

## The Big Empty

“I can’t believe I haven’t told you this story already,” I said to my granddaughter Lisa, who was interviewing me as a ‘historical figure’ for a high school project about rural communities that no longer exist. “Alright, here it goes...”

My name is Joe Harrington, I’m 66 years old. I had hoped to be retired by now, but with the workforce shortage in rural areas, my company offered me a great incentive plan to work until I’m 73. Grandma and I moved from our rural home in Wahpeton, North Dakota to Fargo five years ago because there just weren’t enough retail or medical services left there. We’re getting older and distance gets real important at our age. Plus all of our friends either moved or passed away. But we like Fargo; there’s always something to do. I commute each day to work in my ethanol-electric hybrid car that the company provides to all of its employees.

I grew up on a farm near Herman, Minnesota and always thought I would farm with my dad. After high school I attended the North Dakota State College of Science and studied Farm Management. Then I joined the National Guard and got sent to Iraq for two years. That’s when I was convinced the US needed to become energy independent and got interested in ethanol. So when I returned I went back to school at North Dakota State University and got a degree in Agribusiness.

When I graduated I got a job right away at a 40 million gallon integrated ethanol plant that was being built near Wahpeton by GreenEnergy, Inc. out of Des Moines, Iowa. The plant started operating in 2011. There was a lot of activity in biofuels and our plant was one of the first built that was completely self sufficient and sustainable. I have to say Lisa that at the time, our plant was truly amazing! It was an example of the latest environmental thinking about ethanol production. When we first opened, the input was all corn, but eventually we could do cellulosic conversion of the corn plant leaves, stalks and cobs. The by-products from ethanol production were used as animal feed for the beef cattle in our feedlot. We used everything; the manure fed a methane digester, we burned the methane for electricity, and we slaughtered, processed and packed our cattle right there. What’s really great is that these integrated plants were built to have a balanced carbon footprint.

Our plant employed a few hundred people, mainly in the feedlot and the meat processing; only 30 worked on the ethanol side. We all felt like we were really helping by producing energy and food in a very ‘green’ way. And we were helping farmers too. Corn prices kept ticking up and many area farm families were investing in ethanol plants.

This, of course, was all thanks to the national commitment to energy independence through renewable energy that was transforming our region. The building and operation of wind farms with new power lines, ethanol and biodiesel plants, the meat processing facilities, and methane conversion facilities brought hundreds of new jobs to the area and new people to fill them.

This mini-population boom was great for our area even though it turned out to be short-term. It brought new life to many of our struggling rural communities. It brought new students to the schools, people to the churches, and new customers to the small town businesses. That's when your Grandma came to town. She was a nurse and had always wanted to live in a small town. But I was 'too busy working to notice her,' that's what she'll tell you – I was actually playing hard to get. Well, we finally did meet up and have been together ever since.

You know that I've always supported the continued growth of the ethanol industry. When the technology advanced to include most any kind of starch crop or cellulose input, the industry expanded to the western parts of the region. They were growing field peas, perennial grasses, and other crops more suited to drier climates in areas where there was land available for even larger production facilities. I nearly fell over the first time I saw a 200 million gallon mega integrated ethanol plant. You know them as 'mega plants.' It was like a small city! That was in 2016. Before we knew it, mega plants were going up all over the region. By 2025, sixty of them had opened. I'm proud to say that those plants are helping our country achieve its energy independence goals while lowering our contribution to global climate change.

After the bioenergy boom started, my dad, your great-grandpa, began growing corn and soybeans on a two-year rotation to get in on the biofuel payments. That strategy proved to be very profitable. Farmers and industry worked hard together to meet our national energy independence goals. The demand for ethanol grew so much that by the time I went to work in 2011 newly developed hi-bred seeds allowed us to produce 250 bushel an acre of corn. By 2020 we were reaching 400 bushels. Dad thought he had struck gold.

Of course, when you're wrapped up in something, you don't always see everything that's going on around you. I didn't see the impact that \$8.00 per bushel corn would have on land prices. As they skyrocketed, most of the smaller farmers decided to sell their land and get out of farming themselves. The land that went up for sale was quietly bought up by the companies owning and operating the mega plants. The mega plants eventually owned their own giant farming operations. They were able to purchase fuel, seed, chemicals and fertilizers nation-wide, lowering their costs and increasing their income. This drove even more farmers to sell. By 2030 nearly 80% of the most productive land in the region was owned by a few corporate farming operations or the ethanol companies. This obviously had a negative impact on the small towns. The farmers moved to the cities or out of the region. The big operations didn't need many workers and didn't buy anything locally, so pretty soon all the ag-related businesses in the small towns closed. And it wasn't just crop farming that was impacted. With wet grains fed to dairy cows and dry grains fed to beef cattle only at facilities next to the ethanol plants, all the family livestock operations disappeared.

I didn't realize that technology would eventually advance almost all of the people that had moved here right out of their jobs, or the impact the loss of jobs would have on the region's economy. I thought since we were paying more for corn and offering energy (ethanol) at lower market prices and in an environmentally friendly way that we were helping the economy. But these highly efficient mega plants made it harder and harder for the older, non-integrated plants to compete and forced them to close, one by one. Whenever a new mega plant was built, a lot of

small plants closed. Each mega plant needed only about 30 people to operate it, but it produced 10 to 20 times the ethanol of the early plants. So hundreds of people were displaced every time a mega facility opened and the smaller plants closed. I think if the plant I worked at hadn't been integrated, we'd have closed too.

Even with the job losses in the industry, it seemed like the region was continually developing. So the 2030 census was a real eye opener. A rapid decline in the rural population had been going on due mainly to the baby boomers dying off. And the people that had moved here to work in the ethanol industry were leaving to find work elsewhere. By 2030 North Dakota's population had dropped to 500,000. South Dakota's population had dropped to 585,000, Iowa's to 2.2 million and Nebraska's to 1.3 million. All in all, the four states had lost nearly 1.5 million people in 20 years. In Minnesota, the western and southern parts were losing most of their rural population, while the cities continued to thrive and flourish.

You can imagine what this meant for the rural communities. Schools, churches, and businesses were all closing. People had to travel long distances for healthcare. Some kids spent over six hours bussing to school each day. A few communities tried residential schools, but they never were popular. And the roads weren't great because the states no longer had the tax revenue to maintain the rural transportation infrastructure. So between dying and leaving, there weren't many people left. And to top it off, the population projections for the next decade were even bleaker.

Of course the ethanol companies saw this coming. They had people who told them what the future held and they were preparing for it. The new mega plants were built with robotic processing and needed only a few people to operate them. Seeing all this job loss and the growing number of rural people leaving, including my friends and neighbors because they couldn't make a go of it anymore, was hard for me to accept because I believed so strongly that we were doing the right thing. We were developing green energy production technology and using robotics to do the hard and unpleasant work. You can't really blame the big companies; they needed to be ready for it.

I think one of the hardest things for all of us to accept was the bulldozing down of the abandoned buildings in the empty towns, to turn the land into fields for ethanol crop production. Each time a small town lost its last resident, the property was bought up by one of the mega farming operations. There really wasn't much choice for the county governments but to let it happen: Empty towns don't provide any property tax revenue and farmland does. I watched as they burnt and bulldozed Herman down. I can't even tell you how terrible and sad I felt. It was like losing a part of yourself.

My dad tried to hang on as long as he could, hoping that I would take over. But he knew I enjoyed my work so he gave up, sold the farm and retired in 2035. Being at the auction when they sold the machinery and my childhood home had a serious impact on me. That night I talked to your grandma about what had happened. I tried to think back about what went wrong. Basically I think it boils down to two things. First, we did create a successful biofuel industry, but it didn't need a lot of workers. Hundreds of people had come to the region to work in the construction and operation of the biofuel and meat processing plants, but as the number of mega

plants grew, they eventually found themselves unemployed. Sure we created temporary growth, but it didn't last. People were once again moving away. Folks really didn't have much of a choice. There weren't many blue-collar jobs in the cities, so individuals could either stay where they were in a rural community that was dying and be unemployed and poor or they could find work elsewhere.

The other really disappointing thing that happened was the inability of the rural economic development programs to overcome the reality of our aging rural population. A lot of money and energy was spent encouraging companies that needed a highly skilled labor force to locate in the region. And a lot of those companies did move to rural communities because they knew we had a great work ethic. But the simple fact was that they just couldn't find or keep enough highly trained workers to replace the ones they were losing as the boomer population died off. So they eventually left too. I'm sure it is hard for you to believe Lisa, but at one time there were hundreds of small towns dotted all throughout this region that provided people with good jobs and a great place to live.

The news from the 2040 census was devastating. The impact of the declining rural population just seemed to cascade into total loss everywhere. North Dakota's population dropped to just over 400,000 people and 2/3 of them lived in four cities – Fargo, Grand Forks, Bismarck and Minot. South Dakota's population dropped to 475,000 and they lived mostly in just five cities. Nebraska, Iowa and rural Minnesota weren't in any better a situation. The national media started calling our region 'The Big Empty.'

And the rural parts of the region looked empty. The mega farming operations had pretty much emptied out the rural landscape. The only farm buildings one saw were miles apart and looked more like equipment storage and maintenance facilities than an old fashioned farm like the one I grew up on. A lot of people had fought hard to stay in their rural communities and did not want to move to the city, but they either didn't have jobs or the ones left paid so poorly that people just existed at poverty levels. Eventually even all the senior citizens' homes closed and that was the last kind of medical care left. That's when Grandma lost her job. There just wasn't any paid work for nurses. We decided to move to Fargo, so we could have access to medical care in case we needed it. Grandma had planned to get a job in Fargo, but she's so busy with all the things there is to do here in the city, that she's decided to enjoy life for a while. I guess we had forgotten what it's like to live in a place with so much activity and people.

And so here we are in 2050. I'm sad to have had a hand in what has happened to our region. It really didn't have to come to this. We were driven by hope and the promise of energy independence and a concern for the environment, which did help our nation. But we just couldn't overcome the reality of an aging population and the impact that the consolidation of farming would have on our rural areas. My grandma always told me that stories needed a happy ending. Maybe that's the problem here. I guess your generation will have to create a proper ending.