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### **Bakken Investigation Tour August 26-28, 2014**

Paul Thares, Community Development Field Specialist for SDSU Extension, visited the North Dakota oil patch to meet with community, gas and oil industry leaders, and business owners. The information he learned will assist him as he continues his work with South Dakota communities that are or will have a direct or indirect impact from this oil and gas boom. They also have the potential of impact from a future oil boom in South Dakota.

Currently oil companies are only extracting 6% of the shale oil. After talking with Kathleen Neset owner/geologist of NCS (Neset Consulting Service), Paul found that Kathleen believes the boom is a 30 to 50 year play.

The route:

Day 1, Aug 26 –Hwy 12 to Hwy 22 just east of Reeder ND up to Dickinson then on to Killdeer, north to Hwy 23 then east to New Town to Hwy 8, north on 8 to Stanley.

Day 2, Aug 27 - Hwy 8 south to Hwy 23 west to New Town following Hwy 23 all the way to Watford City. Return on Hwy 23 east to Hwy 73 east to Hwy 22 north to Hwy 23 east back through New Town to Hwy 8 north to Stanley.

Day 3, Aug 28 - From Stanley Hwy 2 West to Tioga, and Ray, where Hwy 2 meets Hwy 85. South on Hwy 85 to Williston, Alexander, Watford City, Belfield to Bowman. At Bowman Hwy 12 east back to Lemmon SD.

Taking the route described above afforded the opportunity to drive through the heart of the Bakken oil play.

The first signs of oil development were on Hwy 22 between New England and Dickinson about 60 miles from Lemmon SD. Heading north of Dickinson on Hwy 22, there are signs of oil and gas development as soon as one enters into Dunn County. These include heavy traffic and much new construction housing, lodging facilities (motels and “man camps’), and trailer parks in Killdeer.

New Town traffic was backed up on Hwy 23 West coming into the community mostly because of road construction. There is a bypass being built there. Upon completion it will remove most of the oil and gas traffic going through downtown.

On Hwy 8 north to Stanley, I passed a Whiting gas plant and several lodging facilities designed for oil and gas workers to stay on site or very close to oil and gas drilling rigs.

There was a great deal of new construction in Stanley including motels and housing units. Traffic was heavy, however, not as heavy as an earlier tour in May of 2013. There were fewer semis and heavy equipment vehicles.

In the Community of Tioga there was also a great deal of housing construction. A new, very large gas station convenience store has been built.

The tour of Watford City found the following: Hwy 23 East is under construction, the bypass connecting Hwy 23 and Hwy 85 is under construction, airport expansion is underway, many new housing developments and many man-camps have been established south of town on Hwy 85.

On my first day in Stanley I met with Sharon Smith NDSU Extension, she gave me a tour of the community. She showed me housing developments that were under construction in May of 2013, now completed, and for sale. Sharon also showed me new housing developments under construction. We met with a business owner who built a private waste water treatment facility. They provide a facility for disposal of sewer and waste water from the established mancamps in the region. This is the first facility of this type in ND. She also took me to the newly completed school facilities...new motels...new Moludager home subdivision.

Sharon then drove me to Tioga to meet with Kathleen Ness for a meeting and explanation of fracking and the shale oil play in ND.

The morning of my second day I met with Donald W. Longmuir Jr., AICP, Zoning Administrator/Planner, Disaster Emergency Coordinator Mountrail County and Tim Holt, Superintendent, Stanley Community Schools. I met with these two for about 3 hours of questions and answers.

I then spent the afternoon driving down to New Town and Watford City taking many pictures and stopping to speak with business owners and a real estate agent in Watford City.



I took this picture while waiting for the red light to change. It was on HWY 85 on the south side of Watford City. The traffic in both directions was a long line of stop and go. Watford City had a 2010 census population of just over 1,700 people, now the estimated population is 8,000 to 10,000 and it is still growing.

On the third day I drove Hwy 2 to the junction of Hwy 85 and took Hwy 85 south to Williston. There was heavy traffic on Hwy 85 into and around Williston. I took many pictures while driving. I followed Hwy 84 south to Watford City. The closer I got to Watford City the heavier the traffic became. At one intersection south of town, where the bypass begins, the line of traffic was as far as I could see in either direction. As I drove South on Hwy 85, the traffic diminished. However, there were still many semis and pickup trucks all the way to I-94. I saw several new oil wells being developed along I-94 that were not there a year ago. I remained on Hwy 85 to Bowman. At Belfield there were 2 “man camps” and oil and gas drilling rigs just outside of town. Belfield is about 25 miles west of the Dickinson Junction of I-90 and Hwy 85. Oil and gas rigs South of Belfield on Hwy 85 appeared for about 30 miles and traffic lessened.

### **Lessons Learned**

Planning is extremely important.

Communities and Counties need to have land use planning in place.

Many, many opportunities for people to start businesses

- Infrastructure needs
- Understand the Boom/Bust cycles
- Problems that oil and gas development brings to communities

- Extreme issues that can happen without planning in place
- As of February 2014 McKenzie County was producing 33% of all the oil coming out of North Dakota.
- McKenzie County currently has more drilling rigs than any other county in North Dakota and produces nearly 500,000 more barrels of oil and double the amount of natural gas per month than Mountrail County, the next closest ranked county in North Dakota. Projected population growth for McKenzie County: 11,771 by 2015; 15,550 by 2020 and 17,110 by 2025. In 2000 McKenzie County had a population of 5,737.
- School student population has doubled in Watford City since 2010, and there will be a new \$50 million high school to house the students. Construction started on the new high school in the spring of 2014 with completion expected in 2015 and will have a capacity of 800 students.
- The community is getting a \$55 million McKenzie County Healthcare facility and a \$3.5 million airport expansion. There are two new by-passes being built around the city, and they are proposing a \$56 million community recreation center.
- There are plans to build a natural gas processing plant in McKenzie County. The Lonesome Creek plant will be capable of processing 200 million cubic feet of natural gas per day. This plant and related gas gathering infrastructure will cost between \$550 million and \$680 million to build and should be completed by the end of 2015.
- There is both positive and negative that go with a boom like this, and these effects are broad reaching. For instance, according to Donald Longmuir, Planning and Zoning Administrator, Mountrail County, there is one county road that has over 1,300 trucks per day traveling on it. Imagine that type of traffic going by your house.
- Within the North Dakota Bakken, currently only 6% of the oil is being extracted. The industry is working on increasing this percent by using old technologies in new ways and new technologies, to extract the oil.
- Most wells being drilled are hitting oil 100% of the time. EOG Resources is using walking drilling rigs, and their wells cost between \$6 million to \$11 million to drill. The pay off on wells is 4 to 5 months. The life of a well is 40 to 50 years.
- Marathon Oil Company is putting in an oil well outside of Killdeer North Dakota, which will be more than 20,000 feet deep.
- North Dakota reached 60 years of oil production in 2011. It is the No. 2 oil producing state in the nation, and now is producing 1 million barrels of oil each day in 2014.
- The Stanley School District student population in 2006 was 340 in K-12. Today their student population is at 689 K-12. From last spring when school was out of session until this fall when the school year started the district gained 68 students. At the beginning of school this year they have students from 38 of the 52 states.
- The Mountrail County Road and Bridge budget for this year is \$60 million.

- Within Mountrail County the oil and gas industry is using water from the sloughs as frack water. This helps the County Road and Bridge Department because too much water in slough's can ruin a road, and it helps the oil and gas industry because they do not have to haul water over great distances.
- According to, Donald Longmuir, Disaster Emergency Coordinator, for Mountrail County, Emergency Services within Mountrail County is ahead of the oil and gas boom growth and the schools within the county are trying to get caught up.
- Dust and Air Quality are an issue within Mountrail County. It affects Ag crops and livestock. It also has a negative impact on humans with asthma and allergies. A local farmer tracked his yield and found that the first 1/3 edge of his crop yield was down 2/3's from the rest of his crop harvest. This was due to the dust settling on the first 1/3 edge of his field.
- Mountrail County currently has 256 permits for RV "man camps" and mobile home parks. This equals 2,500 beds.
- The oil patch's five biggest and multi-layered concerns are: childcare, emergency services, housing, transportation, and water. These issues rose to the top during a two year planning process.
- The boom which began in 2008 has put most communities and public service agencies, such as social services and housing in a catch up position. All of the communities I visited are experiencing temporary and affordable housing shortages.
- The effects of this boom are broad reaching and from what I have heard and seen the housing issue, temporary and affordable, appears to be the one of the most critical issues within the boom.

## Challenges

- Influx of people
- Infrastructure issues
- How to get the resources to the businesses and people that need them
- Because there are insufficient temporary housing, people are making do with living in RV's of all shapes and sizes and places. It has also forced the City of Stanley, Mountrail County, and Stanley School District to become landlords, to house newly hired employees. If the above mentioned entities did not own housing, their new employees would be hard pressed to find affordable housing. Rent in Stanley, for a basic apartment is \$1,800 to \$2,400 (basic is 2 bedrooms, one bath, no garage).
- This housing issue causes other public agencies problems, such as social services. For example if Mountrail County Social Services has been called because of a domestic violence issue, prior to the boom social services may have been able to remove the victim(s)(maybe more than one victim) and put them in a temporary housing unit. Currently that option is not available, so in many instances social services now pays for transportation to get the victim out of the area. This has created a budget problem for social services, now they are spending more money to transport the victim(s) out of the

area, whereas, pre-boom they had the temporary housing. It is important to note that since 2008 domestic violence is on the rise in Mountrail County.

- At present there are a couple of issues with housing in the North Dakota oil patch; insufficient temporary housing to meet the continued growth conditions of the region; organizational capacity within the region to advocate and develop affordable housing is weak.
- The lack of temporary and affordable housing creates a snowball effect for everyone, oil and gas industry workers, counties, communities, private business owners, school districts and the residents themselves. Residents on fixed incomes are being crowded out. What was once affordable is not affordable any more.

### **Strategies**

- Create a coalition of towns with potential impact
- Create educational efforts with potential impacted communities
- Follow the regional planning document for the counties impacted by oil play