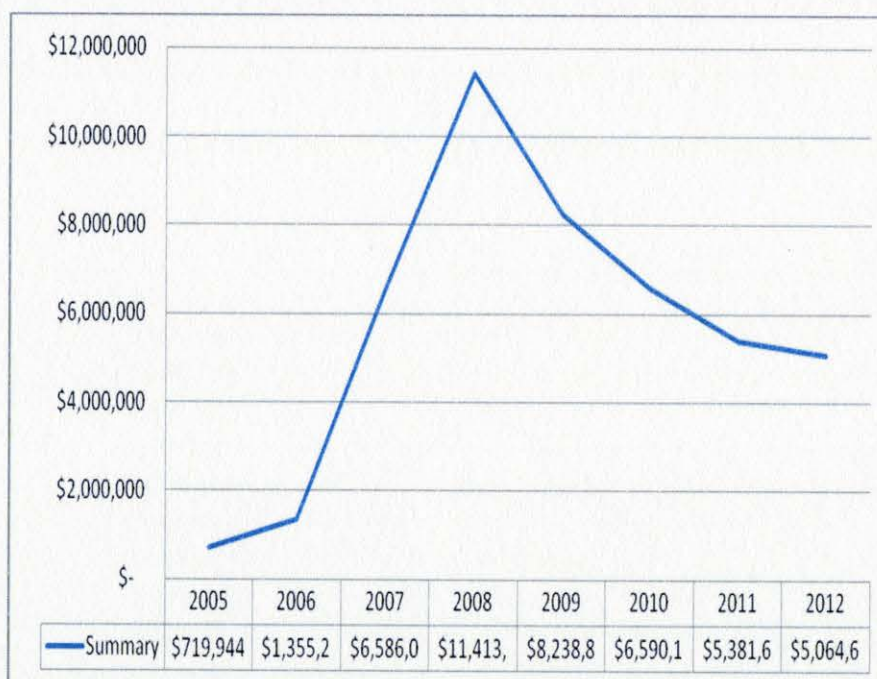


Figure 10. Summary of Cash Receipts, Expenditures, and Unencumbered Cash 2005-2012. “City of Greensburg, Kansas Financial Statements with Independent Auditor’s Report,” City of Greensburg, 2005-2012.

Since the tornado that destroyed Greensburg in 2007, the city has experienced similar downward trends in local sales and vehicle taxes that bring them closer to pre-storm levels. Meanwhile, the city's ad valorem taxes have skyrocketed during the same period. Christy Pyatt, the city clerk at the City of Greensburg, has observed Greensburg's rise since the tornado. She started working three weeks before the tornado and still works there. Pyatt said the Neighborhood Revitalization program, one of the few incentives available from the county, continues to be renewed. The end date depends on the applicant, she said, and not all buildings are included in the revitalization. Some residents did not abide by the rules that they apply and be approved by the county prior to beginning construction. Other residents lost their status because they neglected to pay their taxes at the appropriate times. Most of the building took place in 2008 and 2009 and should start ending in 2018 and 2019. A sliding scale determines the percentage of return for any given year during that 10 year process, with eventually the city and county receiving its maximum amount, she said (C. Pyatt, personal communication, April 15, 2013).



Figure 11. Annual Totals of Ad Valorem Tax, Local Sales Tax, & Vehicle Tax 2005-2012. "City of Greensburg, Kansas Financial Statements with Independent Auditor's Report," City of Greensburg. 2005-2012.

The 2008 plan believed that the sustainability of Greensburg relied on its ability to bring in new high-quality jobs due to the competitive advantage it would have as a result of the city's reinvention, due to the clustering of sustainable amenities, and opportunities. The report was bright:

Crafts people, manufacturing, research, and product design are all business types that could emerge alongside a shift toward sustainable thinking. Coordinating and stimulating these business types will create healthy commerce and pay dividends toward the long-term economic health of the region. A strong economy will also protect the current reinvestment and add momentum to the vision of a completely rebuilt community. (City of Greensburg, 2008, p. 64)

The civilian labor force has remained flat in Kiowa County matching the population's steady decline. At this time, it does not appear that the sustainable-type jobs have materialized. In an interview in September 2012, Erica Goodman, a member of the City Council and a local business owner, said she would prefer not to be in the position to simply accept any business that had an interest in moving into Greensburg if they were not committed to the city's green principles. Specifically, she did not want an incompatible company moving into the city's industrial park simply to occupy it (E. Goodman, personal communication, October 20, 2012). In the July 2013 City Council minutes, the city administrator cautioned that it can take at least three years for a business to establish itself in a new location such as Greensburg (City of Greensburg, 2013).

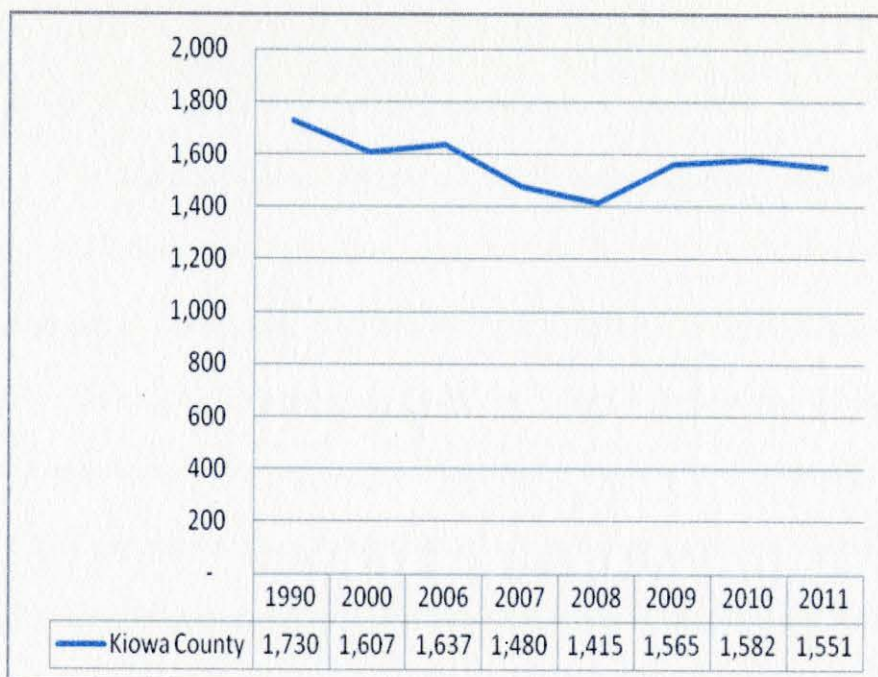


Figure 12. Civilian Labor Force in Kiowa County 1990-2011. The civilian labor force has steadily fallen during this 20-year span. The tornado's reconstruction did not have the long-lasting positive impact that was predicted. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

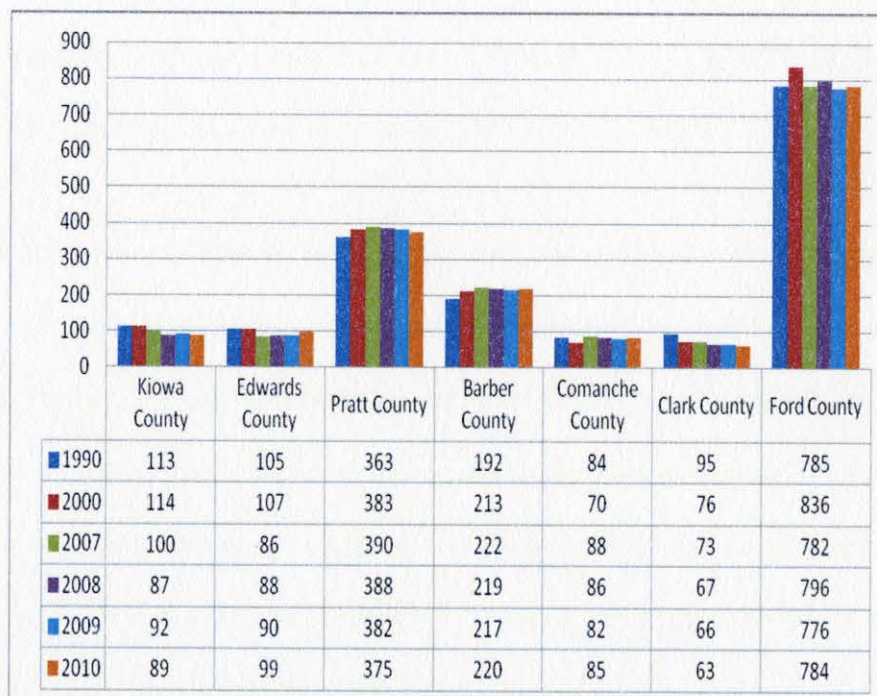


Figure 13. Establishments Total County Business Patterns 1990, 2000, 2007-2010. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

For the purpose of calculating the overall county *Economic Health Index*, the average of the five indicators is given equal weight. Along with Kiowa County, the six contiguous counties bordering it were measured with the scoring falling into five categories. Kiowa County was given a (-56), or “Very Poor Economic Health” grade, largely in part, because its population change indicator is (-846), drawing down the average. The population loss can be directly attributed to the city of Greensburg, which lost half of its 2000 population of 1,500 after the storm. They have not returned (see Table 1).

Hypothesis 1 – The city of Greensburg and Kiowa County will regain its population as projected by the designers of the Greensburg comprehensive sustainable plan and evidenced by sales tax increases.

The figures have not materialized as expected. In fact, they have not come anywhere near the projected population return. One year after the 2007 tornado, the fully-endorsed Greensburg plan released in May 2008 was very clear:

Based on projections by the Federal Emergency Management Agency (FEMA), the City of Greensburg should experience a steady increase in population with a reasonable expectation of reaching the pre-disaster population within five years. The projected return rate of the Greensburg population is based on the level of damage and community response, and shows a 50% recovery of the former population in the next 18 months, 75% recovery in three years and 100 % in five years (City of Greensburg, 2008, p. 17).

Table 1

Economic Health Indicators by County 2012

County	Overall Economic Health	Per Capita Market Income	Unemployment Ratio	Labor Force-to-Total Population Ratio	Per Capita Transfer Payments-to-Per Capita Market Income Ratio	Population Change
Kiowa	(-56)	104	238	128	94	(-846)
Edwards	19	139	220	128	127	(-517)
Pratt	87	107	196	139	97	(-105)
Barber	39	100	232	120	90	348
Clark	7	80	238	123	73	(-477)
Ford	138	80	220	120	120	151

Note. (x<85) Very Poor Economic Health; (85-95) Poor Economic Health; (95-105) Average Economic Health; (105-115) Good Economic Health; (x>115) Very Good Economic Health. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

Patrick Clement, 33, served as the editor of the weekly *Kiowa County Signal*, the town's lone newspaper, for nearly two years. He first arrived in town from Los Angeles as part of the television production team from the Discovery Channel that was making a documentary-style reality show of the town that aired on Planet Green. After returning to

California, he moved back to Greensburg. His position gave him a daily take on life in Greensburg.

“On a more practical level, green industry is founded and created by young professionals and they are not going to move to Greensburg,” he said in an interview.

“Why would they move to Greensburg where there’s no Starbucks? There’s no private school for their children? It’s windy, dusty and dirty” (P. Clement, Personal communication, April 16, 2013).

Recognizing that Kiowa County had also decreased in population, the next question was whether Kiowa County was alone in this phenomenon. It was not. With Dodge City, the major town only 45 miles away to the west, and Pratt, a city about 25 miles east, it was possible that many of the residents simply moved to these different counties. While not limited to only these two counties, it would not be inconceivable that former Greensburg residents did go to other communities within the region, such as the city of Wichita located about 100 miles east. With the exception of Ford and Pratt counties, the other counties have experienced population loss. Kiowa County has lost 31% of its population, the most of the seven counties.

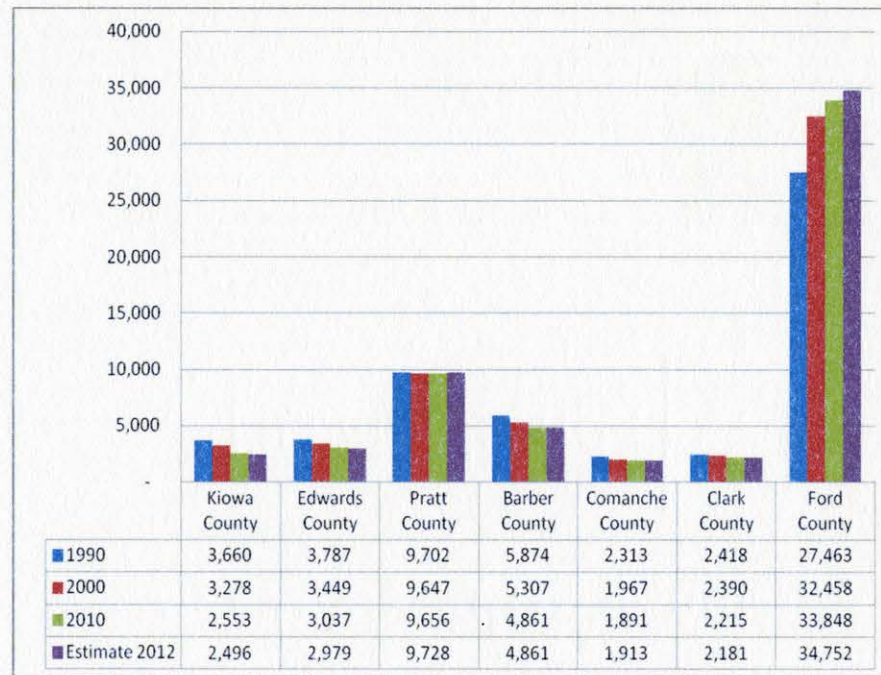


Figure 14. Population of Kiowa County and Surrounding Counties from 1990, 2000, 2010 and Estimate 2012. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

The University of Kansas Institute for Policy and Social Research Economic Health Index gave much weight to population. Projections for the next two decades do not bode well for many of these counties, including Kiowa County.

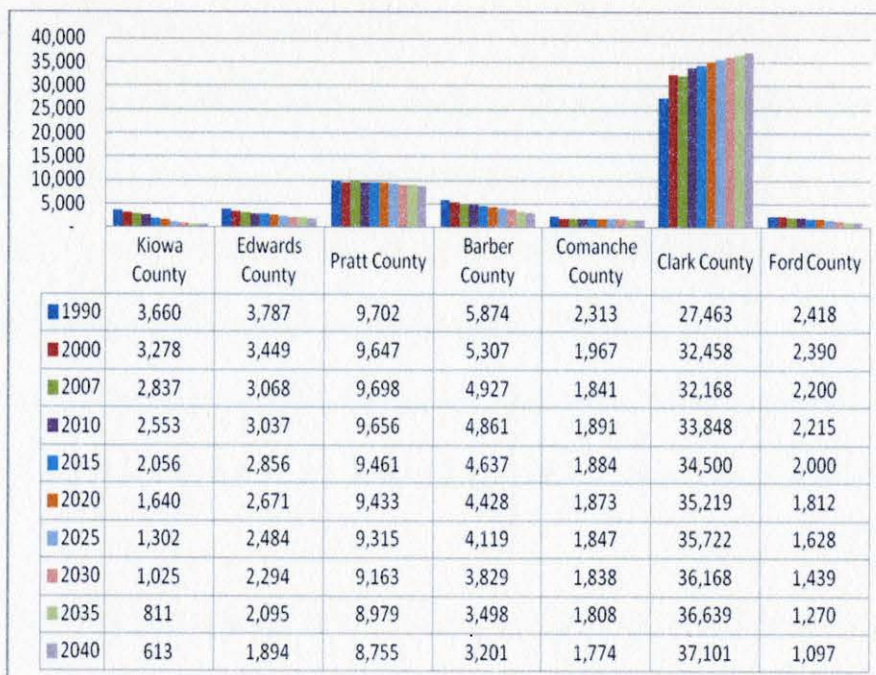


Figure 15. Population of Kiowa County and Surrounding Counties with Estimates Through 2040. “Projected Population,” August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

These projections do not match up with the expectations produced in the 2008 sustainable plan for Kiowa County. With the exception of Clark County, all of the contiguous counties are expected to lose population over the course of the next three decades. Kiowa County’s total population would be smaller than the current population of its county seat, Greensburg, according to the projections.

Where Greensburg’s population will be in 20 years is a question of much debate and a favorite topic of prognostication around town. Based on the research gathered by the planning team and the indication of new industries taking an interest in Greensburg’s sustainability goals, we believe that Greensburg can become one of the few rural communities able to gradually increase its population. To accomplish steady growth, city officials, county agencies, and the

many active citizen groups will have to continue their intensive reconstruction and recruitment efforts. Most importantly, when making rebuilding decision, it will be critical to consider the impact of the project on the citizens of Greensburg today, the citizens that will be recruited to town, and the next generation of Greensburg residents. (City of Greensburg, 2008, p. 17)

Hypothesis 2 – The city of Greensburg and Kiowa County will experience sustained housing prices for newly built environmentally-friendly homes from people moving into the city.

After escalating, housing prices did not fall from the lack of demand for the more expensive environmentally-friendly built homes in the city of Greensburg and Kiowa County.

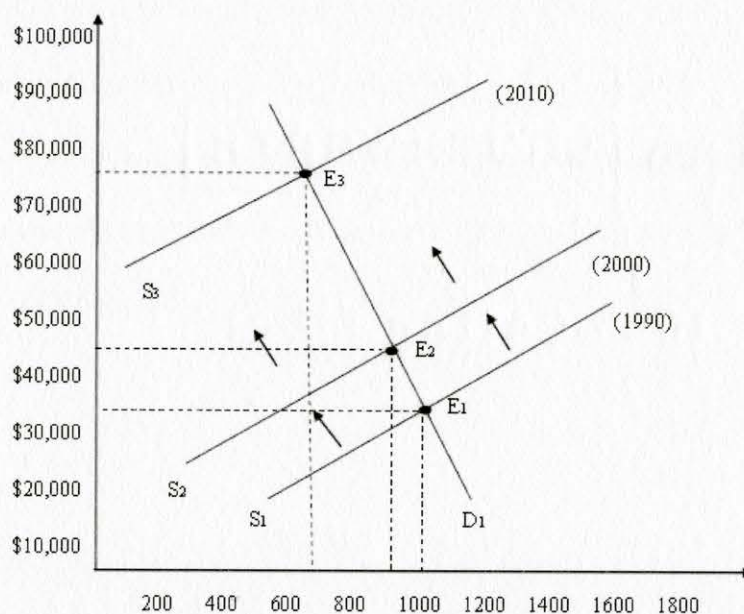


Figure 16. Impact of a Decrease in Supply on the Kiowa County Market Equilibrium.

The Longer Term Community Recovery Plan expected a challenge to building green because the vast majority of the homeowners – nearly 75% – were underinsured.

For its estimates, the values were placed at \$50,000, creating a gap of \$70,000 to replace a \$120,000 home of 1,300 square feet with three bedrooms and two baths. Another \$20,000 was expected to be spent to clean up the site and basement work for a total of \$140,000. However, sources to help offset the expenses were expected to come from state low-income assistance and insurance proceeds for a total of \$50,000. The total cost to replace all of the housing was expected to run between \$37 million and \$53 million (City of Greensburg, 2007).

Since 2000, Kiowa County has experienced the highest increase in median value of owner-occupied homes – up 70% – compared to the other congruous counties. Barber and Edward counties had 59% and 51% increases, respectively, while Ford County had the smallest increase during that 10-year span, 20%.

The plan did acknowledge there would be significant challenges such as the increased costs as a result of the limited number of area contractors with sustainable design experience, housing available for out-of-town contractors, limited amount of sustainable materials that could be purchased locally, and the pent up demand to move quickly (City of Greensburg, 2008).

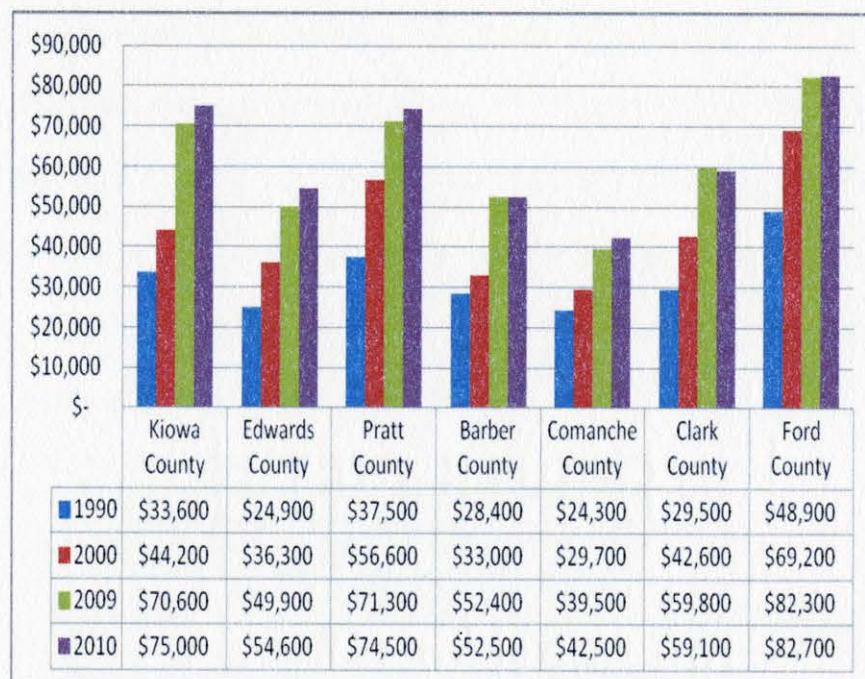


Figure 17. Median Value of Owner-Occupied Housing Units by County 1990, 2000, 2009, 2010. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

From 1990 until 2010, the number of owner-occupied homes has dropped in Kiowa County. The decrease in the supply of homes has increased the market price of homes in the county, which has resulted in a decrease in quantity demanded. With the exception of the period immediately after the storm, prices have not increased as a result of demand. Intuitively, had the decrease in demand been the catalyst for the decrease in price then the demand for quantity supplied would have decreased. All of the seven contiguous counties had similar business establishment trends. However, (Figure 12) in Greensburg, the county seat of Kiowa County, the number of permits dropped significantly. This finding was consistent (Hagelmann, Connolly, Zavar, & Dahal, 2012) in that nearly one-third of businesses failed after the storm, and one-third moved to another location to either take advantage of lower costs or mobility corridors. Hagelmann (2012) purchased detailed business profiles from a commercial vendor to have a frozen

moment of business activity. It resulted in a land detection analysis for the period of 2007-2010. This research paper attempted to update those land detection findings but used data from the Kiowa County Appraisers Office. According to the change detection, the City of Greensburg's rezoning caused 183 acres to be placed into urban use from its pre-storm nonuse. Meanwhile, only 18 acres that were once urban became vegetated. Other parts of the city experienced no change.

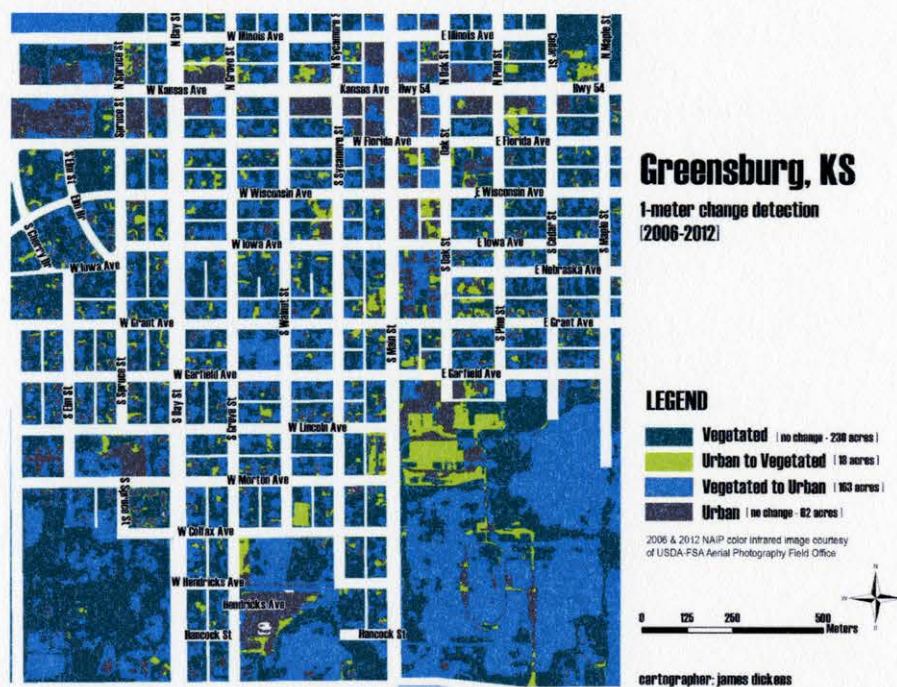


Figure 18. Change Detection of Greensburg from 2006-2012 (Cartography by James Dickens) "One-Meter Change Detection Greensburg, Kansas 2006-2012, Kiowa County Appraisers Office, 2006 & 2012 NAIP Color Infrared Image courtesy of USDA-FSA Aerial Photography Field Office. April 2013.

This finding indicated that the Smart Growth principles that underline sustainability did not achieve their intended objective of creating density and also increased the costs. Six years after the tornado destroyed 95% of Greensburg, the city experienced a rebuilding surge of homes valued at more than \$100,000 even though lots became bigger and homes became more expensive.

Thomas Corns, the banker, gave his own account of how the larger lots occurred. For him, it was about maintaining his property value. He had a home built in the early 1960s that was not completely destroyed by the tornado. After spending “enough money on it to tear it down and have it rebuilt again,” he opted to buy the neighbor’s lot and the lot across the alley (T. Corns, Personal communication, April 15, 2013). “They were going to put a trailer there, and I bought that lot to control the neighborhood,” he said. “I have no use for one of the lots. Whenever I can find someone who will build a permanent stick built house, I will be glad to sell it” (T. Corns, Personal communication, April 15, 2013).

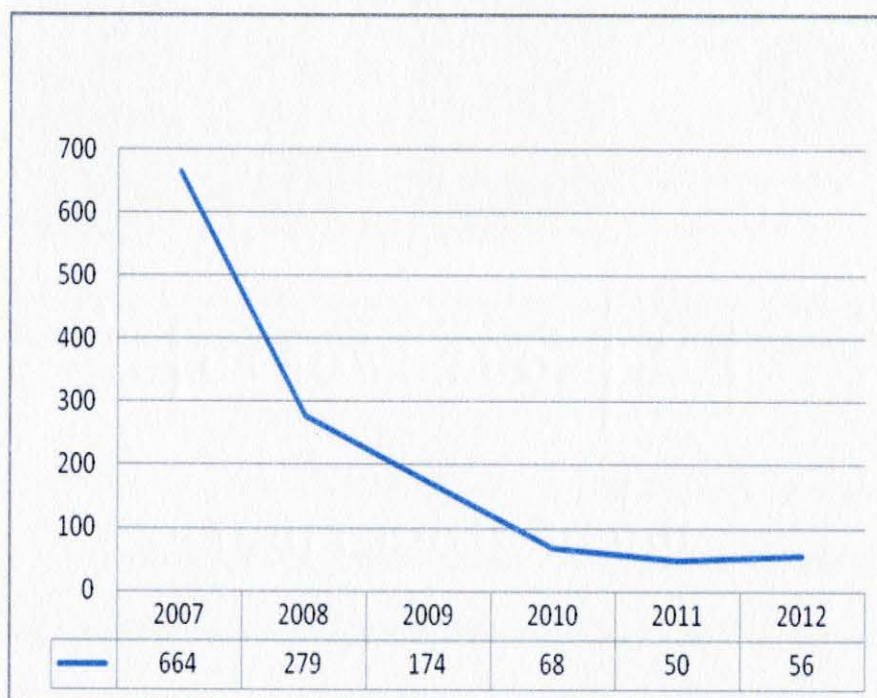


Figure 19. Building Permits in Greensburg.

Pyatt, the city clerk, said appraisals after the tornado were significantly higher than pre-tornado because everything was new, many built bigger, and there were no comparable sales. Every five years, the county appraiser reassesses the homes, which has resulted in some appraisals falling. Still, the services provided by the county and city are

covered by taxes. “We have a much smaller tax base than pre-tornado,” she said. “Between rising costs and the lower tax base the county has had to raise taxes 3% to cover their costs” (C. Pyatt, Personal communication, October 14, 2013).

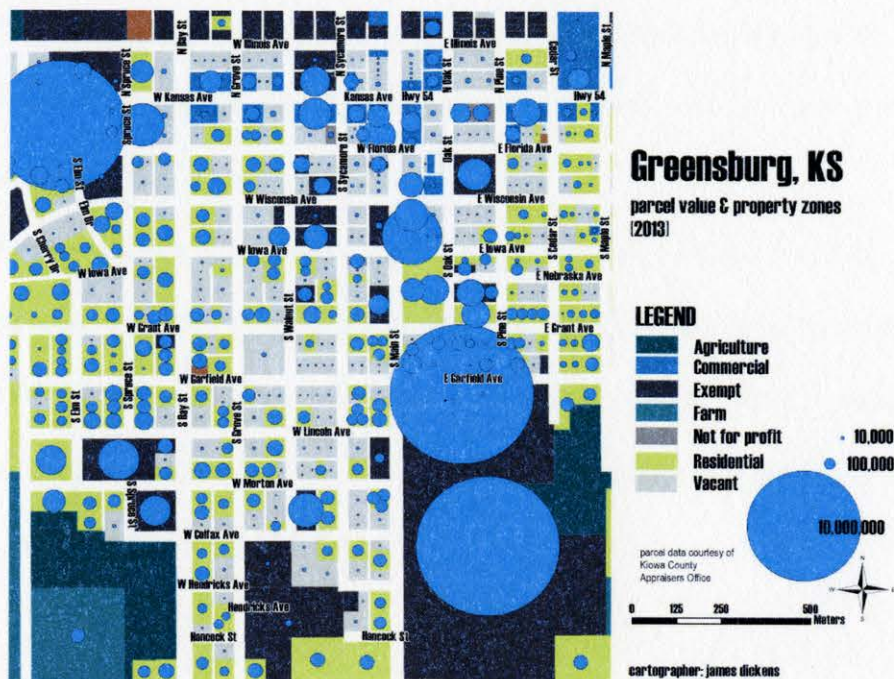


Figure 20. Parcel Value & Property Zones in Greensburg 2013 (Cartography by James Dickens) Kiowa County Appraisers Office, 2006 & 2012 NAIP Color Infrared Image courtesy of USDA-FSA Aerial Photography Field Office. April 2013.

The Federal Reserve Bank of Kansas City captures the *Seriously Delinquent Mortgages* (90 or more days past due or in foreclosure) every quarter, an economic indicator that expresses the economic distress of the area. Since the 2nd quarter of 2011, more than 8% of all mortgages in Kiowa County were either past due by 90 days or already in foreclosure, according to the Kansas City branch, the consistently highest among the seven congruous counties. Should the Federal Open Market Committee raise the Federal Funds Rate, it would have a detrimental impact on Greensburg home owners already unable to pay existing mortgages, as banks would raise their prime rate making it

more costly to purchase those homes on the market. The market would be depressed further.

Clement, the editor, said many people could not live in Greensburg because there were no homes, but the pent up demand forced properties in neighboring cities to increase in asking price, and, as a result, their tax values. Faced with purchasing an older home at higher prices, residents returned and built.

“Either way, you are going to be in debt, but if you are going to rebuild in Greensburg, at least, it will be a brand new house. That’s why people build in Greensburg and they’re upside down, and they’re cool with it,” Clement said (P. Clement, Personal communication, April 16, 2013). “Now that’s a heightened market in a real short time. Those prices have begun to come down.”

County	2 nd Qtr 2013	1 st Qtr 2013	4 th Qtr 2012	3 rd Qtr 2012	2 nd Qtr 2012	1 st Qtr 2012	4 th Qtr 2011	3 rd Qtr 2011	2 nd Qtr 2011
Kiowa									
Edwards									
Pratt									
Barber									
Comanche									
Clark									
Ford									

Legend

< 1 %	1 % - 2 %	2 % - 4 %	4 % - 6 %	6 % - 8 %	> 8 %

Figure 21. Seriously Delinquent Mortgages by County (90 or More Days Past Due or In Foreclosure) from 2nd Qtr 2011 to 2nd Qtr 2013. “Seriously Delinquent Rates by County,” Lender Processing Services, Inc., Consumer Credit Report Kansas, Federal Reserve Bank of Kansas City. 2nd Quarter 2013. 1st Quarter 2013. 4th Quarter 2012. 3rd Quarter 2012. 2nd Quarter 2012. 1st Quarter 2012. 4th Quarter 2011. 3rd Quarter 2011. 2nd Quarter 2011.

A final point on banks should be made here. From 2007-2011, the amount of bank deposits in Kiowa County has dropped 15% while the banks in the other six contiguous counties have experienced an increase during the same period. An explanation for this is unknown, but one could surmise that insurance proceeds have fallen, residents who no longer live in Greensburg deposit their money in local banks, and expenses have increased.

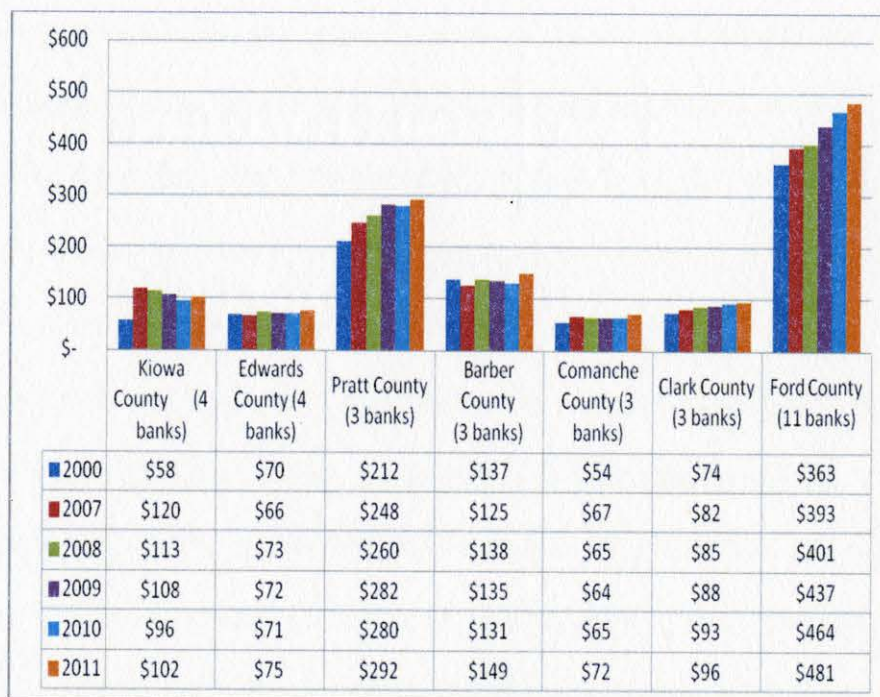


Figure 22. Bank Deposits (\$) in Millions by County, 2000, 2007-2011. "Federal Deposit Insurance Corporation, Data Book, Operating Banks and Branches," August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

Hypothesis 3—The town of Greensburg will reach energy goals that save 30-40% on its Leadership in Energy and Environmental Design (LEED-rated) public buildings compared to typical buildings of comparable size, which will result in lower utility and water sales over the five-year period.

All of the city's public buildings met their energy goals, and in some cases, they exceeded the goals of 42% energy savings. For instance, the 5.4.7 Arts Center saved 70% compared to a typical building. The business incubator saved 71% compared to a comparable building of its size. The K-12 school had 72% savings, while City Hall had 65% savings compared to buildings of comparable size (NREL, 2012).

The city collects fees on utilities. Although the city's population has dropped significantly, the residential and commercial use of water and electricity has not subsided. With the exception of the year after the tornado, fees collected in these two accounts have remained consistent. Even with fewer residents in Greensburg, the water utility sales climbed above pre-storm levels. Given the emphasis on managing all resources, an explanation for the water increases is unknown.

In one potential bright spot, electricity utility sales have experienced a 17% decline since the 2007 storm, which could imply that the savings projected by the NREL is occurring (see Table 2). One explanation could be in the "Notes to Financial Statements" (City of Greensburg, 2012) that states the Series 2001 Electric Utility System is among the city's long-term debt. The filings state that in 2006, the system serviced 924 customers, and in 2012, it serviced 558 customers (see Table 3). While the number of customers is down 40%, the revenue is down 70%. However, the auditors noted that the stipulation to the rate was that net revenues of the Electric Fund should not be less than 120% of the debt service requirement. In 2012, the revenue was short \$59,824 (City of Greensburg, 2012).

Pyatt said several factors account for this counterintuitive occurrence. She said for the first time in years, the city raised electric rates to keep that department "above water,"

making the cost appear higher. Also, many of the new buildings are all electric, which eliminates natural gas consumption, but makes for much higher electric usage and cost. Pyatt said most of the residential buildings do not use an alternative source of power such as solar or wind to help offset the additional electric cost. In addition, a large farm in the city uses much electricity during harvest to run grain driers and other equipment (C. Pyatt, Personal communication, October 14, 2013).

Table 2

Number of Customers Serviced by Series 2001 Electric Utility System 2006-2012

2006	2007	2008	2009	2010	2011	2012
924	931	296	473	537	562	558

"City of Greensburg, Kansas Financial Statements with Independent Auditor's Report," City of Greensburg, 2006-2012.

Table 3

Net Revenue from Series 2001 Electric Utility System 2006-2012

2006	2007	2008	2009	2010	2011	2012
\$465,123	\$237,002	\$254,287	\$355,638	\$333,384	\$292,717	\$140,066

"City of Greensburg, Kansas Financial Statements with Independent Auditor's Report," City of Greensburg, 2006-2012.

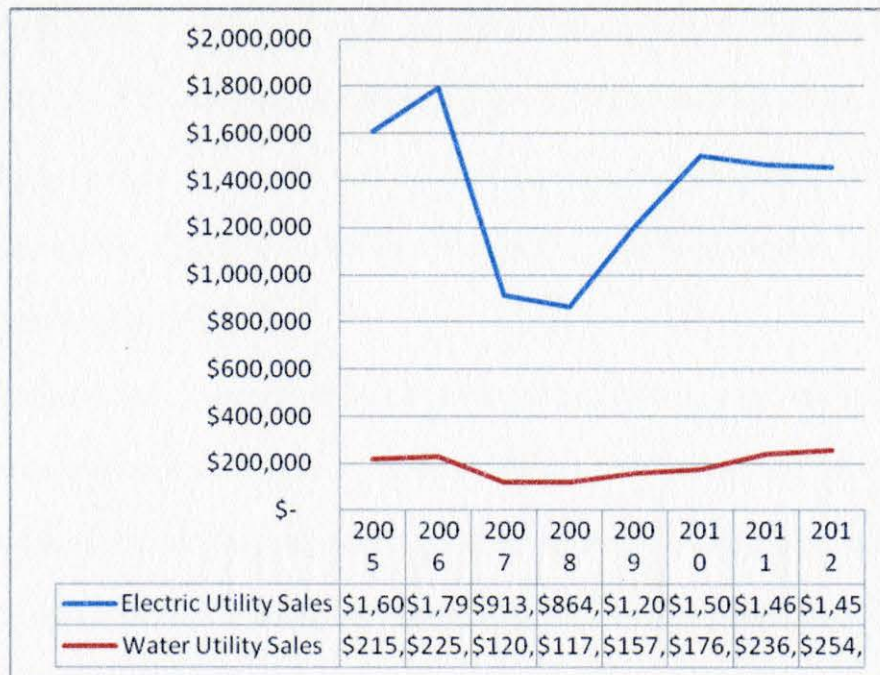


Figure 23. Annual Totals of Electric Utility Sales and Water Utility Sales 2005-2012. "City of Greensburg, Kansas Financial Statements with Independent Auditor's Report," City of Greensburg, 2005-2012. Adapted with permission of the author.

Hypothesis 4 – Neighboring cities and counties will experience some minor declines to their financial health when the Greensburg population moves back to Greensburg.

Neighboring cities and counties did experience some minor improvements to their financial health during the same timeframe because new residents migrated there. In the aftermath of the storm, many people wanted to rebuild quickly so they went where they could do it quickly, according to Pyatt, the city clerk. She said the town of Haviland now has many of Greensburg's former residents. Her comments were in line with the plan's expectations. Renters, who had grown accustomed to paying \$335 per month, were also expected to be challenged by the expected cost increases (City of Greensburg, 2008b). While not all residents were expected to return, new residents were expected. The plan only expected a slight decline in Kiowa County's population, while the city of

Greensburg would be positioned “with a reasonable expectation” of pre-disaster population. (City of Greensburg, 2008b, p. 26) So far, that has not happened. For the seven contiguous counties, there is very little difference in the fair market rent through this seven-year span. Compared to the much larger Pratt and Ford counties, Kiowa County’s rent is only 15% less.

“On (Haviland’s) statistics that looks huge because these were small towns and not a lot of people were moving to or building,” Pyatt said. “There wasn’t a house to be had in Haviland. Houses that would have sat on the market for a long time, sold very quickly. Rentals went very quickly” (P. Pyatt, Personal communication, April 15, 2013).



Figure 24. Fair Market Rent by County: Two Bedrooms 2005-2012. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

Other key figures that were used to analyze and hold as benchmarks included: Tangible Assessed Valuations, Sales Tax Collections, the U.S. Bureau of Economic Analysis Per Capita Personal Income, Percent of Population Receiving Food Stamps,

Estimated Percentage of People in Poverty, and Sources of Personal Income. The findings were relevant and helped frame the answers to the research question. The valuations in Kiowa County have remained persistently high since 2007 despite the drop in population. Sales taxes for all seven contiguous counties have increased since 1990. However, in Clark and Kiowa counties, the 2011 figures are similar to 2007 data. This mirrors the city of Greensburg's sales tax trend (Figure 11), which are now at pre-storm levels. Kiowa County offers the second highest per capita personal income with the exception of Edwards County as the top earning county. Kiowa County's per capita income peaked in 2008 before beginning its slide. Down from its 2007 high of 8.1%, Kiowa County has slowly trended upwards since. Other counties have also seen increases in the percentage of people receiving food stamps. Ford County had the highest rate, at 11%, in 2011. Despite having the second highest per capita income of the seven contiguous counties, Kiowa County also has the second highest percentage of people in poverty. While Ford County has the highest percentage of people in poverty, the counties makes less than 33% compared to Kiowa County residents. All of the seven contiguous counties have similar transfer payments trends. However, Comanche, Clark, and Barber counties had the highest percentage of personal income coming from the transfer payments at 25%.

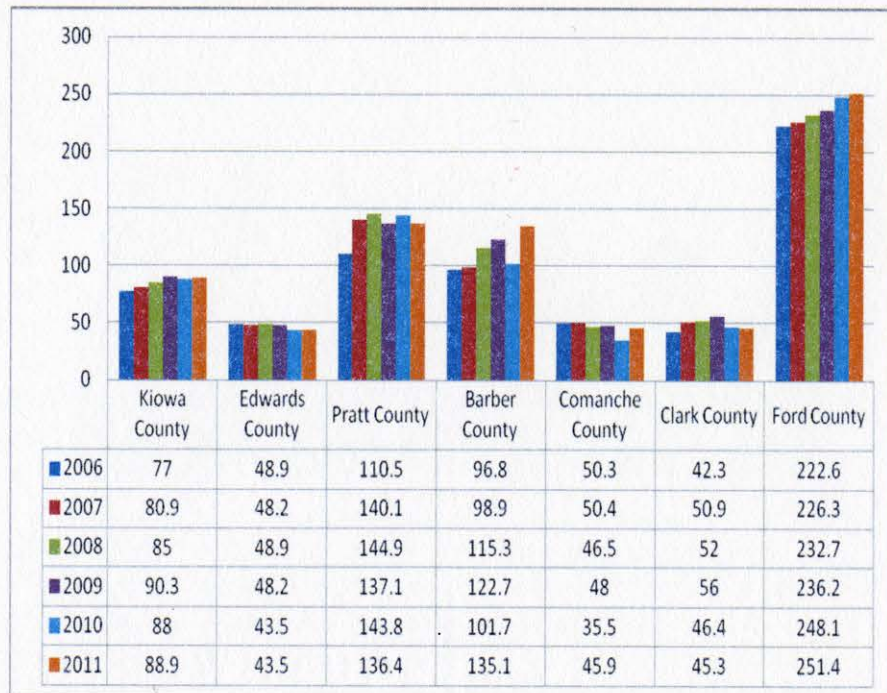


Figure 25. Tangible Assessed Valuation (\$) in Millions by County, 2006-2011. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

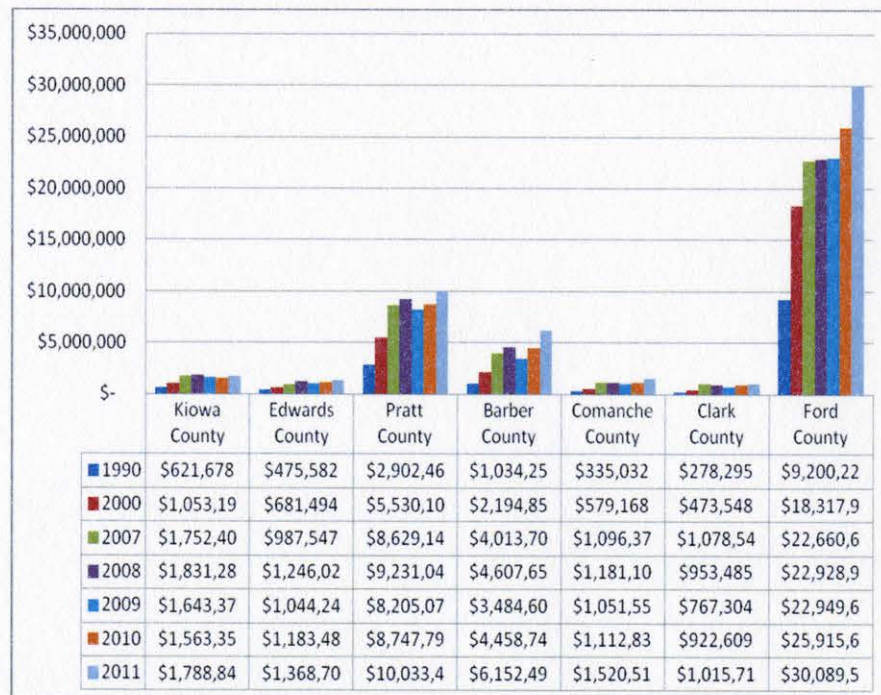


Figure 26. Sales Tax Collection by County 1990, 2000, 2007-2011. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

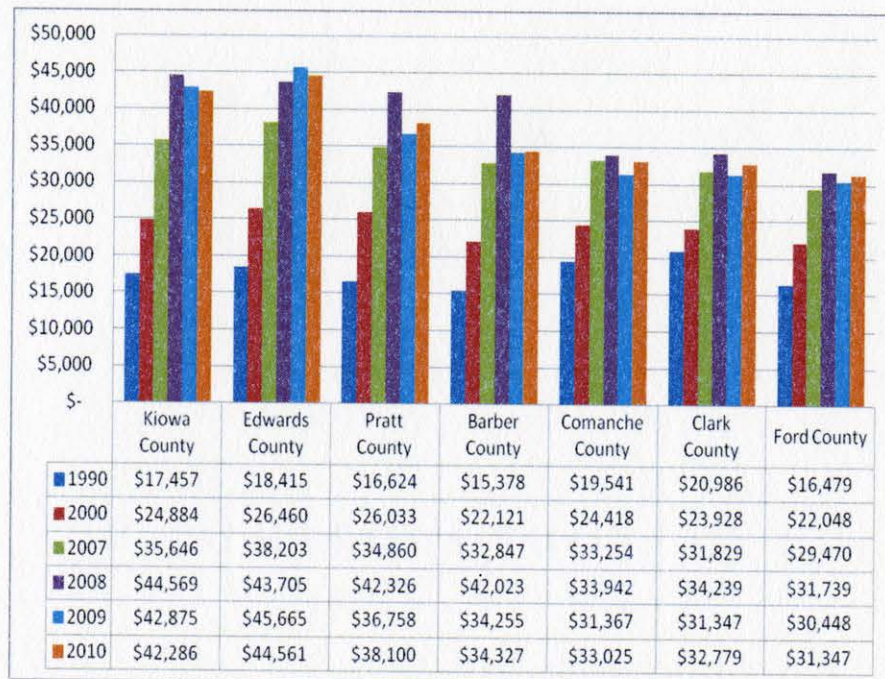


Figure 27. BEA Per Capita Personal Income by County 1990, 2000, 2007-2010. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

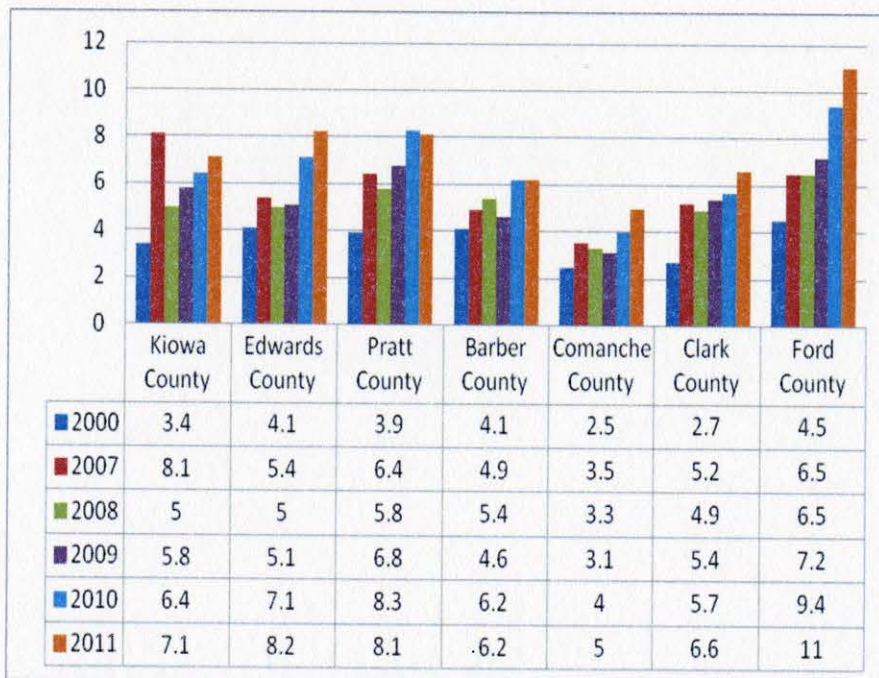


Figure 28. Percent of Population Receiving Food Stamps by County 2000, 2007-2011. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

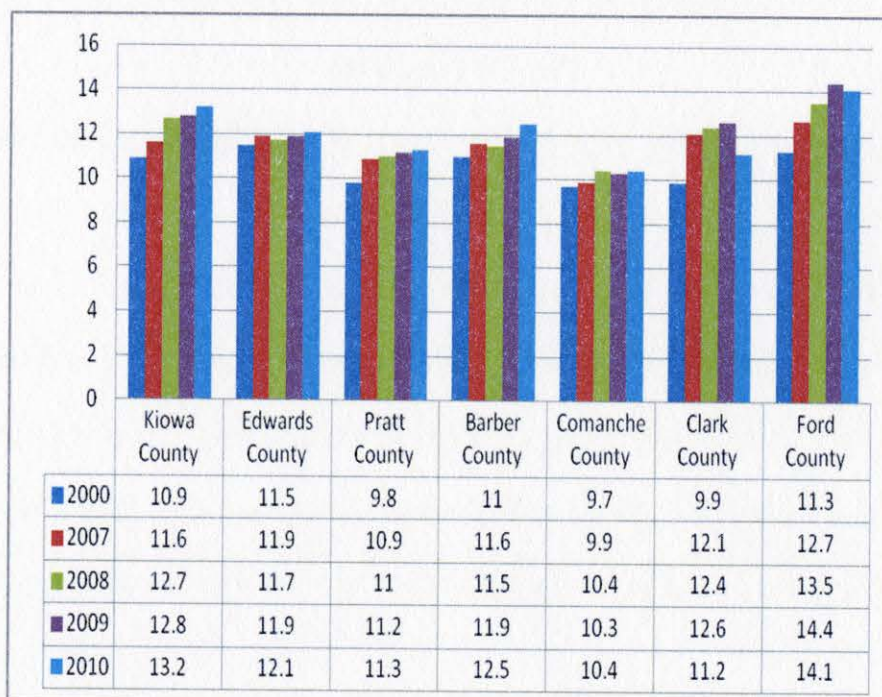


Figure 29. Estimated Percentage of People in Poverty by County 2000, 2007-2010. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

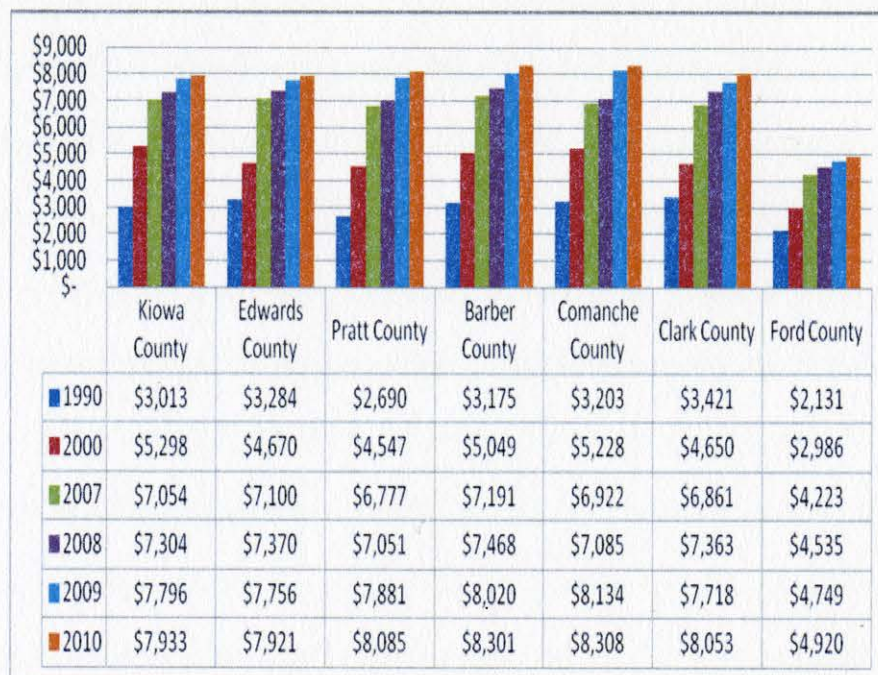


Figure 30. Sources of Personal Income by County: Transfer Payments 1990, 2000, 2007-2010. August 31, 2012, Kansas County Profile Report, The University of Kansas Institute for Policy & Social Research. Adapted with permission of the author.

Qualitative Measure

Four themes emerged from the in-depth interviews, which were recorded and transcribed. All of the comments were unedited. One was the role that outsiders played into framing the need for Greensburg to become a *green city*. A second theme was whether the green economic development would override the other economic development issues that were confronting the town prior to the storm. A third theme that surfaced was whether the town would be sustainable. Fourth, would the community choose this post-disaster economic development approach if it had an opportunity to do it again.

One person served as the town's only reporter, a job that he took after arriving in Greensburg as part of a reality television documentary series. Another person served as

the city clerk, hired just two weeks before the tornado. Also, a businessman, who served as the bank president of the town's main bank, was interviewed to gather a perspective on the economic development plans of the city. Finally, during the visit, the city's part-time urban planner was interviewed. In September 2012, an elected official was interviewed by phone. All of these interviews were extensive. Nearly all four of those interviewed in person during the visit gave a qualitative and authoritative voice to the numbers. They offered an insider's insight that few other studies have been able to provide. All were candid. Data was also gathered from the Kiowa County Appraiser's Office. Photos were taken and documented during the visit, which ran from Sunday through Tuesday.

All four people interviewed acknowledged that experts from outside Kiowa County were consulted and needed to create and fund the rebuilding. The comments were very consistent. The repeating ideas were: BNIM (the architect), FEMA, Greensburg GreenTown, the Discovery Channel, and persistent media attention had formidable places at the decision table. Considered innovators, then-Kansas Gov. Kathleen Sebelius and then-City Administrator Steve Hewitt encouraged the move to sustainable building practices, while media coverage led actor Leonardo DiCaprio to donate \$400,000 to build the business incubator with Frito Lay's contribution for the remainder (White, 2010). Sebelius was appointed to the Secretary of Health and Human Services under the Obama Administration in 2009. Hewitt was named the 2008 Municipal Leader of the Year by *American City and County* magazine and the 2009 Public Official of the Year by *Governing* magazine. He left to take a similar position in Clinton, Oklahoma, in 2011 (Painter, 2011). Danielle Wallach, the executive director of Greensburg GreenTown, continues to operate the nonprofit while starting another one, named GreenTown Joplin

after the 2011 tornado destroyed parts of Joplin, Missouri. Since 2007, the nonprofit has raised more than \$950,000, according to Internal Revenue Service filings (IRS, 2011). Though Wallach is rarely seen in Greensburg, and its most recent model eco-home has been abandoned. The theme of outsider influence emerged from the repeated comments that there was no technical expertise available within Kiowa County, and funding seemed to increase proportionally with the green building incentives.

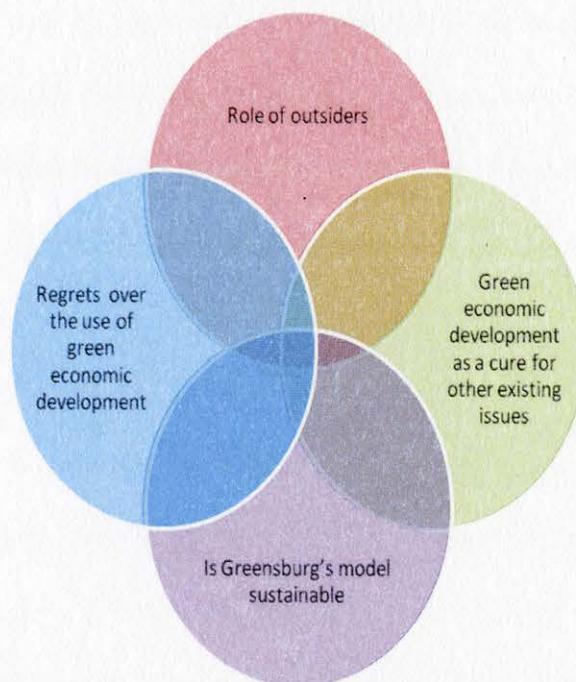


Figure 31. The Themes of the Semi-Structured Personal Interviews.

All four people interviewed acknowledged that pre-storm economic conditions were not favorable and a change was needed to stop the exodus of residents, even before the storm. Corns, the banker, said that leakages continue because residents go to discount stores in Pratt and Wichita. “If that money stays here, it’s going to turn over six or seven times,” he said. “If it goes to Wichita, we’ll never see it again” (T. Corns, Personal communication, April 15, 2013).

Corns said the cluster of people who drove into Greensburg no longer occurs, a tradition that he can vaguely remember as a child. He keeps a photo in the bank taken in 1952 by his father that showed Greensburg on a typical Saturday night. Every single space on Main Street is filled with a car from all of the families of farmers that came in. He comments.

It was kind of a quaint thing, but it just shows the level of business that we had in 1952 as opposed to now. If you came into town on a Saturday night (now), there wouldn't be any cars on the Main Street, and no businesses opened. It used to be that everybody came into town, all the businesses stayed open until 9 pm. The show was open; all the kids went to the show and had an ice cream cone.

(T. Corns, Personal communication, April 15, 2013)

The answer to the question of the viability of Greensburg looking forward was filled with anecdotes, even as the *for sale* signs and empty streets were reminders of the vacant feel. Michael Gurnee, the city's planner, blamed the poor economy for the city's tough times attracting industry. While a staunch defender of sustainability, Gurnee acknowledged that it was definitely more costly. He said a company from Australia donated dual flush, environmentally water saving toilets for people who were rebuilding here. He was impressed by them, but at \$300 to \$400 each, even he opted for a less expensive brand that only cost \$150. "A lot of the so-called 'green initiatives' were very, very expensive. ... More engineering is going into things, and prices are coming down. But I don't know if that's economic development or not" Gurnee said (J. Gurnee, Personal communication, April 15, 2013).

With the exception of Patrick Clement, the editor of the weekly paper, no other person expressed some outright form of regret over the course of the restoration and the jobs that failed to materialize. But, Christy Pyatt, the city clerk, said there would likely be changes due to the functionality of some of the designs – and the costs of building green without outside funding. Pyatt said the school was going to look the same, but not use many of the same materials used in the original building because time has taught them “what works and what didn’t work” (C. Pyatt, Personal communication, April 15, 2013).

One of the most applauded aspects of the city’s redesign is the streetscape on Main Street. But, according to Pyatt, that would need some major tweaks to make it easier for large trucks to back in and out of parking spots, as well as easier for snow removal.

On paper, it looks nice. But to the guy running a truck, he knows that when there is three to four feet of snow drifted in there, he’s not going to know where that bump out is at, and you’re going to get things like what happened out here at this stop sign. Functionality. Storm water collection is great for watering, but it has to rain. If it doesn’t rain, there’s no water to get in the tank. Yes, there are things we’ve learned – functionality. (C. Pyatt, Personal communication, April 15, 2013)

Pragmatism aside, in other interviews (Sparks & White, 2013), residents could not see the city’s fortunes improving, and they attributed the lack of economic development and continued population skid to the green redevelopment, and an attitude that those unwilling to build green were not welcomed. J. Michael Gurnee’s response to a question might echo the sentiment:

We had several people come in with the idea of building a Subway restaurant, and one person came in and said 'you don't have any of those darn building codes, do you?' I said 'not only that, but we want a licensed architect to design your building.' 'Well, I'll go someplace else.' Okay, sayonara. We don't want them. (J. Gurnee, Personal communication, April 15, 2013)

CHAPTER V
FINDINGS, CONCLUSIONS, AND IMPLICATIONS

Introduction

Economic development theories and practices have evolved over time as the economic thought on which most are founded has evolved. In general, an increase in the tax base and jobs is equated with economic development, making a distinction from economic growth which can be measured in the expansion of production by the annual percentage increase in real local or state Gross Domestic Product (Hyman, 1994). Economic development has a tendency to be centered on its objectives: a program, group of policies, or activity that seeks to improve the economic well-being and quality of life for a community by creating and/or retaining jobs that facilitate growth and provide a stable tax base (IEDC, 2006). Economic development, in practical terms, is loosely defined by fuzzy iconic language that is synonymous with “successful economic development” expressions such as good jobs, entrepreneurship, investment, increased tax base, clusters, and economic prosperity (Rowe, 2009). But these terms have a tendency of not being associated with a specific theory, so they are left to the interpretation – and in many cases, the misinterpretation – of the person performing local economic development, which can lead to some of the misunderstandings and misapplications from various disciplines (Blakely & Leigh, 2010).

The International Economic Development Council (IEDC), an international trade group headquartered in Washington D.C., points specifically to six theories (2006) that serve as the basis for modern day economic development projects, policies, and practices that borrow heavily from Blakely’s earlier editions of *Planning Local Economic*

Development (1994). Neoclassical economic development theory accepts that capital investments will seek the highest return. The pure competition dissuades market interference. This framework can also be used to explain the same phenomenon with human, political, social, and community capital. A drawback of this premise, noted by IEDC, is that the highest return might be in low cost areas, such as blighted parts of cities, which does not always happen (IEDC, 2006).

Economic base theory is the most popular understanding of economic development. This theory is when firms create more jobs locally and products are exported outside the community, and any method that assists such firms helps grow the local economy. A criticism of this theory is that (IEDC, 2006) too much concentration on these types of firms creates dependent, less diversified economies. This theory also tends to ignore the opportunity presented to the communities by meeting demands from within, stopping the leakage of income to outside towns through import substitutions. (Blakely & Leigh, 2010)

Location theory assumes that the location decisions firms make are a result of several factors, including proximity to airports, universities, and labor, along with the stage of the company and purpose (IEDC, 2006). More often, firms are including the logistical piece of warehousing and distribution in these decisions. The Achilles heel of this theory has been the technological advances and the work-life balance that quality of life issues raise (Blakely & Leigh, 2010).

Spiral or causation theory attributes local success or failure to local events and conditions that wind around a central event that continues to recede or advance through a

series of cyclical movements (IEDC, 2006). Once started, the phenomenon requires external forces to stop.

Product life-cycle theory seeks to explain why companies move, relating it to the lifecycle of the products they produce. As companies mature, the steady decline of profits leads to a search for areas of lower costs or competitive advantages (IEDC, 2006). Some companies have products that quickly become obsolete, so they require the cheapest production costs to absorb the new innovations. While other companies and industries are not subject to product improvements (Blakely & Leigh, 2010).

New growth theory serves the framework for popular trends of investing in research and development at universities, supporting entrepreneurship, and increasing access to venture capital as a means of attracting an educated workforce (IEDC, 2006). The social returns of these investments improve the rest of the region in this cyclical gain that comes from firms being near other firms that are doing well (Malizia & Feser, 1999).

Now, experts say, the emergence of world markets has forced nations into a hyperactive stage of globalism so intertwined that an economic earthquake in far off places like Athens, Greece, has a very good chance of turning into an economic tsunami here.

Economic development historians characterize the evolution of economic development theory and practice by *waves*, as in a widespread movement that encapsulates the predominant thinking of the time. But the term *phase* could just as easily explain the chronological and overlapping periods underway at local and state economic development organizations. As a result, the economic development profession wraps the progression of local economic development as the first wave, followed by the second,

onto the third wave, and onto any upcoming wave to give the appearance that there is a seamless beginning and end to each period. Economic development literature declare the first wave, after the Great Depression, as the industrial recruiting era, commonly referred to as the South's "smokestack chasing," for its unmistakably visible sign of economic development complete with cheap labor, cheap land and industry-friendly tax and loan packages. This era helped explain the causes of regional growth and development, and it was evident after World War II when Southern states provided the sweetest incentives in the country's first introduction to corporate welfare (Bradshaw & Blakely, 1999).

The second phase marked its existence during the politically volatile 1960s and continued during the energy crisis of the 1970s, where local government entered into the local economic development arena in full force. The manufacturing decline and rising global competition had government providing incentives, such as workforce training and small business assistance, to ensure the foundation was properly constructed as opposed to any firm-specific inducements. This measure would point to the demand side versus a supply-side approach to the first phase. Economic historians, such as Peter Eisinger (1988), point to the beginning of a more sophisticated marketplace resulting in applied research, industrial modernization, entrepreneurship, and business expansion, as he penned in *The Rise of the Entrepreneurial State*. As a result, the promotion of exports is often associated with this phase, as well as government involvement in helping with the demand.

The third phase is said to begin in the 1990s and called for an entrepreneurial strategy and a place for other participants in the local economic development decision making. This phase is a notable contrast to the previous one because it encompasses

using regional resources to support the growth of clusters, offering few direct investments to businesses (Blakely & Leigh, 2010). This stage had a less direct role for government and was more about setting the environment, encouraging networks, regionalism, etc. The significance of the clusters, which bring together technology, human, and financial capital, is that they allow communities to compete globally. The emergence has led to states opening international offices to coordinate business. As a result, the communities that have successfully negotiated this wave have had more nontraditional stakeholders involved, such as churches, civic groups, ethnic minorities, and schools. Some criticism of this outgrowth is that it is another justification of industrial attraction and incentives on a much grander scale, usually associated with the first wave (Miller, 2009).

The fourth phase grew out of a green approach to ensure growth did not come at the expense of the environment. Noted by proponents for its sustainable characteristic, this approach welcomed social, economic, and environmental benefits at the inclusion, not exclusion, of each other (Blakely & Leigh, 2010). But these programs are expensive, and the evaluations are still incomplete. Even without a clear-cut metric, many cities worldwide are drawing up and executing costly, idealistic master plans that incorporate sustainability in the midst of a worldwide recession, with little accompanying research that gives a definitive answer as to its long-term merits and successes in an era of deepening globalization. Many proponents of the green movement offer anecdotal and short-term evidence. Even more telling is that the literature is scant as to whether green development is appropriate after an extraordinary destruction when there is a premium on decision-making, time, energy, and limited resources.

Finally, the fifth phase uses two approaches: relying on market solution and promoting city and regional development. It is almost like revisiting Adam Smith's, *An Inquiry into the Nature and Causes of the Wealth of Nations*, because there is a resounding theme here: whatever the market will bear. Recognizing the negative consequences of urban sprawl and traffic congestion, the fifth wave may provide the impetus to turn around decaying downtowns and urban cities. However, it will come at the expense of the lower income residents when gentrification prices them out of the same areas (Blakely & Leigh, 2010).

Findings

One projection that clearly has not occurred at this point is the population's return. Several people interviewed blamed the Great Recession for the lack of new businesses and residents relocating to Greensburg. However, internal U.S. migration rates have flattened since 1980 (Molloy, Smith, & Wozniak, 2011). The belief that these new residents and corporations would descend on Greensburg ignored the city's role as a periphery in the regional economy, with the only major city 100 miles away serving as the core. Paul Krugman's new economic geography explains that the economies of scale and reduced transport costs of living elsewhere are reasons why people choose to live in bigger towns and cities at the expense of more isolated communities (Krugman, 1991). The architects of the town's Long Term Recovery Plan and Sustainable Comprehensive Master Plan expected the cluster of similar green businesses to fulfill a self-reinforcing process of more like-minded industries to follow; they did not.

At first glance, the choice to build a business incubator may appear to be a sound idea to give fledgling companies an opportunity to grow. In Greensburg, it has not

materialized. Instead, it is filled with many part-time entrepreneurs, including attorneys and accountants who had offices in other cities, and its construction showed how quickly eager organizers ignored the history of incubators and the necessary economic conditions for an incubator to flourish. The economic development field in the United States did not recognize business incubators until well into the fourth phase. In Greensburg, it was immediately introduced. However, business incubators should not be the only means of promoting entrepreneurship and innovation because other policy tools are available. Instead, incubators should be seen as part of a framework of policies that centers itself on the idea of spurring entrepreneurship, a sort of means to an end – not the end. It will not cure all because capitalism is evolutionary (Akcomak, 2009).

High-tech businesses did not make their way to Greensburg because the town could not meet five of the seven important factors required to support such businesses (IEDC, 2006). While many researchers came from across the globe to visit the town, there was no significant presence of research institutions that resulted from the constant queries. The typical angel networks, private equity and other capital sources, are not available. Although the state's Small Business Development Center operates inside the business incubator, the office is manned part-time, and the typical entrepreneurial support and business networking do not exist. Without a community college present, the educated workforce to drive technology never materialized. The demand for fiber optic networks and connectivity was not significant enough to invest in the technology infrastructure, and the municipal airport has not garnered enough interest for its development, although future plans do call for its expansion. The only bright spot is the commitment of state and local governments to support technology growth companies. The IEDC (2006) believes

quality of place – not to be confused with quality of life – attracts and retains the workforce through education, culture, entertainment, and recreation. Stough (2010) cites the example of Austin, Texas in 1960, prior to becoming a technology-driven modern city. To thrust itself several decades later, the city was able to capitalize on its entrepreneurial spirit, significant public-private partnerships, educational institutions, state tax structure, educated workforce, and quality of place.

In Greensburg, immediately following the storm, everyone was excited and determined: hundreds of people attended meetings; the world was documenting; and leadership was plenty. Then-mayor John Janssen had taken over in the midst of the early days of the recovery because the previous mayor resigned. He was caught in the crossfire of dissension between those who wanted to quickly rebuild inexpensively, and others who were okay with living in the government trailers and the sustainability movement. “I didn’t want a \$300,000 home built next to a trailer park,” he said in an interview with his alma mater’s alumni magazine (Campbell, 2008, Tough Times Require Tough Decisions section, para. 3). “A lot of decisions had to be made to get the town back on track. And a lot of the decisions I made weren’t popular. But if it’s got to be done, then it’s got to be done,” he voiced. He lost the 2008 election to Bob Dixson, a retired postmaster.

Today, the enthusiasm has dried up. City Council meetings are sparsely attended. Thomas Corns, the banker, said the engagement has disappeared. So has the momentum from leadership. One of the key lessons learned and recommended by the National Renewable Energy Laboratory was strong leadership. In Greensburg, that direction started when the City Council passed an ordinance requiring the most stringent of green building standards for all public buildings – LEED Platinum level with a minimum of 42% energy savings (Pless, Billman, & Wallach, 2010). “This unique requirement demonstrated

the City's leadership to sustainable rebuilding," the authors wrote for a paper presented at the 2010 American Council for Energy-Efficient Economy. "This leadership and commitment encouraged other Greensburg commercial and public projects to consider similar goals and to foster a sustainable business environment." (Pless, Billman, & Wallach, 2010, p. 4).

In 2012, Dee Chandler, the former director of the Kiowa County Economic Development office, penned a short editorial noting that Greensburg was destined to succeed in attracting "the kinds of sustainable, alternative energy companies the rebuild set out to attract" (Chandler, 2012, para. 7). But months later said she felt usurped when city officials traveled to Texas to meet with a firm that recruits technology companies. The city eventually signed a multi-year contract, and she left (Clement, 2012c). "From the get go it was an uphill battle. There is a percentage of the county that doesn't even think the position (of Economic Development Director) should exist," Chandler said in the interview (Clement, 2012c, para. 5). The office was created as part of the Long Term Recovery Plan.

Recommendations

Scholars will spend the next decade dissecting Greensburg, and the economic development profession should join it for all of the valuable lessons that it may teach from the exceptional set of conditions that created the momentum to rebuild a town on the principles of sustainability. Each year, disasters plague communities nationwide, and the leaders and stakeholders will be given an opportunity to choose their destiny. They must choose wisely, and the economic developer must have a seat at the decision-making table to offer guidance as it goes about reengineering decades of development in a short window.

Incubator

The city's incubator is an untapped resource. No different from other fields, one size does not fit all in the appropriate model for business incubation. However, universities continue to be a great resource, particularly if they are nearby, and all of the key stakeholders and facilities can be concentrated there. Universities are becoming increasingly responsive to the long-term needs of industry and small and medium sized enterprises. Blending the interests of industry and the university, places university graduates in industrial settings where their education and training is honed and effectively used. This marriage raises the technological profile of the business enterprise and the business behavior of the university.

The incubator may become the conduit of effective communication between technology-based businesses and universities. Universities are well positioned to collect and analyze data critical to member enterprises, as well as to the incubator staff. This information can then be utilized to improve student education, providing a better trained future workforce. The university incubator can create a more business-oriented approach, giving the firms located in it the opportunity to create service and research centers in targeted industries, foster university and business partnerships, increase student businesses, while making the full resources of the university available to help these fledgling firms (De la Garza, 1993).

One model that has proven effective is the University of Central Florida, which saw the evolution of their incubator in six practices: (1) recognize the need; (2) gain university commitment; (3) gain financial support; (4) gain public awareness and support; (5) learn the incubator business; and (6) select the right clients (O'Neal, 2005).

Model of Elements for a Successful University-Based Technology Incubator

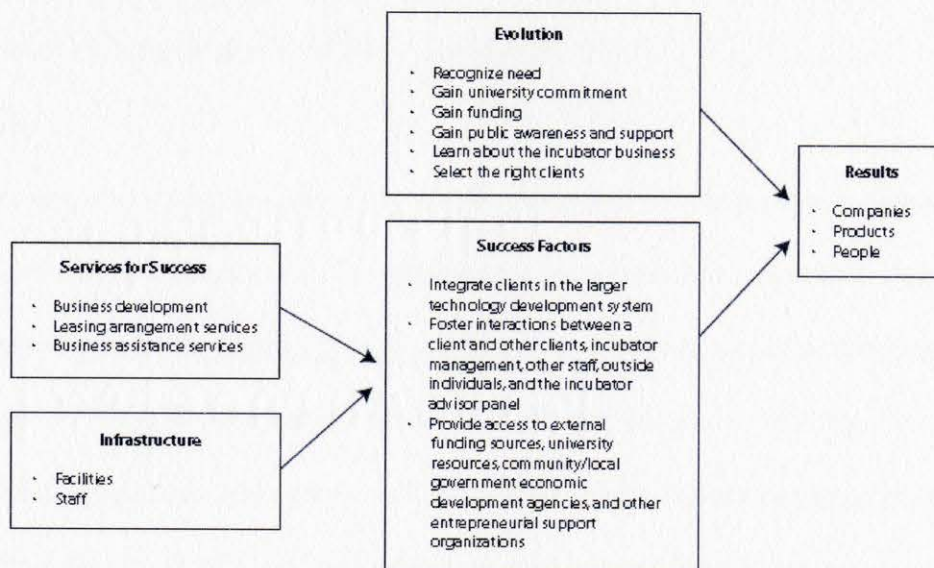


Figure 32. University of Central Florida Technology Incubator Model.

UCF leveraged an existing relationship with the Scottish government and the political acumen of then-Florida Gov. Lawton Chiles into several trips which culminated in an agreement. Seeking an ideal place in the United States to put a technology center, the Scottish government chose Orlando. As a major tenant, UCF secured several other tenants – and the accompanying financial stability – with the addition of the Florida High Tech Corridor, the city of Orlando, Orange County government, and the Technology Research and Development Authority. The director leaned heavily on the National Business Incubator Association by attending events and gleaning NBIA materials to establish the initial policies for the incubator. The incubator then ensured its own success by creating a seven session pre-incubation program, “Excellence in Entrepreneurship,” to select the right companies by incorporating the UCF College of Business Administration (O’Neal, 2005). Five year after its creation, the UCF incubator was named 2004 Incubator of the Year by NBIA in the technology sector. Today, the incubator has

expanded to nine locations and is credited with assisting 300 companies in creating more than \$500 million in revenue and 3,200 new jobs (Owen, 2012).

Core-Periphery

Krugman (1991) said manufacturing would take place with large nearby demand since production near the demand would minimize the transportation costs with other locations served through these sites. A region with a large non-rural population would be an attractive place to produce agriculture and manufacturing because of the larger market and the accompanying goods and services afforded there. Then, at the expense of smaller towns, the population will grow, and the process continues until there is a concentration of only a few regions. Therefore, if Region A (outside Greensburg) has slightly more population than Region B (city of Greensburg) and transportation costs fall considerably, Region A will gain more population at Region B's expense. So, with few exceptions, there cannot be economic growth without population growth.

The EDA report (2004) forewarns that the growing information age will likely hurt rural and isolated areas because of connectivity to ideas and business practices. As the global economy becomes more a part of the local and regional economy, the competition that Greensburg will face will also come from different regions across the world. For economic developers, this means that the very same practices that have been used will be insufficient, and training and human capital development will have to be part of the mix of activities. Using the core-periphery argument, the city of Greensburg will have to find ways to become a viable suburb or alternative to the towns of Pratt and Dodge City. It is very much possible that the town's future will be tied to the future of those bigger towns. Robert Lake, professor at the Bloustein School of Planning and

Public Policy at Rutgers University, was one of the key researchers for the EDA report. Lake believes that the conditions that work to disconnect certain communities from access to investment tend to have that effect over long periods of time. He offers:

... If community X is perceived as an unfavorable site for investment (because of its location, or its lack of resources, or for some other reason), those conditions tend to continue to make it an unfavorable site for investment over time. This is why EDA's strategy of infrastructure investment, etc. was rarely sufficient to make such a community "investment ready" when everything else points in the opposite direction. (Lake, R., personal communication, October, 14, 2013)

Economic development leadership

Nongovernmental leadership has a tendency of emerging to address regional economic issues, and it takes on the form of either a person or small group of people who envision a better regional economy filled with social and individual benefits or from a major devastation (Stough, 2010). Economic developers rarely stand alone in business decisions with strategic implications. They require broad base local support, and the ability to continually reassess projects, learn from mistakes, and respond to changes in the marketplace (Malizia, 1985). For this to happen, economic development requires the input of chief executives from dynamic corporations who are willing to take part in the headship of the economic development organization (EDO). C-level executives will take part in EDOs, even if not immediately part of the local area, if they view it as the means of keeping in touch with peers and trends, find the participation challenging and rewarding, and have the ability to influence the agenda (McGraw, 2003).

In the case of Greensburg, leaders were sufficient in the beginning, but newer faces did not surface, which caused a major deficiency in new ideas as momentum dropped. This leadership dimension is relatively overlooked in the development of economies. The leadership requires a charismatic ability to galvanize coupled with the intelligence, education, experience and wisdom to lead. Failure to provide that type of leadership in this globalized market is the predecessor of extinction.

Summary of the Study

By any economic measure, the city of Greensburg's prospects hang in the balance. By the day, they appear slimmer. In six years, not one major corporation in the green industry has moved to the country's green model city. Why not? There are many plausible reasons that the literature offers. But such academic reasons might cloud the rationale in the same way that smart people insisted on giving Greensburg a fresh start with an unproven, expensive concept. Patrick Clement said (personal communication, April 15, 2013) there were not enough amenities for young urban professionals to move there, yet he did. But that had more to do with a vocation that brought him there, extracted what it needed, and then left. (He later came back to accept the newspaper position.) Clement is the exception. Residents like Thomas Corns are the rule. Educated and relatively affluent, he stayed and bought up as many properties as he could to avoid having an eye-sore across the street from him, a trailer.

The German leading economists are warning that green economic development is a fool's game, like playing soccer with a severe handicap and being expected to keep up (Evans-Pritchard, 2013). Greensburg is playing by different rules than its neighbors – and the rest of the country – and expecting to win. It will not, and not because it did not do

everything it could. It will not win because everyone else has decided to ignore the green movement. There is little value in certificates and accolades that do not pay off.

Hagelman (2012) notes that one lesson that can be learned from Greensburg is the likelihood that companies will execute a plan to move to more advantageous locations immediately following a catastrophe. Some did move into the city, but more moved outside of it, taking advantage of lower rents.

Does green economic development make sense as a post-disaster approach? As complex as the question is, this thesis set out to answer that question. In some respects, it was successful. In other cases, the limitations were evident. The town of Greensburg is an atypical case study. It is small, 100 miles away from a sizable city, and nearly destroyed. But it had a chance to do what no other city in modern times has had the opportunity to do – start over from scratch and reinvent itself in a way that only it could imagine. If success has many fathers, and failure is an orphan then where does Greensburg stand? How does it rate as one of the most courageous and triumphant attempts at balancing the needs of the planet with the needs of its people? Sparks and White (2013) state the plans conceived for people, must have people in mind, because they are the ones who will be left to live with it.

More than five years after President Bush stepped foot in Greensburg, it is still too early to tell. But if a mid-term grade were to be awarded, it would be very difficult to say it has been successful. The city continues to get accolades for its green buildings, most recently receiving a certificate for achieving LEED Platinum on the City Hall building. In November 2013, Mayor Bob Dixson was scheduled to travel to Philadelphia to accept the 2013 Richard M. Daily Sustainability Award from the United States Green

Building Council on behalf of the city. While he is there, he will make a presentation on Greensburg at the USBGC conference (City of Greensburg, 2013b). Success, in this case, has many fathers.

But certificates do not necessarily equal monetary success, and five years is not long enough to gauge the success or failure of any program. Few researchers have traveled back to investigate how Greensburg is coming along, and when they do, they are still more interested in the design, architecture, and social science of people and place. If they asked for copies of the tax returns, they might discover something completely different, a different narrative than the one that has been told and sold to the public. That same public has long moved on as have the professionals who used Greensburg for their own agenda. There may have been no malice, but urban planners, architects, engineers, and proponents of green economic development suspended the laws of economics for the inconvenient truth that global markets punish extreme cases of blind faith and fiscal ignorance. Many in the urban planning profession believe they possess the key to the city's vitality and also have the ear of the federal government. The National Renewable Energy Laboratory also had a major stake by encouraging the development.

The weaknesses within the economy of Greensburg, Kiowa County, and western Kansas, never disappeared after the town moved forward as a green city. They were simply masked. Like hundreds of other rural communities throughout the United States, Greensburg must deal with its diminutive size, geographic isolation, and undiversified economy. The efforts to green did not materialize as expected, and continue not to do so. Soon, the federal funding will disappear from the city's coffers, and the dwindling tax base in Greensburg will be left to fund the LEED buildings.

The financial statements may tell part of the story today. The interviews of the residents and key stakeholders tell a different one. The trends even indicate there are many other factors at play. In any event, Greensburg took a chance to lead. With the help of others, it did. The question, ultimately, is whether doing so ended its long-term viability. While the roads, facilities, and homes come first in the restoration after a disaster, those are the easier tasks to see and easier tasks to accomplish, and they serve as symbols of successful recovery. It is the chicken before the egg, some believe. The economic vitality is a more difficult task, and impediments to growth only exacerbate the issues (Sjostrom, 2011).

The day before the tornado there were 63 businesses. Days after the storm, 62 businesses indicated they would rebuild, according to Thomas Corns. In April 2013, there were only 33 business permits on file at Greensburg City Hall. It is not clear if Corns meant 62 businesses strictly within the city's limits or 62 businesses in the county (T. Corns, Personal communications, April 15, 2013). The city's 33 permits on record are also not something that can be taken at face value. For instance, during the summer of 2013, local eatery Kook's Meat was notified that it did not have a business permit to operate in the city. It is located less than three blocks from City Hall and has been in business since 2009 (City of Greensburg, 2013a). Hagelman (2012) notes that the city's business geography changed as new companies replaced less than half of the businesses lost after the storm. The symptoms of a sick economy were in Greensburg prior to the tornado. Few dispute it. The tornado merely unveiled the reminders that the infrastructure was in dire straits, with the population aging and moving away and the tax base with it. Consequently, resources dwindled and contributed to the overall decline. So, this

certainly set the stage for “swift and radical changes like those witnessed in the aftermath of Katrina” (Morrish, 2008). Morrish notes:

Campaigns for "green objects" and green imperatives do not automatically add up to sustainable design and development. The process demands a much more comprehensive approach and continuing effort to integrate built and natural systems in ways that create reflexive landscapes. (Morrish, 2008, p. 1011)

Future Research

Recommendations for further study include keeping a close look at sales taxes, ad valorem, and utilities. A continued study of neighboring towns and counties to see whether the population estimates were accurate would provide insight into the strength of the Economic Health Indicator. A good question is what will happen after the Neighborhood Revitalization Program tax abatement expires in 2018-2019.

Conclusions

Just where will Greensburg be in 2020, 2030, or 2040? One prediction is that as the population continues to skid in Kiowa County and the real tax rate is realized by homeowners, the demand for the owner-occupied homes will predicatively fall. That will be the catalyst. The decrease in demand will cause a decrease in market equilibrium price (E_1), and when few home sellers are able to get the price they initially paid for reconstruction, this will create a surplus. With no need to build more homes, this will likely continue until there is a new equilibrium price (E_2) (Hyman, 1994).

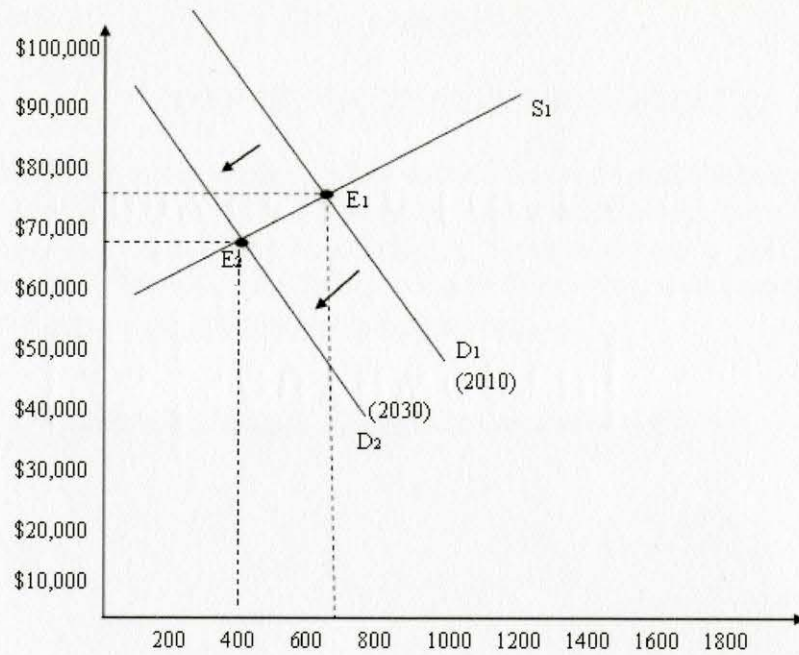


Figure 33. Predicted Impact of a Decrease in Demand on the Kiowa County Home Market Equilibrium in 2030.

The needs of the residents and business owners who remain long after the storm will ultimately pay the price or have the most to gain. Therefore, it is important to take all calculations into effect and not plan in a vacuum. “As planners continue to contemplate plan implementation and effectiveness, the case of Greensburg, Kansas shows that it is important to consider both physical and social impacts of plans” (Sparks & White, 2013, p.15). We may also want to consider the economics of the plan.

APPENDIX A

INTERVIEW WITH PATRICK CLEMENT

Patrick Clement, 33, editor of the weekly Kiowa County Signal, the town's lone newspaper, arrived in town from Los Angeles as part of the television production team from the Discovery Channel that was making a documentary-style reality show of the town that aired on Planet Green. The show made Greensburg well-known. Clement position gave him a daily take on life in Greensburg.



Patrick Clement of the Kiowa County Signal newspaper (photo by David E. Leiva)

I experienced Greensburg as a visitor just like how you are experiencing Greensburg as a visitor. After the tornado, people here are conscious who is a visitor and how important it is to make an impression. When I was here I worked for the Discovery Channel, which at the time was a big deal, so I was treated a very specific way. I wanted to know if that's really what Greensburg was like. I made an assumption that it wasn't that way. And I was correct. And there are reasons for that, and it's tied to every part of the county. From Haviland to Mullinville to Greensburg. That's sort of one of the symptoms of the way the community has changed, and the way the economy of the

community has changed. That was one of my goals – to find out what was Greensburg really like. I think I've reached that goal. I think I've been able to do that, to really understand what the community is really like, what's happening in the community, and to put the pieces together as to what happened immediately after the tornado. I genuinely believe I have done that. I feel I have a complete picture; otherwise if it's not a comprehensive view of the community, then I don't have what I want.

Like a King?

Yes. They rolled out the red carpet.

Personally, I'm more interested in what Greensburg was like before the tornado; I think it's more fascinating. My guess would be that Greensburg will be the last one standing of these small towns in the county.

The experts who came here said the city's population would return to its pre-storm count by 2012. Any comments?

People will be upset with me if I say this, but this is the reality: that's never going to happen, and there's a very specific reason why it's not going to happen. It's not a simple answer, but it's just not going to happen. My fiancé would be upset because she thinks I'm being negative. But it's not about negativity; it's about reality. It is forces that are out of an individual person's control. The population of the town is in control as a whole. They could control their future, but it's just not going to happen because despite on the surface that there is this overwhelming community feeling here, it doesn't exist. This is not what you and I – if we are from a more populated area – would consider to be a community. These are people who live close to one another, but the concept that we know of as a community is almost a foreign concept here. If the future of the town could

be changed by the community as a whole, and it's dependent upon this united common thread that runs amongst people who live here. It will never happen.

When decisions were being made to build Greensburg the way that it is, it was those individuals who had that power, all the decisions that were made. Now people may disagree with that. "Well, we had the meetings, and people voted and voiced their opinions." I think that was more about the process and less about the results. When they built the town, it was a handful of individuals that decided, made the decisions, and sold it to the community. So, those individuals had a lot of power, and they were the ones that created this idea and then sold it to the community. But unfortunately, now for the future, it is the community that has to step up as a whole and do that. I would love to be proved wrong; I would love to see Greensburg 10 years from now double in size. I would love to see that. But the reality is that I don't see it happening.

Does green economic development work?

I think it makes sense. I think any person with half a brain realizes that we are going to have to change the way we do business as a country, as a planet, because our model is destructive. People can dispute it, but really we all agree there are finite resources. For here, it moves to more practical concerns. So, could green economic development happen in Greensburg? It could, but there are a lot of things that will keep it from happening. I'll give you a short list.

First, we're in southwestern Kansas, and aside from the logistical problems that it causes, people say "we're on a rail line." Yeah, there's a rail line in a lot of places. "Oh well, we are close to some shipping things, we're center of the country." That was

another pitch. So whatever the shipping is will be half as cheap because you're not shipping from the East Coast to the West Coast, and you're in the middle.

On a more practical level, green industry is founded and created by young professionals, and they are not going to move to Greensburg. Why would they move to Greensburg where there's no Starbucks? There's no private school for their children? It's windy, dusty, and dirty.

And add on top of the fact that what they can offer for incentives isn't competitive with other like positions communities? Even Hutchinson is a better choice, and it is 45 minutes away. They have an international airport, infrastructure. They have things like water, water pipes. If you build a building out here in the industrial park, there's water that goes there, but it's not easy. You still have to hook it up, and there's an expense of running the building, and the city can't say it will give you \$100 million in tax breaks. You get \$1 rent, that's great, but it's just not attractive enough.

And this idea that a cache of green is going to override all that other business sense is just not realistic. Now, they'll make the pitch, and that's what you do when you're a salesman. You're going to say that we're central in the United States; we're on a rail line. They're redoing the highway. So it's a two-lane highway within five years, and it's a small community with good schools for your kids. That's all well and good, and they should be making that pitch, that's the pitch the city is going to give, that economic development is going to give, but the reality is that that picture just is not attractive enough to bring those types of businesses here. It just isn't. And they know that, but they still have to give that pitch. They understand the challenges.

Do you think they were sold by these big city architects?

I think they hired people, a talented group, wherever they are coming from – the city. They imprinted their own experiences on Greensburg. Here's a perfect example: The incubator building, which was partially a gift, partially USDA funds, it costs the city \$120,000 a year to operate in contract services since it was built. And that doesn't include that the foundation is cracking, and they're going to have to do major repairs in the next year. You want businesses in there. The whole idea is that it's at a loss that you are going to pay low rent to bring people in, which by the way, actually per foot is more expensive than the building across the street which is a privately-owned building. So, it's more expensive by the square foot, and the storefronts were constructed for foot traffic. If you see all those mockups, look at them – the designs, the concept art. You see all these people; everyone's walking around. That doesn't happen. People drive.

People here aren't strolling down Main Street. There is no density, so when they designed it, it was designed for a city person. When I walk by that block, when I'm walking I see a beautiful window display. When I'm driving by it, I don't see anything. So, the design – some of those little things – is part of the bigger flaw. If you're going to have a drive-by business, you need big window displays. Highway traffic, bigger window displays. Now, it's on a great corner, but all the retail is on the Main Street not the highway side. The most traveled side is the highway side. And did anyone ask those questions? And if they did, I think it was those small individuals that they either didn't want to listen or made the decision on their own without that input. Somebody must have said, "Why aren't the windows bigger?"



Rendering in Long Term Community Recovery Plan of Pedestrians on Main Street.

Again, that leads me to believe that it was a small group of people that were making a lot of the decisions, but in the long-term, it's going to take more people. So, green economic development for Greensburg, I just don't think it's a reality. I think a microeconomic approach – two to three person jobs – is where Greensburg can grow and at least level off. If you are opening two to three person jobs every couple of months or once or twice a year, then you can at least stop the bleeding.

I am surprised the universities didn't get more heavily involved here.

I don't know why they didn't try to get a satellite university here; either an agricultural or green architect university to actually build something here. Nothing sustains an economy like a university.

When was the last time you saw Leonardo DiCaprio or the owners of Ben & Jerry's?

I don't blame them. I think they were like everybody else; it was the thing of the moment. And, they wanted to do their part. But they weren't going to be in it for the long

haul, and I think everyone here also understood that. They knew that the Discovery Channel would leave; it wasn't going to be a 10-year show. They didn't expect (University of Kansas) to make a permanent part of the community. They were going to come in, get what they get, and that's it. Just like the Today Show, they built a neat playground, but they have to move on. They're moving onto something else. And that's with the media and everybody else.

What can we get out of them now, which is smart. Let's get what we can get while the getting is good. Leonardo DiCaprio sent some money on this building, but it has cost the city more money than he gave. It's the gift that keeps on giving. \$120,000 a year for a city doesn't seem like a lot, but when you have a shrinking tax base, \$120,000 a year for upkeep is a lot. And, there are two vacancies in the most visible retail locations.

Do you believe the big city guys took advantage?

I don't believe that. I think the people who came in – they are business people – I think they genuinely had the best interest of the people at heart. Was it business, did they see it as work? Sure. The city of Greensburg was spending money like it wasn't theirs because it wasn't. I think there was a big blowout with BNIM (you should spend some time researching the relationship with Steve Hewitt, the former city administrator). You're not going to get that in the paper because the editor at the time was hands-off; the editor of the paper at the time was co-signing all this stuff without really being objective about what was happening. But I believe you can do some research and find out that the city administrator, following the tornado, and BNIM, who designed Main Street and the other buildings, there was some stuff going on there where there was either some exchange for contracts. Eventually, it blew out where BNIM brought in a design for the

Big Well Museum, and the city didn't like it. The city said we want something different. BNIM said, "Screw you, we know what we are doing." The city said, "You're fired." But by then, they had already spent so much money on those initial designs that when they actually hired someone else, (McCown Gordon Construction LLC), to do the Big Well, the money they lost on that initial design was the difference between being a Leadership in Energy & Environmental Design (LEED) building and it not being a LEED building. Ouch! And I was in those meetings when the City Council decided that the Big Well, which was the most visited building in town, was not going to be a LEED platinum building because the costs of the wells they were going to have to build for the heating and air conditioning the geothermal well, they couldn't cover that cost because the difference between that and traditional HVAC was very close to the amount they lost on the initial design.

So, did BNIM take advantage? I would say there were some negatives that came out of that. I wouldn't say they intentionally tried to take advantage, but look these are city architects that have done extremely popular jobs, won awards. They come into Greensburg, and I think it's a dick-measuring contest. "We're BNIM. We've won awards for your Main Street, and you're going to tell us our design isn't right." You've got to remember that these people are also rebuilding their own homes while this is going on, and they were like, "Whatever, that looks good."

Thoughts on Greensburg GreenTown?

Oh, that's a whole other interview. It's a big deal how Greensburg GreenTown is operated in Greensburg. There are two sides to that street. Greensburg GreenTown has questionable accounting practices. Their executive director has made, at the least,

unethical moves, and of course, at the most, fraud, which is really a shame. They really had an opportunity to do something amazing there, and my opinion is that they squandered that with a lot of bad decision-making.

Greensburg GreenTown is not part of Greensburg because it is not a green community. People here don't live a green life. Go into the bathroom and see what chemicals they use to clean the bathrooms. Go into someone's house and ask them if you – you can't get recycled paper towels at the KWIK Shop/Dillon's store. I have to drive out of town to get recycled paper towel, which drives me crazy. So Greensburg GreenTown whose mission statement is sort of like what happens after the building comes in; they don't fit. That's why there is no fulltime employee there anymore. Basically, what they are operating on now are two AmeriCorps interns, paid by AmeriCorps, and I don't know how long that is going to go on. I suspect that eventually it may end, and then there won't be anyone there to operate GreenTown.



The Unfinished Meadowlark House in Greensburg (photo by David E. Leiva).

What about the Meadowlark House?

I'll give you the *Reader's Digest* version. Greensburg GreenTown had a contest where they asked people to design a green house, and they would build it as a model home. There was a design company that won for the Meadowlark House, which is this unfinished building. And part of that was they discovered this company called HIB, which was a German company, actually a timber company in the Black Forest. They basically cut down trees in the Black Forest; that's their business model. The newer generation, one of the sons, because it's a third generation company, decided to start this business where it's sort of a modular wooden home. So you build it with wood, and then you can fill it with sand or cut-up jeans. It's supposed to be extremely strong and insulated. The idea was to build this HIB with that block.

During those conversations, HIB took an interest in building a factory in Greensburg. Now it went from being a GreenTown thing, which at least, as I understand, told them that HIB would have to pay GreenTown a significant percentage of sales for them to come to America. Basically, GreenTown said if you want to come to America, you have to pay a finder's fee. HIB said, "Screw you." They found some local investors in Greensburg, and there were discussions over the course of eight months about HIB building a factory here in Greensburg financed, in part, by local investors. That deal was very close to happening. But again, ego versus ego, who needs who more, and what ended up being was HIB said, "Fuck you, we don't need Greensburg," and the local investors said, "Fuck you, we don't need HIB." Dead. Dead in the water.

Multimillion dollar deal, 30 to 40 employees; they were going to build housing on the HIB block. And, at one point, HIB decided that if they were going to move the

factory here, this Meadowlark House, was such an eye sore that they were going to pay money out of pocket to fix it up. So that's the long story of that house. HIB never came. They're not coming. The local investors invested in another company, which is downstairs. Those are the same investors, a similar product. And so now the Meadowlark Home is sitting vacant. And it will remain vacant until the city decides that they want to punish them with some type of nuisance ordinance, which I think is fair. It's been there for years. There's nothing on the horizon. It touches everything, and that's just another example.

You talk to media. I am sure the media comes see you at some point. Do they not want to see it?

They haven't reached out to me. I don't blame them. A recent *USA Today* story was a fluff piece. Everybody here knows it was a fluff piece. The mayor knows it was a fluff piece. *USA Today* knows it was a fluff piece. I mean, how is it going to make them look --the greenest town in America that is a lie? *USA Today* isn't going to do that.

So, the only news organization that I feel has reported fairly every step of the way is the *Kiowa County Signal*, and we've paid the price. I ran a story about the Family Dollar. So the city spent a significant amount of money to buy this lot, and they gave it away to lure Family Dollar. Economic development wise, I get it. You're going to have to have that type of business. It's got a dozen employees; they pay sales tax. I mean it makes sense. During that process, when the mayor pitched that idea to the City Council, he said this is going to be one of the greenest buildings in town, a flagship green Family Dollar building. Pitched it to the City Council, pitched it in the press release. But I spent time, and it turns out it's not a green building. It's a shit. It's got concrete floors. If you

want to expand the idea of green, a sure, concrete floor is great. They are easy to clean. Skylights? Can you pitch skylights as being green? Yes, you can. But it is green washing; it's not really green. They used yellow insulation; they didn't use the insulated concrete like we have in this building. They didn't use geothermal wells. They didn't do anything. It's not a green building.

So, I wrote a piece that I think is very good news reporting that somewhere between the developer, Mayor Bob Dixon and the City Council, wires got crossed because the developer said, "We never said it was going to be a green building." Now, I wrote that story, and, again, I feel it was very good news reporting. Everything I do like that, I pass through two or three of my higher-ups to make sure everything is legal. They all said, "That is good news." I had sources. I contacted Family Dollar. I contacted U.S. Green Building Council that manufactures the LEED. It turns out Family Dollar does have a LEED building that they built five years ago before this one. Again, using flagship green building is deceptive because it wasn't their first LEED building. I lost 10 papers a week since I posted that article. The week after that, my circulation went down by 10 papers, and it's never made up for.

They fired the economic development person, Dee Chandler. They fired her. And, another of these investors said I think we can do a better job with economic development. I think I covered it fairly in the paper; I gave each side a fair shake, probably lost half dozen papers because of that article. Now, it's bad business. When the paper goes, there will be no news organization that can accurately report on what is happening in Greensburg. I think it's closer than I would like to believe. I'd be very surprised if the

paper exists after I leave. So, *USA Today*, they're weekend warriors. The *USA Today* article is great for the city, but it's a fluff piece.

I would be concerned about someone coming here expecting to see what has been written and it's nothing like it.

It's become part of the economy here, tourism. You have to fly into Wichita, rent a car, drive out here, get gas, and stay in a hotel. So, they are very aware of what that means to the city to maintain this sort of green tourism concept where people can come and see this living laboratory. The ad in the *USA Today* said "authentic." The city actually bought a half-page ad, and under Greensburg it said "authentic." And, I understand why they used that word, and the message they are trying to convey. But the fact is, it's not a real message. It's like going to a circus, and they say, "Come see the man-eating chicken." But it doesn't matter, because you're already here, and you've already spent the money. The buildings are beautiful, and a lot of people just want to accept that story. "Hey, this is a green town. This is what happens."

If you are somewhere else in America, should you copy and paste what happened here in Greensburg?

I do think you can take the principles of some of these building and apply them to other communities. Yes, I believe that. But I would say that it is possible, and likely probable, they are going to apply the same principles to another community. Now, there were a very unique set of circumstances that made that all possible here in Greensburg. Small community, 99.9% gone. These are white farmers, America, corn. I am sure at some point it will happen again.

Green building does work. The house my fiancée and I live in its concrete insulated foam, and our utility bills are 40 to 50% less than our neighbors who live in a traditional home. I don't feel the wind at night; the house doesn't shake. If there was a fire, it wouldn't travel through the walls because it is concrete and stays in the corner. Supposedly, if there were a tornado, it could absorb the impact of a car and not crumble the house. That's impressive. Geothermal well works great. You do pay more upfront, but the more people do it, the more the costs will go down. Up here, just because of the location, construction costs are super high because they have to travel to bring everything here. Now, my house, even though we are a renter, is upside down. Every single person's house who rebuilt in Greensburg is upside down. They spent more money on it than it is worth. They'll lose money if they walk out, and that has nothing to do with the economy – that has to do with the high costs of new construction.

Clearly, this is a byproduct of supply and demand.

Yes. Did anyone explain to you how housing works here?

No.

This is the stuff I find most fascinating. So, here's Greensburg. This is Haviland. This is Mullinville. The tornado comes through and wipes out every single home in Greensburg. Fourteen hundred people live here; half of those people move out of Greensburg after the tornado because they are renters or they are property owners who realize, outside the emotion factors, financially, it doesn't make sense. So, a lot of them move to Haviland, where the college is; some others move to Mullinville; some people move into Pratt. Because suddenly you're out 500 to 700 homes, there's a need.

People want to live in the county, but they can't live in Greensburg because there's no place to live in Greensburg, so they move to Mullinville or Haviland. Suddenly, supply and demand, property values start to go up. So, volume is down but property values go up. As property values go up, that also means valuation goes up.

So a house that at one time was once \$20,000 in Haviland suddenly is \$80,000. Now, for people like me and you, we see that as a jackpot – “Please let the value of my house double” – and that's what a lot of people did. They said, “Damn, this house that we have – that we don't even pay on except taxes – is nothing.” So, they sell, and they sell to the highest bidder, which sets the precedent for property values. This means that when the assessor goes back and evaluates the neighbor's home, which was \$20,000, he bases the valuations on the sales of similar homes. So now, this sweet old lady who has lived in that family home that a week ago was worth \$20,000 – the neighbor's home just sold for \$80,000 – must pay taxes on \$80,000. So suddenly, grandma is paying four times the value in taxes. She's on a fixed income. She retired as a librarian. She has a little bit of money; she can barely afford that home. So, you know what happens? She sells it for more because there's a need. Now she's in assisted living. That house sells for \$120,000, so next year that \$80,000 house is valued at \$120,000 and so on until it reaches the point where the price of a house in Haviland is almost equal to the cost of rebuilding in Greensburg.

Either way, you are going to be in debt, but if you are going to rebuild in Greensburg, at least, it will be a brand new house. That's why people build in Greensburg. They're upside down, and they're cool with it. Now that's a heightened market in a real short time. Those prices have begun to come down. They don't care if

raising taxes is a good thing. They just don't like the idea, and the county appraiser is an employee of the County Commissioners, who are elected officials. If those prices are artificially inflated, that a \$20,000 house can't sell for \$20,000, all the houses will continue to remain overpriced. They won't pay that price. "Why would I do that, I can move to Pratt."

So the population right now is stabilized, but I know a half-dozen people will walk away from their house and move somewhere else if they find a buyer. There are homeowners who don't want those values to go down either because the further it goes down, they'll lose. There are some people who say I am building my dream home, and I'm dying in this home. For them, it actually makes sense because they are not selling.

So people are holding onto their houses. There is no growth, and it's not attractive for investors because the values are going down, not up. As an investor, who wants to do that? You build 10 houses and the values go down because you built those 10 houses. It's not attractive. So, as an investor, building housings here doesn't make sense – the math. No one will look at Greensburg and say this is place where I can build buildings. The people who built these, they are families who have lived in the county for generations. No one else had rental properties, so they were the only people that built new rental properties in Greensburg. Very smart. I think they have a vacancy rate of like 1 or 2%. *I cannot imagine coming from a national paper and not stopping by and asking the people who cover Greensburg all day long, but if you don't want to see the real Greensburg.*

Right. It is inspirational. I'm privy to things that probably a lot of people are not privy to. I struggle with that stuff. My fiancée's family owns the antique store, the

Goodman's. It was the only building that survived on Main Street. I'm living here for now. So I think it can be tainted, that style of reporting, where it's about tempting down this idea of sustainable living because Greensburg is sort of that trophy that, "Hey, it can work." And that's bigger than Greensburg. That's big; that idea that living sustainably is a good idea. In fact, it's a great idea. The more people adopt it, the more cities adopt it, the better.

What happens if the reverse happens? What if more people come here from some other major paper, comes to talk to you, and says "oh my god!" what happened?

I think it would actually be good. The end doesn't justify the means. Sure we have these new buildings, but unless we look at – what isn't working, what didn't work, and the mistakes that were made – you are never going to improve on it. If it's not about integrity in any circumstances, then it seems fake, and Greensburg isn't able to maintain that integrity. It just isn't, and that's not good.

APPENDIX B

INTERVIEW WITH THOMAS CORNS

Thomas Corns is president of Greensburg State Bank, a small bank that has been a member of the community since 1924. According to a filing with the Federal Deposit Insurance Corporation, the small bank had deposits of \$49 million as of the second quarter of 2013, down 21% from the second quarter of 2007, when it recorded \$62 million in deposits.



Thomas Corns, President of Greensburg State Bank (photo by David E. Leiva).

The rental market is a unique situation in Greensburg. Can you please explain?

We lost 100% of our business district, and we lost 95% of all the houses in town. Our population was 1,400. After the tornado, it was 700. Mainly, we had a lot of older people in town. They went to live with family. They couldn't put up with the hassle of rebuilding, so we started out at 700. We're probably at 900 now, and we've reached a plateau as far as building both housing and rental property. But we're a town in western Kansas. We don't have enough carpenters here in town to build a house or the number of

houses that we needed all at once, so we brought carpenters in from Wichita, which is 100 miles east, to help us rebuild.

When you bring in that many people in to build that many houses, the houses are very expensive. We have very few rental properties in town. We have three or four people that make a business out of renting properties. And they took insurance money that they had from the loss of their rentals, and they built some new buildings. One of them is Monica Hayes; she lives in Mullinville. She is president of economic development for the county. I am the treasurer of it. They built as many rental properties as they could stand. But it's not nearly enough. We have a lot of first class houses, but we don't have any blue collar rental properties.

In terms of the numbers, would you say there are more or less rentals since the storm?

There is much, much less rentals than there was before the tornado. What we need is a good size trailer park. We need to have an investor come in and build housing for the purpose of rental. But they run into a cash problem because you can't rent them for enough to cover the building. We're kind of at a crisis point. We need trailer parks for low-income housing. We have several low-income rental properties – one and two bedrooms – but there aren't enough to carry the load. We have a lot of people right now who are in the process of erecting a big electrical feeder line that will carry all of the windmill-generated electricity to the Kansas City area. And we don't have enough houses, or rental properties, or trailer parks to service the people who are constructing the line. It's going to be a two year project. And we can't support the number of workers they're going to have here. So, they are going to have to drive 45 miles to Dodge City, 30 miles to Pratt.

I think this is a good opportunity for someone if they wanted to construct a nice trailer park that would be used for more than a two-year basis. We have an ongoing need. The county asked a committee to construct a trailer park after the tornado, which we did. It was on county property. Our term came to an end; they didn't want to be in the trailer park business and that's because of liability reasons. So we ended up closing the trailer park down, but we had a total of \$26,000 in funds earned off that trailer park, above and beyond the expenses made just by providing a trailer park for contractors. I think we charged them \$10 per day. Anyway, point is, we need a trailer park not just for contractors, but residents, blue collar people, things like this electrical improvement. That would be a good opportunity for someone, but finding someone with the money that can go in and lay in the water, sewer, and electricity, it's going to be hard to do.

Can you elaborate on the residential phenomenon? Land detection studies indicates that lots are bigger with fewer homes, homes are more expensive. How does that translate to you as a banker?

You're right. People bought up the neighbor's lot as houses were destroyed, and doubled the size of their property to have a more spacious lot. I guess I am an example of that. I had a house built in the early 1960s, and it wasn't totally destroyed. I spent enough money on it to tear it down and have it rebuilt again. I bought the neighbor's lot and the lot across the alley. They were going to put a trailer there, and I bought that lot to control the neighborhood. I have no use for one of the lots. Whenever I can find someone who will build a permanent stick built house, I will be glad to sell it. But since the tornado, we have reached a plateau of building. There is one house being constructed so far this year. We need to have industry before we can have housing and housing before we can have

industry. It's kind of the chicken and the egg. We're doing our best to recruit industry. It's tough for a little town in western Kansas to recruit people to come into town to establish industry when we don't have the manpower to run a business.

Our housing structure has changed a lot. On the other side of the railroad tracks was where the people lived in the lesser houses. Then, in the southeast corner, where a lot of old houses that had never really been improved, the tornado came along and cleaned house for us. We've rebuilt this area of town with new housing. The problems that we had north of the railroad tracks were swept away. Maybe the tornado was a mixed blessing, I don't know.

I can tell you that the financial statements of everybody who stayed here and rebuilt went up substantially. In other words, they profited financially from the sale. First of all, it's tough to build even a modest home here – three bedrooms, two baths, two car attached garage, ranch style. You can't build that for less than \$150,000. Before the tornado, we had maybe one or two houses worth \$100,000. Now, any house that is built is going to have \$150,000 in it and, most of them, more. So, the tornado changed all that. *So, if you want to live in Greensburg, you better have some green.*

One of the industries we pursued after tornado was the green industry. Everybody wanted to be a part of it. I don't know if you ever saw some of the programs that were generated. They had a reality show. It was kind of a pain. I don't know that they represented us 100%. It was an interesting thing to watch. You could see us arguing amongst ourselves. The TV program thrived on controversy, so they would publicize that more than some of the getting together and working together.

It was amazing. Donations came in came to the bank. It was touching where the money came from. All of it was small amounts. They raised hundreds of thousands. There was a third grade class in Wichita that sent \$50. They came back six months later. It was such a success, and all of the parents thought so much of it that they sent a substantial donation. Everybody that donated had their personal input. They had been through controversy, or they had been through hard times. This was their repayment. We had a millionaire, who ran an oil company, gave everybody who rebuilt a house \$1,500. Everybody. We probably had 400 checks for \$1,500. People sent things, if they didn't have money. They sent quilts, wash cloths. Lots of stuffed animals. The library got more books than it could ever handle. People just wanted to help, and people came here to help.

Knowing what you (the Greensburg leadership) know now, would there be some changes to the recovery plan?

We're unique because of the tornado. George W. Bush was president, and he had been bloodied by Hurricane Katrina. He wanted to show some good things. We had the tornado on Friday night. On Monday morning, we had these huge motor homes – 50-footers – I mean they were big with satellite antennas, and they were talking to Washington or whoever. A homeowner could come in and get financing on the spot. From a banker's viewpoint, it was kind of hurtful because they did fixed rate loans at 2.75% for 30 years. We needed to get the town rebuilt, so that's what we needed to do.

The federal and state governments came in and took the lead, and they had a four-tier program that they helped us set up. It included business, school, governmental, hospital. There were four areas. And each one had representatives from each of those

organizations, and each one of them operated independently. I was in the business area. So we went that first day and took a total of the business that would rebuild. Before the tornado, we had 62 businesses in town. The Chamber of Commerce counted them all; 61 of them came in and said they were going to rebuild, and they did. The only one that didn't rebuild was a lumber yard. The government had us set up this community rebuilding project. Actually, I had a lot of doubts about it, but it worked pretty well. County and the city cooperated 100%. If the business people said "Hey, we want this or we don't want that," then that's what happened. The mayor of the town wanted a median down Main Street one block wide. If you're going from this side of the street to the other side of the street, you'd have to walk a block to get through the median. The business people said "Oh bull, we don't want to do that." And we ended up not doing that. It was an effective way to get rebuilt, and it was done by the consent and the authority of the people that were in that type of business with the cooperation of the city and the county.

I think the county was working strongly together to rebuild. That first month we had no electricity, water, or sewer. We had electricity down this alley to service the businesses that were going to rebuild. The rest of the town took six to eight months before they got electricity. All the water and sewer lines had to be replaced. We didn't have a water tower. Until we got a water tower, they had to pressurize the water system. We had a sewer system that was full of sand and dirt. We had houses that were destroyed. The homes were bulldozed in. No one remembered to cap the sewer line, so we had all of that dirt down in the sewer. So, we had to rebuild the sewer. It was 100 years old. It needed to be rebuilt anyway. But the U.S. government came in and underwrote all of

these infrastructure improvements that we had to have in order to even be a city. I think Greensburg has vastly improved itself as a result of the tornado with the help of federal funding.

The state came in and assisted that in every way. The real problem was real estate tax valuation. We went from a town with an established tax base. I think my taxes on my house were \$1,200 a year. It's not a fancy house – three bedroom, two baths with an attached garage. You can't go in and raise taxes in a new town when they are trying to build. When they get their houses built, their taxes jump from \$1,200 to \$5,000 a year. We didn't have the industry to support the tax base. They set up a Neighborhood Revitalization program, a 10-year program. You start at the first year at one-tenth of what your taxes would be, and then every year they add 10% until at the end of 10 years, you would pay taxes at the same level other cities, like Pratt, Dodge City, or Wichita. Right now, our taxes here are more than they are in Wichita which has a huge tax base. If it weren't for the state coming in and cutting us some slack on our real estate tax, I doubt anyone would rebuild. We have another five years. Eventually, I think we are going to see people move out. That's just one of the things we had to deal with and will have to deal with in the future. We have neighboring towns of Haviland and Mullinville. Their taxes have remained the same. So, when we're up to speed in five more years, they're going to have to have their taxes brought up to what the state says that everybody else for a house of that quality pays. It sparks some controversy between the towns.

A lot of the businesses rebuilt aren't doing so well. When it reopened, everyone wanted to see Greensburg, the "Green City." Daniel Wallach and the GreenTown group built some energy efficient houses. Tourists could come and stay overnight for the

novelty and see how the construction was done. To service a lot of these people coming to town or driving through to rubber neck the devastation, we had businesses set up for tourism. Some of the things that normally a functional town wouldn't need. People selling butt wax to stop the friction for a motorcyclist. There's not a whole lot of demand for butt wax. We had people that dealt with interior decorating. We had several clothing stores that probably don't interest the locals. There's a western store here and that does interest the locals. So we're kind of reaching a point where the original businesses that went in are having a hard time – now is when they're feeling it.

How much of this is related to green economic development?

I didn't know what "sustainable green structures" meant. Sustainable means that it can support itself. But defining that, took us a while to figure that out. When we were rebuilding, most of us in town, built ICF block. This is defined as two thick slabs of Styrofoam, one on the inside of the building, one on the outside, with a one-foot or larger reinforced concrete in between. That makes a building virtually tornado proof. The roof may leave, but that's like a safety valve. Your windows will implode; your roof will explode. The theory is that if you have this structure, it is your most efficient building in town – walls are 55-60% efficient – as opposed to a normal house that is 19-20% efficient, and that's what this building is built with, ICF block. Steel is cheap. Rebar is cheap. I put enough rebar in this one-story building that I could have built a five-story building. If we have another tornado, all we need to do is slap a roof on it, and we're in business. We're going to have the walls. We would have lost our windows. We can rebuild faster next time. A lot of the houses are built that way; a lot of the garages are built that way.

When you look at the tax rolls, when you see the empty lots, when you don't see the activity you would probably prefer to see, what does that tell you about the future?

I've got a new picture out here on the lobby. It was taken in 1952 by my dad, who enjoyed photography. It shows Greensburg on a Saturday night when all the farmers came into town, and it shows Main Street lit up more than it was before the tornado. Every single space was filled with a car. Every single family from all the farmers around came into town on Saturday night. It was kind of a quaint thing, but it just shows the level of business that we had in 1952 as opposed to now. If you came into town on a Saturday night, there wouldn't be any cars on the Main Street, and no businesses opened. It used to be that everybody came into town; all the businesses stayed open until 9 pm. The show was open; all the kids went to the show and had an ice cream cone.

Knowing what you know now, if someone said the tornado happens, would you say give us the \$100 million, would the city still go the same route that it did?

The leadership, I think, would still go the same route. We had all of these federal people, and they stayed for a long time. A lot of them had been through Katrina and had seen the horrors. Katrina was a mental attitude, "Federal government, give me everything; supply me with everything." Here, we were pulling ourselves up by our own bootstrap. Sure, we took money to put in the infrastructure. We had to have it, or it wouldn't have happened. At some point early on, the federal government had a meeting. I didn't know anything about it. They were deciding whether to rebuild this town or not. I would have liked to have been a part of that meeting. The answer was yes. It would have been terrible if the government hadn't come in and given us help. Part of it was a political decision; government wanted to show a good face after Katrina. I can deal with that. It's

part of the reason why we don't get along with the neighboring towns. They feel that we got everything. Their attitude is they wouldn't have taken anything if it were them. Well, bull shit. Sure you would. They don't feel we did the right thing. We did what we had to do. I don't think we took anything we didn't have to have, or didn't need, or shouldn't have. The attitude of Greensburg was "help us or get out of the way." People who came in from USDA weren't used to being pushed. We wanted to get it done and over with. We were pushing to get things done. Katrina wasn't that way.

It will take at least 20 years to get our feet back on solid ground. We've come six years – made a lot of progress in six years.

Is there anything that I should ask you that I haven't asked you, or do you have any comments you would like to add?

Each of the four community organizations met monthly at the center. It was a very cooperative time. We would have city meetings under a tent out at the park because we didn't have a building to put them in. Everybody worked together. Maybe now things are easier than they were back then. We've gotten away from that. We've lost a lot of the contact between each other, a lot of the cooperation. We need to figure out a way to get that back because we're still struggling just as much as we were before. We have more houses and more buildings, but we need to take care of and service the businesses that we have now.

We've lost some businesses on Main Street, and one of them was a clothing store. And the home furnishings store is probably going to go out. We need more cooperation. Instead of automatically driving to Wal-Mart in Pratt or heading into Wichita, if that money stays here, it's going to turn over six or seven times. If it goes to Wichita, we'll

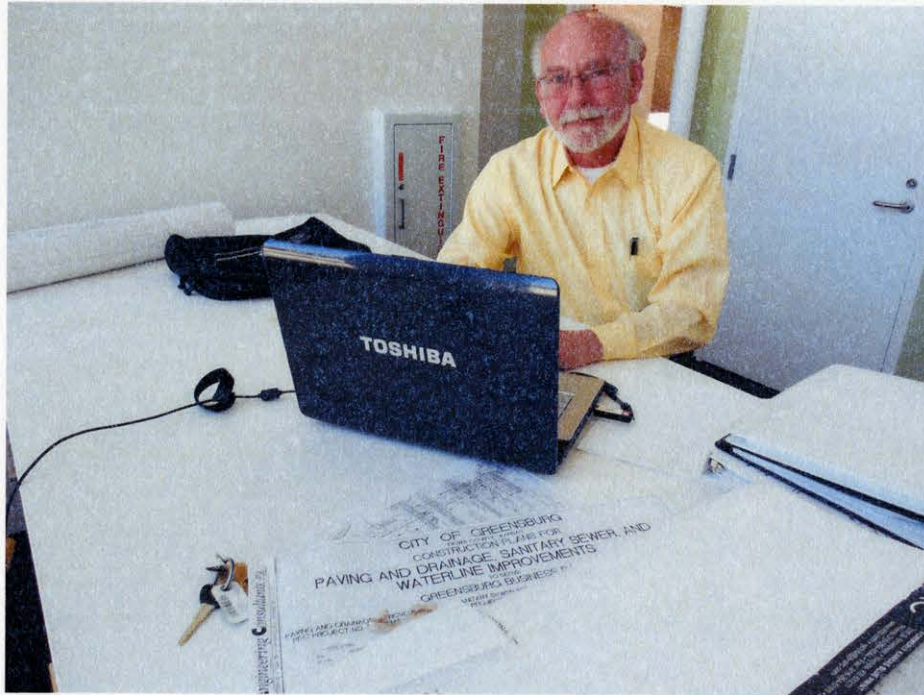
never see it again. We need to be trying to work together still, just as much as we ever were, because just as much is at stake.

We're at the point where the real estate tax realization is going to kick in. We've reached a plateau on building. We've lost some businesses; we have some empty business spaces here. We're starting to pull back and stay at home and watch TV, instead, of going to all of those meetings. We did a lot, and that's the only reason we've gone as far as we have in five or six years. We went to those meetings and all worked together. We're kind of losing that. We can't slack off. We still need to recruit businesses. It's always tough to recruit business in a little town.

APPENDIX C

INTERVIEW WITH MICHAEL GURNEE

J. Michael Gurnee, who received his masters in city planning from Georgia Tech, is originally from Kentucky. He spent the last 12 years in neighboring Dodge City before arriving in Greensburg. Initially working fulltime, he accepted a part-time consultant position with the city to help with planning and zoning issues. He said he usually works 10 to 20 hours per month.



J. Michael Gurnee, Contracted City Planner for Greensburg (photo by David E. Leiva).

What role does the city's 2008 comprehensive plan play in terms of economic development?

The comprehensive plan, in addition to many other things, is an economic development tool of how to grow, in our case, redevelop. The plan lays the framework through mapping of where certain things may or may not be located, what is best environmentally, and economic development of how should business, industry, retailing come back to Greensburg. The plan talks about the fashion of it being green, but in general terms, any comprehensive plan should discuss these economic development

issues of how are we going to grow, what mistakes were made in the past that can be corrected. And, sorry, we had a lovely opportunity to redevelop. Some things in the plan were political; things have changed. At first, it looked like there was going to be a major industrial park northeast of the cemetery and that was because of one projected development, but it fell through. The actual development that we got is the business park that is due east. Have you talked to anyone about the commercial development on Main Street, and how it was done?

No.

Individual contributions from citizens to build what looks like a strip mall. It was great. But I'm not sure where you want to go, or where I can help you with this. The development of the plan was ...

Where you involved in it?

It started before I came. I have been involved in its execution and adoption. The consultant had already been identified when I got here. Some of the first proposals were not accepted, and that makes it a good planning document. Some of the citizens got involved and said, "We don't think this will work; we'd like to see it another way." One example of that was Main Street was originally envisioned to have green space in between both sides of Main Street, that it would be half a block stretched out with greenery of some kind in between like a huge traffic island. And the realtors and merchants said, "That's not going to work because we want people to be able to walk from one side of the street to the other, and if you put a half a block of a park in between then they are going to be less likely to have the pedestrian activity that you want." So that was taken out of the plan. The mayor really wanted it. He thought it was a marvelously

looking plan, and he was ready to go up in arms to fight for that first version. But I'm glad that the citizens won – not just one person saying that this looks like a good concept. So we got what we have now. It's sad that the economy tanked at the same time that we were doing all this.

You couldn't ask for any worse luck.

We've had some very good people involved in economic development, and we just haven't been able to get the people or industry that we've wanted.

That according to the plan would have fit in perfectly with Greensburg.

It's always difficult when you are trying to do things differently. The individual businesses that act like they are interested often just want to do the same things that they've done ever since they started, instead of focusing on the environmental type issues. It's a learning curve that your more experienced, more knowledgeable architects, engineers, and corporations understand, but your small business person has a hard time seeing the rate of return is going to be adequate if they go the extra expense of being more green. We've been fortunate, and sometimes I agree with them. A lot of the so-called "green initiatives" were very, very expensive. Lately, the price has gone down on some of them very significantly. I can just give you a personal example.

A company from Australia donated toilets for people who were rebuilding here, and they were dual flush, super environmentally water saving devices. I looked them up, and they were \$300 to \$400 each for a toilet. I recently replaced a toilet that can do the same things but can do it for \$150. More engineering is going into things, and prices are coming down. But I don't know if that's economic development or not.

Can you point me to some documents that might help explain the direction that the town is now going to develop?

Do you want to talk about business and industry or residential?

Both, since I have you here.

Business and industry is going exactly as the plan prognosticated or directed.

Residential, not quite so. Immediately after the storm, the first people that rebuilt, built in the large lot, suburban style. A lot of this town is plotted on 25-foot lots. Where they used to have a house on, say, two to three lots with 50 to 75 feet of frontage, they bought more and more lots so they could have a larger lots. So the high density housing didn't occur.

Was that something unexpected?

Not by me. I suspected they wanted their little piece of suburbia, and neighboring lots were very inexpensive. So, they got elbow room. The plan concept of high density living, pedestrian orientation is a great concept, but I knew that was for newcomers, not the ones that had been here before. The ones who had been here before were not the type of people who wanted to live in a second floor loft; they wanted their house. Now, the second floor lofts and high density housing was more for the young urban professionals that we want to attract. The plan showed the high density housing surrounding the downtown core in a very, very expansive area. Shortly after the whole thing was adopted – zoning is a way to implement the plan's land use section – we reduced the scope of that high density housing so that more of the suburban type development could occur, but we still left the area for the high density housing and loft development. It has not occurred yet because we don't have the businesses to bring in the young professionals that we want.

Do you believe that the urban planner is best equipped to deal with long-term recovery?

I think the planner's forte is to work for collaboration among the groups much more so than drawing pretty maps. Planners, as a profession, can only do what they are allowed to do. It all depends on whether you have a strong administration. And, in our case at that time, a strong governor and members of the City Council, and the city administrator said, "We want to see a good plan." And they even had a moratorium on building permits until we could get our act together. It was later repealed, but we had enough in place that we were able to accomplish what we wanted. So, in effect, some things were done according to the plan before it was adopted because everyone was together. We knew what we wanted. We knew what we statutorily could and could not do. On high density housing, we would have somebody come here who had just bought five lots – an entire city half block – and wanted to put their house on it. We would say things like, "Don't situate your house so that some day in the future you would prohibit further development. In other words, you can put it in the middle or put it on one end, but don't straddle so many lots that someday later could not be subdivided and made more dense." It was just power of persuasion. Most of them agreed. It's good folks to work with out here. I was here fulltime for about three years. I just wish we had the jobs.

Is there anything that disappoints you, outside of jobs, things that didn't quite pan out?

Architects, engineers, and planners that have a "Holier than Thou" attitude and think that they are God. That's the only thing that disappoints me.

"Here's what I can do for you!" when the question should be. "What can I do for you?" When they were choosing the planning consulting firm, people were brought in with very big titles. The ones we chose has a very big name; they were people who had

backings, some really far out ideas. One person who kept in touch with me wanted to build the town into a single structure. I can't remember the name for it. He's from California. It's a beautiful idea in a place that needs a high-rise single structure – Tokyo. But not Kiowa County, Kansas.

This was a planner's paradise. It was an opportunity to start from scratch.

Almost, but you have to be willing to understand the culture of rural Kansas. A big city idea, if you present it that way, is not going to be listened to, and the consultants that we had did a great job because everything that we have is a big city idea. We just never used the terminology that made it sound that way. Plus, the citizens come from a good farm, agricultural stock. They understand conservation because that's the way you raise cattle. That's the way you grow crops. You've got to understand the environment to farm. So, a lot of the environmental awareness was already there in the back of the citizens' minds. So, it wasn't too terrible of a sales pitch. They already understood what conservation was all about.

The downturn in population after the storm wanted to leave anyway. They wanted to be closer to their children who had moved to Kansas City or Denver. The ones that stayed were, for the most part, younger and still had a stake in the community. We knew that there was a significant portion of the population that was not going to come back. They took their insurance check and ran.

How did someone assume that the population would be restored in five years?

We were on track to do it in the first two years; it's just that we never attracted the industry to keep it going. We never wanted a large industry. We were looking for 20 to 50 employees' type companies. And I know that the state was willing to give all kinds of

tax incentives. I don't know why it never happened. If we had gotten those, I think that five year projection would have been correct of being back to where we were. It's difficult to make population projections with having a disaster, so those numbers that you saw were more faith and hope.

In planning, the terms are long-term plans and strategic plans, with those being five years with more identifiable goals. Sometimes you will see both of them in one document. Our comprehensive plan is more of a strategic plan of what do we want to do in the next five years. And I've worked 35 years in six communities. This is the first one that they are developing things, according to the plan.

Most of our development has been from the public sector: library, City Hall, redevelopment of the county court house, hospital, school. We were fortunate in that we were able to get the business incubator as one of the first structures. I have noticed that a couple of people have graduated out.

Somebody like Thomas Corns may have told you this, but there were a lot of negative people on the outside – a lot of potential investors and lending institutions – said “Forget it, it's not going to work.” Just because! And when I was here fulltime, when somebody came in with that attitude I would say, “Sorry, I've got someone here waiting for me that wants to build. Get out!” A professional office used to be here and decided not to come here after the storm. I don't know why they were here in the first place. I don't know why they came to visit me. I don't remember. There were some people who thought they could make a fast dollar, especially Subway Restaurants. I don't know why, but there must be something about them. We had several people come in with the idea of building a Subway restaurant, and one person came in and said, “You don't have any of

those darn building codes, do you?" I said "Not only that, but we want a licensed architect to design your building." "Well, I'll go someplace else." Okay, sayonara. We don't want them.

The typical economic development strategy is what the community's assets and needs analysis indicate. Where are you losing market share to another community? None of that really applies to a town that is destroyed. Now, it might help with future growth, and I don't know what the economic development strategy has been for the last couple of years here. I just don't know. I know the main push is to attract businesses and industry to the now vacant business park.

One thing and I've said this in a different arena. I said, "Shut it down." But then when I came here and started talking to people and measuring their resolve, I decided we're doing the right thing. It's been fun.

Would you change anything?

No. I can't think of anything. It's always great when your last job is your best job. I never knew my career would end this way, and I'm gratified to have been a part of it.

APPENDIX D

INTERVIEW WITH CHRISTY PYATT

Christy Pyatt, city clerk at the city of Greensburg, started working three weeks before the tornado. Having grown up in the area, she was initially hired to handle the billing of utilities. After the tornado destroyed the infrastructure, she was part of the newly established building department, a position that she would juggle along with the municipal court clerk duties.



Christy Pyatt, City Clerk at the City of Greensburg (photo by David E. Leiva).

You are very busy with all of your assigned jobs. How did you come to do it all?

At some point, we transitioned, and I started doing the financial portions of City projects, still doing court clerk, still working with building and zoning. In a small town, you carry many hats. So tonight, I will be in City Council; I get a brief break between City Council – go usually to 8pm. Grew up here. In this office, you don't have divisions of who does what so much; it's really a group effort. Ed Truelove, the city administrator, and I tag team a lot just to cover our bases and check up on each other as far as "Did we get all of this taken care of?"

We do things a little differently around here, where we have a city treasurer and a utility billings clerk. We do have more employees than most small towns but because of our disaster, you had to. We have scaled back. We don't have nearly as many employees as we did right after the disaster, but that means you get to wear more hats. Like tomorrow night, our judge will be coming in, so I will be staying for court a little while. And it won't be a long court because here most of it right now is traffic, but you ... just wear a lot of hats.

Who could tell me about rental vacancies?

Monica Hayse will be able to tell you a lot about rentals as well. She is the primary property owner. She owns a lot of the rental properties that are up and going. She and her husband own Hayse Management. They have a lot of properties, commercial and residential properties. He contracts with Kansas Gas Service, so they have a utilities side to their company. They are very active. They are great community supporters. They have been on school boards. She's on economic development. They own the property where "FEMAville" – that's what we call it – where all the FEMA trailers used to be. They had the opportunity, and this is where both of them grew up. This is how they support their community.

Has anyone asked these types (financial) of questions?

No, they haven't, and sometimes it takes somebody stepping in from the outside to get a different perspective, kind of like the development here. If you are here every single day, you don't necessarily see the progress. But if you're gone a little while and you come back ... "Wow, that's changed!"

Monica may be able to help you with revitalized properties because they had some properties that sustained damage that they renovated. They have some properties that they purchased since the tornado and renovated. They have some that they had to start from scratch. So she can give you a lot of information on the housing situation from her perspective.

I think that's one of the scary parts about the Greensburg experiment. If so much weight, so much expectations are placed, and it doesn't materialize. Many will dismiss green economic development.

These were goals as where we would like to be, but there are a lot of things that play into it. When the state economy struggles, we are not at this point, and we knew that was going to happen. You don't want to be in the spotlight forever. As citizens, these guys are ready to move on. They don't want their entire lives to rotate around the tornado. Unfortunately, that major event in history changed a lot of things, so there are some things that will have to be. Like it or not, the tornado will be referenced as to when things happened or didn't happen. But as far as being in the limelight, that's not what this community is about. It really isn't. We were for a long time, but that wasn't their main focus – to get attention, to get people here. At the same time, we recognize that without some of that attention, we wouldn't be where we are because it got the ball moving on some things. Whereas it might have gotten tied up in bureaucracy or something, there were some things that got taken care of that needed to happen quickly because we were in the spotlight, and everyone was watching. You don't want to be the governor or the senator who kept people who have lost everything from being able to move forward.

So there were some benefits to being recognized so much in the media, but we knew that was short term. And we weren't trying to take that and use necessarily as an advantage to gain anything. Especially like in tourism, when you're in the news media, you're going to have a lot more people in town, and that helps the businesses. It helps everything here in town. But when that media spotlight goes away, you're not going to have near the foot traffic that you had so as a business you have to learn how to evolve.

You have to learn how to sustain yourself when all the attention is gone. I think these people did a fairly good job of thinking that way knowing "this is who we've got here really every day" and not focus on what was happening in the moment as far as people through here. It is definitely a different world than it was even five years ago because there would have been tourists walking all around and school groups here just everywhere. The place was covered with people. You would be amazed if you go over to the Big Well Museum at how many people come from other states, other countries, school groups, tourists, tours that come through here. Part of it is to see the Big Well, but part of it is to see how they are doing five, six years later.

Total Cash Receipts of Big Well Fund 2007-2012

2007	2008	2009	2010	2011	2012
\$137,073	\$331,160	\$184,309	\$144,199	\$130,994	\$231,112

"City of Greensburg, Kansas Financial Statements with Independent Auditor's Report," City of Greensburg, 2006-2012.

It's a slower traffic than it was before, so you can't say "we don't want to talk about the tornado anymore" and be oblivious to the fact that it happened because it changed everything. It changed the way town looks. It changed how we function, and not all for the bad. Some of the things needed to change; it wasn't working the way it was working before. So, you either keep doing what you've been doing and have it continue

to not work, or you change what you are doing, do things differently, and hopefully, things will turn around. That's the kind of the attitude our County Commissioners and City Council took. This is an opportunity to change things. We can't change the fact the tornado happened. We can't put things back the way they were, so let's take what we've got and change it.

We were nearly completely knocked off the map. It wasn't just the town. We have a whole Mennonite community. It went up through their farm houses, so a lot of them lost everything too. We were so inundated with people coming to help that we started sending people their way. But everyone was focused on the city because that's where most of the population was, where most of the destruction was. But there is a whole community south of here that took a big hit with their school, and then more communities to the north of us that the storm tracked right in the middle of them and for two or three days after, the same storm track. So, this wasn't just Greensburg. This affected Kiowa County, the surrounding areas. That's probably one of the most frustrating things with the other communities is that it affected them so greatly, but Greensburg was getting most of the attention. I bet if you went to talk to Haviland's City Hall, you would find a huge difference in how their town has worked since the tornado because a lot of people, even if it was only temporarily, went to Haviland. There wasn't a house to be had in Haviland. Houses that would have sat on the market for a long time, sold very quickly. Rentals went very quickly. I would be interested to know; I bet their rents are higher because there was such high demand. And so, we had all of these displaced people going to all of these communities, so their life was all in upheaval. Plus, a lot of people come here to shop and

different things; they all had to disperse and go to other towns. So this didn't just affect Greensburg, it affected this whole area.

But I bet if you looked at some of the number of housing in Haviland and Mullinville, it would be an interesting change in the number of homes sold, new builds. Haviland has several new builds, and not all are directly associated with the tornado, but some people who used to live here live in Haviland now. And so, on their statistics that looks huge because these were small towns and not a lot of people were moving to or building. Part of it was that former Greensburg residents wanted something done quickly, and we had cleanup to do. So, they went where they could quickly put something in. Some of them didn't want any regulation put on them, so they went and quickly put in a home in a neighboring community that maybe didn't have building and zoning regulations. There's a lot that went into it.

FEMA just kept telling us how they couldn't believe the resiliency of people around here because we had a house that got put back on its existing basement before we had utilities back in town. So they have this new home sitting there, and can't live in it because we don't have utilities restored yet. But they were like "we're not going to sit around helpless. Let's go! Let's go! Let's go!"

There's definitely a different vibe here than other disaster areas.

They had the same problem in Joplin, Missouri. Right after the Joplin tornado, their building official called me and said, "What do you do when you're still doing search and rescue for bodies, and you've got Joe Blow over here who's got his friends in here to clean off his property and he's ready to start building?" You put a moratorium on the town, and you don't let people start building until you're done with search and rescue or

until you get your streets cleared. But in some areas of this country and some parts of the world, it wouldn't necessarily move that fast. They wouldn't have had Day 1 the tornado happened – and by the end of the week he has cleaned up and is ready to start building. It's just a different mindset.

Are there any building permit figures prior to the storm?

They didn't really have houses built. There was nothing really going on here, in terms of building. And like a building permit was \$1. They had adopted some codes, but they had no one to enforce them. The last house that was built here was probably four years before the tornado. They didn't have a building inspector. We had no building inspector in this community, as far as I know, until after the tornado. And, the state association of building inspectors, The Heart of America chapter, came in and brought in building inspectors to help look at structures that were still standing, get a building department established. Johnson County, which is Kansas City area, sent a lot of guys out here just to get a building department established, get the forms put together, get spreadsheets put together. I am still operating off a Johnson County building permit system that they created in their own office to fit them, and they retrofitted it just to get us by. We had nothing, absolutely nothing.

We didn't lose as many city documents even though City Hall was heavily damaged. Someone came in, took our documents, and freeze dried them and stored them for us. We didn't lose nearly the documentation that you think we did. And they were able to take our computers, dry them out, and retrieve information. They did the same thing at the county. The main server is in the basement area, serious water damage. The first day I walked into the court house, which was like a day or two later, there was

literally water running down the stairways. It was like a stream running from the upper floors down into the basement where their server was because a car flew over the top of the court house and hit the roof. It was a Pontiac Bonneville. They figured out what car it was because there was blue paint on top of the roof, and there was a blue Pontiac Bonneville laying in the side yard of the court house when it was all over. That thing blew over the top of the dome, hit that on the upper floor, and it just poured rain during the storm. It rained during the storm, it rained after the storm, and it rained for a good three days if not longer. We had storms in and out of here all the time, dumping rain and hail; tornados on the same storm track. We had people trying to do search and rescue, and they had to evacuate into existing basements because another tornado was coming. I remember getting stuck in the basement of the court house, and it was jam-packed with rescue workers, all in fire gear with rescue dogs, because another tornado was tracking the exact same path coming right at us. And, we all hunkered down in the basement of the court house that had already been hit once. And it happened all week long, storms tracking like that.

Knowing what you the Greensburg leadership know now, would there be some changes to the recovery plan?

Probably. Knowing what we know now, we would have done some things differently. Yes, you learn a lot. Even the school will tell you, because they're doing an addition to the school; they're changing some things. It's going to look the same, but they are not using all of the same materials; they're not using some of the things that they used in the original building because they've had time to figure out what works and what didn't work. Would we do streetscape the same? No, probably not. The idea was to build

it walkable so you widen the sidewalks. Well, that cut down on your street. We knew that was going to happen, but to live it and realize the impact that that has on trying to back in and back out, and all of these little bumps out in the streets. Try doing snow removal with those. On paper, it looks nice. But to the guy running a truck, he knows that when there is three to four feet of snow drifted in there, he's not going to know where that bump out is at, and you're going to get things like what happened out here at this stop sign.

Functionality. Storm water collection is great for watering, but it has to rain. If it doesn't rain, there's no water to get in the tank. Yes, there are things we've learned – functionality.

Seems like the city should get into the consulting business.

The mayor has done a lot of talking with other communities. We have communities that didn't even get destroyed by disasters that are just wanting to build more sustainable, and they will call and say "What worked, what didn't work?"

APPENDIX E

IRB APPROVAL LETTER



THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD

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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **13112201**

PROJECT TITLE: **A Critical Examination of Green Economic Development as a Post-Disaster Recovery Approach: The Case of Greensburg, Kansas 2007-2012**

PROJECT TYPE: **New Project**

RESEARCHER(S): **David E. Leiva**

COLLEGE/DIVISION: **College of Business**

DEPARTMENT: **Economic Development**

FUNDING AGENCY/SPONSOR: **N/A**

IRB COMMITTEE ACTION: **Expedited Review Approval**

PERIOD OF APPROVAL: **11/22/2013 to 11/21/2014**

Lawrence A. Hosman, Ph.D.
Institutional Review Board

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