

Tall City Boomtown: A Study of the Effects of a Hydraulic Fracturing Boom on  
Midland, TX

By

Gregory D Williams II, BA AAS

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Approved

Perry Carter  
Chair of Committee

Gary Elbow

Mark Sheridan  
Dean of the Graduate School

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## **ABSTRACT**

This thesis examines the effects that the “Great American Energy Boom” had on crime, health, and sense of place in Midland, TX from 2009-2014. This oil boom greatly impacted the economy of the city. Midland witnessed record low unemployment rates and unprecedented economic growth due to increased oil and gas production. In the international literature on towns who have secured large oil and gas projects, ‘Boomtown’ has a particular meaning. In particular, the ‘Boomtown Syndrome’ describes the attitudes and issues communities develop and face from the inception of the project through to the end of construction when operations start and the large construction workforce is drawn down. Social disruption theory asserts that communities experiencing resource booms generally “enter a period of generalized crisis and loss of traditional routines and attitudes”. This research focuses on a boomtown, examines the social disruptions that resulted from the boom and measures the effect that these disruptions had on local residents. To examine this impact, I conducted interviews with city officials, health professionals, law enforcement professionals, and community residents. Natural resource booms, and all booms, tremendously transform communities economically and socially. The effects of these booms permeate all facets of the community. These effects transform the experiences of the residents of the community as well as the perception of the city from visitors and outsiders. In Midland, the oil boom had many unintended social and economic consequences that will affect the city for years to come.

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## CHAPTER I

### OPENING



**Figure 1.1 Midland City Limit Sign**

#### **Introduction**

For the last decade the United States has experienced a boom in oil and natural gas production. This boom has been coined the “Great American Energy Boom”. One of the epicenters of this boom has been Midland, Texas for which it was christened America’s “Economic Miracle City”. This oil boom has greatly impacted the economy of the city. During the height of the boom, the city witnessed record low unemployment rates and unprecedented economic growth due to increased oil and gas production. New oil and gas extraction techniques, hydraulic fracturing and horizontal drilling are responsible for the surge in production in Midland and the surrounding area.

The city of Midland is the focus of my research because it is the administrative hub of the oil and gas exploration and production that takes place in the Permian Basin.

Midland is also the prime location for my study as it was the fastest growing metropolitan area in the US from 2010-12 and featured the highest income per capita in the country in 2012 (Source: Bureau of Economic Analysis). Midland is special to me because I spent many years there as a child and I have family that still resides in the city.

### **Literature Review**

In the international literature on towns who have secured large oil and gas projects, 'Boomtown' has a particular meaning. The 'Boomtown Syndrome' describes the issues communities face from the inception of the boom through to the end when the operations of the large construction workforce are drawn down (Taylor & Winter 2013). The purpose of my research is to examine the impact that the recent boom has had on crime, health and sense of place in Midland.

The negative aspects of 'boomtown syndrome' are rooted in social disruption theory (Wilkinson *et al.* 1982; Park & Stokowski 2009). Social disruption theory asserts that communities experiencing resource booms generally "enter a period of generalized crisis and loss of traditional routines and attitudes" (England & Albrecht 1984, p. 231). These "disruptions" range from concrete problems of increased criminal activity and drug abuse to more abstract issues of reduced social solidarity loss of sense of place (Shields 2012; Ennis *et al.* 2013).



However, research on the social impacts of resource booms tends to focus on remote locations with small resident populations, rather than midsize cities such as Midland, Texas.

Large oil and gas projects attract an influx of workers that are disproportionately male in the early construction phase of drilling (Freudenburg 1981). This sudden influx of workers puts a strain on city services and infrastructure that are not prepared to deal with the new population (Taylor & Winter 2013). Chang-I (1985) suggests that newly arrived male workers fail to adapt successfully to their environment, which leads to loneliness, alcoholism, drug abuse, crime and general social decline. Clashes between workers and locals may create worker alienation and mutual acrimony. The literature highlights that these conflicts develop quickly and authorities are rarely in a position to plan for and mitigate them (Jacquet 2009).

Gilmore (1976), and Freudenburg (1981), and Jacquet (2009, pp 12-13) identify four phases of community adjustment in boom situations: enthusiasm, uncertainty, near panic, and adaption. These four phases of community adjustment make up the Boomtown Impact Model of energy development. The impacts of boom periods are multifaceted, vigorous and differ according to the phase of the boom/bust cycle, the town and its socio-economic circumstances, the resource type and the regulatory infrastructure.

The Boomtown Impact Model, developed by sociologists studying rural towns where many coal, oil and natural gas projects were located, is a model that hypothesizes the social disruptions that will take place during a boom (Jacquet & Kay 2014).

Apart from the negative social impacts that come from the majority male workforce, Boomtown Impact Models also suggest a mix of other positive and negative impacts. Local governments are often not able to deal with the sudden spike in population and this places stress on services which must meet new levels of demand while being underfunded or experiencing a lag in funding (Jacquet 2009). Information flows between governments, the companies and the community can be limited, which creates a sense that the jurisdictional control of the local authority has weakened (Taylor & Winter 2013).

Sociologist Ronald Little (1977, p. 402) describes boomtown growth as a syndrome.

“Besides increased economic activity, the most distinguishing characteristic of boomtown is an accelerated population growth... [which] in turn leads to a breakdown of municipal services.... Planning lags behind needs, and control of the community seems to rest with forces outside the immediate environments.”

In other words, the “boom”, or rapid population growth, affects the opportunities for long range planning, but the local population has little control over when the growth occurs and when it slows because demand for the resource is driven by conditions external to the community itself (Keough 2015).

Few small communities have the infrastructure or leadership capacity to accommodate waves of rapid population growth, leading to a crisis where local resources are strained by a number of social maladies such as crime, substance abuse, health problems and the stress placed on human service organizations and public services due to increased demand for services, and an insufficient capacity to meet these demands. A number of researchers have found an inconsistent association between crime and resource development (Brown 2010; Forsyth et al. 2007; Kowalski and Zajac 2012; Luthra 2006; Luthra et al. 2007). The relationships between rapid population growth and crime due to natural resource development, however, can have differing effects depending on community structure and resilience to crime, the composition of the population (e.g., transient or long-term residents), the duration of the boom and the nature of exploration or extraction activities within counties (Ruddel et al 2014). Ruddell et al (2014) did not find a statistically significant relationship between resource booms and crime.

The perceptions that residents have of their own environments has been termed sense of place (Williams & Kitchen 2012). Sense of place is a combination of characteristics that makes a place unique. Sense of place involves the human experience of landscape, local knowledge and folklore. Social Scientists have long studied the deep and substantial connections between people and environments, and in particular psychosocial conceptions and meaning of place, individual and collective attachment to places and the identities strongly linked to place (Low and Altman 1992; Proshansky et al. 1983).

Proshansky and colleagues argue that the “subjective sense of self is defined and expressed not simply by one’s relationship to other people, but also by one’s relationships to the various physical settings that define and structure day to day life” (1983, 58).

These daily experiences contribute to how citizens come to understand their physical and social environments, specifically in how they give social, cultural and environmental values to place (Manzo 2005). Social and environmental changes to place can have important consequences for people’s sense of self and their attachments to place.

Scholars have found that the adverse health impacts of fracking contributed to the individual and social stress of residents which caused them to lose their sense of connectedness to the area (Sangaramoorthy et al. 2015).

Social disruption theory is a sociological theory which states that communities experiencing rapid growth typically enter a period of generalized crisis and loss of traditional routines and attitudes. Social disruptions can take place in a variety of forms, from natural disasters to the closing of a community grocery store. The crisis affects individuals, whose mental health, worldviews, ways of behaving and social relationships and networks may be affected (England & Albrecht, 1984). Social disruption theory also asserts that rapid community change resulting from population increases will lead to an array of social problems indicative of overall community disorganization (Greider, Krannich, & Berry, 1991). While social disruptions associated with rapid growth were initially studied in urban settings, rural sociologists have also directed their attention to this topic.

Boomtown studies assert that rapid growth related to energy or other resource development creates significant social change, which is stressful for residents and local community institutions (Freudenburg, 1982; Gilmore, 1976; Greider & Krannich, 1985; Summers & Branch, 1984). Among the various adverse consequences of boomtowns, crime has been seen as one of the important indices of social disruptions created by rapid community growth (Freudenburg & Jones, 1991; Sampson & Groves, 1989).

Other researchers have also examined the social impacts that are felt in boomtowns more specifically and written about how they affect quality of life in communities (Fernando & Cooley 2015). The social impacts of energy development are centered around noise (Ladd 2013), increased levels of antisocial behavior, disorder and crime (Wilkinson et al. 1982; Ruddell and Ortiz 2014), physical impacts to the rural landscape or biophysical environment (Alter et al. 2010), impacts on social networks and relationships (Murdock and Leistritz 1979) and lack of newcomer integration into the community (Ford 1977). Freudenburg (1986) concludes that additional social impacts can occur if new employment opportunities attract enough job seekers to lower the community's density of familiarity, or the proportion of residents who know one another, thereby lessening the effectiveness of socialization and nonconformity control. Changes were particularly evident in control of nonconformity, socialization of the young, and care for the community's weaker members (Freudenburg 1984). Typically, areas undergoing oil/gas development experience a rapid transient population increase, (Christopherson and Rightor 2012).

Research suggests that certain negative and positive conditions created by the boom affect the entire community, whereas other conditions only affect quality of life of certain stakeholder groups. The differences in quality of life are based on being in a position to benefit financially from the boom and being in a position not to be subjected to local price inflation. This inflation is largely due to skyrocketing rent and home prices. The research suggests that community planners and policy makers must engage in finding solutions and mechanisms for (1) affordability of housing,(2) enhancing public services and infrastructure, (3) facilitating private business services and amenities, and (4) better community integration programs in order to improve and enhance quality of life of communities (Fernando & Cooley 2015).

Researchers have also looked for connections between social disruption in rural resource-based boomtowns and drug and alcohol abuse risk factors (Parkins & Angell, 2011). Given the cyclical nature of commodity markets and the economic instability of resource towns, researchers point to the social implications of the economic instability that occurs in boomtowns. First, residents, who have experienced recurrent boom and bust cycles, may not see much use in responding to changes, when past experience suggests that such changes are likely to not be permanent (Krannich & Luloff, 1991, p. 7). This may cause a widespread sense of powerlessness or give rise to apathetic local attitudes and pessimism about the community's ability to solve local problems. Furthermore, boom and bust cycles may produce periods of high unemployment and underemployment (Krannich & Luloff, 1991).

Second, these types of communities often experience a high population turnover, resulting in a lack of connectedness among residents (Kulig, Edge, & Guernsey, 2005). This produces feelings of powerlessness and fatalism, and a lack of community connectedness have also been identified as risk factors for alcohol and drug abuse in a rural community resource based community (Parkins & Angell 2011).

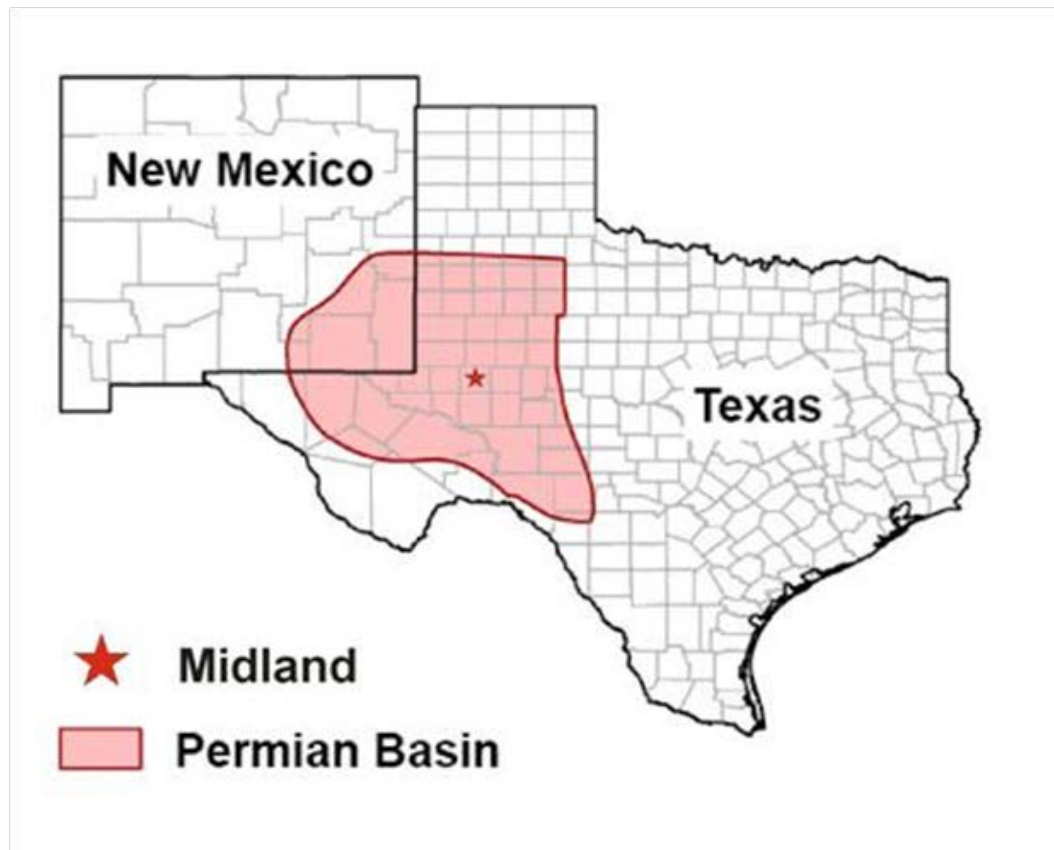
Boomtown literature describes the phenomenon of rapid social, cultural, economic and demographic change in small urban centers and rural areas. Social disruption literature suggests this rapid change generally heralds a period of crisis and loss of traditional identity (England & Albrecht 1984, p. 231). Social disruption literature focuses in on negative aspects of boomtowns. Sense of place literature discusses how changes in a community (i. e. the arrival of a new industry or population) can change residents' perceptions of home and their relationship to home.

My research will focus on a boomtown, examining the social disruptions that resulted from the boom and measuring the effect that these disruptions have had on permanent residents. Did the arrival of these new workers cause disruptions such as increased traffic, shortages of workers in service industries, or the erosion of road systems in and around the city? Would problems such as these affect sense of place among permanent residents? What affect if any did the influx of population have on crime in the city? The specific social disruptions I will be examining are health and crime. Has the influx of workers caused health problems in the community? Were the healthcare providing institutions stressed by the spike in population during the boom?

In order to examine the impact, I will be conducting interviews of city and regional officials, health professionals, law enforcement professionals and community residents.

## **Background**

Midland was originally established in 1881 as Midway Station, on the Texas and Pacific Railway. Midland earned its name because of its central location between Fort Worth and El Paso. The town's initial moniker was Midway but in 1884, due to the number of towns in Texas with the same name, the town changed its name to Midland. Midland became the county seat of Midland County in 1885 when the county was first established. In the late 19<sup>th</sup> century, the city's major industry was cattle shipping.



**Figure 1.2 Permian Basin**



The economy of Midland and Midland County were altered forever when the “Santa Rita Number 1” well began producing oil in Reagan County (Big Lake) in 1923 and the Yates Oilfield in Iraan, Texas began production in 1926 (Source: Texas State Historical Association).



**Figure 1.3 Reagan County**



**Figure 1.4 Yates Oilfield**

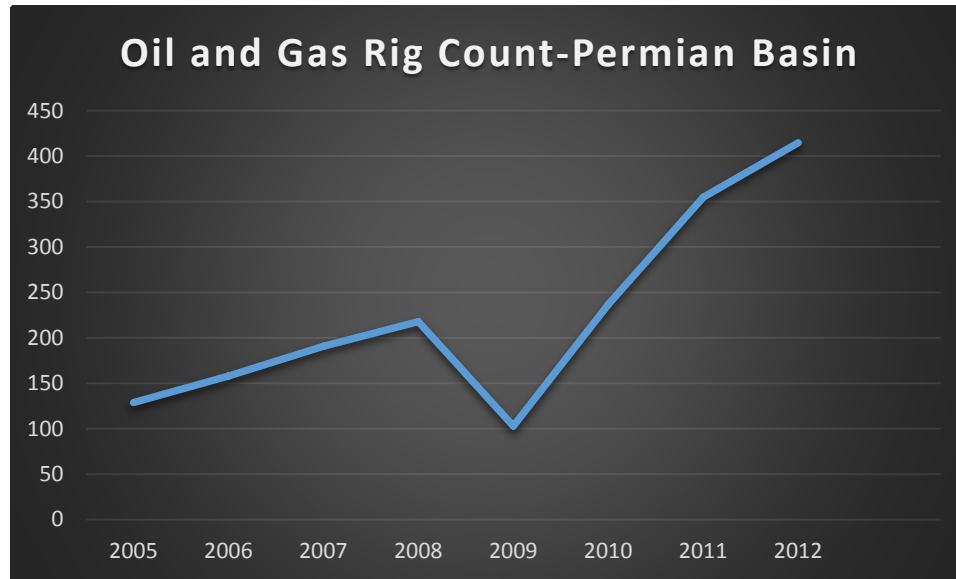
Soon oil production began in the region and Midland became the administrative center of West Texas oilfields, and by 1929 there were 36 oil companies with offices in Midland. Odessa, Midland’s sister city 20 miles to the west of Midland, became the headquarters for the Permian Basin’s oil field services and supply industry. Midland has experienced the boom and bust cycles of the energy industry for quite some time. When the price of oil fell in the late 1960s, dropping under \$4 a barrel by 1970, as many as one quarter of Midland’s independent oil companies went under. When oil skyrocketed in the late 1970s, rising to \$37 a barrel, Midland became one of the most affluent cities in the nation. In 1982, eight midland oilmen made the illustrious Forbes 400 list of richest Americans, the city only housed 70,000 residents at the time.

When Saudi Arabia ratcheted up oil production in 1985 from 6 million barrels a day to 9 million barrels a day; which led to a plummet in the price of oil, the economy of the city effectively collapsed. The largest independent bank in the city, First National Bank, failed. This marked the first time in American history that a bank of this size failed in such a small city. In the mid-1980s the oil business in Midland became a struggle with only the most bold independent oil companies making a profit by retrieving what little oil was left from wells that had already been drilled. By the late 1990s most of the major oil companies had given up on the Permian Basin; closing up their Midland offices. When the price of oil plummeted in 1999, there were a mere 43 rigs working in the Permian Basin.

Oil prices began to skyrocket at the beginning of the 21st century; going from \$38 a barrel in 2004, to \$50 a barrel in 2005, to \$64 in mid-2007. The exponential increase in the worldwide demand for oil at the end of the first decade of the 21st century drove the price of oil up. As long as the price of oil is close to \$70 a barrel, an oil company could drill and frac an oil/gas well in the Wolfcamp or Spraberry fields at a cost of about 1.6 million and recoup their investment within three years and then profit take for years to come. Rising oil prices coupled with the refinement of hydraulic fracturing and horizontal drilling made the Permian Basin a hot spot for oil and gas drilling going into the second decade of the 21st century. I have provided oil production, economic, population, crime and real estate data in order to visualize the 2009-2014 Midland boom.

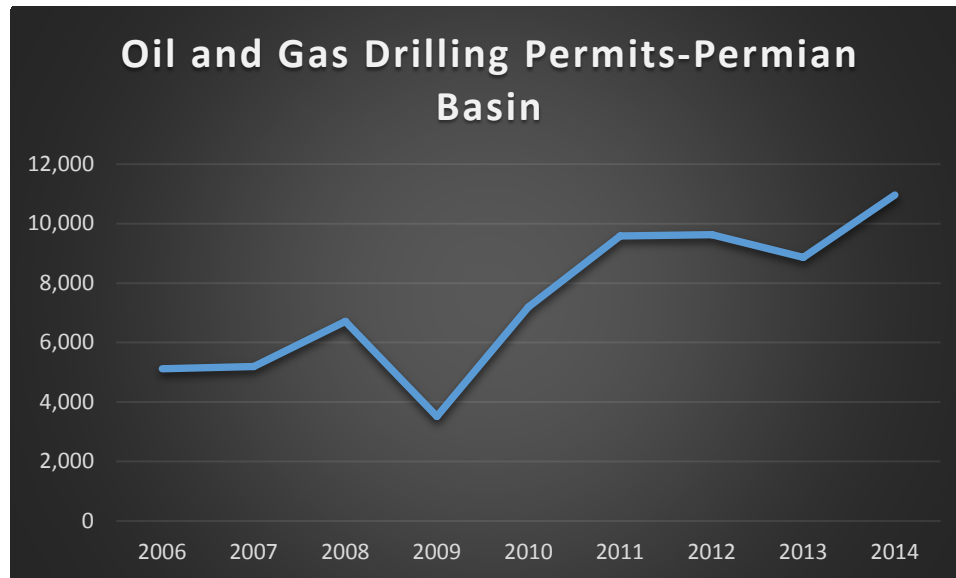
## CHAPTER II INFORMATION

### Data



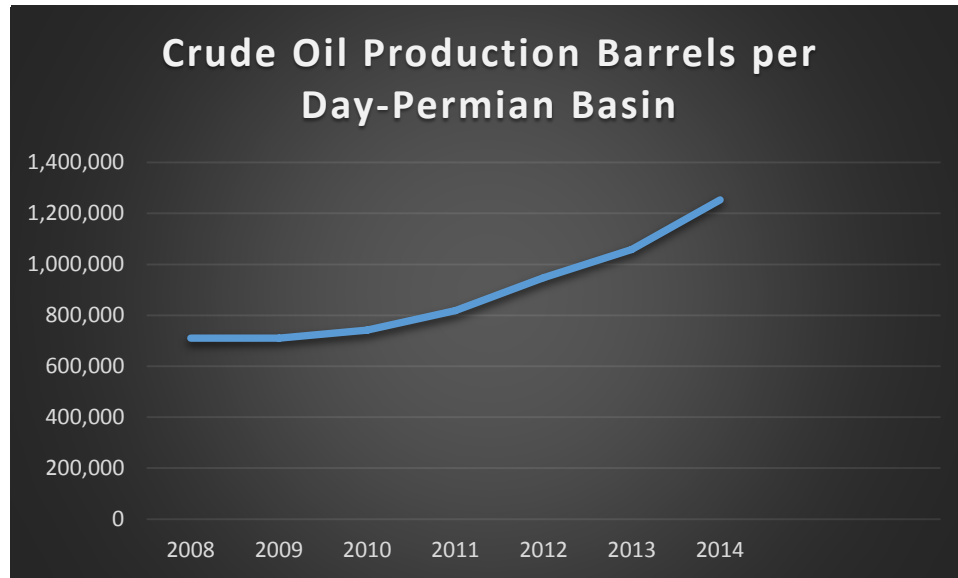
(Source: Texas Railroad Commission)

**Figure 2.1 Oil and Gas Rig Count-Permian Basin**



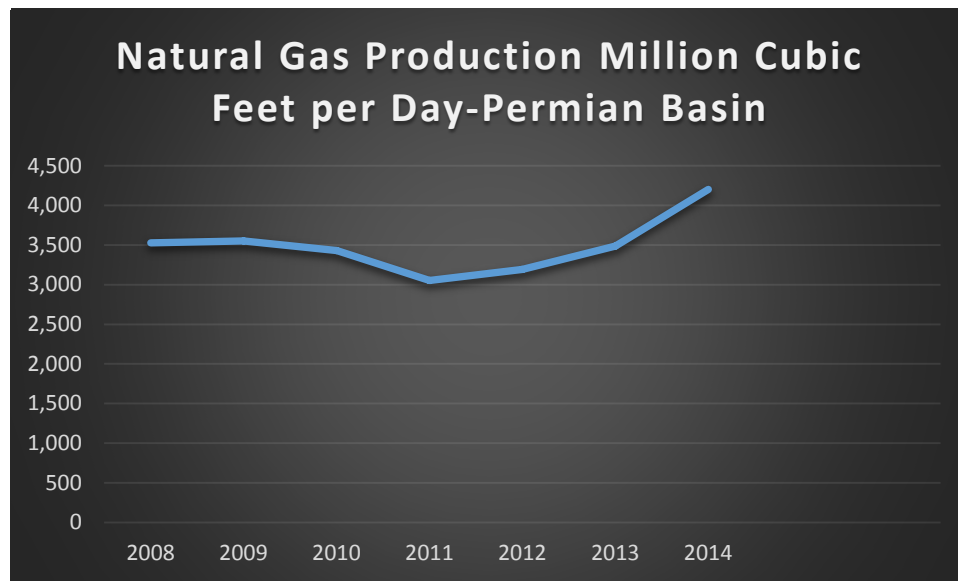
(Source: Texas Railroad Commission)

**Figure 2.2 Oil and Gas Drilling Permits-Permian Basin**



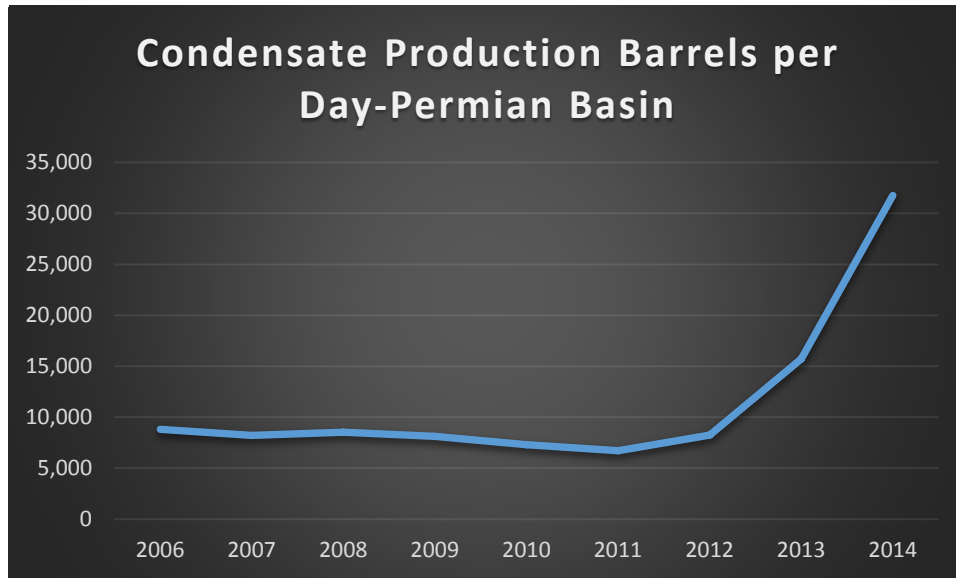
(Source: Texas Railroad Commission)

**Figure 2.3 Crude Oil Production Barrels per Day-Permian Basin**



(Source: Texas Railroad Commission)

**Figure 2.4 Natural Gas Production Million Cubic Feet per Day-Permian Basin**



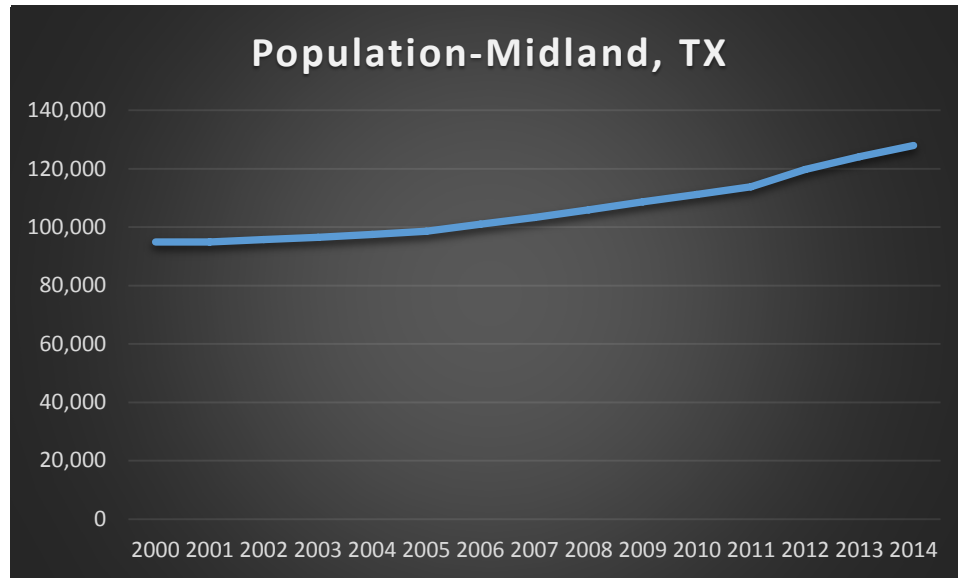
(Source: Texas Railroad Commission)

**Figure 2.5 Condensate Production Barrels per Day-Permian Basin**



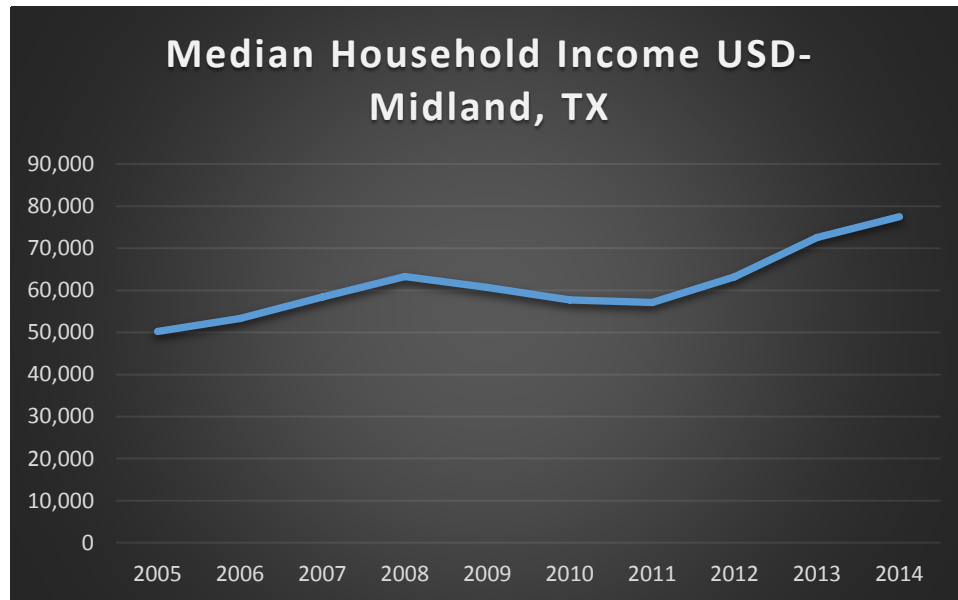
(Source: Bureau of Labor Statistics)

**Figure 2.6 December Unemployment Rate-Midland, TX**



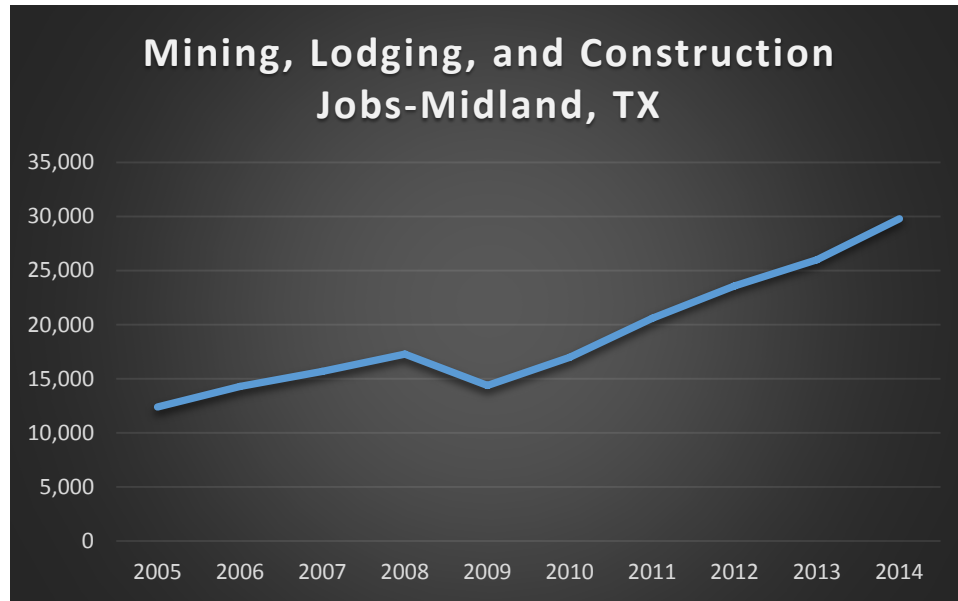
(Source: US Census Bureau)

**Figure 2.7 Population-Midland, TX**



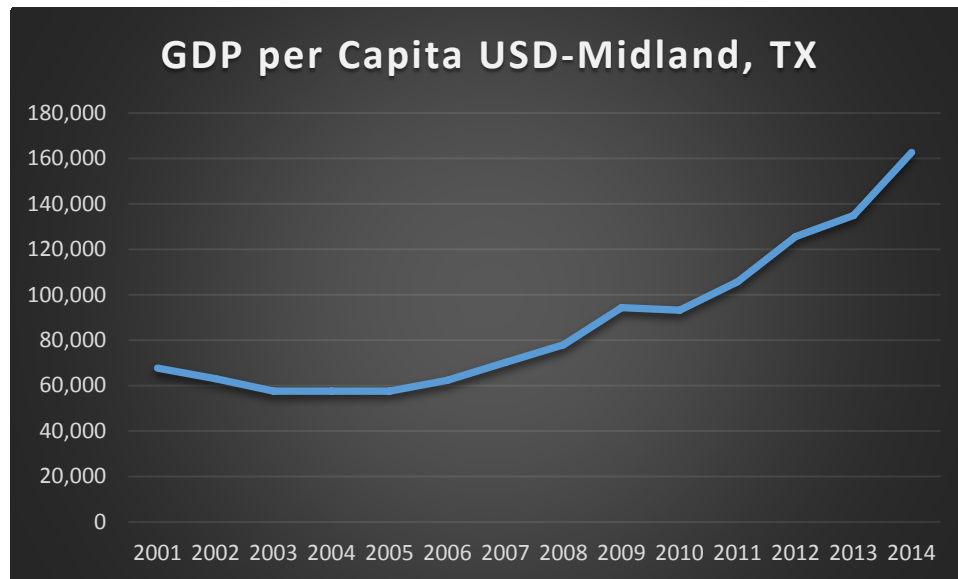
(Source: US Census Bureau)

**Figure 2.8 Median Household Income USD-Midland, TX**



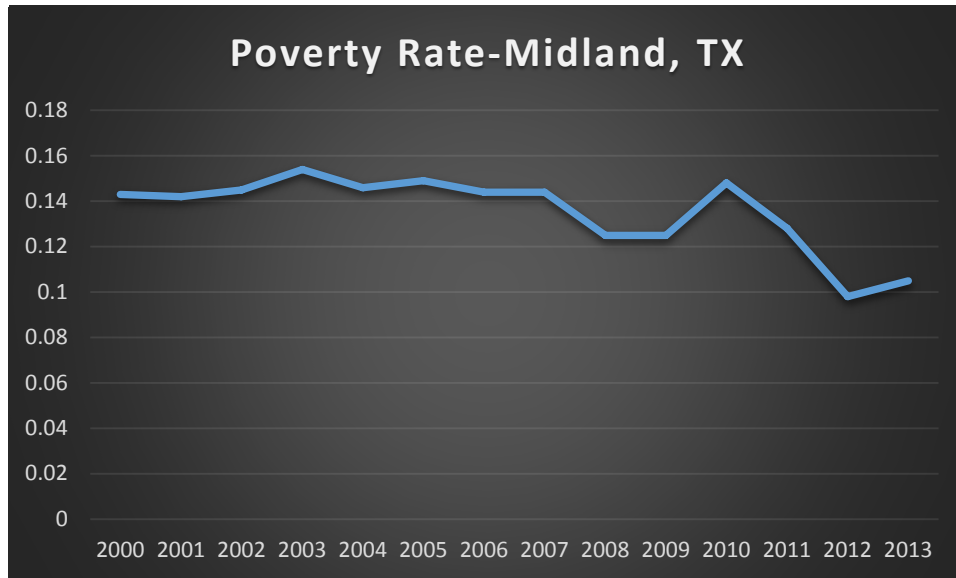
(Source: US Bureau of Labor Statistics)

**Figure 2.9 Mining, Lodging, and Construction Jobs-Midland, TX**



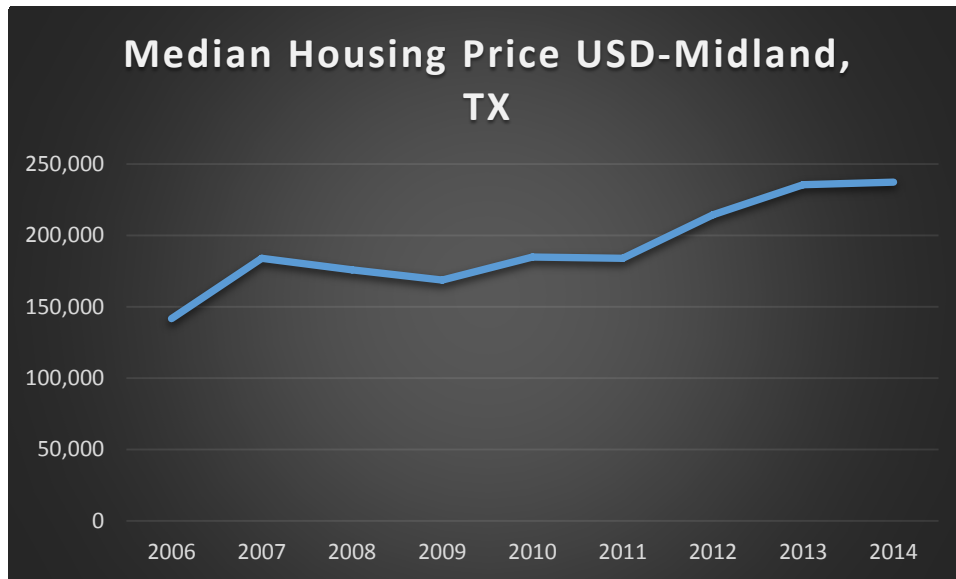
(Source: Bureau of Economic Analysis)

**Figure 2.10 GDP per Capita USD-Midland, TX**



(Source: US Census Bureau)

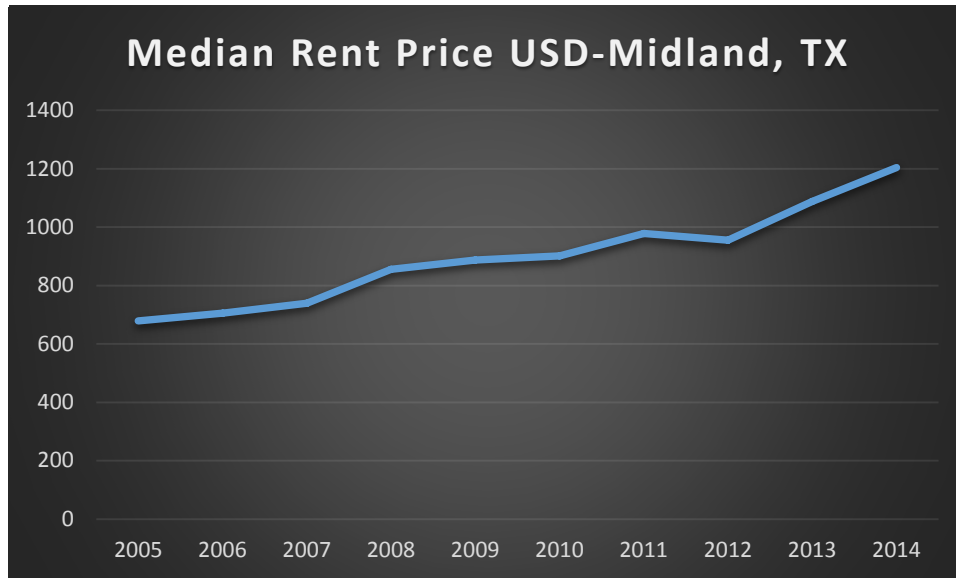
**Figure 2.11 Poverty Rate-Midland, TX**



(Source: Texas A&M Real Estate Center)

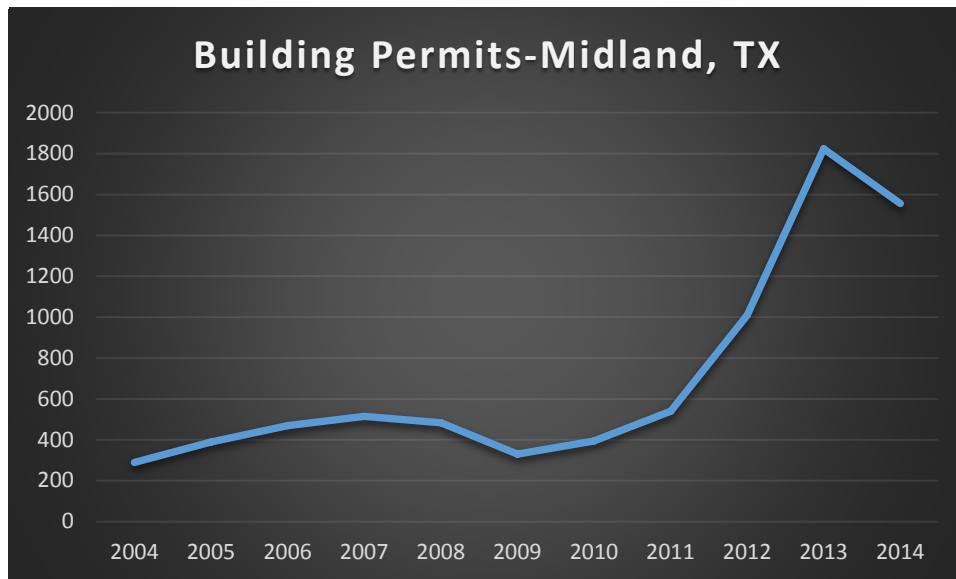
**Figure 2.12 Median Housing Price USD-Midland, TX**





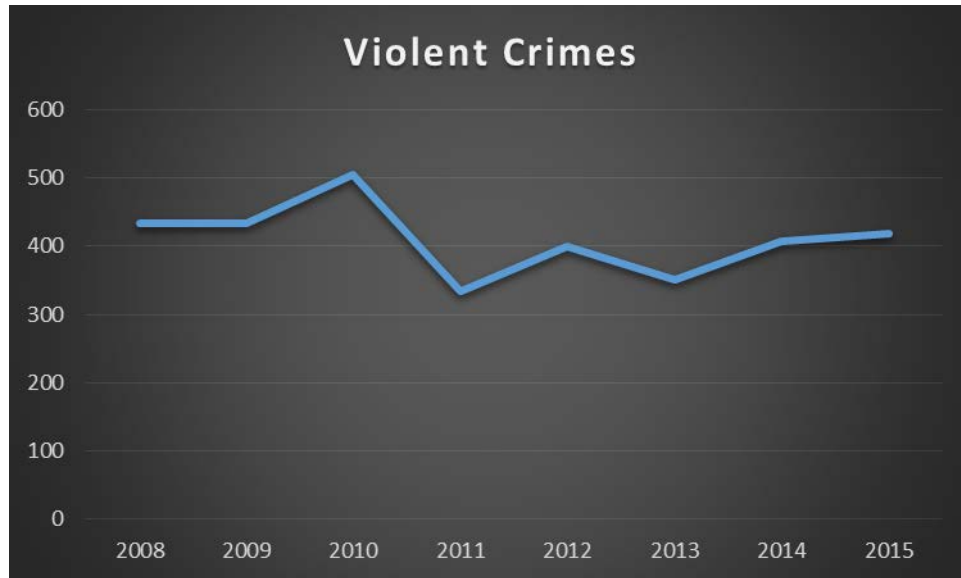
(Source: US Census Bureau)

**Figure 2.13 Medium Rent Price USD-Midland, TX**



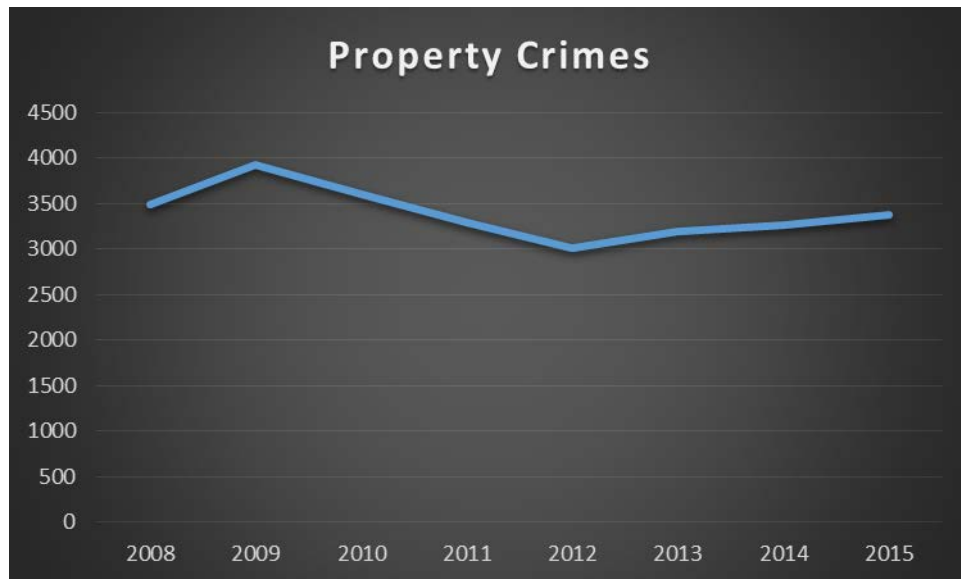
(Source: US Census Bureau)

**Figure 2.14 Building Permits-Midland, TX**



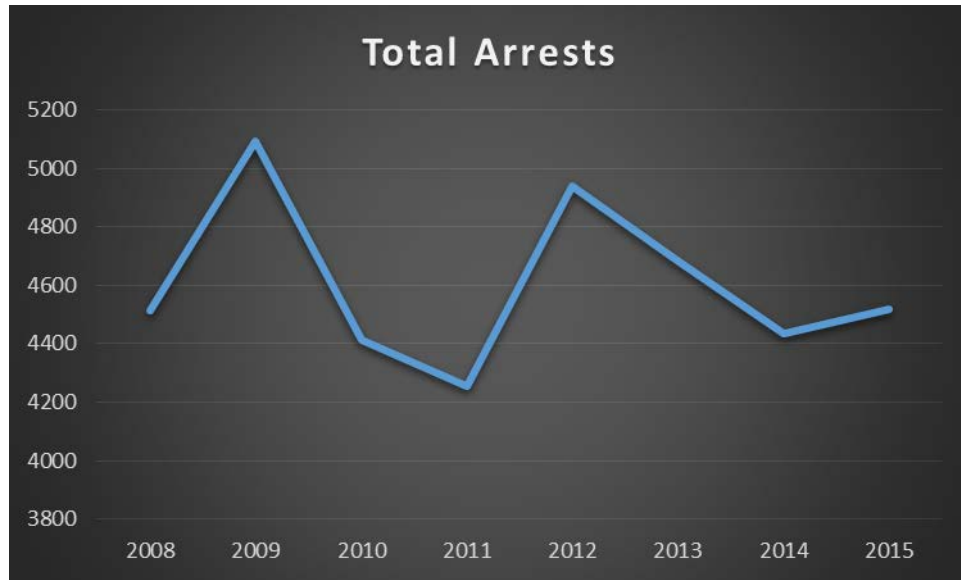
(Source: Federal Bureau of Investigation)

**Figure 2.15 Violent Crimes-Midland, TX**



(Source: Federal Bureau of Investigation)

**Figure 2.16 Property Crimes-Midland, TX**



(Source: Federal Bureau of Investigation)

**Figure 2.17 Total Arrests-Midland, TX**

## **Methods**

The study area for this project is the city of Midland, Texas. The time period is the years 2009-2014. I have used a qualitative interview approach to examine the potential disruptions caused by the oil boom. I conducted interviews with 5 city officials, 15 community residents, 3 local medical professionals and 3 local law enforcement professionals. These interviews were conducted during August, September, October and November of 2016. I used several methods to find people that were willing to participate in my study. I went to community centers and set up booths attempting to interview patrons. I also reached out to community influencers seeing if they would be willing to sit down for an interview. People whom I interviewed referred me to others that they felt like had relevant experiences.

- Long term residents - 11 or more years, medium term – 5 to 11 years, short term – less than 5.
- Long term city official – 11 or more years, medium term - 5 to 11 years, short term – less than 5.
- Long term medical professionals – 11 or more years, medium term - 5 to 11 years, short term – less than 5.
- Long term enforcement professionals – 11 or more years, medium term - 5 to 11 years, short term – less than 5.

## **CHAPTER 4**

### **RESULTS**

#### **Primary Themes**

The primary agents of change for the community during the oil boom were population increase and changes to the job market. The changes were a steadily falling unemployment rate and a rapid increase in blue collar jobs. The unemployment rate in Midland dropped from 5.6 in December of 2009 down to 2.3 in December of 2014. The amount of mining, lodging and construction industry jobs went from 14,400 in 2009 up to 29,800 in 2014. When speaking about the changes that they had seen in the community since 2009 a long term resident stated, “All of the obvious ones; spike in population, costs of housing and [hotel] rooms, heavy increase in traffic and motor vehicle accidents.” When I asked another long term resident about the impact that the influx of oil and gas workers had on the city they stated, “Stress to the city’s infrastructure, schools, law enforcement, housing, etc.” I asked a long term law enforcement professional about how law enforcement work changed during the oil boom and they stated, “A larger population has increased the need for police resources.” When I asked a medium term resident about the changes they had also witnessed in the community since 2009 they responded, “More people, more businesses in the city but not enough staff.” I asked a similar question to a short term community resident and they responded, “More transient, people from other cities, trash.”

The root of the social impacts of the oil boom was the influx of population that the city of Midland during the oil boom and the economic changes that the city experienced due to the substantial increase of high paying blue collar jobs. These high-paying blue collar jobs created competition in the labor market and discouraged the pursuit of higher education. The population data shows that the population of the city skyrocketed from 2011-2013, the height of the oil boom. A high ranking medium term city official spoke about the extreme population growth that the city saw during the height of the oil boom, “Since 1950 Midland has continued to grow 1-3 percent [yearly], in 2013 we grew about 7.5 percent which is unheard of.”

The population of the city was 95,004 in 2000 and the population increased to 108,668 in 2009, a 14.4% increase in population. The population grew by more than 13,000 people over a nine year span. In the five-year span of 2010-2014 the population increased at more than twice the rate it increased in the previous ten-year span of 2000-2009. The population reached 128,290 in 2014. When asked how this population increase impacted the city a long term resident stated, “Housing cost increased, schools became overcrowded, lack of available employees caused business customer service to fail or not be able to meet their customer needs. On the plus side a lot of new businesses came into town and people’s income increased”. Not only did the population of Midland skyrocket during this time period. The populations of the surrounding cities and counties in the Permian Basin also experienced a population swell.

Although these people did not live in Midland, the fact that Midland is the economic and entertainment hub of the Permian Basin meant that many people in the surrounding areas would work or seek entertainment in Midland. The rapid increase in the population along with the types of population that the boom brought in, and the increase in high-paying blue collar jobs seemed to be the driving force of the effects that the oil boom had on crime, health and sense of place in the community. The primary themes of my interviews reflect these impacts.

### **Crime and Health**

When I asked a local long term law enforcement professional about the effect that the influx of workers during the oil boom had on crime in the city they stated, “The increase in call volume was perhaps the most noticeable factor. Call volume increase simply due to the increase in population with calls ranging from accidents to criminal activity.” When I further asked this same law enforcement professional about the adjustments that they had to make during the boom they stated, “A bigger emphasis has been placed on crime analysis in order to appropriately allocate resources and identify pressing criminal issues.” My interviews painted a picture of a community that had an understaffed police force, fire department and EMS, yet was dealing with a rise in motor vehicle accidents, violent crime and drug use. These developments can be tied directly back to the influx of population into the city, the types of population that came into the city and the increase in high paying blue collar jobs. A local long term resident made a statement that spoke to how residents were affected by the shortage of police, “Lack of police, police not responding to calls unless it is a murder or drug related.”

This statement about how the resident thought about the overly taxed police force is interesting, especially when hearing how a long term law enforcement professional in Midland outlined the type of crimes that saw increases in the community during the boom,

“With the influx in workers we have seen an influx in crime. When individuals have more disposable income, they tend to spend it on narcotics and alcohol. Offenses related to those substances then increase such as assault and crimes and persons. The increase in those types of crimes are usually centered around an individual becoming intoxicated and then committing an assaultive offense.”

The theme of an increase in violent incidents was also echoed by the medical professionals that I interviewed. The population spike that the community saw during the oil boom made it more difficult for medical professionals to deal with the increase in traumatic injuries as a result of violent crime. A medium term medical professional that specialized in EMS work at the local hospital described the uptick in traumatic injuries like this, “We saw a little bit more of what we call the gun and knife show stuff, which typically isn’t as bad here in Midland as it is in Odessa, Odessa has always seen more traumatic stabbings [and] gun shots than Midland has but we did see an uptick in that time period as well.” The Midlanders I interviewed seemed to believe that the increase in violent crime may have something to do with the type of population that the oil boom attracted. When speaking about the changes they saw in the community during the oil boom one local long term resident stated, “Traffic and the lack of [law] enforcement; hot shot oil field workers feel as though they don’t have to abide by laws.”



A long term law enforcement professional had a softer yet more in depth take on how the nature of the incoming population related to the types of new crime the community saw.

“Because of the nature of oilfield work, most people that come here to work are usually too busy working or too tired to commit a lot of crimes. These exceptions are DWI, public intoxication and assaults. Young guys that are working 80+ hours a week will spend their time off partying and drink too much get in fights...things of that nature.”

This partying lifestyle of some of these young oilfield workers seemed to manifest itself in other issues such as increase in drug use and STI transmissions. A medium term medical professional spoke about the appearance of drug related incidents in the local emergency room,

“Yeah, there was a big uptick in drug use especially in 2014 [and] 2013 there was a huge uptick in the synthetics [marijuana use], when K2 and all of that came out because a lot of people were trying to pass their drug screens and the idea was that K2 and the synthetics [marijuana] don't show up on a drug screen so we saw a lot more of that but unfortunately those are highly unstable, you don't know what is in there, so in my personal opinion it was actually safer for people to just use marijuana than [use] these synthetics because you don't know what is in there. And also when the bath salts came around we saw an uptick in that. And just for the baseline, you know your classic drugs; methamphetamines have always been a problem in just this area [Permian Basin] and [in] West Texas in general, cocaine primarily those were.”

So not only was the increase in drug use a product of the type of population the oil boom attracted, along with the increased disposable income, but seemingly also a product of the demands of oilfield work. To further expand upon this the medium term medical professional went on to say, “We saw a lot more of methamphetamine use especially in the oil field workers, working two weeks in a row, they would take methamphetamines and various substances like that to stay able [have energy] to work.”

As far as the partying lifestyle of these oilfield employees manifesting itself in the form of an increase in STI transmissions one long term medical professional in the community said, “For a like city we have a larger incidence of STIs in Midland than other areas of Texas, generally affecting young adults.” In addition to drug related incidents the ER in Midland County also saw an uptick in victims of motor vehicle accidents and industrial accidents. A medium term medical professional in the community described the increased volume of patients in the ER during the boom like this, “In the 2012-2015 range, the biggest thing we saw was a lot more of the industrial accidents; oilfield injuries, MVCs (motor vehicle collisions). We saw a lot more of those just simply because of all the traffic on the roads. And that one [Motor Vehicle Collisions] spike up pretty severely.” The medical professional’s statement about the uptick in motor vehicle collisions ties into another theme of my many interviews with community residents; increasing traffic and poor road conditions caused by oilfield equipment traffic and an a population spike.

The influx of population during the boom also affected the health of the community in terms of the introduction of other types of infectious diseases, which was pointed out to me by a long term city official.

“I know that you do have more folks that aren’t as capable of paying for their healthcare when they go to the hospital and introduce infections from other parts of the world.” When asked to specify what types of infections these were the official went on to say, “Just staph infections, things that are just harder to take care of in a hospital, they just need to be more diligent in a hospital setting to make sure that it doesn’t spread.”

Due to the housing shortage and skyrocketing rent prices that the city saw during the boom community, residents were forced to live in alternative housing conditions such as living in cars, tents, or doubling and tripling up in single family residences. These sorts of living conditions had adverse effects on the public health of the city. According to a long term medical professional, “Yes, there is [sic] health issues [living in these situations]. They spread [viral illnesses], whether it would be tuberculous, all communicable diseases are spread easily when they are in communal living. If they are living in the Salvation Army, or they are living together in tent cities, or whatever, they do tend to find more communicable disease in those areas.” A long term local medical professional elaborated on the types of medical issues that spiked during the boom, “We had a lot of people who we hadn’t seen before [in the hospital] and now they are diabetics. We have a lot of people with high blood pressure, whether they are COPD [Chronic Obstructive Pulmonary Disorder] or smokers.

On the note of infectious illnesses that the city official touched on earlier, a long term medical professional had this to say about the impacts of the population influx on the public health of the community. “The flu. The flu season. We did have an impact. We had a lot of positive flu the year that there was a lot of people here [2013-2014]. I don’t know whether they didn’t get flu [shots]...” Dealing with the increase in infections made it tough for the local medical facilities as they were struggling to have enough medical professionals to deal with the increased population. Skyrocketing costs of living made it much harder to recruit healthcare professionals to this more rural part of the state. The shortage in medical professionals put a strain on access to healthcare.

A medium term medical professional summed up these issues this way.

“Just to see one [a doctor], so as a new patient it was 3 months out, so if your kid got sick then that really limited your options of what you could do so we were just getting mass volume of folks coming in [to the Emergency Room] just because they really had no other options, there just wasn’t a whole lot of access to primary care because of the sudden influx in population. And so the medical community in general, we tried recruiting more folks to the area, getting more pediatricians, getting more PCPs [primary care providers] but it takes time and with the housing costs and everything that happened it was really hard to attract healthcare talent here to the area just because of the cost of living. Midland is not really a sexy place to live and if you can go live cheaper in Dallas that’s what most people [potential healthcare workers] were doing. So that definitely caused a pinch there and then again just for our staffing, with the increase in volumes [patients] that we had, we had to try to find a way to sustain that volume [patients] and care for everybody.”

The housing shortage that the city faced during the boom forced it to take extreme measures to house the healthcare professionals that they were able to attract. A long term healthcare professional told me that they even had to house some healthcare professionals in the new wing of the hospital itself. “We actually have housed nurses and people over at our west campus [of the hospital] for health care workers. We bring in these people [health care professionals], the need for them [is substantial], we’ve had to house them because they can’t find houses.” In addition to the community struggling to recruit healthcare professionals, the hospitals themselves were struggling to accommodate the increased volume of patients, when I asked a local long term medical professional about challenges that the rapidly increasing population caused the city’s hospital during the boom the professional stated,

“We actually did have challenges because we didn’t have enough in-patient beds. We had moved all of our in-patients into our new tower in December, 2012 and when the boom hit, we had more patients and we didn’t have any more beds in the new tower. So we actually came back to the main tower, opened up another whole floor and opened those up.

That was another twenty-some beds that we opened just because we were diverting patients [sending them to surrounding hospitals]. We couldn't handle what we had."

Handling the load of these patients, was of course, worsened by the struggle to attract healthcare workers, but according to a long term medical professional, many health professionals were also lost to the oil field,

"We had a lot of people leaving health care to go to the oil fields to work because they could make more money in the oil fields. I know nurses who left the hospital who went to work for oil companies in the oil fields to make the money, and then they got laid off [during the bust] and came back to health care. They [healthcare professionals] worked on rigs, drove trucks, whatever, because they could make more money."

Issues with access to healthcare seemingly affected communities within the city differently. A medium term medical professional outlined how the boom affected healthcare for people from different socioeconomic backgrounds differently,

"It was definitely exacerbated (the dichotomy of healthcare between communities) by the boom because the rich get richer and the poor get poorer, so there were folks that were not in the oilfield industry, you know overall the economy was picking up a little bit; you know McDonald's was offering \$15 an hour for folks to start and those kind of things. So pay would go up a little bit in that but people would have to job hop and pick up side jobs and other stuff, typically demographically speaking you'd see the male of the house would do oilfield and be out there [on site] for weeks at a time so you're looking at a single mom trying to take care of the kids while working two jobs and so when any healthcare needs came up ER was pretty much the only option that they would have, calling EMS was the other option because of transport, simply just transport needs, now they can, EMS can go out to a scene go on a call [and] they don't have to transport if they can handle the situation there. And a lot of it, there was an uptick in no transport calls as well, so they get out there evaluate the patients and they are okay, they don't need to go to the ER but we can have somebody follow up with them later from the community health paramedic program."

## **Sense of Place**

When asked what sort of changes they had seen in the community since 2009, a long term resident at the local YMCA when asked what sort of changes they had seen in the community since 2009 they stated, “More people, heavier traffic, and more businesses. More wear and tear on city and county roads and more use of local services such as, fire, EMS, etc.” this quote outlines how rapid population growth prompts the genesis of the changes that impacted the sense of place in the community. More so than just the volume of new population, the types of people that came into the city also had specific impacts on the community. When speaking of the types of individuals that the oil boom attracted and how that population altered the city, a high ranking medium term city official stated,

“So there are probably two ways to look at it; the major oil companies relocate a lot of engineers here and their families, which were young professionals, so there was families as well as single young professionals, so from a family standpoint I think it’s been good to bring in those families, younger families, younger kids and generations that can learn about Midland and get it engaged our system. The young professionals on the other hand, socially probably are taking the biggest impact as Midland doesn’t have much to offer them from that standpoint but yet this [city] council, really the last 6 years of councils have recognized that we have to do more for our young professionals and even our young families. So what we’ve done is to continue to focus on revitalizing downtown, having more outdoor events. Whether it be concerts, festivals, church activities. Things that are downtown, related to our parks, bringing in more running programs, jogging programs, biking programs, you’re seeing a lot more of that, the foundations seem to be doing more for the community, the city council approving restaurants and lounges that offer a little more nightlife. So we do recognize it, and there’s probably a missing part here in Midland but we’re working on trying to keep everybody here because they can have a little bit of everything to do.”

The population that the oil boom attracted made the population of the city much younger, which created economic opportunities for developers that wanted to cater to the entertainment needs for a younger population. The city also made efforts to try to cater to the needs of this new younger population as well. However, some of the native Midlanders did not take too well to these construction developments and new businesses. When speaking about this, one medium term resident stated, “Too many new fast food joints in too many strip centers where there is no place to park. Too much traffic and not enough infrastructure to handle it.” The new businesses that the oil boom created the labor shortage. “More people, more businesses, but not enough staff,” stated one medium term resident when asked about the changes they had witnessed in the city during the boom.

A couple of local residents spoke about how the increase in high paying blue collar jobs created competition in the labor market, which affected the quality of life of community residents. When asked if their quality of life suffered during the oil boom one long time community resident stated, “Yes, too many people [in the community] hampered basic service availability. Lack of professionals, as workers went to oil [the] field.” A medium term resident spoke about how oil and gas industry pay affected the labor market, “Everyone expects oilfield money so businesses can’t keep good people or have to pay very high wages.”

Another theme that I found in my interviews was talk of a labor shortage caused by the population increase along with the increase in high paying blue collar jobs.

A high ranking medium term city official also elaborated on the topic further in our interview,

“The whole labor market issue was, everybody went into the oil and gas sector so everybody else in every other industry was suffering because we could not compete on the wages. So it was good for the oil and gas, because they needed them, and they were able to maintain. So there is [sic] two ways of looking at it; they were getting paid and they were getting paid well and they were able to put that money back into the economy, which was nice, those of us that were in the retail business really enjoyed it, on the flipside those of us in the retail business were so busy that were weren’t able to keep our units clean, that being apartments, hotels, restaurants, just stores in general. You go to the super market you would see empty shelves; Walmart ran a story [in the Midland Report Telegram] about how they didn’t have enough stockers to keep the shelves filled so they had to start closing at midnight so they could get the one or two workers they had to stock the shelves to get open the next morning. The city became very dirty because the city was down 300 employees, so we couldn’t keep the city clean, the parks maintained, streets were hard to keep up with...it was bad”.

The city official outlined how the labor shortage affected the quality of life in the city as far as service and convenience and how the labor shortage affected some of the city institutions. A short term resident had this to say when it came to the ripple effect of the labor shortage on the city’s institutions and convenience, “Yes there is less quality [when] we ask for any services; schools lose quality teachers to the oilfield and struggle to find replacements, restaurants services suffered, oilfield trucks and [increased] traffic ruined roads, and tax burden of fixing roads falls on citizens and not on oil and gas companies. It was also hard to get home, car and appliance repairs done.” A loss of convenience seemed to be very noticeable to residents of the city. A high ranking long term city official expanded upon the theme with an example of the school district struggles to find personnel.



“Well they didn’t have cafeteria workers, they didn’t have bus drivers, bus drivers were behind on their routes because there was CDL [Commercial Driver’s License] drivers that were all trying to get the bigger dollars [in the oil industry]. Cafeterias [workers] and bus drivers were probably the biggest ones [areas of loss]. The teachers; wasn’t so bad because the [Scharbauer] Foundation stepped in to give raises and that helped to retain teachers and not lose them [to the oil industry], even though they did lose quite a few [teachers] to secretarial jobs [in the oil industry] but we saw them kind of comeback little by little.”

The school district also had issues with having enough resources to handle the spike they experienced in students. A long term resident summed up the issues the school district had during the boom like this, “MISD depends on spouses to take teaching positions, MISD doesn’t budget well for student needs.”

The issues that the population increase and staffing issues caused the school district led to some more affluent parents choosing private schools for their children; when listing the issues that the spike in population caused a long term resident stated, “Overcrowded classrooms which has led me and my husband to keep our son in private school.”

When discussing the issues that the spike in student population caused the school district a high ranking medium term city official stated,

“It went up, so with all of the families moving in with the oil companies and bringing all the kids, one of the biggest challenges that I heard was all of the international families. So we had 32 different languages [students that spoke 32 different foreign languages], means you need to have 32 different teachers who can speak the languages to educate them. So it was big challenge having all of the international families.”

Another institution in the community that was affected by the labor shortage during the oil boom was the city police department. A high ranking medium term city official gave an example of how the police department, EMS and fire department were affected,

“Police officers; we [the city of Midland] finished [trained] a cadet class [during the boom] and we put out 26 officers and we lost 18 of them to the oil and gas industry after they had been in uniform for less than 6 months. It cost us \$180,000 to train, pay their wages and insurance, give them a gun, put them in uniform and put them in a car. So \$180,000 and yet we lost them within 6 months to the oil and gas industry. So we had to catch up from that, fire fighters are the same way [losing personnel to the oil and gas industry]. So it was a good and a bad impact.”

Traffic was an issue that affected the health of the city in that there was a spike in motor vehicle accidents as well as an inconvenience for community residents. When speaking about how the influx of oil and gas workers in the city affected their quality of life, one long term resident had this to say,

“[I] suffered in more traffic, but having lived in metropolitan areas, I don’t mind it as much as the people who have always lived here—not so bad in the grand scheme of things. Traffic is still worse than it was before the boom—[it] hasn’t waned much. Positive quality of life impact: more young people and retail. Infrastructure of roads and other such infrastructure issues can be an irritant, but not experienced overtly regularly.”

The increase in traffic was definitely something that was staggering during the oil boom, native Midlanders and the infrastructure seemingly had a hard time dealing with it and adjusting to it. During my interview with a local medium term city official he explained these traffic issues further, “Traffic on the roads...our road traffic infrastructure was at its maximum (capacity), we didn’t have enough roads, the roads were getting into disrepair.”

When asked if the traffic and road issues were more of a product of increased volume of traffic on the road or more of a product of the wear and tear created by oilfield equipment and vehicles the official had this to say,

“Combined, 13,000 more vehicles on the roads, heavy truck traffic, it was just a heavy use of the roads. The city didn’t have the equipment and the manpower to keep up with all the potholes, the need for more roads, so that became a challenge. It’s really everything, parks, roads, housing, labor, everything was just happening so fast that the city couldn’t keep up with the demand. And so it was a good challenge, they weren’t bad challenges, they were good challenges. Businesses were trying to relocate to Midland as fast as they could to get spaces. Real estate went up really high.”

The official described how the confluence of increased general traffic, increased oilfield traffic and a shortage of city workers created a situation where the roads of the city were in widespread disrepair. The rising cost of living did not only create issues for medical professional recruitment but the entire community experienced skyrocketed rent and home prices along with a housing shortage.

A medium term city official delved deeper into the topic during our interview,

“Housing, the market, there was a high demand, there became a high demand for homes because so many people were moving into Midland so fast to get a good paying job with good benefits, so there became a shortage of homes and apartments and man camps, anything with housing was an issue, so you had people doubling and tripling up in homes with family, you saw more trailers in neighborhoods and in backyards so that became an issue.”

The housing shortage became so severe that some residents had to resort to living in alternative living situations in the less affluent areas of town. A long term community resident explained this to me during our interview. “We had people living in tents on the south side of the city. I live north of the loop [affluent area], so I didn’t see tents in my area, but there were tents on the south side of town [less affluent area].”

The influx of population during the oil boom seemingly created some issues with social community cohesion as well. This new younger nonnative population seemed to make native community residents uncomfortable. A long term resident summed up how they felt the community had changed due to the influx of oil and gas workers, “We went from a fairly quiet small city where you knew your neighbor to a big little city with all the pluses and minuses.”

City officials also expressed some concern over the new population causing the city to lose its “small town feel,” a long term city official describes these issues like this,

“I grew up in Midland, and when I was young and was in school here we were a really really big little town and during this last boom we probably became less of a little town. Little town meaning there was just an easy living type atmosphere as far as everybody knowing [everybody]. I know [Midland had around] 55,000-60,000 people when I grew up here but you still felt like you knew nearly everybody. Certainly Midland was known for being open and friendly and some of that, not all of it, but some of that has been lost when you have an influx as fast as what you had from people that come from other parts of the country where the culture is a little bit different, they don’t know anybody here. Getting them assimilated into the community [was a challenge].”

### **Alternative Views**

During my interviews I was also able to glean information about some less evident themes regarding what went on during the oil boom and the impacts of the boom. The rising tide of the oil boom did not lift all boats and there were some unintended negative consequences for the community. Although there was an increase in high paying blue collar jobs, these jobs were not distributed out evenly among the residents of the city.

Residents of the city who lived on fixed income, public sector employees or working poor, saw their cost of living skyrocket and were unable to access the wealth that was being generated by the oil boom. As is the current trend in the United States, the wealthiest Midlanders benefited from the oil boom more than anyone and were only slightly inconvenienced by the negative impacts. When I asked a long term community resident if their quality of life suffered during the oil boom she stated, “My quality of life did not suffer, me personally, no. My husband is in the oil and gas business, so we like it [the oil boom]. Other than waiting in restaurants and things like that, most certainly. It’s like, “Well, are we going out? Do we want to wait an hour and half for a table, or do we just call and pick it up?” But no, I personally have not had a change in the life [during the boom],” said this long term resident. The city of Midland was growing at such a rapid pace during the oil boom that the city and private entities were struggling to provide housing, lodging and entertainment to supply the needs of the growing changing community. The community saw a commercial and residential real estate explosion that accompanied the oil and gas boom. As construction projects are planned months and years in advance, if a bust occurs there is a risk that the community could overbuild. These alternative themes are the aftershocks of the oil boom that the community will be dealing with for years to come.

### **Neglected Populations**

The influx of high-paying blue collar jobs provided few opportunities for people from the more impoverished areas of the city.

Although poverty did go down substantially during the oil boom, as can be seen in the graph provided earlier, when I spoke to community residents they still complained of issues of income inequality and lack of access to certain needs. I believe that the decreasing poverty rate is more a function of people coming into the community and taking high paying jobs than it is indicative of native Midlanders who were in poverty before the boom benefiting from the boom. When I asked a long term resident if they felt like the oil boom benefited lower income individuals and less affluent areas of the city the way that it benefited others they replied,

“No, certainly not. For a myriad of reasons, the term good old boys club has been overused, but it certainly is a private organization when you start talking about oil and gas industry. The lion's share of the profits are going to the business owners, stockholders, and upper management. The jobs that people in the south side [less affluent area] get are as welders, or as roustabouts, or whatever those... They make a significant amount of money, but they work ungodly hours under very dangerous circumstances to do that. It's all no different than a coal miner.”

When I asked a local long term law enforcement professional which communities have been most affected by the oil boom he replied, “Lower income families were placed in hardship with rapid increase in cost of living coupled with a tough job market stressing service oriented companies or organizations including the police department.” When I asked a similar question to a medium term medical professional in the city he stated, “It still typically happens mostly in the underserved communities, the poor communities, mainly like the south sides of town and you see that just again because of that [lack of] access to healthcare, so your more affluent areas of town, like your Green Tree, pretty much most [of] the North stuff, they all have access to primary care.”

This quote speaks to the fact that even though the economy in the city was booming and the city became one of the wealthiest per capita in the United States of America, there were still people in this community who did not have access to primary healthcare and the oil boom did not change that.

These people in the poorer communities in Midland did not see the benefits of the oil boom that many others in the community saw but they did experience the downsides of it. The main downside that hampered the most vulnerable individuals in the city was the rising cost of living. When asked if they felt that their quality of life suffered during the boom, one medium term community resident stated, “It’s hard to say, I don’t know my neighbors any more, and I am tired of traffic and potholes. Prices could go down and it would be okay with me.” Another medium term resident summed it up more simply when they said, “Housing market prices skyrocketed.” A long term resident also had an interesting statement about the rising cost of living and how it affected certain types of residents differently. When I asked this resident about how the influx of new population impacted the city he stated, “Major growth of new housing developments, significant increase in food and other prices. Only those who had been through earlier boom/bust cycles were prepared for the end of this boom.” The main area that I noticed an increase in the cost of living for the poorest Midlanders was the rising rent costs.

The community saw median rent price increases of more than \$50 for three out of the 5 years of the oil boom, with price increases of more than \$100 each of the final two years of the five year boom.

When people are experiencing rent increases like this and those increases do not coincide with income increases, it takes a toll on renter's disposable incomes. The rent hikes towards the end of the oil boom coincided with an increase in homelessness according to city residents. One long term resident had this to say in regard to the city's growth accompanying rising levels of homelessness, "The growth exploded along the interstate [I-20] but there was a lot of people homeless. They were living in cars, in tents, and everything because there was not enough housing here for that [to accommodate everyone]." Home owners that were living on a fixed income also suffered due to rising property taxes. A long term resident spoke about how their elderly parents were affected by the boom, "My parents are retired and live here. The good thing about it is their sales tax or their MISD [Midland Independent School District] taxes are locked because they are over the age of 65, so it didn't affect them. But they are on a fixed income. But yes, just taxes. Property taxes, however, the rate did go down, but the overall value of your home went up. So, you ended up paying more in taxes, in property taxes."

Although the oil boom brought tremendous wealth to the community and provided well-paying blue collar jobs for many people, the city's African American community was seemingly left out. Even if blacks were able to find employment in the local oil and gas industry they were usually relegated to marginalized positions in the industry compared to their white and Hispanic counterparts. A local long term resident stated this when asked about the subject. "I think they're [blacks] out in the field, more than they are in the office."



Unless the [black] individual who is trained in the oil industry as a geologist or a land person or something like that, then they going to be...I guess you can refer to it as involved in the oil patch [low level] as opposed to being involved in the decision making process [upper level].” Another long term community resident explained this phenomenon to me further,

“For African American friends of mine who are in oil and gas industry, they may work in an office environment. They're not in management or in a supervisory position; they're just workers. They're no different than the folks out in production. They don't realize any significant bounce in their standard of living as a result of these boom cycles. Again, you can make more money, but you're going to work more hours. You're receiving more hours to get this higher standard of living which, in a few months, may not be there.”

Even black entrepreneurs had a tough time making money in the oil and gas space during such a booming time. Opportunities for contractors who wanted to work with these oil companies also seemed to be distributed based on political lines as well,

“And I must be very candid with you, even legitimate black entrepreneurs, have difficulty getting business as opposed to doing business because...I'm going to be very upfront with you. The Anglo-business community is still very discriminatory. They're very select. If you aren't “in the republican vein,” in too many instances, you won't get any favors or any support of its members. A lot of people around here who would otherwise be democrats, and you can't separate the oil industry and what goes on in West Texas from a political climate in this locale because they are meshed. They are one and the same. So, if you find yourself advocating from a democratic perspective, you going to have difficulty from a business standpoint in particular. So, I've seen, [and] my wife as well, and we know people at this very moment who have slipped [changed political allegiance] in order to “be a part of the establishment”, and of course make business. Black folk, [as] you referenced added to a business, black folk have difficulty getting our businesses off the ground. Especially in the area of trucking, land, [oil] field, paving companies.”

## **Privatized Gains and Socialized Losses**

When I asked a local short term resident about how they felt the influx of new population during the boom impacted the city they provided this perspective, “Yes there is less quality we ask [when] we ask for any services; schools lose quality teachers to the oilfield and struggle to find replacements, restaurant services suffered, oilfield trucks and traffic ruined roads, and the burden of fixing roads falls on citizens and not on oil and gas companies.” The first part of that quote was fairly typical but what the resident touched on at the end of the statement was the fact that during the oil boom the companies privatize the gains and socialize the losses, meaning that the benefits of the boom are reaped by private companies and the private citizens that work for them and the adverse effects of the boom are felt by the community as a whole and its institutions. In an oil boom there are local companies and multinational corporations that are exploiting the resources in the area to enrich their stockholders and owners. When speaking to a long term community resident regarding privatized gains and socialized losses as it relates to the most recent fracking oil boom in Midland and the impacts that that boom has on different members of the population the resident had this to say.

“Well, the people who make the most from that alliance [big oil, the local government and the permanent residents] don't live here. Now, they may be here, but they don't live here. Whatever is left is left for the citizens of this community. Unfortunately, it disproportionately impacts lower income neighborhoods where they do that kind of thing. That has always been the case, and it's not right. It disproportionately impacts people on the south side of Midland [lower income], because they don't care. They'll drill a well down the street from them, and they don't care what the fallout is, but they wouldn't do the same thing in Green Tree [higher income].”



**Figure 3.1** Tent community in the south side of Midland, TX (Source: NewsWest 9/Raycom Media)



**Figure 3.2** Home in Green Tree Subdivision in Northern Midland, TX (Source: Zillow)

Through the process of harvesting oil and gas, resource extractive firms generate an extraordinary amount of wealth. In turn the retail, entertainment, construction and real estate sectors indirectly benefit. When speaking about all of this economic prosperity a long term city official had this to say, “Economically I would agree with your thesis; we had record low unemployment rates, you had a huge influx of people that came in. From an economic standpoint our sales tax revenue went up tremendously.” Though the city saw a spike in sales tax revenue this revenue did not necessarily translate to benefits for public goods, institutions and services. Keep in mind that these services were already being strained by a population spike and a labor shortage. These public services and goods also did not benefit from the wealth that was being generated in the community during this boom at the rate these private companies were. When I asked a long term community resident about the impact that the new population, brought in by the oil boom, had on the city they replied, “[The city] needs more and updated schools, but a [politically] conservative area doesn’t want to pay for the tax increase it requires. Infrastructure of roads and other such infrastructure issues can be an irritant, but [are] not experienced overtly regularly.”

Another long term community resident that is very politically active fleshed out this idea of the area potentially not benefitting from these booms the way that they could due to politically ideology of the local government and its citizens:

“Well, the problem there lies in the fact this area is a victim of its own conservatism. When the boom comes, as I’ve said...as a school board member and some of the other board members, when the boom comes, we ought to be investing in facilities, technology, the whole bit. We are still behind in relative technology. We ought to be changing out technology as frequently as it changes [keeping up with advancements]. So, unfortunately, the policy makers pride themselves on, we heard last night at school board, on “not raising taxes.” What? So? That doesn’t mean a thing when your schools are crumbling or when they are overcrowded. Or when we can’t buy the most sophisticated technology and incorporate it into the school district. But our kids ought to be going home with electronic books as opposed to hoping they get a text book that they can use in the classroom. So, it’s a matter of commitment to investing in public schools, in particular, during periods of the boom.”

During the oil boom, the economy is great but there are many economic, social, and environmental consequences. In addition to the changes caused by the population increases, the increase in high paying blue collar jobs seemed to have an effect on the overall education of the community. When I asked a medium term high ranking city official if the oil boom had any sort of negative effects on Midland College, they stated; “I don’t think so, other than enrollment was down. Nobody wanted to go to school because they wanted to make money. So all of the college students dropped out to get into the oil field.” A high ranking administrator at the community college echoed this sentiment and also spoke about how the boom affected the staff of the college.

“Most of our students are part-time and they were all dropping out to go to work and doing really well financially because there were all of these great jobs in the industry. In 2011, we set a record enrollment of 7,000 credit students and then we were as low as 4,500 a couple of years ago [2013-2014]. Our enrollments really did go off the cliff, but now we’re going back up.

We were back up to 6,000 this Fall [2016], so you see that trail line in Midland [decrease in students during the boom].”

In addition to the oil boom making it more difficult for the college to maintain enrollment, the boom also made it difficult for the college to keep and recruit staff. The high ranking administrator elaborated on this.

“We, as a college as far as our employees, we couldn’t keep business staff, IT staff, clerical staff. They were all leaving to get better-paying jobs than what we could offer. Our faculty was stable. We didn’t lose a lot of faculty during that period. Recruitment [of staff] was hard. We had a lot of positions that we left open because we couldn’t fill the positions or we couldn’t find qualified people to do that. Again, faculty were more stable and we didn’t have that much problem with faculty, but all of our other staff.

All of our other administrators and staff, it was really hard to recruit and was really hard to keep them once we got them.”

The increase in well-paying blue collar jobs in the community during oil booms has traditionally had adverse effects on the community college according to a long term resident, “For us, the pattern has always been the college really does well when the economy slows down and enrollments go up, and then when the economy takes off, enrollments go down.” In addition, decreases in contact hours affected the college’s funding from the state. A long term community resident who happened to be high ranking administrator at the college summed it up this way.

“It affected it [the funding] in this way. When you go back and look at the last biennium [budget] and our formula is based on contact hours, which means enrollments, our contact hours were down while all of that formula was being calculated. So we ended up losing big time from the state two years ago just because our contact hours were down. We lost double-digit from state in terms of reduction and again it was timing. We’re looking better now that enrollments are better. If they were to write a check today, if the state were to do exactly what our formula calls for we would be up significantly.

Yes, it affected us in the sense that we didn't have nearly the state support that we would have liked to have had."

In order to accommodate the spike in population that the community was experiencing during the oil boom commercial and residential real estate development increased exponentially. During the oil boom of the 1980s, the city of Houston experienced a similar spike in development and that city suffered the consequences of overbuilding in the aftermath of the boom. Overbuilding has consequences for a community such as crime, extreme traffic and pollution. These consequences are things that the permanent residents and the local government will have to deal with. When the boom goes bust the transient workers will leave and the private companies that did the real estate development will have already gotten paid and the franchises that built new locations in the city will simply just close those locations and move on to the next booming city.

There were some residents that I interviewed that expressed concerns about the long term potential environmental costs of all of the fracking that occurred during the boom and that maybe those types of things are being overlooked due to the city being over reliant on the oil and gas industry. There was one long term resident that really fleshed these ideas out.

"Well, when you have a diverse economic base like you would in, say, Dallas, there are communities that would say, "We won't allow fracking," or "We won't allow drilling in the city limits." There are some limitations. There are other industries that you could choose from, whereas here, oil is king. We just formed that devil's pact with the oil and gas industry from the standpoint of we know that there's going to be these problems. I think the only thing that really bothers me is that I don't think fracking is 100% safe as the oil and gas industry poses. I'm worried about groundwater and things like that.

I don't think you can, for example, go out in our parking lot and crack the surface, pour water on it, and say, "Well, the water is only going to go so deep." No. You don't know where the water is going to go. I think that's the thing. I think the tradeoff is the political jobs and the economic prosperity it brings is worth it to a significant portion of population. To get in bed with the oil and gas just for that, only to see when that stuff is gone, when that water is polluted, they will pull out, and they will go somewhere else. Those are the kinds of things I don't see oil and gas companies being interested in—investing in a community and making things better overall. They'll support a high school football team, or they'll put signage up in an arena. They'll do those kinds of things, but I don't see them investing in communities if they're going to stay."

## **Conclusion**

This study examines the impacts that the recent oil and gas boom had on crime, health and sense of place in Midland, TX. By interviewing a spectrum of citizens with differing levels of experience in the city I was able to present a holistic view of how the oil boom affected the community socially and economically. Although this study focuses on the oil boom that occurred from 2009-2014, interview subjects were also able to provide data on what occurred during the bust following the boom. Information that they provided regarding what occurred during earlier booms was consistent with their descriptions of the most recent boom. Social disruptions such as the impacts on crime and health are also evident in other published boomtown research. These social disruptions were consistent with the Boomtown Impact Model and social disruption theory. The research that had been done on boomtowns has largely focused on remote rural small cities, yet the findings here are consistent.

The themes that I was able to glean from my interviews show that a spike in population and an increase in well-paying blue collar jobs acted as the catalysts for the social disruptions experienced in Midland.



One of the most prominent of these social disruptions was the stress on community institutions. The service industry was strained by having to accommodate an increasing population and an intense competition for blue collar workers. The police department, the school districts, and the hospitals were all heavily strained by the rapidly increasing population. High paying blue collar jobs in the oil and gas industry created a shortage in employees that these institutions depend on to function to their maximum capability. The city also experienced a shortage in fire department and EMS employees. The school district also saw their ranks raided by oil and gas related companies just as they were experiencing record high enrollments. The service industry also experienced this shortage and employees, and many long term residents felt inconvenienced by a drop in quality and efficiency of services. The need that the oil and gas industry had for employees led to the population increase that the community experienced; however, although long term citizens generally view oil booms favorably, the new residents the boom attracted did not actually blend into the existing community. The transient workers that the oil boom attracts seem to cause several social disruptions. These disruptions included a rise in crime and an increase in spread of infectious diseases. These crimes included drug and alcohol related offenses as well as violent crime.

The rising population and the increasing presence of oil and gas vehicles led to traffic gridlock and an increase in motor vehicle accidents. The increase in life-threatening car accidents provided a challenge for the hospitals in the community. The hospitals also saw an increase in drug overdoses as well traumatic injuries resulting from increasing numbers of victims of violence appearing in their emergency rooms.

These hospitals also found it difficult to fill their staff due to increasing home and rental prices in the city. The increasing rental prices in the city were a side effect of the housing shortage that was created by the rapid increase in population. Other city institutions also found it difficult to recruit professionals to fill the need they had for employees due to the high cost of living in the city. The workforce shortages experienced by the city's institutions created a strain on the services that they were able to provide citizens. This strain hurt the quality of life of the long term residents in the community and made them feel as though the city did not *feel the same* as it did prior to the boom.

The city did not feel the same to local long term residents due to many of the conveniences of small town living being lost. From the information I gathered during my interviews it seems that local long term residents felt as though the services provided by the local government deteriorated as a result of the boom. The stress that the increase in population and the competition for blue collar workers put on the city institutions and service industries eroded the small-town conveniences to which long term residents had become accustomed. Due to much heavier motor vehicle traffic, the city's roads fell into disrepair and the city's government struggled to maintain them because they were in an employee crunch.

In the previous research I found very little published work on how booms affected blacks, older people, and public employees. The black residents in the community did not see opportunities to obtain gainful employment in the oil and gas industry the way other residents were able to.

The older residents living on fixed incomes in the city suffered during the boom as their property taxes surged upward, due to their property values increasing exponentially along with the housing market. Public employees also saw their cost of living increase yet did not see a rise in pay. Another item that I did not see examined in previous boomtown research was the issue of privatized gains and socialized losses. Privatized gains and socialized losses was a major theme of my research and it is especially relevant as all across the world we are witnessing environmental issues associated with fracking and complications related to climate change. In my study, Midland experienced a decline in the quality of public education, increases in crime, the weakening of public health along with the destruction of roads. Oil and gas companies do not appear to be doing much to try to correct these issues. Going forward, I think that this theme is something that should be scrutinized further in future boomtown research.

The results of my study reveal that corporations will come into communities and exploit the natural resources and create circumstances that are potentially harmful to the most financially vulnerable community members. In addition, local communities will often not require corporations, and people locally who make the most money working for these corporations, to pay enough in taxes to create a situation where the whole community can benefit from the exploitation of local resources. The corporations and private citizens that make the most money during the boom do not use their wealth and power to counteract the social disruptions that occur during the boom.

Natural resource booms, and all booms, tremendously transform communities economically and socially.

The effects of these booms permeate all facets of the community. These effects transform the experiences of the residents of the community as well as the perception of the city from visitors and outsiders. In Midland, the oil boom had many unintended social and economic consequences that will affect the city for years to come. Studying the effects of a natural resource bust is an area where important future research should be carried out.

## **BIBLIOGRAPHY**

- Alter, Ted, Kathy Brasier, Diane McLaughlin, and Fern K. Willits. 2010. Baseline Socioeconomic Analysis for the Marcellus Shale Development in Pennsylvania. Report to the Appalachian Regional Commission. Retrieved August 29, 2013 (<http://www.institutepa.org/PDF/Marcellus/MarcellusShaleStudy08312010.pdf>).
- Brown, Timothy C. 2010. Social Change, Social Capital and Civic Community: A Qualitative Study of the Long Term Effects of Industrial Restricting on a Coastal Community. Unpublished Dissertation. Baton Rouge, LA: Louisiana State University.
- Chang-i, H. (1985). Energy-related boom towns: Problems, causes, policies and modelling. In T. R. Lakshmanan, & B. Johansson (Eds.), *Large-scale energy projects: Assessment of regional consequences and international comparison of experiences with models and methods* (pp. 215-232). London: Reaktion Books.
- Christopherson, S. and N. Rightor. 2012. "How Shale Gas Extraction Affects Drilling Localities: Lessons for Regional and City Policy Makers," *Journal of Town & City Management* 2(4).
- England, J. L. and Albrecht, S. L. (1984). 'Boomtowns and Social Disruption.' *Rural Sociology* 49: 230–249.
- Ennis, G., Finlayson, M. & Speering, G. (2013) 'Expecting a boomtown? Exploring potential housing-related impacts of large resource developments in Darwin', *Human Geographies* 7(1), pp. 33-42.

- Fernando, F. N. and Cooley, D. R. 2015. An oil boom's effect on quality of life (QoL): Lessons from western North Dakota. *Applied Research in Quality of Life*.  
Published ahead of print: DOI 10.1007/s11482-015-9422-y.
- Ford, A. (1977a). —Breaking the Stalemate: An Analysis of Boom-town Mitigation Policies (Report No. LA-7046-MS).|| Los Alamos Laboratories.
- Forsyth, Craig J., Asha D. Luthra and William B. Bankston. 2007. "Framing Perceptions of Oil Development and Social Disruption." *The Social Science Journal* 44:287-299.
- Freudenburg, W. 1981 "Women and Men in an Energy Boomtown: Adjustment, Alienation, Adaptation" *Rural Sociology* 46:2:220-244
- Freudenburg, W.R., 1984. "Boomtown's Youth: The Differential Impacts of Rapid Community Growth on Adolescents and Adults," *American Sociological Review* 49:697-705.
- Freudenburg, W.R. 1986. The density of acquaintanceship: An overlooked variable in community research. *American Journal of Sociology* 92(1):27-63.
- Freudenburg, W. and Gramling, R 1991 "Community Impacts of Technological Change: Towards a Longitudinal Perspective" *Social Forces* 1991:70:937
- Gilmore, J. S. (1976). Boom towns may hinder energy resource development: Isolated rural communities cannot handle sudden industrialization and growth without help. *Science*, 191(4227), 535-540.
- Goldenburg, Shira. 2008. "Youth Sexual Behavior in a Boomtown: Implications for the Control of Sexually Transmitted Infections." *Sexually Transmitted Infections* 84:220-223.

Greider, T., and R. S. Krannich. 1985. Neighboring patterns, social support, and rapid growth: A comparative analysis from three Western communities. *Social. Perspect.* 28(1):51-70.

Greider, T., Krannich, R.S. & Berry, E. H. 1991. Local identity, solidarity, and trust in changing rural communities. *Sociological Focus*, 24, 263-282.

Jacquet, J. 2009. Energy Boomtowns and Natural Gas: Implications for Marcellus Shale Local Governments and Rural Communities. Northeast Regional Center for Rural Development, Paper Number 43: 63 pp.

Jacquet, J. B., & Kay, D. L., (2014). The unconventional boomtown: Updating the impact model to fit new spatial and temporal scales. *Journal of Rural and Community Development*, 9(1), 1-23.

Jacquet, J., and R.C. Stedman. 2014. The risk of social-psychological disruption as an impact of energy development and environmental change. *Journal of Environmental Planning and Management* 57(9): 1285-1304

Keough, S. 2015. "Planning for Growth in a Natural Resource Boomtown: Challenges for Urban Planners in Fort McMurray, Alberta." *Urban Geography*. 36 (5): 1-28.  
DOI: 10.1080/02723638.2015.1049482

Kowalski, Lindsay and Gary Zajac. 2012. A Preliminary Examination of Marcellus Shale Drilling Activity and Crime Trends in Pennsylvania. University Park, PA: Justice Center for Research.

Krannich, R.S. and A.E. Luloff. 1991. "Problems of Resource Dependency in U.S. Rural Communities." *Progress in Rural Policy and Planning* 1(1):5-18.

Kulig, J., D. Edge, and J. Guernsey. 2005. "Community Resiliency and Health Status: What Are the Links?" *Journal of Rural and Community Development* 3 (3): 76-94.

- Ladd, Anthony E. 2013. "Stakeholder Perceptions of Socio-environmental Impacts From Unconventional Natural Gas Development and Hydraulic Fracturing in the Haynesville Shale." *Journal of Rural Social Sciences* 28(2): 56-89.
- Little, R. L. 1977 "Some Social Consequences of Boom Towns" *North Dakota Law Review* 53:3:401-426
- Low, S. M. & Altman, I. (1992). Place attachment: A conceptual inquiry. In I. Altman & S. Low (Eds.), *Place attachment* (pp. 1-12). New York: Plenum Press.
- Luthra, Asha D. 2006. *The Relationship of Crime and Oil Development in the Coastal Regions of Louisiana*. Unpublished dissertation. Retrieved Jan. 2, 2014 ([http://etd.lsu.edu/docs/available/etd-06122006-133233/unrestricted/Luthra\\_dis.pdf](http://etd.lsu.edu/docs/available/etd-06122006-133233/unrestricted/Luthra_dis.pdf))
- Luthra, Asha D., William B. Bankston, DeAnn M. Kalich, and Craig J. Forsyth. 2007. "Economic Fluctuation and Crime: A Time Series Analysis of the Effects of Oil Development in the Coastal Regions of Louisiana." *Deviant Behavior* 28:113-130.
- Manzo, L. C. 2005. For better or worse: exploring multiple dimensions of place meaning. *Journal of Environmental Psychology* 25: 67-86.
- Murdock, S.H., and F.L. Leistriz, 1979, *Energy Development in the Western United States: Impact on Rural Areas*, New York: Praeger Publishers
- Park, M. and Stokowski, P. A. (2009). 'Social Disruption Theory and Crime in Rural Communities: Comparisons across Three Levels of Tourism Growth.' *Tourism Management* 30: 905-915.
- Parkins JR, Angell AC (2011) Linking social structure, fragmentation, and substance abuse in a resource-based community. *Community Work Fam* 14(1):39-55

- Proshansky, H. M., Fabian, A. K., & Kaminoff, R. (1983). Place-identity: Physical world socialization of the self. *Journal of Environmental Psychology*, 3, 57-83.
- Sampson, Robert and W. Byron Groves. 1989. "Community Structure and Crime: Testing Social Disorganization Theory." *American Journal of Sociology* 94: 774-802.
- Sangaramoorthy, T, Jamison, A, Boyle, M, Payne-Sturges, D, Sapkota, A, Milton, D, Wilson, S. Place-based perceptions of the impacts of fracking along the Marcellus Shale. *Soc Sci Med* 2016, 151:27–37.
- Shields, R. (2012) 'Feral suburbs: cultural topologies of social reproduction, Fort McMurray, Canada', *International Journal of Cultural Studies* 15(3), pp. 205-215.
- Summers, G., Branch, K. 1984 "Economic Development and Community Social Change" *Annual Review of Sociology*, 10
- Taylor A & Winter J (2013) Welcome to the Boomtown! Darwin and the 'Boomtown Syndrome' – 201303, <http://www.cdu.edu.au/the-northern-institute/research-brief-series>
- Ruddell, Rick, Dheeshana S. Jayasundara, Roni Mayzer, and Thomasine Heitkamp. 2014. "Drilling Down: An Examination of the Boom-Crime Relationship in Resource Based Boom Counties" *Western Criminology Review* 15(1):3-17 (<http://wcr.sonoma.edu/v15n1/Ruddell.pdf>).
- Ruddell, R., & Ortiz, N. (2014). Boomtown blues: Long-term community perceptions of crime and disorder. *American Journal of Criminal Justice*, 40(1), 129–146. doi: 10.1007/s12103-014-9237-7
- Wilkinson, K., Thompson, J., Reynolds Jr, R., and Ostresh, L. 1982. "Local Social Disruption and Western Energy Development: A critical review" *Pacific Sociological Review* 25:275-296



Williams A, Kitchen P. Sense of place and health in Hamilton, Ontario: A case study. *Social Indicators Research*. 2012;108(2):257–276. doi: 10.1007/s11205-012-0065-1.