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I. COUNTY ZONING AND LOCAL LAND USE REGULATIONS

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Well, good morning. One of my kids was kind enough to share some sort of head cold with me, so I apologize in advance for the sound of my voice. I'm also not sure whose idea it was to set county zoning at 8:15 a.m., but I actually do find it to be a very interesting topic, it's actually one of the most rewarding areas that I practice in, and I hope to share some of that with you, but I know not everybody might feel that way. So, what I want to focus on today is for the most part, my practice in this area is contained to the western counties of North Dakota and shrinking that a little further, mostly Mountrail, Williams, and McKenzie Counties. I want to try to make this a primer, if you will on zoning and land use regulations, and also talk about some trends that I've been seeing over the last several years, because this area really has

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changed over the last couple of years, and I hope you'll join in my conclusion, at the end, that I think it's changed for the better.

So, with that, here's a couple of topics that we'll talk about today. So, the first thing I want to talk about is just general authority granted to counties for zoning. So, we're going to talk about a couple state statutes. Secondly, general overview of land use planning processes and considerations that you want to think about if you're practicing in this area. Third, enforcement of zoning violations, what powers to the counties, the townships, local governing bodies have to enforce violations of the zoning ordinances. For the applicants themselves, what does the appeals process for an adverse zoning decision look like? Talk about trends that I've seen in the last couple of years, and then conclude with some tips if you do practice in this area.

So, I'll do my lawyerly disclaimer right now, these are general comments about general concepts, so again, I practice in those three counties. I'm not necessarily going to highlight specific provisions, if you will, of the zoning ordinances in those counties. In some instances, I will, but this area really, really is county specific, and as we'll talk about it, it even shrinks further, it can be dependent on city by city, township by township, so these are general concepts on the general areas, but we'll talk about some specifics as we move through.

So, general authority grants to counties for zoning. The authority for that comes from the legislature, and it set forth in century code 11-33-01. I'm trying to find the best way to read this. So, it's pretty broad language. I mean, this is the directive from the legislature as to counties, granting them the ability to adopt zoning ordinances, and the directive that the legislature has given counties is as follows that, "The county can adopt zoning ordinances for "the purpose of promoting health, safety, morals, public convenience, general propriety, and public welfare." Well, those are pretty broad topics and that's where the rub in zoning comes from, but that's the general state statute which grants powers to the counties who adopt zoning ordinances, and then from that directive, counties adopt individual zoning ordinances that apply to their counties.

So, this should be a statement of the obvious, but I want to talk a little bit about what's the relationship between local laws, county laws, state laws, and federal laws. So, we know from this Mountrail County case that a local governing body cannot validly enact a zoning ordinance that contravenes federal or state law. So, really, what that is, it's a statement of what we call preemption. So, if there's an explicit state statue or an explicit federal statute on something, it can't be contravened by a zoning ordinance that would different than that state ordinance.

So, the best way to state this doctrine is that it's that which is allowed by the general laws of the state cannot be prohibited by a local ordinance without an express grant on the part of the state. And I'll take you through some examples in a bit. There are several statutes where the state has expressly granted that power and that discretion to these counties.

Local municipal ordinances are inferior in status and subordinate to the laws of the state; again, it's a statement of the obvious, but it's something to keep in mind. Just because there might be concurrent regulations from a state on one area and a county on another area, it doesn't mean that the county can't regulate that area. So, local laws can touch on areas addressed by state law, and courts have a duty to try to reconcile each and give effect of both to the extent possible. So, courts are consistently wrestling with this. They don't like to use preemption of they don't have to, but they have, in some instances, and we'll talk about that. So, if there is a way to harmonize the two between state law and local laws, the courts will try and do that.

One thing to keep in mind is, zoning ordinances, by and large, are always changing. So, these counties are adopting amendments to them, they're adopting resolutions, so keep in mind that those amendments are only going to apply to projects put forth after the adoption of amendments, right? They don't work in reverse. So, one area that I think is important to think about . . . well, I think this is just fascinating, McKenzie County didn't have a zoning ordinance at all until March of 2013. Well, you can imagine what kind of development and how many projects went in to McKenzie County prior to March of 2013. So, to the county's credit, they had a lot to deal with, and when they first adopted the zoning ordinance, they were trying to wrestle with themselves, "How do we apply this to these projects," and there was so much development in their county that I am sympathetic to the struggles that they had, but trying to practice in this area, in McKenzie county right after that adoption was very, very tough.

But again, I think you can understand the amount of activity that happened in that county, with no zoning ordinance at all, created a mess for them, and over the last several years, they've really done pretty well and trying to tweak that to make it a little more industry friendly or at least a little bit more reasonable and balanced.

So, again, zoning ordinances only apply looking forward, so in the case of McKenzie County or in the case of any project you might have where the zoning ordinance changes, it changes the use of the project that you're looking at, is that use, is your project, in violation of the ordinance? And the short answer as a general concept is no. That's called lawful nonconforming use. So, if you have some project on ag land . . . again, let's look at the McKenzie County example. No zoning ordinance prior to March of 2013. So, if you

were to develop a project, let's say on ag land and using for some type of oil storage facility, McKenzie County adopts its ordinance in March of 2013 that says, "No oil storage facilities on ag land." Well, the owner of the project is not going to have to tear out that facility, it's going to be considered a lawful nonconforming use, and that classification will continue until one of several circumstances is met.

So, as a general comment, if the use changes, so if you try to add something to that particular project, it will then need to be brought in conforming with the zoning ordinance. If it burns down or something happens, as a general rule of thumb, if it loses more than 50% of its footprint, it needs to be rebuilt. You're not going to be able to rebuild it and still claim that nonconforming use status, or if the physical footprint of this project expands, that's going to remove that lawful nonconforming use status. It's also called grandfathering. So, it's something to keep in mind. Time of when the project was put in the ground, when was the zoning ordinance put into effect, and can you reconcile the two and always be thinking about lawful nonconforming uses.

So, there is an explicit statute on permitting lawful nonconforming use, that's 11-33-14, so the counties do have a way to regulate those. And these are the circumstances. For the most part, there are others, but as a general comment, these are the circumstances which will destroy that lawful nonconforming use status and that project will need to be brought into conformity with the zoning ordinance.

That one's there again. So, the result of that, if any of these circumstances happen, the result is you're going to need to bring that into compliance, at that time. So, we'll talk a little bit about enforcement of zoning ordinances. So, there's two main ways that counties can enforce their zoning ordinances, and first is through civil action. This is the statute 11-33-17, "Counties can prevent unlawful construction of a structure which does not have its required land use permits in place."

So, if you're supposed to get, for example, a CUP or some places call them SUP, a certain type of permit for a certain type of project, this statute authorizes the county, through a civil action, to enforce their zoning ordinance and theoretically prohibit that project from going forward.

What's also interesting is, these enforcement rights are not limited to the county itself or to the local governing body, but they also extend to any affected citizen or property owner, and we'll talk about a case or two where it wasn't the county trying to enforce the zoning ordinance, it was either a neighboring property or a "an affected citizen," which I think is interesting.

And the theory here is, violations of the zoning ordinance are public nuisances, that's how we have that connection between not only a county

enforcing these things, but neighbors and any affected citizen, because they are public nuisances.

What I also think is really interesting is there's a criminal element to it. According to state statute, violations of a zoning ordinance are considered public nuisances and are considered a class B misdemeanor, so there is a criminal element to this, and counties can actually enforce this criminally, and I will highlight a couple of areas where they've done that. That seems extreme, and I think most people see that and say, "Well, they'll never do that." They have, so something to keep in mind.

What's also interesting is generally, each day that a violation persists, it's considered a separate punishable offense, and I'll talk about a pretty extreme case out of Williams County, where they tried to enforce it that way. So, if you put a project in the ground that doesn't have its right permits for example, and it persists for 200 days, for example, there are theoretically 200 individual separate punishable offenses that the county can try to enforce civilly or criminally. Something to keep in mind.

So, generally, talk about the land use planning process and some specific considerations. I want to talk about initial considerations in this area, common land use planning permits and requests, and just general overview of the application and the hearing process. So, some initial considerations. Again, it sounds like a statement of the obvious, but this is actually really important. Always be thinking, "Where is my proposed project located?" Because there's so much potential for overlapping jurisdiction and so much potential for needing to reconcile, "Am I located within the corporate bounds of a city? Am I located within that city's ETJ?" Or "Am I in a township that might have retained its own zoning authority? Or am I just in the county and therefore need to comply with county zoning ordinances?"

So, always be thinking, "Where is my project and who has jurisdiction and who has authority over the location of my project?" And oftentimes, it might be a combination of all of those, it's not a simple as saying, "Well, I'm in Equality Township in Williams County; therefore, I only need to deal with Equality Township," when in reality, you might have to deal with both Equality Township and you're going to be dealing with Williams County.

So, who has jurisdiction over the proposed project? So, thinking about your first step, "Where is my project going? Where's the closest city? What township am I in? What county in my in?" Doesn't mean that that township or city necessarily has authority over the project. A lot of townships, not all . . . a lot of townships have ceded that authority to the county. Some have retained, so that you have to be thinking about what township am I in?

In McKenzie County, for example, many townships have ceded that authority to McKenzie County. So, they're not individually regulating these

things. I can't remember the name of it, but I know there's at least one county in McKenzie County where they've given the authority to McKenzie County to regulate zoning, but they've retained the authority to regulate building permits, so there's a lot of moving parts, here. Always be thinking about, "Who has jurisdiction over this particular project?" Generally, these townships are entering into joint powers agreements with the county, so it's fairly easy to find that out, but always be thinking about it. Don't make assumptions, always look into who has authority over this particular project and might that authored have been ceded to the county? Or the state, for that matter.

So, which portions of the zoning are in supply to the proposed project? This is just a statement of "Now that I know where my project is, I have more or less figured out who I need to talk to about it, who is going to grant me the authority for this project, now I look at the zoning ordinance. What provisions in the zoning ordinance apply to my project?"

So, the first step in my mind is look to the current zoning classification of the land. So, you know where your project's going to be, figure out how that land is zoned. It's a pretty good chance it's zoned ag if it's a new development. Now, there are industrial corridors and there's exceptions to that, but always check that. This is all public information that counties readily supply it. Always be thinking about "What's the current zoning classification of the land that I'm either purchasing, that I'm leasing, that I'm going to develop on, whatever that might be.

Once you figure that out, determine whether the use that you propose is allowed, if it's conditional, or if it's not allowed. Again, something to be thinking about. So, as a general rule of thumb, if you figure out the classification of the land and the use that you want to put it to is allowed, explicit under the ordinance, you're more or less good to go, right? But if it's a conditional use, there are additional steps that you need to undertake, and usually, that's through what's called a conditional use permit, so these zoning classifications will generally distinguish between these, and they're pretty explicit. They'll list, "These are the allowed uses on this type of zoning classification. These are the conditional uses on this type of zoning classification."

And you might need to look at both. So, if you know that you need to change the zoning from this land from let's say ag to industrial, for example, well then your second step, after knowing you need to change the zoning is, "Well, is my use then permitted or conditional under the classification I'm seeking to change it to?" Because oftentimes, you have to do both. So, if you're going to purchase some ag land and you want to put a project on it, you might have to both change that property's classification from ag to industrial, and then also get a conditional use permit, so always be thinking

about "What's the classification, and is the use that I proposed allowed or conditional?"

So, I'll just touch on these areas, there's more, but these are the general types of permits and applications that one might see when practicing in this area. Zone changes, I'll call it hard zoning; again, changing from ag to industrial, ag to commercial, those types of things. Changing the hard zoning of that particular property. Conditional use permits, that would be these conditional uses on that type of zoning classification; variances, comprehensive plan amendments, and then I'll talk a little bit about subdivisions.

So, for the most part, and this doesn't cover everything, because lately, the counties have tried to break out subcategories within these general classifications, but for the most part, the classifications of land that you're going to find is either ag, residential, commercial, or industrial, but they sometimes break these out further to heavy industrial, light industrial. I mean, there are some subcategories, but for the most part, you're going to follow that general rule of thumb for those four areas. And like I said before, you want to identify the current zone classification, determine the uses in the current zone where they'd be permitted or conditional, and if it's not permitted or conditional, within the zone classification that it is, the day you're either going to buy the land or propose your project, then at the minimum, you're going to a need zone change.

One thing that, in my opinion, that is nice hard zoning is it's either up or down vote, right? The counties are looking at, "Does this comply with our comprehensive plan? Do we need a comprehensive plan amendment?" But it's either yes or no. There's no conditions, for the most part, that come with changing the zoning. It's either you can change it or you can't. The counties, as a general matter, don't have the power and usually don't try and impose extraneous conditions on these approvals. That is not the case with conditional use permits, as we'll talk about in a minute.

One thing to consider, here, is the theory of spot zoning. And this can be a little frustrating as developers or as folks trying to put a project in the ground, because what do you need for a project? You need a willing buyer and a willing seller, more or less, and you can't always pick where those may be. So, if you found a piece of ground that works for your infrastructure, it may be near some other projects that you have, you have a buyer who's willing to sell it to you, but it's surrounded by ag and you need to change the zoning to industrial, for example. One thing you should always be thinking about and one thing that the county's always thinking about is spot zoning. This idea that by changing the zoning to a parcel that's surrounded by ag, are we varying what we intended that area to be? It's rooted more or less in discrimination? Are we treating this parcel that might be on the east side of the

highway differently than we would treat the parcel on the west side of the highway? And counties are real reluctant to do it and so always be thinking of that and try to think of ways to demonstrate why it's not spot zoning.

And as a practical matter, in rural counties, like most of North Dakota, but especially in the western part where I practice, you're going to have parcels that if it's industrial and it might be fairly far away from another parcel zoned industrial, but that's just the reality, and so it's a balancing act. There's no hard and fast rule on it has to be adjacent to some other similarly zoned property.

So, conditional use permits. These are going to be required when the proposed use is conditional within the applicable zoning classification. I talked about that earlier. A conditional use is a permitted use within the zone, but because of the possibility that the permitted use could be incompatible in some respects with other uses in the zone, a special permit is required. CUPs are ministerial, administrative, or discretionary procedures of governments relating to land use.

So, what are some of the rights granted by a CUP? As we know from this Arnegard Township case, a CUP is not is not a contract. A CUP does not create a greater right in property owners than they would have possessed, had they desired to conform the use allowed in the zone. So again, it's just a government function that certain uses might be permitted, but because they might be incompatible with the allowed uses within that classification of zoning, we're going to require a special permit, and with that permit comes conditions.

So, here's an example in one of the western counties of a conditional use on industrial zone land, and all it says is, "Oil storage and loading facilities, gas holding, processing, and distribution facilities." Well, there's a lot of ways to read that. The way I read it is there are two parts, right? Oil storage and loading facilities, and then secondly, gas holding, processing, and distribution facilities. And I argued with the state's attorney over this, and he made the argument that somehow oil storage modified the second part of that statement, and also, I mean, the way you can read it is, gas-holding, processing, and distribution facilities." Well, the word "and" is in the conjunctive, right? So, does that mean that you only need a conditional use permit if the facility holds, processes and distributes, or is it if holds, processes or distributes. Well, it doesn't say "or," but I can guarantee you that the county is going to interpret it to be those three separate instances.

And we run into this all the time. Zoning ordinances are written somewhat vague or open ended, and the way to wrestle that is you're going to have to make reasonable arguments about how that should be interpreted. So, those are some of my comments on initial interpretation issues and that happens all

the time. And another thing is, these are undefined terms. It might be different if the county had to find what it means by oil storage and loading facilities or gas holding, processing, and distribution, but it doesn't. And so I gave you my comments on how to address it. You have to make reasonable arguments, whether it's under state law or industry practice, industry standards, whatever it might be, saying, "Here's why my particular project does not meet that provision; therefore, it doesn't require a CUP."

So, the real . . . what I'm calling the rub with CUPs is in the conditions. Because they are discretionary, and remember that general directive that these counties have from the state to regulate the general welfare, prosperity, health, safety of its residents, conditional use permits can be really tough, especially in the western part of the state, because the counties will attach conditions that can be considered fairly onerous on the applicant, if they're going to want that use, but they have the discretion to do it.

Sometimes it might be as simple as maintaining garbage on the property, making sure it's free and clear of garbage during snow removal, but some counties have taken it farther to require fencing. A couple of years ago, in a western county, they were not only requiring landscaping and buffering, but they go so specific to the width and the type of tree that someone had to place along a facility in terms of buffering. Roads are always a big topic, here. Either the counties are going to ask applicants to pave or to hard surface or to do dust control or other types of things on the roads, under the theory that this project is conditional, you're the one impacting the road, and here's what we want to see you help us maintain that road. So, when you're thinking about condition use permits, always, always, always be thinking about, "Well, what are the conditions going to be, and are they palatable?"

So, real quick, go through variances. Honestly, I don't see these very much, but they're there. It's defined as a one-time exception to an expressed provision of a zoning ordinance. Another way to say that is it's a license to violate the provisions of the zoning ordinance as it applies to a particular property.

So usually, they're granted in two areas; one for the use. That's pretty rare and not really favored. For example, if I wanted to do something that was conditional, a conditional use on a piece of property, I could theoretically apply for a variance saying, "Well, let me do it without getting a CUP." I've never seen one be granted, but theoretically, you could do it for the use.

What's more likely is it's asking for relaxation of development standards, and a variance is going to be property specific. So, you're going to have to make the case that this property is so unique that I should be granted a variance to relieve me from complying with some provision of the zoning ordinances. Usually, it deals with setbacks or lot sizes, things like that.

Local governing body here has total discretion on whether to grant or not. As a general rule, a variance is proper only when the property is somehow different from other property, particularly adjacent propriety. So, you have to show why is this property so unique that I should be granted a variance and relieved from complying with the zoning ordinance? The requirements to get a variance, no adverse effect on the public, no adverse effect on neighbors, and the property has characteristics making it eligible for variance. Fairly tough to get, but not impossible.

So, the comprehensive plan, some counties have adopted . . . well, many have adopted comprehensive plans, but some, in order to conform with state statutes say, "Well, if we're going to grant either a zone change or a conditional use that doesn't conform with our comprehensive plan, we're going to make you get what's called a comprehensive plan amendment."

So, the purpose of a comprehensive plan is to articulate the goals which the community hopes to attain through its land use activities and regulation and serve as a guide for coordinated development of the community. Zoning ordinances are required to be made in accordance with the comprehensive plan by state statute, and like I say, oftentimes comprehensive plan amendments are part of the zoning request, and that's how they . . . I don't want to say get around, but I mean, that's how the counties are saying they're complying with that state statute. "We've adopted a comprehensive plan. What you're proposing to do is at variance with that; therefore, if we're going to grant you a request, we're also going to have you amend the plan." That's the logical connection, there.

This is the authority for variances and amendments to the comprehensive plan. It is granted by state statute. I'm not going to read the statute, but it is rooted in state law. This is just an example. I think everyone here has probably seen a JIS map before. This is a zoomed out version of a JISs of a portion of Williams County, Wilson is on the far right, so that's Highway 2 in the middle black line, there, looking west.

So, the purple is the industrial zone parcels, red is going to be commercial, yellow is residential. The rest is ag. So, that's why I say, there's a pretty good chance, if you're buying some property in rural parts of the county, it's going to be zoned ag.

As you'll see, it's not impossible to have an industrial zoned property that's outside of these corridors. So, you can see the county has tried to restrict some of these corridors to along Highway 2, but you can see industrial zone property a little bit south of Highway 2, you can see industrial zone property that's further north.

A couple of comments on subdivisions, again, statement of the obvious, but a subdivision is a literal subdivision of the land. If you have one parcel,

say a 40-acre parcel you want to divide up, be it for residential purposes or commercial purposes for that matter, you need to go through the subdivision process. It goes by many different names and these are all variants of the subdivision process, but there might be a small strip requirement, a replat requirement, short plat, lot land adjustment, lot split. There are variants of the same thing, but they go by different names.

When needing to a subdivision, always be thinking about the applicable development standards. These are usually set forth in the zoning ordinance. There's going to be restrictions of the lot size, public rights and access requirements, green scape, utilities, and other improvements, so be thinking of that. You almost always need a survey and an attorney's title opinion.

So, a general overview of the application of the hearing process, it's going to vary by city, township, and county, but it's generally similar. There are some variants to it. Usually, it's going to involve an initial meeting with the planning department. You put together your materials, say "Here's what I'm proposing, here's the location, let's talk about the project." You're also going to prepare the corresponding application and assemble the necessary materials after that initial meeting. Usually, the planning department then takes it upon themselves to notify adjacent land owners. In Mountrail, for example, you have to do it, so there is some variant to that, but in other counties, for the most part, the county is the one doing it, and they'll also publish the requests in the paper, and they may send the application on to the township.

So, usually, there's a two-step public hearing process. First is before a board called the planning and zoning commission. It is a public hearing, the public is welcome to attend, the applicant should attend, make their case for the project. The decision that comes out of the planning and zoning is usually a recommendation. It's not universally true. There are some instances and some counties where some permits end at this level. They do not need to go on to the Board of County Commissioners. So, just be thinking about, "Where am I and what am I seeking, and who has authority?"

So, that decision is usually a recommendation. The weight on the recommendation depends on the county. In my opinion, in Williams County, you'll have a robust public hearing at the planning and zoning level, and then you'll go up to the board, and then you'll have another robust public hearing. In McKenzie County, for example, they have something called the consent agenda. If you get a favorable recommendation out of planning and zoning, it goes on the Board of County Commissioners consent agenda, and for the most part, you're not going to have to reargue why your project should be approved. So, just be thinking about . . . not to hammer on this too much, but "Where are am I and what are the different procedures?"

The second public hearing, which is not required for all permits, it's going to depend on the county. Second hearing before the Board of County Commissioners, the decision at this level is the ultimate decision on the request. Like I say, not every permit or request is going to go to that level.

We'll talk a little bit about preemption of local ordinances, I talked about that earlier. So, preemption is not limited to only those local ordinances which expressly conflict with the state or federal statute. An ordinance may be preempted if the legislative purpose in enacting a statute is frustrated by the ordinance. An ordinance may also be preempted if the state intended to preempt an entire field of legislation, and field preemption may not be expressly declared in statute.

So, here's an example of concurrent jurisdiction. This is one of these statutes in the setting act, and it says, "The issuance of a certificate of site compatibility or route permitted is subject to Sections II and III. The sole site or route approval required to be attained by the utility."

Now, so this says subject to section II. So, we look at section II. "A certification of site compatibility for an energy conversion facility does not supersede or preempt any local land use zoning or building rules, regulations, or ordinances." So, these aren't really in conflict with one another, but that's an example. The statute has been changed, which I'll talk about, but I just wanted to show this as an example of instances where the state gives concurrent jurisdictions, saying that if you get a route approval out of the PSC, that's all you need, but you need to comply with local land use.

And here's an example of field preemption, this was specifically as to treating plants, and I want to talk about this case a little bit later also, but this is a statute about the NDIC's jurisdiction. A treating plant is a defined term in the administrative code. In this specific instance, a county required a CUP for "saltwater storage tank and similar facilities on properties on rural preservation," which this facility happened to be, and it creates the potential for inconsistent outcomes. Basically saying the NDIC has jurisdiction over these facilities and then the county said, "Well, we require CUP for these facilities." It has the potential for inconsistent outcomes. If I get an approval out of the NDIC, then I go to the county and say, "I need my CUP," and I'm denied, what happens?

So, we have a case that tells us. So, how do you reconcile the two? This was a case from 2017, *Environmental-Driven Solutions v. Dunn County*. The facts of that case were as I just stated. The conclusion was that the ordinance as to treating plants is preempted, saying that the state, through the various regulations and powers granted by the NDIC and because the rules are so broad, the state intended to have the NDIC legislate the field of regulating treating plants, therefore county, your regulations are preempted.

So, this is the reasoning of the decision, the NDIC has expressed statutory authority to regulate "all other operations for the production of oil and gas. A treatment plant qualifies as other operation. Given the comprehensiveness of the state laws and regulations, the North Dakota Legislature intended the NDIC to 'occupy the field,' which I spelled wrong. Of oil and gas waste treatment plants; therefore, the NDIC has exclusive jurisdiction of the issue of the location of oil and gas treating plants; therefore, counties do not have the authority to veto the NDIC citing of an oil and gas waste treatment plant. That's the logic of that decision.

So, one thing to be thinking about, we talked a little bit about the process, think about where am I, what permits do I need? We talked about the hearing process, we actually go and get an approval or a denial. And there are rights that are granted to the applicant after presumably getting a denial. There is ability and a procedure to appeal an adverse zoning decision.

So, we'll talk about the grounds for an appeal, standing for an appeal, the burden of proof, and the standard of review on appeal, and the timing and procedure. So, grounds for an appeal. This is set forth in state statute, appealing an adoption of the zoning resolution or amendment.

So, this is a little different. I just wanted to highlight this, but this isn't what I'm talking about. There's two ways to appeal. If the county adopts an ordinance or makes an amendment to it and someone feels aggrieved by that, there's a route for them to appeal. That's the procedure for that, I don't want to talk about that, but I wanted to highlight that it was there.

This is what I want to talk about, 1133-12. "Appealing a decision based on the zoning ordinance." Which has "A person or persons jointly or separately aggrieved by a decision of the Board of County Commissioners under this chapter may appeal to the District Court in the manner prescribed in Section 28-34-01."

So, how does one have standing to an appeal to the District Court? Well, the rule is you must be aggrieved. So, we have cases that tell us what it means to be an aggrieved person. A person seeking to appeal must show "personal individual interest in the decision and any grievance which he might have suffered simply because he is an elector and a taxpayer is not sufficient to give him the right to an appeal. One is factually aggrieved if the decision enlarges or diminishes that person interest." So, stated simply, a person must be injuriously affected by the decision. That's how you have standing. That's how you are "aggrieved."

So, what's the burden of proof? The standard of review on appeal on the burden of proof obviously is on the applicant and it is arbitrary, capricious or unreasonable. That's the standard of review that the District Court is looking at. So, the local governing body's decision must be affirmed unless the local

body acted "arbitrarily, capriciously, or unreasonably, or there is not a substantial evidence supporting the decision." The decision is not arbitrary, capricious or unreasonable if the exercise of discretion is the product of a rational mental process by which the facts and the law relied upon are considered together for the purpose of achieving a reasoned and reasonable interpretation. So, always be keeping that in mind.

Basically, and I'll talk about this in a little bit, the District Court is not going to substitute its own judgment for that of the county. So, think about some limitations and considerations. Exactly what I just said. The court is not going to substitute its judgment for that of the enacting body, the Board of County Commissioners, for example, that made the decision. The court is going to give deference to the judgment, and interpretation of the governing body that it made at the hearing. Only evidence presented to the county can be considered at the District Court level and must be reviewed in light of the commission's decision to determine whether that decision was arbitrary, capricious, or unreasonable.

So, in other words, an appellant's burden is not to show that the greater weight of the evidence entitled it to the relief they requested, so that goes back to point one; the court is not substituting its own judgment, here; rather, an appellant's burden is to show that the county acted arbitrarily, capriciously, or unreasonably, based on the evidence that it had before. And this is one of the most important takeaways I hope that you get from today, and I'll hammer this in a little bit about how do we build a record, at these hearings.

So, why the foregoing limitations? Well, it's the principle of separation of powers. Principalities relitigating the correctness and propriety of a commission's decision. Granting approvals under zoning ordinances is a legislative function that is subject only to appellate review to determine whether they acted again, arbitrarily, capriciously, or unreasonably. So, because of principles of separation of powers and because the county, at this time, is acting in a legislative function, the court is not one substitute its own judgment, here.

So, what's the overall lesson? Well, the burden on the appellant is fairly high, and especially if the county makes a decision which it can root back to exactly where we started, "the grant of authority given to counties, promoting health, safety, morals, public convenience, general prosperity, and public welfare." Very broad, so if they can root the decision in one of those areas, it's probably not arbitrary, capricious, or unreasonable. So, it is, in my opinion, a very high burden on appeal.

Talk a little bit about the timing and procedure of an appeal. 11-33-12 tells us that we may appeal that decision to the District Court as provided in

28-34-01, and here's what 28-34-01 tells us. It's a very simple process, you have to follow a notice of appeal with the Clerk of Courts within 30 days after the decision, always be keeping that time frame in mind. "Appellant must post an undertaking and a reasonable sum in with sureties approved by the auditor." The purpose here is set forth a statute just to make sure that the appellant actively prosecute the case, and if it's adjudged any cost that those will be paid to the county. You have to serve a copy of the notice of appeal on the governing body within 30 days after the decision, so filing and service are going to need to happen about the same time, and then the appellee, the local governing body that made the decision actually prepares the record and files that with the District Court.

So, one of the most important areas I want to talk about is the record on appeal. So, it's certified by the local governing body that this was everything that we considered at the hearing, basically, is what the record is. So, you can theoretically supplement the record with additional evidence, but it's very hard to set forth the grounds upon which you can do that, but in my opinion, it's very hard. So, what I'm getting at, here, is if you have evidence in support of your project, make that case at the Board of County Commissioner's hearing. Don't hold anything back because getting that evidence in later and saying, "Hey, court, you should've looked at this" or "Look at this now and view that in the light of the denial I got," they're not going to do it, for the most part, unless basically a county somehow excluded you from presenting that evidence.

So, consideration of the record depends on whether the appellant objects to the local governing findings of fact or conclusions of law. That sounds like something we would get from the court, but local governing bodies are supposed to be doing both, when they make end of decision, either approving or denying a project, for example, they need to make findings of fact and conclusions of law.

So, the record on appeal. If the appellant is only objecting to findings of fact, then the evidence submitted at hearing before the local governing body shall be considered by the District Court, and the standard review then applies to both findings of fact and conclusions of law.

So, if you're saying, "Based on the record, based on the evidence I presented, they made incorrect findings of fact," then the court is going to look at the evidence that you submitted at the Board of County Commissioner's hearing. But if you're only objecting to the conclusions, basically saying, "I don't dispute that the findings that the county made are incorrect, I think those are correct, but based on those findings, they should've granted my project," basically is the theory, here.

Well, if that's your only argument on appeal, then the evidence submitted at the hearing is not considered, right? Because basically those facts were undisputed. "I don't dispute that the county made correct findings of fact, just that their conclusions were wrong." So, the court is not going to be looking at the record if you're only objecting to conclusions of law.

So, tips when considering the record. Local governing bodies must may findings of fact. They're getting better at this. They didn't used to do this, even a couple of years ago. They would make a decision and they wouldn't build their own record, they wouldn't really give reasoning, necessarily, for a decision. They'd said, "Well, it's denied," and no discussion about why it's denied. The eventual minutes that would come out wouldn't touch on these areas of why did they deny it. They are getting much, much better at that. Almost always, their motions are pretty robust and they are rooting their decisions what we would understand to be finding of fact. But always be keeping that in mind. If a county makes a decision, and there's no accompanying finding of fact, then perhaps it is arbitrary or capricious or unreasonable, so always be thinking about that.

And this is probably, like I say, one of the most important takeaways from today, and not say we should always be thinking about appeals, the moment we walk into a Board of County Commissioner's meeting, but at the same time, your chance to build the record is at that meeting. It's at the planning and zoning commission hearing and it's at the Board of County Commissioner's hearing. We know that we can't get additional evidence in before the District Court, so always be thinking about, "How do I present all my evidence to the Board of County Commissioners to put my project in the best light and to show why granting my permit, granting my zone chance, meets those areas; general prosperity, welfare, etc."

So, really, theoretically, the local governing bodies findings and facts should be based on the record that the applicant creates. So, it's your opportunity to make sure you get everything that they should be considering in and don't forgo that opportunity, it's a big opportunity.

So, here are the potential outcomes for a decision on appeal by the District Court. This is the legalese language, but I'll just put it in other words. Basically, what you can get out of the District Court on appeal is either an affirmance. If your project was denied, on appeal, the court can say, "Denied. We affirm the decision of the Board of County Commissioners." The court can reverse and remand with instructions on what the county is supposed to do, or the court can reverse without remand. I will say this, reversal without remand is very rare in North Dakota. There's one case that I'm aware of, there might be others, this is the one that I'm aware of, and I'll walk through

it quickly, but really, I think it's an unsatisfactory opinion, both from the county's perspective and from an applicant's perspective.

Basically, zoning ordinances prohibited mobile homes in a certain subdivision. The county granted a variance to permanent mobile home in that subdivision and even used the words "this one time only." District court affirmed the variance, so it went to the District Court level, and I'm going to talk about this a little bit, but District Court decisions are then appealable to the Supreme Court, and the Supreme Court reversed back to the county without remand, or rather, just reversed the decision, did not remand it back, and the Supreme Court held a spot variance that is in conflict with the relevant standard of the zoning ordinance is arbitrary, capricious, and unreasonable.

So, basically, they're saying county didn't follow your own ordinance. Your own ordinance said, "No mobile homes," and you granted a variance that said, "a mobile home is okay." So, why I say this is unsatisfactory is this is an example of the Supreme Court reversing, but not remanding, but for the applicant, and for the county, it doesn't do much, right? It just said, "You didn't interpret the ordinance right. Overturned."

In other words, if you got your project denied and you go to the District Court, and let's say it's affirmed or what have you, and go all the way to the Supreme Court, it's unlikely that the Supreme Court is going to say, "County, approve the project." That's the bottom line. That's what I mean when I say a reversal without a remand.

Usually the remand is going to be something like, "Here's why the decision was arbitrary, capricious, or unreasonable." And I'll give you one example of my opinion on that in a moment. So, of course, the District Court's decision is appealable to the North Dakota Supreme Court, the standard of review is the same. The Supreme Court is looking at did the District Court, in view of the findings of fact . . . was their decision arbitrary, capricious, or unreasonable. The North Dakota Supreme Court independently determines the propriety of the board's decision without according any special deference to the District Court's review.

I'll talk about some trends. Oh, the last thing I'll say on appeals, when you get a remand with instructions, so let's say a reversal/remand with instructions, well, what does the count do with those instructions? What the District Court is basically telling them is "Here's why your decision was arbitrary, capricious, or unreasonable." So, the county will then say, "Well, how do we make the decision that's not arbitrary, capricious and unreasonable?" So, the court, in my opinion, is giving them a roadmap of how to make a better decision. But as a practical matter, the outcome is probably the same, right? It's just a "Here's why it was improper for you to deny it, but here's the areas where, had you done it, it would be okay to deny it." So, you go

back to rehearing before the board, as a practical matter, it's likely that they're still going to deny it, but do a better job of why they denied it, in their opinion.

Here's some trends I'm seeing in the last couple of years. Counties are moving away from requiring CUPs for pipeline. I think this is a good thing, just because of the potential for inconsistent outcomes. For example, in Williams County, the ordinance says, "No CUP required for industrial, municipal, and/or commercial pipelines if such a pipeline is subject to state or federal government regulation oversight."

So, if it's a transmission line subject to PSC jurisdiction, the county is not going to require a separate CUP. They've set for a very simple process where you can get an exemption. You submit evidence that that pipeline meets the exemption, the county reviews that, issues an exemption letter. Usually that exemption letters is passed on to the PSC, and upon a final PSC approval, it's then provided to Williams County. Easy process. A couple of years ago, they were requiring CUPs for pipelines, so it's a good change.

In my opinion, staff are becoming vested with more authority to make administrative approvals, so going up to the public hearing process, some of that power has been ceded to staff, where you're not actually going through the public hearing process. For example, staff can renew time-condition CUPs, staff approval of time-condition temporary use permits; usually, these are for lay flat for fracks, or sometimes for public projects; and administrative variances. Oftentimes, staff is just issuing those approvals and not going all the way up either to either the Planning and Zoning Commission or the Board of County Commissioners.

There is a move, and specifically in McKenzie County, away from requiring building permits for certain oil and gas facilities. So, in McKenzie County, certain oil and gas processing and storage facilities can apply for a building permit waiver instead of a building permit. In the interest of time, I won't read this, but this is from the county itself. And I think it's a very reasonable position saying these things are already so regulated, who is the county to substitute its judgment for state or federal authorities that already have pretty comprehensive regulations and building standards for some of these facilities. It's a very reasonable position. And this process, I've used many times, actually getting the waiver instead of getting the permit, and it's fairly straightforward. And I think that's been a good change.

On the other side of that, counties are moving more towards requiring reclamation and performance bonds. So, depending on the type of project, and depending on the county, they might require a reclamation bond for that particular project. Those can be very expensive. The idea being, let's say they grant a project on ag land, you're going to put some type of oil storage facility

out there. The county . . . this is McKenzie County specifically, is going to require that the applicant post a bond in the amount of 150% of the amount to proclaim that land back to ag. As a practical matter, I don't know that that will ever happen, but I mean, that's the thinking at least of the counties and why they require these bonds.

Roads continue to be a tough issue with the counties. Again, I think I said this before, but they're thinking being you, applicant you, industry, are the ones putting the wear and tear on the roads; therefore, we're going to shift some of the public burden of maintaining these roads onto you; you, who are causing the impact. And this continues to be a struggle and it continues to be a tough area to negotiate with the local governing bodies.

There has been some clarification on state versus local authority and jurisdiction, that's the Environmental-Driven Solutions case, which I talked about earlier. So, we have some clarification on the NDIC authority and jurisdiction, exclusive jurisdiction.

One other area I want to highlight is in the citing act. This is the Electric Energy Conversion Facilities portion of that, which basically says . . . so this is the language you see, "Permit for the construction, etc., within a designated quarter supersedes and preempts a local land use, zoning, or building rule, regulation, or ordinance." So there, it's express, right? And this was recently amended saying, "An approval that comes out the PSC preempts land use planning at the county level." And that's pretty explicit.

There's also a similar change in the gas or liquid energy conversion facility portion of the citing act. This is the old statute, which said, and I read this before, "Does not supersede or preempt any local land use, zoning, or building rules, regulations, or ordinances." This is the new statute. So, the state permit for the facility, "Supersedes and preempts any local land use or zoning regulations; however, before actually getting that approval, an applicant must demonstrate these things."

So basically, they're giving some deference to the county on these road issues. They're giving notice to the county and the township about the project, but the PSC is going to be ultimate authority on that issue and this statute, I think was just signed by the governor in March, so it's very, very new.

A couple of tips if you practice in this area. Be cognizant of the powers of the county to enforce this by criminal action. Again, I think we tend to think, "Well, they're not really going to do that." I can tell you about two instances where they've done it in Mountrail County a couple of years ago. There's a gentleman . . . and there's some dispute about what really the background was, but basically, the county's position was, he had been given cease and desist letters, they believed he was building a project that was in violation of the ordinance, or at least he didn't have all of his permits in place at the

time he was building the project. He showed up to a county commission meeting to try and get that permit, and he was arrested. There was a sheriff's deputy there and he was arrested and taken to jail for violation of a zoning ordinance.

There was also a case from Williams County, which I think the facts are just fascinating, this went all the way up to the Supreme Court, it's a 2016 case. At the time, Williams County had an ordinance that said, "No man camps without a CUP and a violation of our zoning ordinance is $1000 for each offense."

There was a particular operator that had 49 housing units with no CUP. They had no CUP for something like 250 days, so the county tried to impose a fine of $29 million dollars. Basically said, "$1000 bucks a day per unit for every time you didn't have a CUP." And the other part of this I find interesting, they said, "But if you pay us within 10 days, it's only a million bucks."

So, this went to the District Court and it was affirmed. District Court said, "Yeah, you can impose a $29 million fine. A thousand bucks per day per unit, for all the time you didn't have the CUPs. Supreme Court said, "Can't do that." Reversed and remanded. Basically, that because you don't have to get an individual CUP for each housing unit, right, I can just get a CUP that says, "Hey, I have 50 housing units." They said, "You can't charge each of those housing units as a separate punishable offense." And I think this case ultimately settled. I don't know what the amount was, but it did come back to Williams County, and I'm pretty sure they settled it.

So, yeah, always be thinking of that. So, I'm going to burn through this really quick. This is really important, so I'll take maybe two minutes and talk about this, but always be thinking about a project from the perspective of the neighboring farmer. I've been at many, many, many of these hearings where you could have engineers and professionals and they can talk about all of the technical aspects of this and respectfully, Joe Farmer stands up and says, "Well, I don't like it." And his neighbor happens to be a County Commissioner. The County Commissioner, almost without fail, is going to take what Joe Farmer has to say more to heart than what 10 engineers and professionals have to say, so always be thinking of how do we get these folks that are around this project on board or at least try to reduce some of their heartburn about it.

This used to be a practice, and I think it's a terrible practice, so I'd never tell you to do it, and counties are really getting tired of it, is doing something and saying, "Oh, I didn't know about the zoning ordinance," or "I didn't know I needed that permit." That doesn't work anymore. Not that it worked before, but I mean, I really wouldn't do it now, with the trends that we're seeing.

Much of this practice, and this is why I say it's one of the most satisfactory portions of my practice, it's a lot about relationships. It's a lot about interacting with staff, interacting with public officials, so that's important. So, always be keeping that in mind.

One thing I would say, and this brings me back full circle is, even if an applicable township doesn't have zoning authority over your project, I still say go meet with the township. It's still in their backyard. Those are the folks that are going to show up to the county and might have heartburn over the project. Engage these people regardless of whether they have "authority" to regulate the project. These are the folks that live out there and these are the folks that have their County Commissioners' numbers on speed dial. They've grown up together, they were high school classmates. I mean, always be thinking of that an engage these people, even if you're not looking for an approval out of them. I will always think that that's very worthwhile.

And engage the public for that matter. If it's a very controversial project or might have some impact, don't let the first time the public hears about it be at a public hearing. Because then you're standing there trying to respond to questions and address issues. If it's a big enough project, have a public forum. I mean, do something before you submit the project and before it becomes public. Try and engage the public as early as possible.

This is rare, but one thing to be thinking about, in some counties and in some practices, if you get a CUP denied, there's a lock period where you can't reapply. So, it's not as if I get denied, I can apply the next month. Sometimes it's a long as a year. It says, "If we denied you, you can't come back for a year." So, something to think about. And again, I don't to want to just be negative, saying always walk into a hearing thinking about the record, but again, that's your one chance to build the record, so always be thinking about, "When I go before these public bodies, how do I get all the information that I want them to consider before them." So, if you need to write letters, documents, and exhibits and demonstratives or whatever it is, get that before them so that they can make a decision with all the evidence.

For two reasons: one, you want them to have all that they need to make the decision; and two, you're not going be able to get that before the District Court if you get an adverse decision and they make the decision to appeal it.

II. NORTH DAKOTA INDUSTRIAL COMMISSION UPDATE

LAWRENCE BENDER*

As was pointed out, I do a fair amount of work before the North Dakota Industrial Commission Oil and Gas Division. I've been requested to provide you with an update on recent important matters that have taken place before the Industrial Commission and the Oil and Gas Division. If any of you look at the docket sheets that come out on a monthly basis, you'll see that the Industrial Commission has approximately two hearings a month. Most of those hearings have to do with spacings, poolings, salt water disposal wells, increase density wells, central tank batteries, that sort of thing. Those are pretty mundane things, pretty routine with the industrial commission. I'm going to try to focus on something a little bit different. I want to talk a little bit about unitization, statutory changes and notable orders of the commission, as well as some things that have happened before the Industrial Commission relative to revocation of permits.

With respect to unitization and statutory changes that have taken place, my plan is to talk just a little bit about the types of unitization we have in North Dakota in terms of voluntary unitization and compulsory unitization. Then I'll talk a little bit about some of the cases that the commission has heard recently with respect to primary units versus secondary and tertiary recovery units. In terms of unitization generally as I noted, the statutory mechanism in North Dakota provides for two types of unitization, voluntary unitization and compulsory unitization. Voluntary unitization is as it would appear, is when all of the owners, working interest owners, royalty owners, overriding royalty owners can get together and make a decision for unitization of a field. Compulsory unitization is if you can get approval by the Industrial Commission for unitization, and then you can get a certain percentage of commitment from the royalty owners, and a certain percentage of commitment from the working interest owners, the commission will then force pool or force unitize the remaining persons.

Utilizing a word from bankruptcy, it's basically a cramdown procedure that if you can get a certain percentage, the commission will enter an order

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requiring the other working interest owners and royalty owners to go along. Voluntary unitization came into play in North Dakota when the conservation statutes were adopted in the late 40s early 50s. Compulsory unitization is something more recent. It came into play when the legislature adopted a statute back in 1965. The requirements for unitization are that the unitization is necessary for the operations contemplated by the operator, the unitization operations are feasible, meaning it's going to work, and unitization costs less than the value of the additional oil and gas that's going to be recovered from the operation, and then finally, unitization is for the common good.

In terms of compulsory unit approval, as I indicated earlier, it requires a certain percentage of approval by the working interest owners, and a certain percentage of approval by the royalty owners. In compulsory unitization, you do not need the approval by the overriding royalty owners. It's only the royalty owners and the working interest owners. Back in 1965 when the statute was adopted, the requirement was for 80% of the working interest owners to approve the plan of unitization, as well as 80% of the royalty owners. Now there's been some changes to that in the past few years, primarily because operators found it difficult to get that 80%. I believe it was in 1991, the legislature changed the percentage of ratification required for unitization from 80% to 70% for both working interest owners and royalty owners.

The reason for the industry petitioning or requesting that the legislature change this ratification requirement was they were having some difficulty after the failure of some of the Burke County units in the late 80s in getting royalty interest owners to approve at the 80% level, so they sought the change, and the legislature agreed to the change. In 2001, industry went back to the legislature again, and as a result of some unitization projects that were in the process down in Bowman County North Dakota, industry again sought a reduction of the percentage of ownership required for the ratifications from 70% down to 60%. It's kind of interesting to note that at that time Attorney General Heitkamp was suggesting that maybe it should even be lower, maybe it should be 50% or 51%. We were too far down the line in trying to get that change, so we stayed at 60%.

It was a result of this change from 60% that we ultimately were able to unitize the Cedar Hills Red River B Pool down in Bowman County North Dakota. I'll be getting into this in a little bit on another topic. There was a large dispute between Burlington Resources Oil and Gas Company LP as well as Continental Resources Inc. as to the type of unitization that should take place down in that area. Continental Resources wanted to inject air, Burlington wanted to inject water. There was disputes as to how the field should be broken up. I believe that if the percentage had not been reduced to 60%, that unit probably would have never been formed. The Continental unit I

believe is in the neighborhood of thirty-something thousand acres. The Burlington unit is a little bit smaller. They have since conveyed that unit to another operator Denbury. Denbury is planning on building a CO2 line from Wyoming into North Dakota, and injecting CO2 into that field.

The unitization process that took place back in early 2000, and the fact that the legislature agreed with the industry that it should be reduced from 70% to 60% was pretty important for that field at the time. It's going to be pretty important in the future as a result of CO2 coming into the area. In 2017, industry went back to the legislature one more time and requested that the percentage be reduced again, this time from 60% to 55% both for working interest owners and royalty owners. That was primarily a result of one operator who was having some trouble getting the necessary percentages in a unit up in I believe it was Renville County or Bottineau County North Dakota. That's where we're at right now in terms of the requirement for unitization. As a comparison, Montana is still at 80% and South Dakota is still at 80%. It is quite a bit easier in North Dakota to get a unit formed with the 55% ratification that it is in Montana and South Dakota.

As I mentioned earlier, there's two types of units in North Dakota, there's primary recovery units and there are secondary recovery units. In a primary recovery unit, talking about a situation where you're putting a unit together, but you're not going to be injecting any fluids into the reservoir to enhance the recovery. I'll be talking a little bit more about this, why you would put together a primary recovery unit if you're not going to be injecting any substances. A secondary recovery unit is a recovery unit where you're injecting gas or water into the reservoir. A tertiary recovery unit would be something like CO2 or polymers or things like that that might enhance the recovery of the oil and gas in the pool. All the voluntary units and compulsory units that have been established in North Dakota until very recently have been secondary recovery units.

It was only very recently that two units were established that were primary units. The first was the Little Missouri unit, which is located in Bowman County, and I believe that it stretches across the border into Montana. That unit is a very shallow gas unit. It was probably producing gas in North Dakota in the early 1900s. It was first drilled out by a company I guess, and then they sold it to another company. The Little Missouri was to the point where it was about ready to be plugged out if they could not reduce some of the costs and expenses of the unit. Just the cost of having meters on all the wells was such that it added a lot of expense to the field. The operator of the unit proposed a primary unit so that all the gas could come out of the wells and then just go to one meter, and then it would allocated back to the various owners of tracks in the unit.

The other more recent primary unit is the Corral Creek Bakken Unit. It was the first Bakken unit in North Dakota. Once again, no injection of any substances into the reservoir. The reason for unitizing that field was it's located in a state park. Burlington Resources Oil and Gas Company, which the operator of that unit at that time found it very difficult to find locations in the unit because of setbacks for spacing units, park facilities and that sort of thing. It was unitized to give Burlington Resources Oil and Gas Company an opportunity to have more flexibility with regards to drilling of wells. Talk a little bit about the trends toward more primary units in 2018 and 2019. XTO has made application to the Industrial Commission for the Huffman Bakken Unit and Continental Resources has made application to the Industrial Commission for the Long Creek Bakken Unit. The hearings on both of these cases have been held. The Huffman Bakken Unit was created by the Industrial Commission after the hearing. XTO has received the necessary ratifications. That unit has been formed.

I believe it became effective on March one. Continental Resources' Long Creek Bakken Unit, the application has been filed, a hearing has been held. Right now Continental is seeking the necessary ratifications. Talk a little bit more specifically about primary units, a question might be going through someone's mind out there is why put together a primary unit if you're not going to inject additional substances into the ground and produce more oil and gas that way? I think this example will give you an idea of just what's going on, as well as the examples I gave you on the Corral Creek. XTO's application for the Huffman Bakken unit the proposed unit area was approximately 26000 acres. There were 34 existing wells in that proposed unit. The proposed unit area was north of portions of Lake Sakakawea. One of the reasons they wanted to put this unit together is they felt they needed more flexibility to drill these long reach horizontal wells under Lake Sakakawea. As you can see we have probably not the greatest map, but you could see the topography here.

It's very rough around the lake. Once again, they needed the flexibility to be able to locate wells because of that topography. Then finally, there's just been more and more effort to push operators back from the shores of the lake. The tribe has adopted certain rules where the lake is on a reservation. State and federal agencies also trying to get operators far away from the lake, but still allow development under the lake. This is a depiction of what will likely happen now that this unit has been formed. You can see that XTO estimates between 100 and 150 additional wells are going to be drilled in this area. They are estimating approximately a billion dollars in capital will be invested to drill these wells. There will be an additional 150 million barrels of oil that will be recovered. XTO is estimating of course depending on the

price, but at the time, that additional four billion dollars in revenue will be derived.

It's probably a little bit difficult to see, but you can see that you do get a lot more flexibility if you can eliminate those spacing unit boundaries inside the unit area. If this was going to be developed on the basis of spacing units, we couldn't drill as many wells as being are proposed here, and there'd be different setbacks between the different unit boundaries. This does allow for better development of the pool. Okay all right, thanks. Okay the next unit I want to talk a little bit about is I mentioned it early is the Long Creek unit. This is the Continental Resources Unit. In this unit, talking about approximately 6000 acres of land, quite a bit smaller than the XTO unit. Right now, there's five existing wells in that unit. Once again, the proposed unit area is on the shores of Lake Sakakawea, needs to drill long reach horizontal Bakken wells. This is a structure map, I didn't have a terrain map, but the terrain is about as rough as it as in the other field that XTO is drilling in.

Also, once again, we're talking about a situation where we have state agencies and federal agencies trying to push operators as far away from the lake as possible for environmental reasons. Here is a diagram of what full development is going to look like in this area. As I indicated earlier, five wells drilled now, they'll probably drill an additional 56 wells, 461 million dollars of capital will likely be invested, 33 million barrels of oil recovered and approximately 1.6 million dollars in additional revenue. Primary units are being considered by other Bakken operators. I think we're going to see more of this particularly around Lake Sakakawea, because of some of the issues around the lake. The commission is not particularly keen on primary units. You have to demonstrate in addition to all the other factors that are in the statute certain other criteria, and that's the terrain is challenging, which was certainly the case in the two units I discussed earlier, uniform porosity, permeability and bad, and let me just talk a little about that.

The reason the commission is interested in having uniformity with respect to the reservoir is it would become very difficult if you had a good part of the reservoir and a bad part of the reservoir unitized into one in terms of coming up with a formula as to how the oil and gas would be allocated in and under the unit. The other thing that the commission looks into on that is uniform development in the unit before unitization is formed. As you noted in that one, there were five wells in that particular unit. There were five spacing units. We had uniform development because there was one well in each one of the spacing units. That's important from the standpoint of if you had five or six wells in one spacing unit and no wells in another spacing unit, once again, it becomes difficult for the commission to allocate production from the unit as a whole.

A lot of oil would have been produced out of one spacing unit, yet you've got another spacing unit that hasn't produced a lot of oil. There's a real problem in trying to equitably divide oil that's produced when you have that in equity at the beginning. In addition, a very important part, and this was very important in the Corral Creek is that the operator when they come in for a primary unit, they have to have plans for uniform development of the field. If you have a situation where let's go back to the XTO unit where they're going to drill approximately 100 or 150 wells, if they were to drill all those wells on the east side of the unit, and no wells on the west side of the unit, the commission would have problems with that because they wouldn't think that would be fair. You should be having uniform development over the unit as a whole.

In terms of primary units, as I've indicated, the commission has added certain criteria to its requirements before they will allow these units to be formed. Generally speaking, they're getting ratified. State of North Dakota seems receptive to approving primary units I think primarily because of the increase development, the additional oil that will be recovered, and what that means for revenue to the state of North Dakota. In fact, they did ratify the Huffman Bakken unit and the Long Creek Bakken unit. The federal government also seems to be receptive to approving these units. They have approved the Huffman unit. We are still waiting to hear from them on the Long Creek unit. Well the next subject I was going to talk about without slides, I'll just try to do it without it is suspension and revocation of drilling permits. This has actually been a subject that has been going on with the Industrial Commission for a number of years.

It was a result of activity down in Bowman County, once again the Cedar Hills Red River B Pool. When activity was taking place down there in the early 2000s, Continental Resources and Burlington Resources were very active in drilling wells, very active in determining who should be operators of wells. Both Continental and Burlington thought it was important to be the operator because they were drilling wells differently. A battle ensued as to who should be the operator of wells. The battle took place in terms of permitting. Continental and Burlington were going out and just securing every permit they could get and submitting them to the commission. It was basically a race to the Industrial Commission offices as to who got the permit first. It wasn't the best way for development for the commission to make a determination as to operatorship based on who got to their offices first. In the early 2000's the commission came up with a rule having to do with permitting.

That rule provided for certain criteria to determine who should be the operator, who should have a permit on a well. The first criteria was who had

the best techniques for drilling into a well, or who had the greater technical ability for permitting. Then there was experience of the operator, obviously technical ability. You want the person who has the greatest technical ability drilling the wells. Experience, presumably if you've drilled 100 wells, horizontal Bakken wells, you're probably going to be a better operator than if you drilled one or none. The number of wells in the area was also a criteria. The reason that's important to the Industrial Commission is if you have a number of wells in the area, you're probably going to have the infrastructure in place to obtain the gas or sell the gas, so you don't have flaring.

Then there was contractual obligations was another thing the commission looked into is if an operator or a permit holder had a contractual obligation and the other permit holder did not, they would like to see the permit go to the person who has the contractual obligation, so that the well could get drilled and leases don't expire. Then finally, the commission looked at percentage of ownership. They looked at that from the standpoint of the party or operator or permit holder that by itself or with the support of other working interest owners had the majority interest, was presumed to be the best operator, and would hold the permit. Fortunately, the commission has been very consistent with respect to that criteria. Initially, there were lots of applications brought before the Industrial Commission on who should be the permit holder. Because of their consistency, and because they primarily relied on that objective test of the operator with the majority interest being the operator, parties started to see what the commission was going to do, and that resulted in a lot less applications being filed with the commission.

Now more recently, what has been happening is some new things have developed with respect to disputes over permits. One of the more recent cases that I handled, it's over with now so I can talk about it, but there was a 1280 acre spacing unit and PetroShale was the operator of the 640 acre section in the north part of the 1280. EOG was the operator of the section in the south half of the 1280 acre spacing unit. PetroShale permeated a well in the 1280, but the 640 acre spacing unit that was operated by EOG had an operating agreement. That operating agreement provided that only EOG could be the operator. PetroShale as I indicated permeated a well. EOG brought an application to the commission asking that the permit be revoked, and also brought an action in state district court asking for a temporary restraining order preventing PetroShale from drilling the well.

At the time, at the hearing for the preliminary injunction, the court ruled that it did not have jurisdiction to be making a determination as to who the operator should be under the JOA, that that was a decision that should be made by the Industrial Commission. I think the district court got it wrong. We went back to the Industrial Commission, filed a motion for summary

judgment indicating that the District Court had indicated that they were the agency to be making that determination. The Industrial Commission agreed with what I just said, and said, "No, that's for the District Court to determine." Before we were able to get a decision out of the district court as to whether the JOA governed the entire 1280 acre spacing unit, the parties reached an agreement where they took the 1280 acre spacing unit and they basically split it in half. They established two 640 acre spacing units stand up so that east half was going to be operated by EOG, west half was going to be operated by PetroShale.

One other situation the commission has encountered recently little bit unique with respect to revocation of permits was a situation in which QEP and WPX were involved in a situation that I think we're going to see more and more in the future as more and more wells are drilled. The situation there was I'll just give you an example, section one and 12 was a 1280 acre spacing unit operated by WPX. 13 and 24 were a 1280 acre spacing unit operated by QEP. Imagine basically four section stacked on top of one another, the top 1280 operated by WPX the bottom one operated by QEP. There weren't any surface locations available in the QEP 1280 spacing unit, so it located its surface location in the WPX spacing unit. WPX brought an application before the commission said, "We're going to have problems with that location. It's going to result in us not being able to fully develop because of anti-collision issues where our wellbores are going to cross their wellbores."

Ultimately, we heard the case before the commission. Before the commission had an opportunity to reach a decision, the parties reached a settlement agreement, and the matter was resolved. As more and more wells are drilled, as wells are drilled in areas where there just aren't any surface locations, we're going to see more and more situations where operators are going to want to locate their surface locations of their wells on spacing units that they don't operate. That's going to cause some of the issues that I just mentioned.

III. CARBON CAPTURE AND SEQUESTRATION: PROJECT TUNDRA

JASON BOHRER* AND STACEY DAHL**

Jason Bohrer: I'll be Speaking about Project Tundra, the future of the coal industry, while Stacey really is going to handle more of the particulars about Project Tundra. I wanted to back up maybe even 100 years and review what gets us to this point. And really talk about energy policy development, justification and outcomes and why after 100 years of energy policy development, you get to the point where, we in North Dakota are debating what you do with CO2 and utility is preparing to make hundreds of millions of dollars investment in this technology.

I don't want to dwell too much on this. Prior to the industrial revolution, human and animal labor where the major sources of energy. Wealth and prosperity were really related to how many humans you could control and animals you can control, right? And that labor was transformed into wealth with small mechanical improvements and energy policy really didn't exist. As that industrial revolution came about, those first energy policies objectives sought to spread and create wealth and prosperity. Not necessarily among everyone, but among those folks who controlled that ability.

Once electricity was proven as a concept, in a way to power machinery, the policy that was enabled or the policy that was enacted was rapid electrification. The reaction to that policy was creativity among electricity distribution, and if you go back a little bit farther than industrial revolution, you're talking about competing. Do you have AC or DC power? Are you going to have micro grids in every city? Are you going to have a distribution model that looks more like we do now?

**Jason Bohrer* was named President and CEO of the Lignite Energy Council in June 2013. He has spent his time at the Lignite Energy Council leading its public outreach and advocacy operations and engaging with stakeholders and government officials on behalf of the lignite coal industry. Jason is a graduate of North Dakota State University, where he received a degree in history, and of George Mason University Law School. Jason has worked in the field of politics as the Communications Director for the Idaho Republican Party and for several members of Congress, where he focused on energy policy and eventually served as chief of Staff to Rep. Raul Labrador (R-Idaho). Jason, his wife, and two children live in Bismarck, North Dakota.

***Stacey Dahl* is senior manager of external affairs for Minnkota Power Cooperative, based in Grand Forks. Originally from Bismarck, Stacey received her undergraduate degree in education in 2004 from the University of North Dakota. She received her law degree in 2008 from the UND School of Law. Dahl served in the North Dakota House of Representatives from 2005 until 2012. An attorney, she also is a former private practitioner and prosecutor. In addition to overseeing public policy efforts for Minnkota, Dahl serves on the leadership team exploring the feasibility of Project Tundra, a proposed carbon capture project at the coal-fired Young station in Center, North Dakota. Dahl lives in Grand Forks with her husband and two children.

But the reaction came to look more and more like what we have today with large co-ops. Early in the 20th century, you had significant government investment. The Tennessee Valley Authority had as a policy, the rapid electrification of that Tennessee Valley, the creation of wealth and the improvement in the quality of life among those inhabitants. Those policies, many of them came about as part of the New Deal when the government was vesting in millions of things. But it was supporting that objective and that reality that electricity provides wealth and prosperity and makes people's lives better.

Energy didn't come directly from human labor anymore. Energy began to come from machines, which were by and large, fed by fossil fuels. The objective then, was successful as mechanical advantages and machines transformed that energy into wealth and prosperity for those folks. At this time, there was very little of what you'd call an R and D infrastructure such as we have today, that much of it is overseen by the federal government. States have a large role. There is little to that at this point in the energy world.

You move on into that wartime and postwar expansion. The objectives then shifted from providing a broad base of prosperity to a wide swath of people. The objective shifted to providing energy for the industrial machinery to transform energy into wealth and military might.

Let me give you a specific policy that was enacted in the Pacific Northwest was to accelerate dam development. When this policy was done, was enacted, they didn't know what the result would be. They said, "If we build excess capacity, industry will come and it will be a benefit for the Pacific Northwest." So they built dams up and down the Columbia.

The response after that policy was enacted was a large scale development of aluminum. Aluminum processing takes a lot of electricity. It's very energy intense and because the investments had been made in the Pacific northwest to eventually invest in electricity but not create load for that electricity, industrial manufacturers flock there because the electricity was essentially free.

Was that objective to provide energy for industrial machinery to transform energy into wealth and military might successful? Absolutely, it was successful. In 1948, President Roosevelt said that we could not have won the war without the Grand Coulee Dam because that was the driver for much of the military might that was eventually transformed from raw aluminum with free electricity into a vast number of airplanes, Boeing. That whole development of the aircraft industry in the Northwest is really, directly traced back to this policy to develop electricity, to develop and use our natural resources.

At this point, there was growing R and D particularly in the nuclear industry, but there's also minor but growing opposition and increasing timelines for the projects. The dams that were built at the tail end of this process, we're taking a lot longer than the dams that were built at the front end of this

process, right? The culture around energy development is beginning to change. The objectives are being completed, but the culture is beginning to change.

Moving on in the timeline, stretching after the postwar into maybe the early 80s, our objective began to be increasing energy security. You have very specific policies now that were implemented that have repercussions in North Dakota to this day and that we're still feeling, we're still dealing with these. It's happened quick enough that the energy industry has lived to see two sides of federal policies that really are contradictory to each other.

One of those policies was the prohibition of natural gas being used for power plants in 1974. So because the objective was to increase energy security, the thought was, we are going to run out of natural gas and that needed to be used for other more important objectives. So the policy shifted to incentivize the creation and deployment of large coal power plants. This is right in the heart of when North Dakota's coal industry and our major power plants began to be constructed.

So the reaction to this policy was the rapid deployment of coal power plants, including in North Dakota. Was that objective successful? It really was because we became much more energy secure because of those investments and because of those policies that were made. There was also the significant R and D that really began to filter out into the private industry as well, as the nuclear industry shifted away from government projects, more into the private sector. This is also the timeframe when many of our nuclear power plants were built. Again, supporting that policy objective to increase energy security.

However, also increasing was public engagement and concern relating to energy development. There was major transmission controversies in our neighbor in Minnesota, where you would have really, literally armed groups of people who were protesting large transmission towers. Similarly, as nuclear power was beginning to be developed in Minnesota, which doesn't have those coal resources like North Dakota does, there was significant opposition at the capitol in Minnesota to the growth of nuclear power.

You read the stories of the early disputes that would happen in some of the capitol buildings around the country and Minnesota's one of them. Where the state police or the police would have to come and make sure that there was no shenanigans going on and you look at what happens today and you think, "Well, it has improved a little I guess." But that increase in cultural engagement, in the energy policy development, really began to be seen here in this timeframe and the timelines really began to be extended in these projects.

It became a lot harder to say, "Here's the policy, here's the objective, let's get it done." Because the policies were becoming more convoluted and more confused by the engagement of a really interested public. Now, after that moved into the environmentalist movement when those objectives that were present at the beginning of the 20th century, really we're no longer at the top of anybody's list for energy policy. You're no longer really interested in spreading wealth and prosperity to people. You are more interested in, "How is this going to impact the environment?"

I guess that's good news because that first wave of policy objectives had been successful. Really the standard of living between the first slide and this slide is tenfold and so, people had the luxury, I guess, of saying, "What is it going to do to this river bed? What is it gonna do to this endangered species? What's going to happen here?"

The policies also got more specific and you also, began to see what happens when policies get very specific industry and the public and the world reacts maybe unexpectedly. I'll give you an example. As the Clean Air Act Amendments of 1977 and '90 were passed, the objectives were to reduce acid rain, other forms of pollution. Some of those objectives were to really begin reducing the amount of coal that was being linked directly to these things.

A little bit of inside information, many need to know this, but the energy policy for the United States is really set by natural resources committee, the United States Senate. And that's because early on, the United States Senate recognized that natural resources are energy. As these amendments were being debated in 1977, 1990 saying, "What's our objective to reduce acid range, to reduce pollution?" That the energy policy power was concentrated in the United States Senate and energy and natural resources, which was dominated by western senators.

What they were able to do is create a policy that, while it did reduce acid rain and pollution, it gave advantages to the type of coal that is found in the west. So you saw a really significant shift from higher sulfur coals that were being used in the east, to lower sulfur coals that were being used in the west.

And while yes, this was in response to that objective to reduce acid rain and pollution, it was also directly related to how energy policies actually made the nuts and bolts of it on a day-to-day basis in Congress, in the Energy and Natural Resources Committee, which is dominated by western senators.

So you see, this is really a great example of how energy policy is made, matters and not just the objective. You look behind the scenes and it's not just about reducing that sulfur content, but it was also about really astute senators who were able to see an opportunity and make the best of it. So this is also a time where research and development was still happening at a pretty significant level in the federal government. This overlaps with the time frame

that the federal government and others made serious investments in the Synfuels Plant. Being able to taper off from that last concern of energy insecurity. Can we make our own natural gas? Can we leverage our research and development assets to make our lives better, our world more energy secure?

So at the end of this slide, you ask, was that policy objective successful? Absolutely it was. When's the last time you heard about anyone seriously complaining about acid rain? It was because of those amendments were successful in doing that. But you also look behind the scenes and visualize how it changed the coal industry from one that was dominated by Eastern interests. One that was dominated by Western interests.

Now you move into the more modern era. I don't know when, I'd say this begins. But if you classify it by the objectives are to reduce climate change, it's a relatively recent 25, 30 year phenomenon, maybe. This is a time when the policies become a little bit more convoluted because the objective is harder to achieve and especially harder to quantify. The Clean Power Plan that President Obama unveiled, it's objective was to reduce the damage by climate change.

But, if by any form of evaluation, full compliance with the Clean Power Plan would have had zero impact on climate change. So you begin to see, because there is more fine details in those energy policy objectives and there focusing on broader problems, success is harder to define. The reaction to these policies has been major research and development has been transferred, continues at the federal level, but also transferring to the private level.

What you also see is a less linear regulatory and industry progression. You could go back to that slide and say, "The challenge is acid rain. Here's the solution. Industry's going to go fix it." We've been hearing concern about climate change for a couple of decades now and there hasn't been really nothing that looks like the Clean Air Act to make that really huge bite at solving that challenge.

However, your industry has not waited for the government to weigh in 100% and say, "This is what you shall do." So, you've seen industry groups focusing on their own on, what do you do with carbon dioxide? That's really been a benefit because it has allowed industry to look at CO2 not as a sulfur that is something that is a pollutant to get rid of, but more as an opportunity to see, while people are talking about carbon dioxide and is it a pollutant? Is it not a pollutant? Maybe we can do something with carbon dioxide that is beneficial. Maybe we can take that carbon dioxide and turn it into something that is good instead of just simply treating it as a pollutant.

So that's really one of the changes that as energy policy, those big steps have slowed from the federal government development and concern has been picked up by the private sector. That's one of the things that you're going to

see about Project Tundra is this doesn't necessarily work because the government says, "You shall control CO2." That background conversation is always on. That CO2 is something that the EPA or that the Supreme Court has declared as a pollutant and how are we going to respond to that reality? That CO2 is in the top of our policymakers minds and it's in the top of public pressure minds. There's investor groups, there's financing that are all built around your carbon footprint.

So, industry has had a little bit of flexibility to decide how are we going to respond to this? So, you circle back and you say, "If the objective is to reduce climate change, have we been successful? Can we even be successful?" And I don't know the answer to that. But if the objective is to continue to spread that wealth and prosperity to our people, while overlapping with many of the most significant environmental challenges of the day, then that focus and that growth of the research and development industry has provided a blueprint that will get us into the future. With that, I just wanted to transition more into the future and where North Dakota fits in this.

What we've realized is that if you're going to do anything with carbon dioxide, North Dakota has a great opportunity to be part of the solution. Our emission sources are in close proximity to where you could potentially put that CO2 and there's immense possibility to store CO2 underground. We've got opportunities to use carbon dioxide to spin the turbine in a power plant instead of using steam, that's called the Allam Cycle. So you'd be able to build a brand new power plant that didn't have a stack for anything to go out. A smaller footprint, more efficient, economically competitive with natural gas.

Or we've got all of these assets. Again, remember these were built in a time when the government said, "You shall not build gas." So now we have this great installed asset in the country and how are we going to make that work as it was intended to provide maximum benefit for a long period of time?

What we are working on is potentially a solution to that. To retrofit some of that existing high value asset with technology that would capture the CO2 and do something useful with it or store it deep underground. So that is what Stacey will talk a little bit more about. So, what's next is to drive that CO2 industry, find those partnerships, study the enhanced oil recovery needs that CO2 might offer, figure out what state policy needs would be needed to make this happen and make sure that the state of North Dakota's policy is to maximize the energy resources that it has in a way that's environmentally compatible. I think that's something that everybody could agree on.

Any new CO2 incentive that we might have would maximize the value of that CO2 for oil recovery. We could add a 20-year exemption from oil

taxes that would make sure that, if you're using CO2 from a coal power plant and putting that into the oil field, that you're creating incentives to leverage the infrastructure, the resources that North Dakota has for the future.

So I just wanted to cover a broad segment of time stretching back prior to the industrial revolution, kind of walk through how energy policy is developed slowly by fits and starts. Call out some of those policies that you could specifically visualize how they're coming to North Dakota and really where we might go in the future. What might be next for those energy policies and set up Stacey to talk more directly about the specifics of how one of these technologies might work in North Dakota. So with that, I'll conclude, turn the time over to Stacey and I think we could probably do questions at the end of her presentation.

Stacey Dahl: Well, thank you very much. It is so good to be here, and I appreciate the opportunity to talk to you about our carbon capture and utilization project that we're embarking on and exploring at Minnkota Power, so as manager of external affairs, which means policy is in my wheelhouse, I talk to people all the time, some who believe are going to die in 12 years because of impacts of climate change, others who think we should release more CO2 into the air because it helps plants.

So as a company, we're in a very difficult position in terms of managing that future going forward, and our primary motivation as a cooperative is to provide low cost-based service to our members and to insulate them from adverse impacts of regulation. Jason referenced the Clean Power Plan, which would have required North Dakota to reduce CO2 emissions by 45%, and as such, that had a big and significant rate impact to our membership. So Project Tundra really is about trying to mitigate risk for our members in the future using the technology-based solution.

So just by way of background in whom Minnkota is, we're again a not-for-profit generation and transmission cooperative, meaning we produce power and we send it to our member-owners via high voltage transmission line. They take that energy and ultimately deliver it to the end user who are their members. So in total, we have about 150,000 members, which in the world of utilities actually makes us a pretty small utility, so just bear that in mind as we talk about this project, which is a proposed 1.6 billion dollar project, we are relatively small, and certainly to embark on a project of this size.

All of our generation resources are within North Dakota, and although half of our load is in Minnesota, our resources are over here and that's by design. You really don't want to try build generation in Minnesota. If your resources are going to be in either of the two states, North Dakota is certainly a much better place to build out those resources.

So Minnkota has won awards for our role in renewable energy, and you can see in terms of capacity, we are at almost 35% capacity for wind energy, so we've won national awards for our leadership on renewable energy, but fundamentally at the end of the day, we are still a coal-based utility. With our unit availability in the 90% and up range in terms of those coal shafts being available, we are still a coal-based utility and that is the backbone of who we are and what we do, and it is a very cost-effective resource for us. So those units are about 40 years old, and last year had their second best year in history, so they're performing very well as we move forward.

When you talk about actual energy delivered, because wind doesn't always produce, it produces between 40 and 50% of the time, coal becomes an even larger share of our portfolio, and yet coal is very challenged on the emissions front. Jason highlighted the environmental resistance and pushback on coal in particular, and it is very challenging to utilities who want to continue to use coal in the future, and Minnkota does. So our CEO has a phrase, the rest of the world is running away from coal and we seemingly have our arms open trying to find more ways to utilize coal, and that is captured within the Project Tundra itself.

So as we prepare for the future, and we think that it will be a carbon-managed future, Project Tundra is about defining and helping to use technology to define that path forward. You really can't turn on the news without some story about climate change. Even this White House, which is very friendly towards fossil energy in general, issued a report that addressed some of the impacts of climate change, so it is at every turn, and certainly that pressure is not easing in any respect.

So how are we going to sustain a reliable and resilient grid in the future, and as a company we really believe it is all of the above, and so that is natural gas, it's batteries, it's hydro, nuclear, and yes, it's coal too. In North Dakota, we have a particularly unique opportunity because of our 800 years of lignite coal and because of the unique geology we have and opportunities to enhance recovery, we are in a unique position that only a handful of states across the country are really in, but we do really have the potential to unlock the value of oil production today that is limited to those older conventional wells. I haven't quite cracked the code on the Bakken. The EERC is working hard on that, but we're not there yet today, so can we preserve those lignite units that are available 92% of the time for electricity to the grid and preserve that 800 year supply, and insulate our members from regulatory CO2 risk.

So I just want to, I hope it's available. We have a video that my department actually worked really hard on. When you talk about Project Tundra, it's called a post-combustion retrofit, which doesn't really, it's not self-

explanatory, so we produced a video to help walk through the different components of the project.

Video Presentation: The Milton R. Young Station is home to energy innovation. The lignite coal-based power plant is the focus of a major research and development effort called Project Tundra.

Innovative technologies are being explored to remove up to 95% of the carbon dioxide emissions from the Young Station Unit Two generator. If Project Tundra is completed as planned, North Dakota would be home to the largest carbon capture facility in the world.

So, how does it work?

The first step is to take the flue gas from the power plant and divert it to a scrubber which cools the gas and removes impurities. From there, the gas flows into the bottom of a large absorber unit which is filled with stainless steel structural packing. As the gas rises through the packing, an amine-based liquid solvent is released. The amine bonds with the CO2 and removes it from the flue gas.

The solvent is then sent to a regeneration unit. There, heat is used to separate the CO2 from the liquid solvent, bringing the CO2 back to a gaseous state. The CO2 is finally delivered to a compressor where it is compacted and prepared for transport via pipeline. The solvent meanwhile is routed back to the absorber unit where it is used again.

The captured CO2 will either be permanently stored in a deep geologic formation or used to enhance production from oilfields that are near the end of their useful life.

Stacey Dahl: Did you ever think you would get that kind of bass set in energy CLE? I didn't. Pretty amazing.

All right, very good, so you get the sense of what this looks like. It's capturing flue gas after the combustion process and using an amine to capture the CO2. We're working very hard with EERC on a deep geologic solution, and also a company called Eagle Operating, which is a North Dakota-based oil company on an oilfield application as well. Our hope at the end of this is that we'll have a project that has that dual storage component, which is injection into the ground and in the oilfield as well.

So in order to make this project work, there are a thousand different obstacles that we have to overcome, and they all have to align perfectly nearly, and so when we look at this project, there's four major categories. We have to develop the business structure, and I'll just spend a moment and a couple of slides talking about what's going to be the financial driver for this project, so let me come back to that.

We also need state and federal support, for which we have had exceptional support from the state of North Dakota and the federal government. To

date, there's been over 65 million dollars of research between looking at the geology and the amine technology that has touched this project in some fashion. Most all of it has come from the state and federal government, and certainly both arms of that support have really been helpful in advancing this project. We continue again to work with EERC in evaluating the geology near the plant for geologic storage, as well as our oilfield partner as well for those CCUS, the utilization part of this project to enhance recovery as well.

This just shows you a map. You may have seen this before, but again, we are at this point for enhanced oil recovery limited to really these are the best conventional targets today, and as such, we hope that in the future we ultimately can use CO2 in the Bakken, but that is some number of years away at this point.

This is modeled after the Petra Nova project, so we're proposing to scale up to X in terms of the CO2 captured, but there is a model operational today that was on time, on budget, and that hasn't been true for every clean coal technology project. So this Petra Nova project, if you want to spend a little time looking into it, it is successful and a much needed win on the clean coal front, but they took a field that went from 500 barrels per day to over 3,000 barrels per day, and they're going higher in the next year or so.

The developer of that project has now joined the Project Tundra team. He's a Texan with the included swagger, and he is a fantastic addition to our project, and his knowledge in project development is second to none, so I'm confident we have the right team in place.

Now, I promise I will not dive into the U.S. Federal Tax Code, but only to mention back to that business structure slide that the financial driver in this case is going to be something called a 45Q tax credit, because these carbon capture projects are not economically feasible, they can't stand on their own today, so they still require state and federal support. Last year, and it was actually former Senator Heitkamp, and now Senator Cramer with the support of Senator Hoeven who really pushed for these 45Q changes, but essentially what it does is it allows a $35 per ton credit for every ton of CO2 you store that is used in enhanced oil recovery. That number changes to $50 if you can verify that you sequestered it in the saline geology.

So in Project Tundra, we are looking to sequester four million tons per year. That's 95% of the CO2 off of that unit. So four million tons a year times 50 or $35 a ton depending on which application that CO2 goes to, represents potentially over two billion dollars in federal tax credits over the life of that program, which is 12 years, and so those are huge numbers. You need to find a partner that can monetize, and so that's where again we have to develop that business structure and perfect parallel path, so if you know anybody who has a two billion dollar taxable appetite, please let us know. We are actively

searching for partners, and again, that's part of the role David is playing in the project as well.

So lots to do. We are applying for a federal grant to get us through the next design phase, and there's a lot more to come in the way of research and development on the project, but so far, we have continued to knock down those thousand different obstacles in our path with the partnership of the state, with our partners through the lignite council, and our delegation as well. Thank you.

IV. ENERGY DEVELOPMENT ON TRIBAL LANDS

JOHN FREDERICKS III* AND MARK FOX**

John Fredericks III: I want to talk a little bit about some historical and legal background with regard to tribal energy development in general on tribal lands. First, I want to sort of give you what I consider to be the fundamentals of what you should know if you want to engage in energy development on tribal land. First is to know the history of the tribe that you're dealing with and how its government works, be familiar with the tribe's constitution and their form of government, their treaties and especially in our case, the case of the MHA nation, the allotment process which I'll get into a little bit later. Second fundamental is the federal trust responsibility what is it and how does it affect energy development on Indian land. Basically, the federal government as a result of our treaties and a plethora of laws that govern trade and intercourse in Indian country has its thumbprint on most development of

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***Mark Fox* is the Chairman of the Mandan, Hidatsa, and Arikara Nation. Fox is a veteran of the U.S. Marine Corps and earned his law degree in 1993 from the University of North Dakota. First elected Chairman in 2014, Fox is currently serving his second term. Chairman Fox currently serves on three federal advisory boards for the Department of Energy, Department of Interior, and the Environmental Protection Agency. He was recently elected Chairman of the Coalition of Large Tribes. A fierce proponent of tribal sovereignty, Chairman Fox has dedicated his administration to improving the lives of all MHA Nation members. Under his leadership, tribal members have received increased education, addiction, and health services. Chairman Fox has also expanded and enhanced tribal infrastructure and transparency in governmental affairs. Chairman Fox is renowned for his work in the areas of taxation, gaming, energy, and economic development. In his personal time, he enjoys participating in events that endorse good health and endurance challenges.

energy resources in Indian country and it comes as a result of what I call the federal trust responsibility which is the duty of the federal government to protect the interests of Indian tribes.

That's a historic relationship that relates all the way back to the beginning of the nation's existence. There's also a complicated application of tribal, federal and state laws that apply to energy development in Indian country in general and it comes about as a result of the checkerboard land ownership situation that a lot of tribes that have been allotted are faced with including our tribe, the MHA nation at Fort Berthold. The application of those laws is extremely complicated, I can probably spend a half a day and not even get into the detail of how the state, federal and tribal law applies to particular energy development in Indian country. Of course, the fourth fundamental is land status and title issues, landmen that are out there that deal with energy development at Fort Berthold probably are familiar with this but land issues get extremely complicated at Fort Berthold and in Indian country in general. It's mostly as a result of the General Allotment Act which I'll talk a little bit about today as well. It's important to know the difference between trust land and what we call fee land on the reservations in Indian country. Depending on whether a land is held in trust or is in fee, different laws can apply.

So, treaties, that's sort of the foundation of the federal-tribal relationship. I like to include these two quotations from Chief Justice John Marshall when I talk about Indian law in general and in this case energy development. But Chief Justice John Marshall wrote in a case called *Worcester v. Georgia* which is a foundational Indian law case that was decided back in the early 1800s when the United States was just a young country. The issue had to do with the relationship between the United States government and Indian tribes and how the treaties between the United States and tribes should be treated as a matter of federal law.

What John Marshall said was that, "The constitution declared that treaties already made as well as those to be made to be the supreme law of the land and the nation is adopted and sanctioned previous treaties with Indian nations and consequently admits their rank among those powers who are capable of making treaties. The words treaty and nation are words of our own language selected in our diplomatic and legislative proceedings by ourselves having each a definite and understood meaning. We have applied them to Indians as we have applied them to the other nations of the Earth, they are applied to all in the same sense." So, the treaty clause of the constitution doesn't mention Indian tribes but if you look at it historically, the United States as a young country, most of the treaties that it entered into were with the Indian tribes on the continent. Those tribes were, in many cases, just as powerful or more powerful as that young United States was back then.

So, Chief Justice Marshall and the Supreme Court recognized this and said that Indian tribes are nations with whom the United States can execute treaties and when those treaties are executed and confirmed by the Senate in accordance with the constitution, they constitute the supreme law of the land. So, treaties with the MHA Nation and a lot of tribes along the Missouri River go back as far as 1825 called the Atkinson O'Fallon treaties also know the Friendship Treaties of 1825. Chairman Fox might elaborate on this but these treaties in 1825 were entered into separately with our three tribes, the Mandan, the Arikara and the Hidatsa in the same year by this military delegation that came up the Missouri River. The sites you see there are to the statutes at large, they're not published on the United States code but these treaties are part of the statutes at large and if you want to look them up you can see all three separate treaties with the tribes in those citations.

The purpose of those treaties basically was to have an understanding between the United States and our three tribes that there would be peace and friendship. They acknowledged the MHA country but they didn't attempt to define or limit our borders back then, our territory was defined by what we call today legally as our aboriginal territory which was much larger. A lot of people don't know this but it was much larger than the territory that was defined by the 1851 Fort Laramie Treaty. The 1825 treaties also constituted an agreement whereby the United States agreed to receive the MHA nation into their friendship and under their protection. That word protection in that treaty is important because that's the foundation of what we call the federal-tribal trust relationship. The 1825 treaties had important commerce and trade provisions, the most important one was the acknowledgment by the MHA nation of the United States right to regulate all trade and intercourse with them.

We agreed not to trade with anybody but authorized American citizens and that was a significant concession on our part and something that the United States wanted because at that time, we were actively engaged in trade with Great Britain and France to the north of us and they posed a threat to the United States if you look at it historically. The United States also agreed to admit licensed Indian traders under what their treaty refers to as under mild and equitable conditions. We haven't really gotten into enforcement of that clause recently as a matter of a legal right but there's a lot of issues in connection with energy development where I think that treaty clause is going to come into play in the future with regard to what types of regulations and burdens that not only the United States but the state of North Dakota can seek to impose on our energy development on Fort Berthold.

Then there was the 1851 treaty Fort Laramie which most people who know a little bit about the MHA nation and the tribes in North Dakota and South Dakota are familiar with. That treaty at the time was the largest treaty

council or since then also is the largest treaty council ever held. More than 10,000 Indians from the Dakota's and Montana participated in that treaty, some of the provisions of the treaty you'll see there. The important one for our purposes here is that it recognized the territory of the MHA nation south and west of the Missouri River. That was the only purpose of the treaty, was to go and attempt to make peace with the tribes and negotiate treaty agreements with the tribes for accessions or to define their lands that were south and west of the Missouri River.

It wasn't . . . It didn't have anything to do with what right the tribes had north and east of the Missouri River and that was made clear in what we call the Savings Clause of Article Five of the treaty because it acknowledges that the tribes by entering into those treaties didn't abandon any of the rights that it had north and east of the Missouri River. The General Allotment Act of 1887, this is probably one of the most devastating acts in Indian country and it resulted in a lot of the issues faced today, not only by us as tribes, tribal governments and tribal attorneys but also as industry and their landmen when they go out to try and lease land at Fort Berthold. They're faced in a lot of cases with difficult title issues and it comes . . . It's all rooted in this General Allotment Act where Congress, in 1887, stated that its policy basically was to break up tribal and holdings into individual allotments. Usually those allotments were anywhere from 80 to 160 acres per individual.

A lot of tribes in the country, including our tribe, were affected by allotment. Nationwide, allotment resulted in the loss of about 90 million acres of Indian land, today it results in a lot of, what we call, fractionated lands where tracks of land can be owned by up to 100 or more tribal members in what we call undivided interests. It makes for extremely complicated title work and it makes it extremely difficult in some cases to obtain leases for allotted land for oil and gas. Like most tribes, we also have our own allotment agreement which we executed in 1886 and which Congress ratified in 1891 and that allotment agreement which was entered under the authority of the General Allotment Act, diminished our reservation and provided for allotment of a lot of the lands within what was left of our reservation. Because the size of the allotments, there was a lot of surplus land that was left after all of our members received their allotment.

So, in 1910 Congress adopted another act that essentially opened those unallotted lands in the north-eastern part of our reservations to sail and homesteading and that's where the majority of the fee lands on the reservation are now in what we call the North-East Quadrant. So, reservation land status, that's an important issue and matter to contend with when it comes to energy development, not just at Fort Berthold but in Indian country in general especially where those tribes have been allotted. As a result of the allotment

policy, we now have basically three types of land holdings on the reservation, tribal trust, allotted trust and what we call fee patent land. Legal title to all trust land included to both tribal and allotted land is held by the United States and the whole title to that land entrust for the benefit of the tribe or in case of allotments for the allottees and their heirs.

The federal title records are housed in the BIAs land titles and records office in Aberdeen, South Dakota, that's where all of the original trust deeds have been recorded and there's a lot of complicated issues that can arise as a result of some of the languages in those trust deeds. Some of our industry partners have found out the hard way. In cases where they thought they had a valid lease of allotted land but it turned up to be . . . There was a mineral reservation that only lasted for 20 years and then lapsed. So, in some cases the BIA doesn't always record the lapse of those mineral reservations. So, in some cases, where the tribe has reacquired land from allottees that were subject to those 20-year mineral reservations, those mineral reservations lapsed and so the tribe wound up owning the minerals but the lessee actually had a lease with the allottees. So, they technically were in trespass and as a result they had to come back to the tribe and negotiate new leases.

Fee patentee lands, these are lands which most of you are more familiar with where title is held by the individual who actually owns the and. Fee lands can be owned by the tribes, in a lot of cases our tribe has reacquired land that we lost through the fee patent process under the General Allotment Act. We own those lands in fee, those lands can also be owned by individuals including both tribal members and non-Indians. Different laws apply on the reservation depending upon whether your lands are in trust or in fee, that comes as a result, of some recent Supreme Court cases that have held . . . Some cases, tribes have lost the right to regulate non-Indians on fee land in the reservation unless you come within certain defined exception which I won't get into because that'll take another two hours of time.

In some cases, states have jurisdiction to regulate on fee lands that are owned by non-Indians and it's a big headache for us as a tribal government because, in a lot of cases, there's things that happen with energy development that don't just stay put on fee land. It has effects that generate out onto trust land or it effects our own members. Things like where wells are located, spills and things like that, so we deal with those types of regulatory issues on a daily basis at Fort Berthold. In a lot of cases, our industry partners are good partners, they're socially responsible partners and they come to us and get permits that we require even though their wells are located on fee land. There are exceptions, one notable exception with a lessee out there that doesn't think that it needs to comply with tribal law and as a result, we're in litigation over that.

The Indian Reorganization Act of 1934 is also another important law that affects energy development in Indian county. Your tribe like many tribes reorganize their government under this act. The act basically ended the policy of allotment, Congress finally acknowledged that that policy was an abject failure so they adopted the Indian Reorganization Act, reemphasized tribal sovereignty and self-determination. Congress, in that act, recognized the tribe's right to adopt constitution subject to approval of the Secretary of the Interior. Those constitutions generally define how our tribal government operates today, they also define the limits of our jurisdiction, the scope of our jurisdiction. Our particular constitution provides that our jurisdiction extends to all persons and all land within the boundaries of our reservation.

And that's an important legal point for us because in the supreme court in a case called *Montana v. the United States* in 1982, I believe, limited the Crow Tribe's jurisdiction over non-Indians on fee land but a lot of people don't realize that the Crow Tribe is not an IRA tribe so they didn't have the federal protections that we have in our constitution. And we're in the process of litigating exactly what that means right now through the federal court system in some of our oil and gas cases. Section 17 of the IRA also authorized separate federal charters of incorporation for tribes to separately conduct business, these are what we call section 17 Corporations. Among the power that Congress gave these corporations was the power to lease land up to 25 years without federal approval and I'll talk a little bit more about what that means as we go.

So, some of the points to consider for energy development on tribal lands, no interest in trust land can be conveyed, leased or encumbered without the consent of Congress. Congress is consented for energy development to leasing in a number of statutes, some of which are on this slide. The Indian Mineral Leasing Act was before 1982, that was that act the was generally used to lease Indian lands for energy or mining development. The Indian Mineral Development Act of 1982, that's the act that the tribe generally now leases or enters into agreements for energy development on its lands. The Federal Oil and Gas Royalty Management Act, that applies in some cases to Indian lands, most notably the office of natural resource revenue, collects royalties and performs auditing functions, a lot of its duties are defined by this act.

Tribes who have Section 17 corporations, as I said, can lease land for up to 25 years without federal approval. That provision of federal law has not been used much for energy development, although I think that the potential is there. We're currently in the process of exploring whether we can use that statute to enter into energy leases where we've got title issues that have stymied our federal partners into not being able to act one way or the other. So,

that's a potential that we'll be looking at in the future. N.E.P.A., the National Environmental Policy Act does not apply to Section 17 leases but tribal laws do apply, so we apply our own environmental protection laws even when we lease land under our Section 17 corporation. Energy development on tribal fee land on reservation does not require federal approval but again tribal law do apply. Section 503 of that Energy Policy Act of 2005, that act authorizes what we call Tribal Energy Resource Agreements or TERAs. The purpose of the act was to give tribes more autonomy, more control over the way they lease their lands and less oversight by the federal government.

When that act was passed in 2005 and the regulations were implemented, it was underutilized primarily because of the difficulty of getting these TERAs approved by the federal government. Congress just recently, last year in December, approved the Indian Tribal Energy Self Determination Act, the purpose of that actually it to give, again, give tribes greater autonomy over the management and development of their resources, streamline and bring greater certainty to the Bureau of Indian Affairs Approval process for TERAs. The jury's out on whether or not that act is really going to fix the issues that the tribes are having with these tribal energy resource agreements and getting the secretary of the interior to approve them. But we'll be looking closely at that act going forward as a potential tool for us to use to enhance responsible energy development at Fort Berthold.

Energy development on allotted lands, just like tribal trust lands a lot of trust lands can't be conveyed, leased or encumbered without the approval of Congress. Congress has provided that allotted lands can be eased under the Indian Mineral Leasing Act and there's also an act that's specific to Fort Berthold, a lot of people don't know this but it's called the Fort Berthold Mineral Leasing Act. The Bureau of Indian Affairs historically has not approved leases under that act which applies to us but they've approved them under the more general Indian leasing act. One of the things under the Forth Berthold Mineral Leasing Act that the secretary has to determine before he approves the leases is whether or not that lease is in the best interest of the Indian owners. N.E.P.A., the National Environmental Policy Act applies to energy leases and writes away on a lot of allotted trust lands just like it does for tribal trust lands unless, again, you lease under section 17 which doesn't require federal approval. It's the federal approval that triggers the N.E.P.A. process.

Under the Froth Berthold Mineral Leasing act, individual owners must approve the lease if a majority of the owners have attract . . . Approve it and then it's binding the secretary has the power to execute leases on behalf of what we call undetermined heirs of allottees of heirs who cannot be located. Some of the federal agencies that we deal with on a daily basis and that our

industry partners deal with, of course, the big one is the Department of the Interior. Under the department we have the BIA, responsible for approving leases, rights of way and other energy related agreements. The BLM which a public land agency, has been delegated certain authority by the Secretary to regulate energy development on Indian land, that's sort of been an ongoing issue with us. Although I think we're making some progress in educating the BLM that Indian lands are not public lands and that there's a special fiduciary trust obligation that the BLM must follow when it makes decisions that affect our lands.

O.N.R.R., the Office of Natural Resource Revenue, again they're the agency that is responsible for collecting royalties and auditing payments made under approved Indian leases. Indian Energy Service Center is a multi-agency collaboration of all these agencies and what we call . . . Originally we called it a one-stop-shop, it's still sort of in the process of being established but we hope that going forward, that they'll have greater role in energy development in Indian country in general. We also deal with the Environment Protection Agency, they're the federal agency the enforces that Clean Water Act, The Clean Air Act, The Safe Drinking Water Act in Indian country and their jurisdiction extends to both to fee and trust lands. We deal with the Core of Engineers because of the flood, because of Lake Sakakawea, in a lot of cases we have to get rights away from the core permits when we want to build things or take water from the lake.

U.S. Fish and Wildlife Service is responsible for the Endangered Species Act on the reservation, they have a significant role when it comes to the N.E.P.A. process, environment assessments and the like when it comes to approving Indian energy development agreements and leases. Some of the challenges that we face, I'm sure Chairman Fox will elaborate on this, I think gas capture, venting and flaring of natural gas is probably the most immediate, most significant issue that we have to deal with. The BLM has recently adopted a new rule, part of that rule is to give difference to tribal regulation of flared and vented natural gas. That's something that we, as a MHA nation, have been fighting for a number of years. We're finally able to get it and we're going to be in the process of amending our existing tribal rule that regulates venting and flaring on the reservation. Infrastructure is also a significant challenge for us and again, I'll defer to Chairman Fox on this because he deals with it on a daily basis but not just the infrastructure like pipelines, gas processing, refining, but what I call governmental infrastructure.

The people that we need, that time we need to spend regulating the significant footprint that industry puts on our reservation as a result of oil and gas development, that's an ongoing challenge that we have to deal with and find ways to mitigate those impacts. Dual taxation and dual regulation is also

an issue, industry needs regulatory certainty and we can't have that when we have dual taxation and dual regulations. Our fight on a daily basis is to assure that the tribe is the government that has primary regulatory authority on the reservation, especially when it comes to trust lands.

Like I said, oil and gas development leaves a big footprint, ensuring responsible development requires regulatory oversight, that's a significant challenge that we face on a daily basis, as I said and it's not going to go away. There's a lot of development left, a lot of wells to be drilled, there's probably more wells on the reservation that need to be drilled than there are off the reservation because development occurred faster off the reservation than it did on the reservation for a number of reasons. That's about the end of my presentation, I like to defer to Chairman Fox for the rest of the hour and I appreciate you listening, thanks.

Mark Fox: Good morning everybody. I'm going to get you awake here a little bit. Got some chow coming, I'm sure. It's good to see everybody. I see a lot of familiar faces. My name is Mark Fox. I am the chairman of the Mandan Hidatsa and Arikara Nation. I've been a chairman now for going on my fifth year. It's been a privilege and an honor, but a great challenge and oftentimes a great difficulty in the things that we have to do. It is my privilege and honor and to be before you as well today. My traditional name amongst the Hidatsa and Arikara means sage or sage man. That's a name I care with a great honor. I'm very proud of where I come from. Just my father's side and a full blooded member of our tribal nation, but also my mother's side as well coming from the Towner area. All my relatives that I have up that way as well too.

What I'm going to do here before I get rolling with this power point, and I'll have to advise you. I'm going to try to cram into 23 minutes what just yesterday took me a little over an hour, but we'll do our best to speed through it as fast as possible. Forgive me if I seem a little hasty or to be skipping over things, but I'm going to try to get it done and give you as much information to supplement what John just gave you, which is the letter of the law and all the applicable federal laws that had been passed in Supreme Court decisions. So, I want to try to supplement that with information to you as well too. I see a lot of familiar faces. We have some of our tribal members here as well. Glad to see you here. I see some industry partners. I see a number of other people, state and a federal government as well. Thank you for being here.

Of course, I want to thank the organizers of the North Dakota Law Review, the board for this invitation to go ahead and present, provide some information relative to our nation and what's going on at Fort Berthold and within the state of North Dakota. I also see one of my fellow graduates there. Good to see you. I travel through New Town every day, but we rarely get to

see each other more. Grange and Gary, good to see you. We'll get rolling here.

I think it's really an amazing view that we have here. I'm looking at the Missouri River and it's I guess is the most applicable thing appropriate that we would be talking about. What I'm going to talk about real quick and historically. To be looking at the Missouri River and many of the things that I want to talk about occurring on or near this river and the importance of this river to our existence, the Missouri River to the Mandan Hidatsa and Arikara people. We're going to go ahead and move forward that, unless that started out now.

Historical background of our tribes anthropological terms. They referred to us as aboriginal or as riverine tribes. We were once a very prominent one. One of two major aboriginal trade centers that existed for thousands of years before Europeans came to the United States in North America. We're an aboriginal trade center. Many of the nations, the other tribal nations, east coast, west coast as far as down as Mexico would come this far up to trade with our tribes. That was a primary basis because we were agricultural. We had corns, beans, squash, watermelon. We raised a lot of crops or semi-nomadic. We had a permanent earth lodge villages. We realized the value of this river. Our existence is the importance of trade.

They refer to us as riverine tribes. That means we have such a close connection, not just economically, but socially, also spiritually to this river and the importance of what we now call the Missouri River to our existence. Arikara War of 1823, John talked about the subsequent Treaty of 1825. This is the first time that the United States of America formally and officially the Congress declared a war against the tribe west of the Mississippi in 1823 against one of our tribal nations. As a result of some things that were going on in Missouri that was disrupting that aboriginal trade center. The Arikara people were very upset about it. The Americans had come in and had a different philosophy instead of trading with the tribe like the British and the French would do to the Arikara to the other tribes as the middleman. They decided they're just going to come to where we were located in trade directly with those nomadic tribes and cut us out, so to speak.

Have you seen that movie Revenant? That's what that's based on. The movie Revenant that see Leonardo DiCaprio. Of course, it's Hollywood and not all factual to every degree, but they're trying to re-illustrate this event in the history of our time and that's what that movie was all about, The Revenant. Treaty of 1851, John covered it, but basically 13 million acres but were reduced by executive orders subsequent to that. We also have leading us up to the modern times, the Garrison Down Picks Loan Program. The whole reason why the Missouri River takes a different form when you go north or

south of where we stand today and this river here as well. The 1944 Flood Control Act created that and the flooding that occurred, a series of dams more than a dozen dams up and down the Missouri River and we were greatly impacted by that.

Fort Berthold Indian Reservation, FBIR, 16,000 plus members, six geographical segments, we call them districts, seven member council. I'm the chairman elected at large, but we have six council members that are representing each of those six districts. When we come together then every two years the council amongst itself, the other six with myself, we elect the vice chairman, secretary and treasurer. Those positions currently are not elected at large. It is my hope that one day that we will, but currently they are not. It is internally done. My position is the only position elected at large by our membership.

Today we have approximately 1 million acres of land left of 13 million plus, reduced to 1 million acres. About 50% of that or thereabouts is held in trust as John alluded to earlier. Here's a map talking about Bakken Formation. Of course, it goes beyond the borders of Montana and Canada there, but it illustrates where we sit in the Bakken Formation and where Fort Berthold. It's one of the highest producing fields in the world. We're approaching again about 300,000 barrels per day, which represents about 20% to 25% of the state's production at 1.2, 1.3 billion barrels per day.

Challenges of major oil production, big issue, a big issue for us. You see some of the photographs here, from chuck traffic. The roads getting on roads that are not designed to carry 10 ton loads and things of that nature. You see them off the left. Pipelines making sure that they're properly developed, properly installed, properly maintained is a big issue for us as well.

This is the item that I like to talk about. It's called Failed Federal Trust Responsibility. It's why I spent a lot of my time dealing with issues with federal agencies, talking about what's going on not just our oil and gas but with every other issue that impacts us as a nation and it's ongoing. Federal Tribal Trust relationship is ongoing and it's a difficult one. It's a very challenging one and at many times and upsetting one. It's something that we have to focus on from day to day.

When this oil and gas boom began in 2000 and 2008 there was a full understanding that there was shell deposits of crude beneath our feet. There is scientific evidence. Previous testing, seismology and things, data to show that there's a significant amount of shell. Of course, technology changed and recruited fracking an opportunity to get at that. So, subsequent to the 2008 tax agreement and everything that began to occur from 2008 for the last 10, 10.5 years. Prior to that, the United States government had a full understanding that this was a potential that was going to occur.

The problem I've got, they never did any study. They didn't come in and say, what's going to happen to Fort Berthold once we opened up the doors of leasing? Once we say, oil companies come on in and do your development, what's going to happen? What's going to happen to the railroads, to their social structure? What's going to happen with crime? What's going to happen to people and lack of housing? All these lacks of? What's going to happen with them? Had they done that, they could have probably come in years before and said let's help them. Let's get the roads figured out. Let's get rights of away, corridors, figured out. Let's figure it out. Let's figure out how we're going to address this issue. I know that occurs in other areas as well, but these are Federal Trust Lands. These are lands that the federal government's responsible or obligated for, but they did no such thing.

Lack of financial support for infrastructure from the Federal government. Let me give you an example of that. Roads, 2014 to 2018 our tribe based upon the taxation that we do receive, we had to put in during my first term of over $120 million of road infrastructure just to maintain them, to be able to traverse those. Dialysis patients, children to school, all these different things. Dust suppression. All these things have to be dealt with as well. In the next 10 years were estimating at a minimum of one point $1.3 billion to either construct or maintain that road system on Fort Berthold.

If you look at the federal budget less than $1 million for road construction on Fort Berthold on an annual basis. I think two years ago it was $800,000 this year we got just a little over a million dollars. We have a need to pave, to specs, to meet the industry demands, 150 to 200 miles on fort Berthold. Yet it cost us about $3 million to build a road to specs that would withstand that pressure. So, if you do the math, you're giving us a million a year, it takes $3 million for one mile, 500 years, 600 years. We finish this road project, right? This is the Federal government's responsibility, federal roads, federal highways. The only way that we're able to do that is to go in and negotiate with our tax and then we try to get more revenue to build those roads are to maintain those roads the way they're supposed to be, but all along the way, what are we doing? We're taking money for more necessary and needed areas to put it and prioritize it on this area. It's a difficult thing to face day by day.

Water infrastructure. The value of water is 50 fold from what it was 20 years ago. A bottle of water today is anywhere from 30 to 50 times more in value than a bottle of water 20 years ago. That's a fact, but you have to have the infrastructure to take that water out, to make it available and we do that currently and help an industry to move forward.

Housing. All the housing. Rent is going from $500 a month for a three bedroom to $2,500 to $3,000 a month. Real estate property going up 10 times

in value. All these changes. Sometimes you can look at it in a good way. Sometimes it's very difficult, especially when you already have a need for 500 homes to be built prior to the boom and it's been something we wrestled all this time.

You go on with a crime. You go on with all the impacts that are happening. We become a prime market for drug dissemination, drug trafficking. We have a prime market for many of the crimes that are now committed in our area. Whoever thought that we would be impacted the way we have been by human trafficking, for example, murder, missing bodies, etc., etc. I mean these are radical changes to our government that now they all equate to some dollars. They equate the resources that you have to have to deal with these issues on a day to day basis and it's really made it difficult.

One of the biggest issues of course is dual taxation. John reserved some of that for me to talk about. Typically he does the law of that when we present together. Cotton petroleum, a 1989 case was very, very critical to a what we've had to deal with. What all tribes in the United States have to deal with. That case basically said that if an oil company comes in and it gets a leasehold interest, regardless of if it's trust or not, the fact that it is stress. If they get a lease hold interest on that at least to develop and they extract a barrel of oil out of the ground and say, it's tanked at the market, that's taxable by the state.

That case has led the landscape of causing what we call dual taxation. If you don't want to have dual taxation it forces, the tribe and the state to get into tax agreements. If the state has 10%, we have 10%. We might be saying we have a right to tax under that law. Each of us has the right to tax, but the oil company is going to say, I can't pay 20% though. It impedes, dual taxation is a difficult situation. It is my position. I advocate strongly that the only entity that should be taxing on trust lands within our boundaries should be the tribes. We're working at that from a legislative perspective, from an executive perspective, from the White House on down to everything else because we are the ones who are 100% responsible for what happens on trust. All that infrastructure I just talked about. We get very little from the state to deal with trust assets on our reservation, if anything at all. When you diminish that trust, the resources for trust, now we have to take other resources and reprioritize and it's really difficult.

State tax agreement, $1.5 billion collected by the state under our own gas tax agreement over the course of ten and a half years. That's the number that we were approaching now is gone to the state. I've asked for records of course, and I know that we have state officials here, but the thing is no matter how they tried to sit down with me, cannot show even 5% of those dollars that have come back to the reservation. We're going to do something very substantial today on dual taxation. We're going to celebrate. We're going to

go this afternoon, we're going to be going to the state capitol very productively and very gladly. In part that our state government, through the governor's office to the state legislature have said, we recognize, we recognize what's going on here. We understand what you've been saying for years. That you need more resources to build infrastructure so that the development can continue. So, that energy development on Fort Berthold will continue so that we can continue to play the role we have.

Today as a successful result of two or three tax bills that have been passed. We're going to celebrate that, have a ceremonial procedure up there with media and things of that nature. We're going to thank the state of their willingness to work with us. To add more work to do in the future, obviously so. It has been very substantial stabilizing our environment. This is going to be the first time now having signed with the governor previously, but we reaffirming that today that you're going to have a tax agreement mutually signed by both entities since 2013. We'll stabilize the environment. As this industry will want to put in more investment, it'll continue to grow. That's the strategy in doing that.

This tax structure, if you've ever worked with me in the past, you get an ad nauseum. I'm always referring to this triangle of taxation, right? On the left, you see how it's supposed to work in taxation. You get a taxable activity. Let's take for example a sale of alcohol on our reservation. That's a taxable activity at the top. You create a tax in between there. You apply a tax, you create revenue. Under that revenue you will come across and you create programs that might be domestic violence. That might be saturation patrolled by law enforcement. All as a result of drinking alcohol. That might be creating treatment centers and dealing with addictions because somebody has got the privilege of selling alcohol on the reservation. Those come back up and deal with the impacts of that taxable activity.

While the same thing works with oil and gas. We have a taxable activity up here on the right. We come down to the revenue because we have a joint tax agreement. Then you come across to the bottom side of things and you see that previously when I stayed at $1.5 billion of revenue, more than half of the revenue going to the state and not to the tribe. That leaves us with 50%. That means that we have 50% less of the resources necessary to build that infrastructure to address what's going on with that taxable activity. It has under resourced us for years, for a decade now. That's what we're trying to get more equity in our negotiations to get more of that back. That's going to change today now. Over the next 10 years, that's going to increase. That number is going to go from 50% to potentially 70% to 80% of that total revenue depending on where the development occurs and depending on where

the production levels go. So, we're trying to fix this taxation triangle as I call it, so we'll have more resources.

Some of the issues that are on in regards to the economy we're trying to build. Access to capital is very, extremely limited. There's not always a lot of money in Indian country for people to come in and say, we're going to borrow you money. What do you want to do? Often times, you literally are begging for sometimes the financial capital necessary due to project in Indian country. That often creates a concern with what we call inequitable negotiation of terms. When there's not a lot of competition to provide money to you and you only have one, maybe two that are saying, well, we'll work with you. Those terms become very difficult. That slice the pie that you have to carve up to determine how they're going to get their ROI on a deal and how you're going to make the project work really becomes contentious sometimes and it's difficult.

In our situation, we're not talking about what we need to do to participate in our sovereignty model. Our sovereignty model means we're not just going to sit back and collect some taxes and royalty with the oil and gas going on at Fort Berthold. We're going to get involved with how the profit is made. Upstream, midstream, downstream, ancillary services. Our tribe and tribal members are going to do that. That's what we call the sovereignty model, but we get impeded by these terms that we have to do. For us to get something substantial, gas capture for example. That's not $1, $2, $5, $10 million. The project cycle, refinery, gas capture, draft prophecy, those are $300 to $500 million projects, sometimes more. If we're going to run a pipeline to the West coast and our participation, that's going to be $600 to $800 million. So, those are the kind of dollars that we're talking about. Thankfully working with the administration, Senator Hoeven and energy bill. But with this administration now under DOE, we now have some access to capital as far greater for the energy tribes. We're going to be pursuing that very soon.

Y'all see the wonderful maps? Somebody said that they didn't exist. I would tell you if you think that those maps that they put up initially on Google Earth and all those things were fictitious and that they really didn't look like that, I challenge you. Just come to Fort Berthold. Go up and take a look around at that high point and see all the flaring. You can quickly understand that the lighting exists. Those are older maps. Capture has been a priority for the state as well as the tribe, so of course you're less flaring going on, but it still exists as well.

Other leasing challenges and difficulties. A lot of people don't understand is initially in 2007 and 2008 when all the leashing was beginning to occur, our tribal members in particular were positioned differently. Two thirds of all the royalties that are that had been earned on Fort Berthold as a

result of oil and gas go to individual allottees, but that's the only about 15% of our membership. The other 85% of our membership get very little. I have to let you understand and know that. Although, two thirds of over 2 billion in royalties in the last 11 years has gone to allottees. It's helped many families. Very, very beneficial. Sometimes these families have new homes. Able to do things for their grandchildren and they couldn't do before. It's had a significant positive impact and we protect that. That's why we're involved with our own gas and energy development because our membership benefits by that. So, we want them to continue to benefit off of their individual IIM allotted lands.

When we started this off, we had an inequitable position. Our people, many of our people didn't understand the value of their lands. In contradiction to some of the farmers and ranchers that surround us who have been economically prosperous for a number of years, for decades, if not nearly a century, have come to the understanding of understanding of value is. So, when a leasing company comes up and says, we want to lease your lands to develop oil. Here's our number. We're going to give you a hundred bucks an acre. Well, that individual can sit back and lean back in their chair and say, no, you'd add some zeros there because I don't need to have that. I'm okay. But, when you come onto the reservation at that period in time in 2007 and 2008 and somebody telling you can give you $50 an acre and you got an interest of a hundred acres, that's $5,000. You could probably get yourself a new car.

These are kind of the mentality of leasing interests that were coming forward to people. Our people not understanding that that's a very small amount of money. The royalty rate, things of that nature. These were very difficult for our people in the beginning. But, the learning curve. We took the strings out earlier and now we've learned. Actually, I think we've actually swung to the other side of things. Now, it's gotten to the point where we've got to teach our old members that there is a balancing act that has go on between the value of your property and continued development. You have to find the middle ground to that and that might be a re-leasing, a right of way. That might be storing things. All these different things have to be learned. They have to be understood. If you want to continue to get royalties, you got to position yourself so that that will continue, but still maximize your resources.

Industry of Economic Development Policy. I talked about the sovereignty model more than just royalties and taxes. We get involved to enhance our resources and then move from there. Responsible Development. Before I became chairman, my opponents to that prospect said, well, when he becomes chairman, he's going to shut down all oil and gas. I even had some oil

and gas partners saying that, alright? Yet, not understanding Section 17 providing water. All the different things I had done to enhance development that we had to explain that at that time. That's what was said. I did say this, and I still hang tight to this today, is that we want continued development of energy development on Fort Berthold because of the positive benefits that we're, we're putting together. At the same time, we want responsible development.

Industry will come and go. One day, the last bill crude will come out of there and there will be no more, but this is our home. Along this river and where we are today that belongs to our children, our grandchildren and we can't sacrifice that. That's why it's critical to say we're going to continue development, but have responsible development. One big part of that is enhancing and protecting our water resources. Water is more valuable than oil. I'm going to say it over and over. As much as in and as well as we do. As hard as we work at oil and gas and energy development. Water is more valuable than oil. The revenues that we're going to realize, and economic development that we're going to do as a result of water. I can promise you will be tenfold to what we're going to be able to do with energy in a short amount of time. In 20, 30 years, maybe 40. Water, very critical.

Success in Energy Development. You see some of the things. We created a brand new good road recovery center here in Bismarck. We positioned here for ancillary services treating hundreds and hundreds. Every week I'm sending three to four individuals to drug treatment. Why? Because we are literally being killed by, like the rest of America, the drug epidemic that is destroying our communities is badly impacting us. So, we're trying to get people sober, get them productive, taking care of their families.

Public Safety and Judicial Center. New law enforcement center and courthouse. No longer do I have to have a courthouse in dilapidated basements of old buildings ready to fall down. How do you have respect for a system? How do you respect the law? You have a capitol. You have county courthouses. It commands respect from the public inside those walls, inside that structure, important business goes on. We have to have the same thing. We built a very beautiful building. Law enforcement center and courthouse, so they can operate and we can have the infrastructure stability and safety on Fort Berthold.

Drug Enforcement Agency. I'm alluding again, under impact. We have become a prime market for illegal drug trade. Why disposable income? A lot of people from the outside. A lot of activity going on. We had to create our own DEA. Federal government wasn't doing it. Maybe one or two busts in a few years. We have arrested over 600 individuals in the last two years for illegal drug trade. Many of them from the outside and deferred them to

federal prosecution where most of them are being convicted, but we had to do that. I didn't say, oh geez, my cousin's sister's son needs a job. We needed to be impactful now. We are former FBI agents, BCI. We've got individuals that worked out of Las Vegas. Drug dog experts. We brought them in. We hired them. That's how we've had that success as well.

Three hundred plus new homes built. It's actually higher. You take all the segments, things that we're doing. Do we have a need to build more than that? Obviously, another three to 500 homes at a minimum, we're going to have to do that as well. Constructing in process. We have a new Veterans Center. Nowhere in the world do they honor and recognize veterans more so than we do at Fort Berthold. Myself, I'm a veteran of the United States Marine Corps. Tourism and Cultural Center, tourism big. They used to be concerned that for both of that we limited access. That we were going to keep people from enjoying beautiful Lake Sakakawea. Contrary to that, we don't do that. We're encouraging people, come to Fort Berthold, come fishing, come boating, come enjoy everything. Bring your checkbook, your credit cards and your cash.

We're also building a child safety center. Next month that will be done. Protecting your young people in situations where they need to be protected for 48 hours because there are problems going on inside their families and their households. Wellness and outreach facility. We're building that right next to the drug treatment facility. That should be done within a year as well. Assisted living centers for our elders, for people that are getting older. They still have some independence, but still be able to. We need to build a nursing home. Councilwoman Maher is working on that as well too.

Educational Support and Clearing. We just created a $20 million trust fund. We're going to keep building that. The more we educate our people, the stronger our people get, the more the leadership can take us in positive directions and we can see the positive benefit. That's our investment is our young people and our adults of any age is to go out and continue to support that.

Goals and Objectives to Energy and Economic Development. I'm coming to the end here, so you can breathe a sigh of relief. Increase the standard of living is of our goal. You look at some of the tribes out there through gaming, whether it's the Shakopee or anybody else. Their membership, albeit, 10% of what we have or actually 5% of what we have, they have increased their standard of living. They have increased their ability to take care of themselves and it's very critical that we do that.

We must diversify our economies. We can't just rely on oil and gas. We have to get into now into renewables. We have to get into other sectors. Manufacturing and other items. I'm going to talk about one at the end I'm very,

very proud of. Here's my main philosophy. If you take anything from Mark Fox talking to you today and whether you fell asleep or not, if you can take anything of what I say, this item right here. If you want to understand where I'm trying to go. This is the most important item.

As far as I'm concerned. What has been done to us in creating total dependency, to isolate us, to take our lands and then to make us federally dependent on subsistence from the United States Government is a deliberate process. It's a failed policy and process, but it's deliberate. The only way that tribal nations throughout the United States are ever going to change where they stand today is to reduce federal dependency or eliminate federal dependency. That has to be the goal of every tribal nation that you no longer depend on the federal government. If you don't do that, you're going to be in that same box forever.

I can guarantee you this, the United States government is never going to come in, like we would do. I'll speak as a United States Marine, like what we would do to a country that we blow the hell out of and dominate and change the political structure. You're not going to see the United States come over, come in with $500 billion and say, let's figure out how to make those reservations economic profitable, regain what they once had because of what we've done to them with the failed US policy. That's never going to happen. So, what we do is we hold their feet to the fire on trust, on responsibilities, same way your government does. Our government, we pay taxes, you pay taxes. So, we have to hold their feet to the fire on that and say, you need to give us dollars for infrastructure and things that we need federal government. At the same time, you're planning over here how to no longer depend on the federal government. That is the key to changing where we stand today.

Here's one of the examples of economic opportunities that I wanted to just briefly talk about. I had mentioned about tourism, our casino. What we're doing on Fort Berthold, we're trying to make a destination resort. A new waterpark completed last year. Phase two coming up this year. All this expansion. If I have my way about it in about two years, you are going to see a brand new six or seven story hotel there as well with views of the lake and you eat at a restaurant on top of it. Fishing, tourism, our pow wow celebrations, all of these attracting. The things you see on North Dakota tourism posters that say come out and you get to see Indian people and their culture. We're enhancing that, right? So, that's what we're doing as well.

That being said, we have great concerts there, alright, and events. Just add on this past month, we've got John Fogarty in May. Some of you, Brooks and Dunn in August. These are not small time. You had to go to Vegas for these kind of things. Well, you don't have to go that far, just drive up the road, you'll be there.

Going back to a last comment I want to make. I don't know if the poster showed? Obviously, it's not from a this, gas capture. I understand that segment prior to me was about gas capture, carbon capture, carbon usage. I came across an article and some of you probably read it too. The article was in National Geographic. The front cover of National Geographic a year and a half ago, August, September of 2017. The front cover of National Geographic said, a tiny country feeds the world. What that article was about is about Holland, what we call the Netherlands. They are the leading expert of agricultural goods in the world, leading. Billions of dollars. They don't even sell any to the United States.

The United States out produces them in total agriculture production, but they are the leading exporter. That's only because United States has 240 times a landmass. This tiny country is doing something remarkable. Their message is strong from The Hague, in the agriculture ministry that we visited. The first time that an Indian delegation or tribe came to their country to try to learn from them and potentially partner with them. Their philosophy is if everybody doesn't do what we're doing here, that there are massive starvation from 2040 2050 is going to begin to take place in the world. They do exactly what we do or what we're going to do. Excuse me. They made massive greenhouses so they can grow agricultural products all year long. They capture gas. They compress the gas. They run the heating, the lighting. The carbon dioxide they take it from a refinery. It's piped on in. That's what you use. That's what the plants need to breathe. They do all these things.

The went through massive, they went from two hectors. I don't know about hectors and metric system, etc. That's five acres, alright? From two hectors to 40 acre greenhouses, huge, they're growing these products. For us at Fort Berthold, it's something I'm pushing hard on, not just our own consumption, but it's my hope. I truly believe we're going to get there. That you're going to Walmart or you're going to do it online. Somebody said, what about online? You're going to go Walmart online. You're going to order the product. You're going to get some peppers. You're going to get some cabbage. You're going to get carrots growing inside these massive green houses as a result of our participation in oil and gas and gas capture. That's what we're going to do. If one man can do it, so can another. That's what our intentions to do it as well too.

Our council, myself, you see members of our council, all the names up there. Some of you may know them, working with them constantly, our natural resources. I appreciate the time today. Like I said, I tried to condense what at UND Law School in a courtroom took me an hour to do yesterday into a short amount of time. I appreciate your time today and thank you for letting me share that on behalf of our nation. Thank you.

V. OIL AND GAS TRANSPORTATION ISSUES

JUSTIN KRINGSTAD*

Justin Kringstad: I can't stand in one spot when I present, so I'll be moving around here and try not to get in your way of the slides here. So the Pipeline Authority, it is a state government agency in North Dakota. North Dakota is one of two states that has a Pipeline Authority that functions in the same way as North Dakota. So I come to you today, not as a regulator, not as a policy maker, but as a state agency that's been tasked with developing and facilitating new pipeline development in North Dakota.

So I know the topic of this conversation is, what are types of obstacles, challenges, are in front of the pipeline industry going forward? So I'm not going to come at it as a policy or a legal analysis. I'm going to come at it from the challenges that I've been asked to work on with the pipeline companies as they develop new projects, which is trying to stay ahead of production. We've had a tremendous challenge in North Dakota, as this production has ramped up over the last 10 years, in keeping up with appropriate infrastructure to address the challenges that you're seeing with natural gas capture, crude oil movements, trucking, all the different things out in the field itself.

So I'm going to come at it from that angle. And as a geological engineer, most pipeline companies, they have an extensive staff of mechanical engineers, civil engineers. They understand pipeline design, construction. What they don't have a good knowledge on is, what's happening below the surface as far as a reservoir is concerned, and why type of production to expect. What can their engineers be designing and working on that will be appropriate five years from now, ten years from now, down the road? And so that's the angle that I come at this from. So obviously the Williston Basin, if you took a cut straight across from Beach, North Dakota to Fargo, this is what the earth would look like.

We've got the Williston Basin located out in the western portion of the state. Deep down, about 10,000 feet down, you'll notice two very thin formations. About 370 million years ago, Mother Earth was putting together all the key pieces to create one of the world's most robust oil fields and resources. And that is in the Bakken in Three Forks. Very thin formations

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relative to other strata within that column. The Bakken Formation that you're familiar with is about 100 feet thick in most areas. And then you've got the Three Forks Formation, which is also very important, below it which is about 200 to 250 feet thick. And so, the Bakken is the name that most folks associate with this development.

And I want to talk a little bit here, in a few moments, about the Three Forks as well. That sometimes gets lumped in with the Bakken, sometimes it gets forgotten altogether. But in the coming decades, I think the Three Forks is going to become a much more popular target for development. And we're going to continue to see a lot more success and development in that Three Forks as well. When we look at the geology, again, the middle Bakken is . . . the Bakken Formation, as a whole, looks like that Oreo cookie on the top. You've got the dark rich black shells on the top and bottom of this Bakken Formation. And then the white part in the middle. The white, the sandstones, limestones, is where the oil industry is targeting with their wellbores. So they drill down two miles, and horizontally two miles, targeting that lighter color portion of that rock formation.

Directly underneath it is the Three Forks Formation. And if you can imagine for a second these dark rich black shells, that's where the oil originated. The high organic content gives it that dark black color. And throughout the millions of years of heat and pressure, the oil migrated out of these black shells into the middle Bakken, as well as pressure forcing some of that crude oil out of the lower shell down into the Three Forks. And so, you have oil trapped within microscopic pores within those two formations that the industry is trying to unlock and develop. So what's the industry doing today? This is a snapshot of where the drilling rigs were located as of yesterday. Sixty-three drilling rigs in North Dakota. And you'll notice, geographically, they're all very tightly spaced in one area in Western North Dakota.

And so the question becomes, why? Is it just a coincidence? Do they like being that close to each other? Why are they spaced the way that they are? And it has to do with the geology down in the subsurface. How well the industry expects the rock to produce. What type of results they can expect. The other interesting fact about these drilling rigs, some folks use this drilling rig count as kind of a metric. How active is North Dakota's oil industries? So they'd say, "Okay. We've got 63 drilling rigs today. Well I remember five, ten years ago, we had 180 drilling rigs. How does this compare? Are we that much lower in activity?" The answer's a little bit misleading. If you just focus on this green line for a second, that is the drilling rig efficiency in North Dakota. And it's measure by how many wells they can drill in a given month.

And so a drilling rig today, this drilling rig fleet of 63, is roughly the equivalent of about 120, 130 drilling rigs of just five years ago. The

efficiency, how quickly they can drill down horizontally, vertically, has increased substantially. So 63 drilling rigs, much more efficient, much more active than maybe that number would initially look. And so, again, to answer that question, why are they so focused where they're at? This map that you're looking at is one I've put together of breakeven prices for the Bakken Three Forks development in North Dakota. So I get asked the question quite frequently, what oil price does it take for the industry to be active or inactive in North Dakota? If oil hits $50, if oil hits $70, what happens? Do the rigs go away? Do they come back?

To answer that question, there's no one-size-fits-all. The geology and the subsurface drives the economics. And you'll notice these darkest richest red portions of this play in North Dakota, you'll notice on the scale they have very low breakeven prices which means they produce a lot of oil and they can stay active in those areas at lower price points. The yellows and the darker greens require higher price point. And so, again, if you remember back to that rig map, they're all focused right now on some of their best acreage. So if an operator has acreage positions to drill in that red area, they will. And that's where they're going to position their rigs. That same operator may have acreage in the greens and the yellows, but they're not putting their rig there today because, again, they're going after their most abundant targets first.

And as prices increase throughout time, as technology improves, we expect these rigs to continue to move outward, almost in a circular fashion, from the core into these outward plays . . . or outward fields as they develop the resource in those areas. So it will get developed but, generally, it does take a higher price in order to target and go after those fringe areas of the play. Another key question I get asked a lot is, how long is this thing going to last? For the pipeline companies that I work with, it's very concerning to them. They put pipe in the ground. It's not like building a storefront that if things go south, they can repurpose it for a different store or sell it. Once pipe is in the ground, that's a sunk cost, that's a sunk asset. So they're very concerned about, what does this play look like five years from now? Ten years from now? Thirty, forty years from now?

And so last year, I took on a pretty big project trying to quantify how many drilling locations were left in North Dakota. How much play . . . how much life did this play still have in it? Given what we know today, and again, these are just some summaries, slides, I've got the full slide deck on my website. But in summary, the biggest unknown is on that Three Forks Formation. Remember how I said, "I believe, honestly, personally, that the further I dig into Three Forks, that in the coming decades it will become more and more a target in North Dakota." So this low-case scenario is high-case scenario,

assumes very little activity in the Three Forks. High-case assumes that that formation below the Bakken will get developed fairly extensively.

So when we look out and we look at, okay, the higher performing wells to the lower performing wells, today it takes about a 500 barrel per day well to be economic. And so with what we know today, we have between 21,000 and 60,000 additional wells to be drilled in the category that I would say is considered economic today. If oil prices were to go up to $80, $90, then a 300 barrel a day well would work. And we still have about 30 to 85,000 additional wells to be drilled within the play. So again, it's price driven, it's geology driven, and it's going to also be very dependent upon what the industry decides to do with that lower Three Forks Formation. Again, the well results, so far, have been very positive. Some things are looking very promising for the Three Forks. So I think the answer's probably somewhere in the middle, but I think it's going to be probably closer to this lower scenario than it would be to the top.

And then in terms of years, well count may not mean a lot to you if you're not familiar with the industry. Again, at today's price we'll just use $61. At the pace they're drilling today, between 20 and 60 years of today's pace of activity just to get all the wells drilled in the play. That does not include the additional 30 to 40 years of production from that well. It does not include any type of additional work on enhanced oil recovery. So the moral of the story is that we've got a tremendous amount of just pure development phase, we've got a production phase, and then you've got the extended enhanced oil production, and then the reclamation phase. So this activity in North Dakota is going to continue far through my career, children's careers, and likely far beyond that as this continues to mature and work its way through the process.

So where are we at today? Roughly, 1.4 million barrels per day. Again, you can see this rapid ramp up, the price collapse that occurred late 2014, and then the recovery in production going forward. So what are the expectations? During this price crash, I read and spoke with many different analysts that thought this was the beginning of the end of North Dakota's oil boom. That we were going to be declining out, industry would never come back. And that hasn't been the case. So in my world, 1.4 million barrels per day, what happens with that? If we look at the U.S. and North America, we've got quite an extensive network of major trunk . . . the transmission lines that handle the crude oil from North Dakota and other producing areas of the North America.

And you'll notice, in a moment, a couple of key things. First, North Dakota's very well connected to the Great Lakes area. There's a few different pipeline options to get down to these refineries. There is connectivity down to the Cushing, Oklahoma into the Gulf Coast now. There is zero pipeline

connectivity to the West Coast. Zero pipeline connectivity to the refineries on the East Coast. And so you're going to see a mix out of North Dakota of pipeline transportation and rail transportation. And the most recent figures were from January, about three-fourths of North Dakota's oil was leaving the state by pipeline. The remainder was either moved out by rail car or being refined locally within the state.

And so for anyone that's been in North Dakota for a number of years and has followed this industry, you know that the pipe-rail conversation has been one that has been at the forefront of a lot of different topics of conversation. And it has been evolving quite dynamically. This is just a historical view at market share. Pipeline is in blue. Rail market share's in purple. And you saw this massive flip flop where rail became the dominate mode of transportation back in 2012, 2013. A few things were going on. North Dakota's oil production was ramping up very quickly. There was a very strong market incentive. The refineries on the East and West Coast had a very strong price incentive. That's shown in this blue dotted line. Where they could far exceed the additional cost of rail in the pricing structure.

Again, a $20 bonus to get that oil to the, say, the East Coast. And let's say it cost you an extra $4 or $5 to get it there. Well, you just made a $15 profit on that transaction versus going on a pipeline. So we saw rail takeover as the dominant mode of transportation. And then as we saw additional pipeline projects come into play, Dakota Access come into service, and as well, that market incentive had decreased substantially, and we saw now back in the scenario of pipelines being the dominant mode of transportation out of the region. People, again, ask me, "What does this look like going forward?" I can't predict the market. We do have some predictions as far as where production's going. But again, the market does play a very key driver in those decisions of whether or not a barrel leave North Dakota on a pipeline or whether it gets onto a rail car.

On just a pure volume basis, the highest crude by rail volumes were back again in that 2014 timeframe, about 800,000 barrels per day leaving by rail car. Now, it's around that 275, 300,000 barrels per day leaving North Dakota by rail car. Again, this is just a snapshot of the major market prices. These black barrels that you see, these are refineries around the U.S.. So again, you've got the Marathon Petroleum just across the river here. Very small relative to some of these other major hubs. As we go forward, the Gulf Coast is going to continue to be a primary target for North Dakota and the crude oil. Again, not only is it the . . . North America's largest refining center, there are also export options down in that market place.

These other markets are very well saturated with crude, so any growth, incremental growth, led in North Dakota and other plays will likely be

heading down to the Gulf Coast. Either consume their offsetting imports or getting on a tankard ship and moving to the export side. And so where does this thing go from here? So that 1.4 million barrels per day, the magic question that I work with on a daily basis is, where is this play going? One interesting trend that we've seen is every single year, this is just average North Dakota well performance. And so the topic of the conversation today was, challenges for the pipeline industry. It's been keeping up with production.

The Midstream folks that build these pipelines, build the processing facilities, the gas capture infrastructure, been very, very challenging for them to be able to keep up with technology and stay ahead of the curve because of all the technology advancements on the producing side of the community. So year by year, we've continued to see well performance improve. 2017 to 2018, another 12% improvement in the way the wells perform. So if you can imagine yourself as an engineer in 2015, you're designing a project to go into service in 2017 or 2018 because of the timeframe in permitting, construction, everything else. You thought you were building this infrastructure with the best known technologies, the best everything built into it.

All of a sudden, that system goes into service finally 2017, 2018 and the wells are performing 20, 30% higher than what your engineering team had anticipated. And that's been, again, the rut of the challenge for infrastructure development. From my viewpoint is, again, keeping up with producing community. Again, it's a good challenge to have for those folks, that our customers are producing more product. But from a regulatory standpoint and other environmental concerns, it is very challenging. This will be the point that I would put up a slide from the movie, Jaws. If you remember the sheriff, when he first sees the shark off the back, he's chumming off the back of the fishing boat and he looks up and he has a shocked look on his face and he goes and talks to the old fisherman there and says the famous line, "You're going to need a bigger boat."

This has been a very concerning graphic for us in the Midstream industry. What you're looking at are initial production rates. And if you're not familiar with the industry, what that means, when a well gets drilled and they fracture the well, there's this initial 24-hour production test. They finally turn the well on and they measure the production for 24-hours. And it tells a bit of the tale of what to expect, potentially, from that well going forward. It doesn't tell the whole story, but it helps understand. You'll notice that, for many years, oil production rates in that 24-hour test were fairly static. Things were very marginally improving. Over the life of the well, they were improving production techniques, pumping techniques. But IP rates have been fairly static.

Well, the second half of 2018 we've seen a massive, massive jump in these 24-hour production rates, 50 to 60% improvement, which is massive. This is something that has the processing companies, the pipeline companies, it has everyone's full attention right now saying, "Okay. What does this mean? Has technology taken another leap forward? What does this mean for our infrastructure? What do we need going forward?" When we look at both oil and gas, again on the gas side, from a gas capture, gas processing, all that infrastructure that's necessary, this again has everyone's attention. Both the middle Bakken and the Three Forks together. It's not just happening in the middle Bakken, it's happening in Three Forks as well. It makes us concerned that our forecasts and our expectations and designs and everything else that was being put into place to address challenges in 2019, will it be enough? Is the big question.

Just again, another graphic here. These are just some samples of 24-hour production rates. Some cases hitting over 8,000 barrels per day, 9,000 barrels per day. Wells, which again, is unheard of for North Dakota. So again, very . . . it's got our attention. We'll put it that way. And so, where do we see things going forward? This is, with today's technology, the current oil price forecast from the Department of Energy at the federal level. This is my forecast for where oil production may be headed in the coming years. I have two scenarios. My case one and my case two. Case one is my expected . . . it assumes that if the DOE was 100% correct on their price forecast and every industry participant acted in the way we thought they would act at a given price point, this is where we'd see production going north of two million barrels per day.

Case two is a more conservative look. It assumes the same price outlook, but it assumes that the industry pulls back the reigns in North Dakota. Whether it's because they're putting investment and capital in other plays around the U.S., in Texas. Maybe there's regulatory issues they're facing. So case two is just a conservative look at the industry activity. So again, still some growth long-term. In the near-term, a lot more uncertainty. And so, what does this mean? We know the resource in the ground, there is a resource assessment update by Continental Resources late last year. They were anticipating that with today's technology, 30 to 40 billion barrels would be recovered out of the Bakken. And so this is a good spot check for me, as a forecaster, to say, "Okay. I'm predicting two million barrels per day. Is that reasonable with the resource development that some of the operators are saying?"

Again, my case one scenario, at least in this forecast period, still does not get up to that resource assessment level, which maybe it would in the further out years. So I think it's reasonable. Whether it's conservative or

reasonable, that's up for debate. But I don't think it's unreasonable. Again, pipeline development in North Dakota, we've got three major directions that oil moves out of the region. The Enbridge Pipeline System, which moves oil east towards the Great Lakes and down to the Cushion, Oklahoma market. You've got the Dakota Access System, shown in teal, which goes directly down to the Gulf Coast. And then you've got a series of pipelines out in Eastern Montana that take Williston Basin oil and move it down into the Guernsey, Wyoming-Cushion, Oklahoma markets.

And so going forward, if this was our oil production, we have the amount of pipeline and refining capacity shown in green today, a couple of projects in the works. The Liberty Pipeline System by True Oil and Phillips 66, as well as the Davis Refinery out near Belfield, are shown in yellow. And then this gray chunk is rail loading capacity within North Dakota. So again, we don't anticipate oil being stranded in North Dakota under these production profiles, but we will be exceeding, again, pipeline and refining capacity in the coming years. So again, what does that mean? Again, crude by rail will be a part of the transportation mix of volume. You kind of have a sense of what a minimum volume might be. It could be higher than that if there's market incentive to do so.

So again, going forward what we're working on is taking a look at, "Okay, what opportunities are there for new projects, expansions of projects, in order to get additional pipeline refining capacity into this area under the red curve?" On the natural gas side of the world, natural gas, again, I heard just some bits and pieces of the previous speaker talking about gas capture and the importance of that topic. This is something, again, I work with on a daily basis. I try and break it down into four understandable chunks of what it takes in order to get this gas captured and moved to market. The first is understanding production. You saw some of my discussion on the oil side earlier, natural gas as well. I've got a pretty robust production forecast for natural gas development in North Dakota.

This curve, in both scenarios, grows at a much faster rate than the oil forecast. The way the reservoir works, overtime, more gas, relative to oil, gets produced as is well's age. And we see a more rapid growth rate in natural gas production. So very important when you're putting together new projects, trying to develop processing facilities, and infrastructure to capture it. First phase, once that well starts producing the natural gas is, you have to get into the gathering phase. Again, I heard a comment by the earlier speaker that most of the flaring in North Dakota comes from connected wells. That's 100% correct. You'll notice, of the gas that is flared, a large portion that you see in orange there is gas that is connected to a pipeline.

It's just simply, that pipeline system cannot handle all the gas that's being produced at that well location. And so, you have some gas going into the flare pit, some gas going down the sail line simultaneously. And then you have this blue portion, which is wells that don't have a pipeline connection. A pipeline connection may be coming, maybe it's in a stranded area that a pipeline will never come to that location, but it is a much smaller piece of the pie. So the industry, again, is trying to stay very focused and targeted on this bigger piece in, how do we expand existing infrastructure to minimize the flaring from connected facilities?

Gas scenario, again, year over year, the gas performance has continued to increase. So again, folks say, "Why is so much flaring happening?" I think at the very, very rut of it, no one intends for that gas to flare as it's being developed. Again, pipeline systems, the diameters that were chosen, the flow rates, the processing capacity, again, if it was a 2015 design build and trying to go into service in, say, 2017, 2018, well we've got a massive, massive improvement in well performance in a six inch line or an eight inch line, whatever it was that the engineers had designed, just simply is not large enough to handle all the production from that location. Again, as you saw earlier, same things been occurring over the last six months. The natural gas initial production rates significantly higher.

That, again, has folks concerned about systems that are being constructed, and whether or not the industry, we're going to be able to keep up with development here in the near-term. On the processing side of the world, so one side gas is produced, it's gathered from the wellhead location and it needs to go to a processing facility. Those processing facilities take the gas, they clean it up and make it into marketable, saleable products that we can consume. Whether that's methane, it gets delivered to our homes and our business, propanes, butanes, that go into other petrochemical industries. In North Dakota, you'll notice, again, my production forecast, there's a lot of things going on here, but if you just focus right here where that red and gray line fork, that is where current natural gas production is.

This peach colored portion is current processing plant capacity. You notice white space underneath the production curve. Again, that's not a scenario that's desirable. That means that production is higher than processing capacity. It won't be until later this year that we anticipate the investments that are going into the ground today, construction that's ongoing will begin to catch up. But you'll quickly notice that that red line breaks through that chunk of investment that's going into the ground today in the not too distant future. So we look long-term, again, the discussions we're having today are on this piece of the pie. This chunk, these solutions, are already getting put into place.

The question now is, how quickly are new processing plants necessary? What size? What scale? What location? Are these facilities going to be necessary? So those are the key questions that are getting developed and answered today in boardrooms and around the U.S.. And then transmission. This has not been a major issue for North Dakota yet. I think it's coming. It will become a major issue in the coming years. So natural gas transmission, what that means is after gas leaves the processing facility, has to go somewhere. We produce far more natural gas than North Dakota can consume through our heating and power generation, any other uses. And so, we have a major infrastructure system currently in place. Today, it works very well. There are no issues with natural gas transmission.

The natural gas processing facilities that you see output, the methane, the dry gas, it gets put primarily into the red WBI and the blue Norther Border System, gets delivered down to the mid-continent, Iowa, Chicago type markets. The question becomes, at what point in time do we start to fill up these pipeline systems? And when would we need a major new natural gas transmission line out of North Dakota? And the big key system to watch is this Northern Borderline. It's North Dakota's biggest pipeline system, it's 42 inch. It carries, historically, it was built primarily for Canadian production. It comes down out of Alberta. And as North Dakota's production has ramped up, North Dakota gas keeps, as we continue to grow volumes, that volume continues to push itself into Northern Border.

And so for every new molecule of North Dakota gas that gets produced, that means one more molecule of Canadian gas can't get on a Northern Border. And that Canadian gas is forced to find a different route out of Canada. And again, this has been working thus far. It's about a 50-50 mix, half Canadian, half North Dakota gas on this system. Question becomes, at what point in time does this become 100% North Dakota? And are we out of space on this pipeline that work? And so my answer for that, with what we know today barring any major technology shifts which we think are very likely coming, somewhere in the next five years, five to seven years, this could be a major issue for gas exiting the Williston Basin.

So again, these discussions are taking place right now. They are taking place saying, "Okay. What happens if we see a 10% improvement in well performance this year? What if we see a 20% improvement? We saw the IP rates ramping up. Does this come even sooner than what we're showing on this graphic?" So again, because of the timeframes it takes to develop a major pipeline option out of the region, decisions and things are going to have to start happening very rapidly within the next year or so in order to address this challenge going forward. And then natural gas liquids. From those natural

gas processing facilities, natural gas liquids, your ethane, propane, butane, these other chemical commodities need to be moved to market place.

And we'll look long-term. If you'll just focus on this top-left corner, this is my forecast for natural gas liquids out of the region. So almost 1.2 million barrels per day of natural gas liquids. That used to be a phenomenal number to even talk about for crude oil being produced in North Dakota. Now we're talking about over a million barrels per day of natural gas liquids that need to be handled, moved, and transported out of the region. When we look long-term, again, we're short on pipe capacity today. We are railing roughly 100,000 barrels per day of natural gas liquids out of the region because of inadequate pipeline capacity. There's a major system under construction today by One Oak. That should be in service late this year.

That's going to provide some relief. But again, long-term, as you look at this, the notion is with what we understand today that either an expansion will have to happen of that system, and-or, some additional investment in natural gas liquid exit options for the Williston Basin. And this is just a quick graphic of that Elk Creek System that's under construction today. And then last but not least, just very quickly, where is North Dakota at on pipeline construction? 2017 is the latest year we have hard data for. What you're seeing in gray, this is the miles of pipeline that's being constructed on a given year. During the most active time periods, over 3,000 miles of new pipe getting put into service in one year's timeframe. That's the distance from about Seattle to Orlando, Florida.

In one year's timeframe, out in the western one-third of North Dakota. So a phenomenal pace of activity. A very, very challenging for the landowners, the pipeline developers, the construction crews. So again, this was a very challenging time for all stakeholders during development. As activity slowed down with the price collapse, we saw pipeline activity retract. My expectation is that, again, going forward with ramp ups and activity in 2018, 2019, we'll start to see these miles of installation continue to go up.

VI. MISSOURI RIVER AND LAKE SAKAKAWEA MINERAL OWNERSHIP

CRAIG SMITH*

This topic has been around for a little while. It's a very important topic to North Dakota, to thousands of mineral owners, to oil companies, to the

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state of North Dakota, and it's citizens. The Missouri River and Lake Sakakawea are right in the heart of the Bakken. It's a blessing in one way in that it provides water resources. Without the Missouri River and Lake Sakakawea, we probably wouldn't be able to develop the Bakken. However, it's created a lot of issues, ownership disputes, and we're working through this, been working on this for 10 years. I think we're finally making some progress, but there's still a ways to go.

I'm going to talk about several topics. First, some historical background, the Equal Footing Doctrine, issues created by river movement, then I'll go through the state surveys and the Corp of Engineer survey of the Missouri River concerning Garrison Dam and Lake Sakakawea. We'll talk about Senate Bill 2134, which was in 2017 legislature. That legislation authorized a new study of the ordinary high-water mark. Then, we'll review the Wenck Associates study of the high-water mark. Then, there's some pending legislation, follow-up legislation, that I'm going to discuss briefly, as well as the status of litigation. Josh Swanson from the Vogel Firm was going to cover litigation. He cannot be here today, but I'll try to provide a little bit of update on that.

Historical background on Equal Footing Doctrine, the original 13 colonies on title underlying navigable tidal waters. In 1842, the US Supreme Court recognized that the states on title to the bed of navigable rivers and water bodies. In 1845, the Supreme Court formally recognized the constitutional doctrine, the Equal Footing Doctrine, which provides whereby as states enter the union, they acquire title to the beds of all navigable waters up to the ordinary high-water mark. When North Dakota joined the union in 1889, the state acquired title to the Missouri River being a navigable body of water up to the ordinary high-water mark.

After joining the union, states could elect to own up to the low-water mark or the high-water mark. At statehood, North Dakota had a statute that provided the upland owners took to the low-water mark. In 2013, however, the North Dakota Supreme Court in a reverse of state, held the statute violated the state's anti-gift clause in the constitution. The reason being is since the state acquired title to the high-water mark when it entered the union, under

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administrative, regulatory and government affairs matters. He has also authored and presented at national seminars regarding the recent Missouri River ordinary high water mark oil and gas title litigation and other water issues involving the Bakken play. Most recently, during the 2017 North Dakota Legislative session, Mr. Smith represented industry in support of Senate Bill 2134, leading a comprehensive legislative effort to resolve oil and gas mineral ownership issues underlying the Missouri River and Lake Sakakawea. He served as Vice-Chairman and Chairman of the North Dakota Petroleum Council from 2008 through 2012 and currently serves on the Council's Board and Executive Committee. In 2017, he was inducted into the North Dakota Petroleum Council Hall of Fame.

the anti-gift clause, it could not give up the land between the low-water mark and the high-water mark.

What is the impact of low versus high-water mark? For some water bodies, if you're familiar with a lot of the lakes in Minnesota, the elevation in the lake may change a few inches during the year or from year to year. For very large river systems, like the Missouri River, the difference between the low-water mark and the high-water mark throughout the year and from year to year can be extremely significant. For example, just look at the Bismarck USGS gauge. If we looked at pre-dam numbers, pre-Garrison Dam, and you see the low-water mark was 15,000 CFS, you're looking at about four feet in elevation, but the high-water at that time would have been about 80,000 CFS, an elevation of 15 feet. You're looking at a difference of 11 feet in elevation between the low and high-water mark. Well, when you have flat lands adjacent to the Missouri River, 11 feet in elevation can be a tremendous difference and it can expand that channel out significantly.

What is the definition of ordinary high-water mark? The most common one is high-water mark is to be considered the mark of the bed which water occupies sufficiently long and continuous to rest it from vegetation and destroy its value for agricultural purposes. I'm going to be continually refer back to this. The test is vegetation, soils, and does the water destroy the land's value for agricultural purposes. If it's capable of crop land or it is crop land, it's generally presumed that land is above the high-water mark.

River movement, some definitions. Accretions. Accretions are the gradual deposit in additional soil along the bank of the river as the river shifts away. In that case, the riparian owner takes title to the additional land created by the accretions. Erosion, of course, would be just the opposite. As the river moves into someone else's property and erodes it away, that is erosion. In that case, the riparian owner loses title to the property. State laws controls the determination of all subsequent river movement caused by accretion and erosion. As to islands, if they existed in the river before statehood, title is retained by the United States. However, if they were formed after statehood, they are owned by the state of North Dakota.

This is an example of an original government survey in 1896 of the Missouri River. The squares depict sections 18 and 17. You can see that in 1896, the river does not even enter section 18. If we jump forward to about 1950, again you have section 17 and 18. You can see the river channel has moved southerly into section 18. The legal effect of that is the state now owns minerals in section 18, whereas they did not in 1896. The state's title moves with the river. The other legal effect of that is the owners in that northeast corner of section 18, they have lost acreage. They have lost mineral acres. Throughout the whole Missouri River system in North Dakota, the river moves

significantly from the original government survey until Garrison Dam was built. In some cases, up to a mile and a half.

I'll talk about the high-water mark surveys. When the Bakken first started, the State Land Board, the elected to conduct their own surveys for oil and gas leasing purposes. The two most common surveys are the phase one or task one survey, the survey was of the Missouri River and Yellowstone River from the Montana state line to the Highway 85 bridge near Williston. This survey was based on current conditions of the river channel. The phase two survey started near Trenton and it went to the northern boundary of the Fort Berthold Reservation. This survey was based on the historical Missouri River Channel as it existed prior to Garrison Dam. The surveys overlapped between Trenton and the Highway 85 bridge. Ultimately, for leasing purposes, the state elected the Highway 85 bridge as a dividing line of we're going to lease on historical Missouri River Channel versus current conditions.

This is the Google Earth imagery. You can see the Highway 85 bridge. The red line between Highway 85 bridge and the state phase two, that's the overlap area between the phase one and the phase two survey, but in any event, everything to the east of the Highway 85 bridge was leased on historical conditions, everything to the west on current conditions.

I'm going to touch on this case a little bit later, but I think it would be helpful to explain the difference between the surveys and some of the issues. *Wilkinson v. State* was the initial case involving the conflicting high-water mark surveys and the only case to date to be heard by the Supreme Court concerning the surveys. In this case, Wilkinson's own minerals directly west of the Highway 85 bridge. They argued the ordinary high-water mark of the historical Missouri riverbed channel should be applied. The state argued that the current river conditions in the phase one survey should apply. I'll show you some subsequent slides that will point out the difference and the effect. This is the state phase one survey. The black rectangles depicts the approximate location of the Wilkinson family mineral interest. The red line is the state's phase one ordinary high-water mark survey, so you can see the Wilkinson minerals are entirely within the phase one survey, meaning if this was applied, they lose all their mineral interests and the state owns it.

The next slide is just the opposite side. Again, you can see the little black rectangle. That's where the Wilkinson minerals are and then the red line is the state's ordinary high-water mark survey. In this particular area, the state phase one survey shows the channel being about two and a half miles wide. If you applied the phase two historical survey, the Wilkinson minerals are above the ordinary high-water mark. If you apply the Corp of Engineer's survey, which was done for Garrison Dam, we'll talk about more later, again,

the Wilkinson mineral interests are above the high-water mark and they would retain their interests. If you apply the recent Wenck Associates study, the pink or red line is the phase one state survey, the yellow area is the Wilkinson minerals. I don't know if this shows up well or not. There's a blue line, if you can see the blue line, that is the Wenck ordinary high-water mark determination. In any event, under all three of the latter studies and surveys, the Wilkinson's would retain their mineral interests.

Let's talk about the Corp survey for a little bit. Because the river had moved between the original government survey and the time that the Corp was acquiring land for Lake Sakakawea, they needed to conduct a new survey of the river channel to determine the acreages for land acquisition purposes and compensation purposes to the owners. The survey relied primarily on aerial photography, but it did include some on-the-ground work. This is an example of a 1947 Corp segment map. What they did in their land acquisition process was they started at the Garrison Dam site and then they work westwardly and they did them in segments. This one, the blue area, shows where the river channel was at the time of the Corp survey. All those tracks of land above and below the blue line is land that was acquired the Corp for inundation. The column to the right is a list of all the farmers who had their land taken in this particular segment. There was 17,000 acres taken, but of importance here is that at this time, the United States was acquiring not just the surface, but all the oil, gas, and other minerals.

Then, in 1951, we have the Clarence Iverson discovery well. What does that have to do with ordinary high-water mark and Lake Sakakawea? It has a lot to do with it. What happened was, after that discovery well, land values and land speculation went up significantly. The Corp decided, do we really need to take the oil and gas rights. They changed their policy in 1951 and thereafter, they didn't acquire oil and gas rights, so if you're a farmer and had your land taken, whether it was through purchase or condemnation, you were allowed to keep the oil and gas rights. The timing of this could not have been better, at least for the private owners, because if the discovery well had been drilled in 1958, the land acquisition process would be complete and the United States would own all the minerals under Lake Sakakawea.

This is another example of the Corp survey and what I want you to look at is the blue is what the Corp survey is of the river channel and the orange or yellow, I'm going to focus on that, where the orange and yellow area is, that's where the river was in 1896. Between 1896 and the Corp survey, it moves south. The area in orange there, that was also claimed by the state in its phase two survey, so we had my client's as operators, we had two competing surveys. All of that acreage in the orange, the private owners claimed and leased it and the state also claimed it and leased it. This created a lot of

title and ownership confusion and uncertainty, making it harder to develop along the river and the lake.

Senate bill 2134, from 2017, how did we get to that point? Basically, due to a lot of uncertainty with the pending litigation cases, including Wilkinson, but also, operators as between the federal government and the state, the Unites States also owns minerals along the river. The state and the feds were disputing ownership and operators would try to file what's called an interpleader action in federal court and then let the owners fight it out. The problem is, when we filed those, the United States would file motion to dismiss and assert sovereign unity, so we couldn't get that issue resolved in litigation. Then came the lake claim in November 2015. Attorneys for the state suggested in a brief is that the state may own title to the entirety of Lake Sakakawea, not just the historical river channel. The landlord, I might mention, never formally adopted such a policy. Third, obviously, we had a lot of mineral owner royalty payment frustration with suspense and that's ongoing today.

The initial version of Senate Bill 2134, simply adopted the Corp survey as the conclusive determination of the ordinary high-water mark of the Missouri River underlying Lake Sakakawea. During this process, however, a lot of concerns were raised by legislators, individuals, other interest groups, about what do we really know about the Corp survey. It was done back in the 1940s, we don't know, or do we know the methodology used, do we know whether it's actually an ordinary high-water mark survey, and do we know whether or not it was conducted pursuant to North Dakota law?

Therefore, what we did, we decided that it was time to dig into the archival records of the Corp. We reached out to them and they were very cooperative. We reviewed records at the Riverdale office in their vault and one thing that we wanted to review were land appraisal documents. We knew that the Corp had retained professional agricultural land appraisers to go out and inspect the property. Why that's important is, the land appraisers, as part of that they're looking at soil conditions, they're looking at crop land. Is this property capable of producing a crop? That ties right back into your determination or definition of ordinary high-water mark. These were initially confidential and the Corp used them for their internal valuation of properties. The Omaha office ultimately agreed that they would release those to us.

In any event, after that review, we realized that there were probably some issues with the Corp survey and I'll show you a couple slides. This first slide is an exhibit to one of the land appraisals and you can see at the bottom where the Missouri River channel was. The blue area is upland of the Missouri River and it was designated as crop land by the appraiser and it had a higher value than other land that the property owner owned. However, the state phase two

survey claimed all of that blue area as being within the ordinary high-water mark. If you go back to your definition of crop land is above the high-water mark, then it would appear the state phase two survey has some issues here. This one shows a little bit of the opposite. You can see the Corp survey on the river, the appraiser there in the red area, that's a sandbar. The sandbar is going to be within the high-water mark. You have the pink area where the appraiser noted that the property had little agricultural value. In this case, just based on the appraisal document, it would appear that the Corp survey took additional land below the ordinary high-water mark.

There were 18 separate legislative committee and subcommittee hearings throughout this process. There was about a 700-page written record. The key provisions of the bill as ultimately passed, number one, it clarified the state's ownership under Lake Sakakawea is limited to the ordinary high-water mark of the historical Missouri riverbed as it existed prior to the closer of Garrison Dam in April of 1953. It extended the historical riverbed channel from the Fort Berthold Reservation to 12 river miles west of Highway 85 bridge. It did adopt the Corp survey as the presumptive determination of the historical high-water mark. However, it required a review of the Corp survey and designated the Industrial Commission to oversee the review process and to retain a professional engineering and surveying firm to do so. It required the surveying firm to review the Corp survey, to correct and modify segments if clear and convincing evidence showed that adjustments were necessary under state law.

Some of the factors that the surveying firm reviewed was aerial photography, United States Geological Survey flow data, Army Corp of Engineers historical records, those appraisal documents and then apply the state law test. The legislation also incorporated due process provisions. It required that a preliminary report be published and a 60-day public comment period. Then, it had a two-year implementation period after a final review was adopted for the state and operators to implement the final study and to make proper royalty adjustments or refunds.

The area of review of the Wenck Study was 83 river miles and 12 of those Corp survey segment maps that I showed you. It went from the northern boundary of Fort Berthold Reservation, again, to west of Highway 85 bridge. Fort Berthold Indian Reservation is not included in this. On the reservation, in 1949, the United States took all of the surface oil, gas, and other minerals on the reservation. In 1984, by act of Congress, the minerals were restored to the United States for the benefit of the Three Affiliated Tribes, so the reservation is not impacted by this legislation. In addition, there's approximately 39 river miles of the Missouri and Yellowstone located between the Montana state line and the western boundary of Senate Bill 2134 that is not subject to

this review process and in that area, the ordinary high-water mark is determined based on current river conditions.

This is just a map of the area review. You can see the Fort Berthold boundary to the right and then to the left, you go up to Williston and it goes a little bit west of Williston. The blue line is the western boundary of Senate Bill 2134 and basically, where the boundary is where the Corp quit acquiring property for purposes of Lake Sakakawea. Everything above the blue line, the Corp, or the United States owns property on both sides of the river and that is subject to the Garrison Dam project and Lake Sakakawea and subject to inundation by the lake.

Let's talk about the Wenck high-water mark study and occasionally I refer to it as a survey. If there's any professional surveyors here, I apologize. It's technically not a survey, it's a study. The preliminary report was completed on April 17, 2018. Again, we had a public comment period from April to June. There was a public hearing and a lot of comments were submitted. Wenck took those comments and they made adjustments. I think it was around 950 acres in adjustments after the public comments. Then, they took it to the Industrial Commission and the final survey was adopted. See, I just said survey. The final study was adopted September 27th of 2018.

Wenck reviewed the aerial photography survey of the historical records, the appraisal documents, and flow records. They also at the Omaha office were provided with what are called cross sections or elevation studies. The Wenck study included appraisal documents, plus the cross sections and neither of that information was available at the time the state did its phase two survey. This is an example of one of the segments that Wenck did and I don't think this is going to show up that great. Again, the blue line is the Wenck ordinary high-water mark determination. Does my pointer show up? Does not. The blue line is the Wenck ordinary high-water mark. To the south, the black line, that's where the river used to be. Where the river channel currently is, between the black line and the river, that's what the state claimed as being within the ordinary high-water mark. The blue line, Wenck's blue line, is basically in the middle between what the state claimed and what the Corp survey is, but if you can see it, the property above the blue line is, you can see forest vegetation. The area with the slash line that's within the high-water mark, it's flatland and it's been severely damaged with erosion, so you can clearly see a distinguishing boundary line between above and below that blue line. Although, probably not as clear on this.

This is another example. At the top of the page, the orange line is the state phase two survey and then the blue line, again, is the Wenck survey. You can see the state phase two survey claimed a significant amount of acreage more than the Corp or the Wenck study. The property in that area you

can see what appear to be fields, crop land, and they looked at the Corp records and the appraisal documents and those documents confirm that that property was crop land and being used for agricultural purposes. In fact, had a higher value than other property did. You can see that there was at least some rational for where they drew the line. The final acreages, the Wenck study delineates 9,500 additional acres above the Corp survey. The Wenck study delineates approximately 15,500 acres less than the state phase two survey, so of the approximately 25,000 acres differences between the Corp survey and the state phase two survey, Wenck allocated 9,507 to the state and 15,493 acres to the upland owners.

The Wenck study set the boundary line of where the ordinary high-water mark is located within that 83 mile stretch and they also calculated the acreage within that ordinary high-water mark for the 83 mile stretch, but they did not calculate the acreages on a per section basis, a quarter quarter basis, or calculate the acreages lying above and below the high-water mark for each individual well spacing unit. Thus, the study by itself, we're not able to incorporate the high-water mark study until we have the acreages. I'll try to show you some examples on the next few slides and this will probably be clear as mud when I'm done. This is, the black square is section 23 and then I've divided it in quarters so you have the northwest quarter, northeast quarter, etc. You can see where the blue line passes through the north half, but if I look at the northwest quarter, where the blue line goes through, I don't know how many acres are below that blue line and owned by the state and how many acres are above. That would be the same for each of those quarter sections.

This is section 23 at the bottom. It's a well spacing unit, section 14 and 23. It's a on the ground survey that was done by a surveyor for an operator. Operators have to submit with their permit to drill with the Industrial Commission a survey that shows the surface location. Well, what the surveyors do is they go out and they locate the original government corners and from there, they conduct their survey and draw out their lines. What we need to do is the next slide. This again is section 23 and what they did was they took the Wenck ordinary high-water mark data, incorporated it into the survey that had the original corners already inputted. Then, you have the blue lines. What they need to do is you can see the notation to the six-acre tract. As an example, they calculated that tract. We need to have that calculation for every single tract along that river and to determine the accretions the same way. Without those calculations, there's no way that operator can figure out . . . We might know who owns the tract, but we don't know how much acreage they have and if you don't have the acreage, you're missing the fundamental part of the formula to determine mineral owners, that interest.

This is just a Google Earth imagery showing that the land is now submerged by Lake Sakakawea. Pending legislation, actually there are two bills now, Senate Bill 2211 and House Bill 1192, these bills would authorize the landlord to retain a licensed professional surveying firm to do these necessary acreage calculations. The bills would also extend the implementation period from six months for two years from the date of completion of the acreage calculations. It's important to note that this is not in the survey or study of the high-water mark. The engineering firm that does these calculations must incorporate the Wenck study. Also of note, the Land Board has already issued an RFP for the surveying firm and if this legislation is adopted, they should be ready to roll as soon as it's adopted.

Litigation, the Wilkinson case, I already talked about that a little bit. Again, if the state's phase one survey applied, the state would win, and that's what they argued. The Wilkinson's argued the historical Missouri River Channel should apply. The district court granted summary judgment in favor of the state and also held the ordinary high-water mark of the Missouri River and Lake Sakakawea are indistinguishable. On appeal, the North Dakota Supreme Court reversed and remanded. They instructed the district court must consider Senate Bill 2134 and the Supreme Court also reinstated the plaintiff's takings claim holding that if the district court determines Garrison Dam resulted in the state acquiring plaintiff's minerals, the plaintiffs must be compensated for the taking. The case is on remand and is still pending.

There's several other cases in state district court. All of those cases remain stayed until the high-water mark study and its implementation are ready to go. There's a newer case, January 10th, 2008, *Sorum v. North Dakota*. This case is a citizen's complaint seeking a declaratory judgment that Chapter 6133.1 or Senate Bill 2134 is unconstitutional. The plaintiffs allege it gives away $1.96 billion of state-owned sovereign minerals to private citizens as well as $205 million in accrued bonus and royalty proceeds. The main premise of the law suit is based upon the assumption that the state not only owns he historic Missouri River Channel, but owns all of the minerals under all of Lake Sakakawea. The plaintiffs assert that under the Equal Footing Doctrine, that is Lake Sakakawea was formed by the damming of the Missouri River, the state's title to the bed of the lake, including minerals, became immediately vested in a state as waters rose and formed a lake. Therefore, they allege that Senate Bill 2134, which recognizes state only owns title to the historic channel under the Equal Footing Doctrine, would violate the state's anti-gift clause of the constitution by this giveaway of the lake bed.

On February 27th of this year, the Cass County District Court issued an order on cross motions for summary judgment. Part one of the order held that Senate Bill 2134 is constitutional. A couple quotes, "Lake Sakakawea did not

exist at statehood, thus the Equal Footing Doctrine does not vest the state with title to Lake Sakakawea. Further, any interpretation of state law that would divest title of the federal government lands that the federal government acquired would appear to run afoul of the supremacy clause of the United States Constitution."

Part two of the opinion concerned the refund provisions in the act. What the act requires is that once the new study is adopted and implemented, if it is determined that the state claimed more acres in a particular tract than they own, the state would have to refund that and operators would have to make the adjustments. The district court held that the provisions required retroactive refunds, "To newly adjudicated mineral owners is a direct violation of the anti-gift clause." Essentially, the district court is saying that the mineral owners never owned their minerals until the study came out and the state did, but I think that part of the holding it certainly has some issues. The state never owned those minerals. In addition, the state contracted in its leases to refund payments if it's later determined the high-water mark changed. We'll see what happens with that.

The current status of the Sorum case, the district court ordered the parties to submit a final judgment for entry of judgment pursuant to the court's order for judgment. However, the parties have been unable to agree on language of the judgment and they've briefed it. The judges, we're waiting on the judge to decide what language he's going to put in the final entry.

Status of federal litigation. I mentioned before that we had previously attempted to do interpleaders where there is a dispute between the state and the United States. This is another interpleader case filed by Continental. Continental sought to interplead disputed oil and gas royalties related to acreages claimed both by the state and US. The US filed a motion to dismiss, asserting Senate Bill 2134 resolved that issue as Senate Bill 2134 recognized that federal law would apply to federal owned minerals. The state filed a response opposing the US motion to dismiss and asserted the district court did have jurisdiction to address the claims between the state and the United States. The United States then sought dismissal based on sovereign immunity. This time, however, Federal Judge Dan Hovland, denied the United States motion to dismiss. This case is actually still pending. I do want to point out, though, that the federal case doesn't affect the Wenck study in so far as it concerns the delineation of the high-water mark between state and sovereign lands or between state and privately owned lands.

In summary, I'm sure you're probably more confused now than you were before I started, but that's part of it, I guess. The final implementation of the Wenck study is on hold. Hopefully, the legislation on acreage adjustments is passed and they can get moving on that, but even if that gets accomplished,

the final outcome of the judicial decisions and Sorum, Wilkinson and Continental cases, we need that as well before everything is fully implemented.

VII. ENERGY INDUSTRY WORKFORCE DEVELOPMENT

JONATHAN SICKLER,* MARK HAGEROTT,** BRAD BEKKEDAHL,*** AND BRIAN OPP****

Jonathan Sickler: I just want to start off by thanking Matt and the rest of the students that are on the law review; Dean Myers, Professor McGinniss, and the folks at the law school, for putting this on. This is a great event, and I know it's a lot of work, so for those of us who are participating and all those who are in the audience as well, thank you for all the efforts to put this together. As Matt mentioned, I'm Jonathan Sickler, I'm the CLO at AE2S, and I have the honor of moderating this panel of distinguished experts we have here today to deal with an important policy issue that definitely has some direct tie to the legal profession here in North Dakota, but certainly indirectly

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**_Mark Hagerott_ serves as Chancellor for the North Dakota University System. Before his move back home to North Dakota, Dr. Hagerott served on the faculty and held numerous academic leadership roles at the United States Naval Academy, including as distinguished professor and deputy director of the Center for Cyber Security Studies at the Naval Academy. He is a commissioner on The American Council on Education, Midwestern Higher Education Compact, and Western Interstate Commission for Higher Education. Prior to his transition to an academic career path, Hagerott held numerous leadership positions in the U.S. Navy, both aboard ships and in administrative positions in the Department of Defense. Hagerott holds a B.S. from the U.S. Naval Academy, an M.A. in political science and economics from Oxford University, where he attended as a Rhodes Scholar, and a Ph.D. in history from the University of Maryland.

***_Brad Bekkedahl_ was elected to represent District 1 in the North Dakota State Senate in 2014, where he serves on the Senate Appropriations Committee. He is also in his 23rd year as Finance Commissioner for the City of Williston. He previously served 8 years on the Williston Park Board, including 4 years as President of the Board. He is a graduate of Williston High School, Jamestown College, and the University of Minnesota School of Dentistry. He served 9 years on the Executive Committee of the North Dakota Association of Oil and Gas Producing Counties, with 2 years as President. He has also served on the Executive Board of the North Dakota League of Cities. He is a Colonel in the North Dakota Army National Guard.

****_Brian Opp_ leads a newly launched team at the University of Mary that focuses on identifying and addressing the workforce needs in North Dakota and beyond. Its goal is to become a key resource in developing, attracting, and retaining workforce in partnership with employers, communities, the state, and others. Prior to joining the University of Mary in April 2018, Opp held positions within the North Dakota Department of Commerce for nearly 10 years. Before that he worked in the banking industry.

has relevance to us as leaders in our communities in a state that has some rapidly changing workforce issues.

As most are likely aware, having sufficient workforce has long been identified as a factor that could inhibit growth in the energy sector in North Dakota. One of the often cited figures is 15,000. We have 15,000 jobs that are open, that are listed in Job Service North Dakota. The real number that is typically assumed is to be something well north of 30,000. Many of those jobs, if not most, are in the energy sector. As well as an off-shoot of that, workforce initiatives or workforce shortages have been the impetus for a number of initiatives both on the private and the industry side and on the state side in order to deal with that. And we are going to touch on a few of those that are specific to higher education. One of the things that, as we kind of set the context for why higher education has particular relevance for energy industry workforce issues is the maturation of the Bakken over the last . . . Since the initial phases in 2009 to where we are now in 2019.

I think there is the notion for some, at least that weren't intimately familiar with the energy industry, that when prices dropped a number of years back that the workforce issues went away, that there was less need for workforce. And, I think, what we saw is that certainly there has been a reduction in workforce but not a reduction in workforce needs. And I think what we saw is a number of employees that had become, particularly the lower-skilled employees that were a part of that initial wave, when the work went away, they went away. So, what you saw is our current situation that we have now, that's very similar to what it was back in the heyday of the boom, is we have a very low unemployment rate and we have a very competitive atmosphere or environment for those jobs that are needed.

Our total workforce, the energy workforce, at least in the oil and gas industry, it depends on how you define it certainly, but is about 36,000. So, it's a very significant portion of, obviously, of North Dakota's overall workforce. So, what we're talking about here obviously has direct consequences with that group. But one of the things that you all may have been exposed to is the fact that is, energy industry expands in the state, it has effects on all sorts of next circles of services in the state. So, whether the energy industry is putting a competitive effect or pressure on other industries for wages or it's taking highly qualified staff or hiring highly qualified staff for the energy industry, that has an effect in medical professions, somewhat in the legal profession, certainly on the engineering side. So, there's a long term effect that does have a multiplier effect when it goes just beyond the energy industry.

One of the things that has been changing, and this has been noted by a number of researchers and industry participants, in particularly the NDSU department of Agribusiness and Applied Economics, has some very

interesting reports where they've tracked the workforce, energy workforce statistics over the years. And one of the things that they have demonstrated is how the type of workers that we are now in need, or have short supply of, is the more highly skilled, highly trained folks that are operating transportation systems, that are operating the more computer-generated, technologically driven oil pads, all those types of things that is different. And it means that we have a smaller workforce in some ways in the oil and gas energy industry than we had a number of years ago. But it is a more highly educated, more highly technically trained staff, which means they are going to be in greater demand. They have a skillset that is applicable much more widely across the country. So, that puts a greater challenge on North Dakota to make this a place, that either we train our own residents to fill those jobs or we make this a place that is able to attract people from around the country to come and fill these jobs.

And that's where I think higher education has a particularly important role. And what hopefully we get a chance to talk about today with our panelists, is a little bit on those two points; higher education, what is it doing to work with industry to train our own residents, those folks that are already here, to fill some of those needs. But on a larger standpoint, what is higher education's role in making the state have a high quality of living that makes all the communities that are impacted by the oil industry a place where these folks that have a lot more opportunities to go work anywhere. What makes North Dakota a place where they want to come and live? So, with that, there have been a number of initiatives, as I mentioned, that in the higher education space, certainly with the North Dakota university system, a number of changes have been made over the last four years and probably longer to address some of these issues. We have Bismarck State, where we are right now making a transition to a polytechnic institution, we have dual-mission campuses that are coming on board, we have programmatic changes or programmatic additions. UND, obviously, an easy one, the introduction of the petroleum engineering program. We have research funding that's increasing.

So, there are lots of things specific that the public university system within North Dakota has been doing to address this. So, with that, I will ask Chancellor Hagerott to give some comments on what the university system's doing.

Mark Hagerott: Well, thank you for the invitation to come here. I have great admiration for lawyers. How many are lawyers in the audience? Just about everybody, okay. Yeah. No lawyer jokes here, seriously, I was White House Fellow as a naval lieutenant and I was hired by a guy named Bill Barr, who's back again. And a guy named Mueller was a couple doors down. As a former Marine, he would mentor me a little bit and it's . . . I had the highest

admiration for them when I went to Afghanistan then, to serve there under a guy named McChrystal. I looked around and go, "Where's the law program?" And they didn't have one. Well, how are you going to build a modern society without a law program? And it was just that being around lawyers and understanding, you either run a country with a barrel of a gun or you get lawyers to fight it for you without too much bloodshed. So, I just wanna thank you again, Jon, for thinking of me.

But it is absolutely a fascinating time for workforce. And I just, well I guess my main point, especially with the whole legislator from the western part of the state who, by the way, gets credit for some of the things I'll say here, 'cause he started asking hard questions about two years ago when we were doing a thing called Envision 2030, which included law, by the way. We wanted to look long-term, 'cause higher ed can just get consumed with the day-to-day. What's the news headline of the day? And then you can get consumed in a budget cycle. And you have to really consciously make an effort to thing longer-term, which leaders did, some might've been here in 1999 to 2000, called the round table. Well, we wanted to do something about 15 years later called Envision 2030 and again, to throw credit to the lawyers, they said, "We really are a critical part of the economy, and there's issues here." So, law got broken out as one of the explicit things along with agriculture, energy, healthcare, and technology, we added law to that review.

So, education is just such a hugely important thing because of a couple reasons in our state. One, of course, is this massive digitization going on. Our Envision 2030 found two findings, that there are two things we had to grapple with which were not there in 1999, and that was the digitization of our society with massive implications for the workforce, including law. One of my favorite books is called "Civilizing the Machine," about the lawyers and politicians grappling with the social, legal, ethical implications of industrialization. Guys like Thomas Jefferson, Hamilton, Roosevelt, Dewey, big names going, "Okay, we can build these machines, but now what does our society look like?" So, that's happening again and so we are grappling with that. And as Jonathan said, trying to get some money into research on technology, digitization, etc.

The other main driver we had, pertinent to this topic, was the discoveries in the West. I mean, nobody in 1999 predicted this. My grandfather came here with the Mandan Oil Refinery. My father's side came with Homestead, but that oil Bakken thing in 1952 brought them in here, and everyone was talking about it declining. It was just gonna go away. And if that would've happened, then our discussion here would probably be, how do we close colleges in the West and concentrate in Bismarck, Grand Forks, Fargo, type of thing?

And that's happening in a lot of states. Upper Maine is depopulating. Upper Wisconsin's depopulating. That is not the case here. And in fact, we almost have a tyranny of an imbalance in education going on, which again I give credit to the senator here, when asked some hard questions about alignment. But we discovered that because our state settled east to west, and a few other things, we have an over-concentration of university programs in the east. And in the West, we are so underserved that the Chronicle of Higher Education made North Dakota one of the worst four in the nation for access to education, 'cause of the distances involved. You have to drive 200 miles round-trip for a welding class from Dickinson. And they actually designated us an education desert because of those distances. Now, the eastern part of the state, very easy. I mean, you got two research universities, community colleges, you count the ones in Minnesota, tri-state, I mean there's colleges all over the place along the Red River.

So, we started doing some numbers after being brow-beaten, I mean, encouraged, by Senator Bekkedahl. His intuition was, something's happening here. And in fact, our numbers showed, in the last two years between 34 to 38 percent of the 18-year-olds leave the west to go to the east to school. So, just while we're having this massive surge, unlike Maine, Wisconsin, everybody else, this demand for workforce in the West, we actually structurally are sucking people out of the West to go to the east because of what happened in 1883 when we settled east to west. So, and as a great summary, we realized we had to do something.

And one of the innovations was the dual-mission college model in Dickinson. This is a recognition now beginning to happen across the country that if you don't have the money to build more campuses, you're gonna have to do more with less with the physical structures, and liberal arts four-year schools need to start becoming two-year schools, a hybrid or dual-mission. And so the Dickinson faculty . . . Anybody here from Dickinson? So, some people from Dickinson, couple Dickinson people. I give credit to the faculty at Dickinson. It's not an easy thing for professors who are liberal arts professors to go, "We need to become a dual-mission campus and start to welcome community college students, certificate students, mid-career laborers from the oil fields, and bring 'em back." All right? And Dickinson faculty voted on that this time last year. The board approved it. So, we are now, with the help of the senator here, getting hopefully some money to help tool up the dual-mission model in Dickinson to begin to do both those functions; liberal arts and certificates, two-year programming, the trades.

The interesting statistic out of this, out of Utah, which is a leader, they were just in a national magazine this week on their dual-mission model. A lot higher success rate of people who come in very humble thinking, "I just want

a certificate, I wanna get my welding," and they're like, "Well, hey, you got the top grade in the biology gen ed here at the two-year school program." "Oh, I'm good at this school thing?" And they have a fairly successful rate of them, transitioning them on up. So, we're doing that innovation.

The other one, you mentioned here, is the polytechnic, where whereas Dickinson was reaching down to two-year programming, Bismarck state is reaching up from two-year programming into Bachelors of Applied Sciences. Polytechnic, I guess, is like, the shorthand is like practical technology. And are there any engineers in the room, from like UND or NDSU? Okay. What people don't realize is those schools require what's called ABET accredited engineering, which means you have to do physics or calculus-based physics. And that knocks out a lot of people because it's so abstract. The programs that'll be here will be Bachelors of Applied Science, very much working with your hands, knowledge on the shop floor, knowledge in the oil fields.

But it gets them the bachelor's degree they need and can help, again, fill some of those managerial things. So, those are two of the key innovations, I don't wanna take too much time. But we've heard the signals from you all, we realize the West is not depopulating; if anything, it's the fastest growing part of our state. And the colleges were misaligned, and we're doing stuff also to help Williston. We have a thing called the Bakken New Initiative. Sharing classes from any of the five campuses in the West. The Dakota nursing program, same thing, sharing the online nursing as much as we can. And then a Northern Information Technology Consortium, predominantly colleges in the West but also Lake Region, to share IT courses in the West. So, we got several things we're doing to try to adapt to this. But the last thing we need to do is close any campuses in the West, I can say that, that we need those touchpoints there. Also for the second reason you said, and that's vitality of communities and a livable place to be.

Jonathan Sickler: Thank you, and there's a whole list of potential questions that could follow up with that. And maybe we'll get a chance to get to those, but there's one that I'd certainly be remiss if I didn't ask. And considering the audience and the sponsor of this and the nature of I guess what we're talking about here and workforce, particularly in Western North Dakota, is we know that we have some of our counties in North Dakota where the biggest activity in terms of oil and gas activity also have our fewest number of attorneys. So, the role that law school, UND Law School plays, obviously, is absolutely critical to making sure that we have a state that can provide legal services. We know industry is well-represented. I can attest to that.

But we have a number of, whether it's land owners or small business folks that are benefiting or are affected by the oil and gas industry, that may not have as easy access to legal services. So, knowing that the law school,

UND Law School, is an important player in this, there's some activity going on in the legislature to address that. And I know that the State Bar Association has certainly let their thoughts be known in terms of potentially the idea of increasing civil filing fees to raise a couple more million dollars for the school, having a separate line item in the higher education budget for the law school, similar to the medical school. And then, I think, one of the things being the funding formula, when that was implemented a number of years ago, perhaps the funding formula for legal credits caused the law school to take a hit, financially. I guess if you could kinda comment where some of those thoughts are and as chancellor, what your view of the law school is and its role in the state.

Mark Hagerott: Thank you for keeping me on task. I did make some notes. Yeah, exactly right. That's why we had law broken out as part of the Envision. We didn't break out the history department, we didn't break out the biology department. We did break out the school of law because we only have one. And again, we don't want, especially when it comes to legal thinking, outsourcing that to the law schools on the west. Well, you went to a pretty impressive one, so that was . . . I understand that. So, we do value the law schools as a strategic asset. And in our sessions we rounded, you're exactly right. We had people, including the lieutenant governor, who said, "Shoot," it was his wife or sister who said, "I'd go to law school tomorrow," if she could stay in the west and get her law degree. But she can't move to Grand Forks.

And so, I know we have the new Dean of Law School here. One of the things the State Board asked UND to do, and they're bringing this back in June, so we may have the law school dean standing in front of us, to talk about how we can meet those needs. And we asked, "Could we be the first state law school to have an online program?" We still have the on-premise program in Grand Forks, but there is at least, I believe, one or two private schools that are providing online degrees. But no state flagship law schools that we know of.

So, we're not the experts, but we have definitely made it one of the priorities to be briefed this June. As for the funding, you're exactly right. I was just in the meeting of the Senate Appropriations Committee, of which you were on, so maybe you'd wanna talk about that. But they are taking conscious action on exactly what you're talking about. So, I just wanna encourage you that we appreciate what you're doing and we appreciate the imbalance with the west. It's a fairly unique problem in our country. Most areas are kinda contracting or urban areas just growing, but to have something like a sparsely populated west growing this fast around an industry is a challenge for the law profession too, so . . . Can I deflect to him on the status for the legislature?

Brad Bekkedahl: Well, thank you Chancellor and thank you Jonathan for letting me be here with you today. As far as the Appropriations Committee, we just had hearings on the higher education budget in the last three weeks, and one of the issues we discussed with the law school, which was so relevant in my mind, was the need to have a separate line item within the agency budgets so that they could see where they're at and where they're going. Right now, it's kind of been embedded in the whole higher education budget, not separated out as the med school is. And I think the full Appropriations Committee agrees that the law school needs that kind of attention at this point. It's critical for their growth and development right now to have that, so you will see that change happen. I think it's a good change. We tend not to focus on the things when we don't see them anymore. Once we see them again, we tend to bring the focus back in. So, I think that'll be a good thing for the UND Law School.

Jonathan Sickler: Thank you. Next up, I'd like to turn it over to Brian Opp from the University of Mary. We are lucky in our state to not only have great public institutions but very strong private institutions and tribal colleges as well. And University of Mary has certainly been part of responding to workforce issues, particularly in the energy space. They have partnered with industry to introduce an engineering program at the University of Mary. And Brian is leading an effort to study workforce issues and needs across the state, but particularly to the energy industry. So, I'll turn it over to Brian to comment on what Mary's been up to.

Brian Opp: Thank you for that, and to follow up Chancellor Hagerott's comments, what an exciting time to be in education, in higher education and working on these significant challenges facing North Dakota. I can see many different opportunities, different players, different individuals, organizations across the state that have a role to play in addressing these workforce challenges and the key is getting us all to work together to achieve the biggest impact. But when I think about higher education and our role, we're in a really exciting spot. I don't know if anybody else, any other type of industry or organization, attracts people to the state like higher education.

The University of Mary is a smaller animal than some of the state schools like University of North Dakota or NDSU in Fargo. Our incoming freshman class in Fall 2018 had about 530 kids in it. But the exciting piece about that is that more than half of those kids came from somewhere other than North Dakota. So, from that attraction piece, we're a really great example, and I know that that is probably true to different extents at all of the schools across the state. We're attracting young people to the state. The challenge that we have is keeping more of these young people in the state after they graduate. But we'll figure that out as we go, won't we. The other piece, though, is not

just the attraction, it's the training, it's the retraining, it's the education, it's the development piece. We are in such an actionable position on this critical topic. How much more fun can you have? Chancellor, I don't know if you'd agree with that.

Mark Hagerott: And also being around young people, too.

Brian Opp: Yeah, absolutely.

Mark Hagerott: I mean, you're young. But younger people.

Brian Opp: Absolutely, that's a great point. Any young person who comes to North Dakota right now is stepping into a land of opportunity. We have, as Jonathan mentioned earlier, something like 30,000 unfilled jobs, maybe more, maybe . . . Good luck putting your finger on that exact number. But at any rate, there are opportunities. Western North Dakota is a key example of those opportunities and being in an area where workforce development is such a major consideration.

But let me go back to the beginning and talk about the University of Mary, who we are and what we're doing. The University of Mary is a private school located just south of Bismarck. Total population is about 3800 students; 2500 on-campus, traditional four-year undergrad experience, and then we have about 1300 that are pursuing advanced degrees, they're online, maybe non-traditional, off-site type of students. So, about 3800 kids, or students, I should say. We do have just some exciting growth and progress on the campus at the University of Mary. Jonathan, you had alluded to our school of engineering, and we had talked a little bit about how some of our young people start out in the west, they look at those engineering career paths as a major opportunity and they go east and they unfortunately never come back, or it maybe takes a really long time for them to ultimately get back. Boomerang, I'm gonna use that word again. But with our school of engineering at the University of Mary, a big focus of ours, a big hope of ours is that more of these students are coming to us from Western North Dakota, from Central North Dakota.

They have maybe more of a mindset that they want to be in this portion of the state, they want to stay in this portion of the state after graduation. It's an exciting opportunity for the University of Mary to serve. And we're really excited to have our first graduate this spring. We have our first engineering grad walk across the stage at the end of the month. So, we're really excited about that.

But along the lines of really exciting things at the University of Mary, we've seen our enrollment grow to the extent where we've enlisted or implied our second consecutive year of a wait list for registration, for enrollment on campus. We've seen new buildings pop up on campus. I guess you'd say our crown jewel is our new student center, our Lumen Vitae University Center.

It's really changed the face of the campus and it's really made such a tremendous impact to our students' experiences on campus. And then, as we think about moving forward, back to that engineering school. As soon as classes are over, the last week of April, the University of Mary is breaking ground on renovating an existing building that will become, in time, our brand new school of engineering out on the campus.

And I envy those students because of the positioning of the campus and the positioning of the building, they're gonna have a view that is very comparable to what we're looking at if you just look right behind you, which I'm sure all of you have spent some time today at one point or another. So, really, on one hand, it might be really tough for them to concentrate, but it's gonna be a beautiful school when it's done.

The reason why we're here though, of course, is talking about workforce development. And the University of Mary was really blessed to receive a two million dollar gift from Energy Transfer. The direction attack workforce in North Dakota. Energy Transfer really wanted to make an impact. They looked around, they said, "Workforce is where it's at. We wanna help the state attract, train, develop, and then retain the workforce." And I can't think of more important words when I think about Western North Dakota's workforce, the energy industry; attract, train and develop, and then retain. Such big factors. The gift, again, has been just a blessing for the university. It's put us in a position to really play a role in creating an impact on workforce challenges in the state. First thing we did, stood up a team, three people, I'm one of those three people, dedicated to the task of identifying where higher education can plug in. I like to think we're already plugged in, but what more can we do? Where can we hone in on? Back to, what more can we do?

To accomplish that, we're partnering with the Greater North Dakota Chamber and other groups to build on the work that's already been done by groups like the Governor's Workforce Development Council, other groups across the state, looking at some regional efforts as well as national efforts. And our objective here was to consolidate those findings and build. What we did next is we interviewed almost 60 North Dakota employers from across the state, different industries. We wanted to get back to that point of, what more can higher education do to take a bigger bite out of this challenge here in the state?

So, it's been an amazing process. We've heard some, definitely heard some pain points in different industries. But man, have we heard some really great stories, some great perspectives from great employers across North Dakota. The challenges are real, but it's really important to know we are not alone in facing those challenges. I can't really imagine a better place than North Dakota to try to attack this, because where else other than North

Dakota can you reach across the aisle or can you call someone across the state and just instantly strike up those conversations? It's really not hard to get your chancellor on the phone, to get your local legislator on the phone. We have a great, great environment and that is a major asset to anyone who is looking at addressing those issues. Whether it's higher ed playing their role, whether it's K through 12, whether it is industry itself, or let's not forget about the missing piece here, and they're not missing, but students and their parents.

So, it's really an exciting time. It's an exciting place, and we have everything in our inventory to really attack this and just make a huge impact. I'm so excited about the opportunity. Back to our interviews, our 60 employers across North Dakota. Our objective, we're gonna package up what we've learned. We're gonna put it into a report that we're gonna share, we're sending it to the presidents of the universities within the, all of them within the university system. We're gonna share publicly. It's not something that we're gonna keep it as our secret recipe or anything like that. But what we wanna do is, by the end of April, we wanna have that out in people's hands. We would know that we would wanna take a bite outta this, and we hope that others find something of value in that report that enables them to maybe take a bite or maybe a bigger bite out of what's going on in North Dakota right now.

But, back again to those employers. If I could tell you one thing in North Dakota, again, talking about the amazing people that we have. 60 North Dakota employers, and I think you could say that there's probably some level of survey fatigue on the workforce subject that people experience. But despite that, imagine, let me just tell you how great we were received as we reached out to companies across the state. 60 employers, they treated us with kindness and generosity as they shared their time and their knowledge and their experience. Some of these employers have such amazing company cultures, such amazing best practices, and they talked about the ways that they partner and they're engaged and they're connected, whether it's to higher ed or whether it's to K through 12, or whether it's simply their community. Or, one of my favorite examples is the way that the five big manufacturers worked together out in Dickinson.

Just tons of examples of best practices and what I think I would love to see is to see more of those examples shared. And from a higher education standpoint, how can we support and best position the industries across the state, including and especially the energy industry in Western North Dakota, to be successful, to turn the corner on this topic. So, collaboration, connectivity, engaged, those are all things that I think are gonna get us where we need to go. And the University of Mary is, again, back to that generous gift

that we received that is making this possible for us. We're incredibly excited to be able to have a seat at this table and be one of the groups that, hopefully, is pushing this forward in partnership with the university system and others across the state.

Jonathan Sickler: Brian, could you talk a little bit about, in your experience at University of Mary, how the bridge between academia and industry . . . Sometimes, those two groups can speak different languages and not necessarily view each other as aligned. How, in your experience, how was that overcome and how did the two different groups get over some of maybe that initial weariness that may at times exist?

Brian Opp: Well, I tell ya, I don't think that we can say with any confidence that it's solved. It's something that I think is gonna continually be an ongoing exercise for all of us, whether it's industry, whether it's education. I don't think we can be connected enough. I don't think we can talk enough. Think about your neighbors at home. If you say hello to them once in a while, how connected are you? How engaged and informed are you? I think that there needs to be constant and regular dialogue between our universities, our professors, our deans, all of the key players, directly with industry. And if I'm shooting for the moon here, it doesn't stop just with industry and education. We're pulling in state leadership, we're pulling in community leadership. In North Dakota, I believe the world is small enough where we can get everyone around the table. And that's what's gonna make the biggest difference, in my opinion. So, we're working on it, we're not there yet, but it is achievable, in my opinion.

Jonathan Sickler: Well, thank you, I know certainly we're going to be all very interested in the report when it's issued. What is the timeline for that?

Brian Opp: We are breaking ground on that school of engineering building on the 25th of April. We hope that we can be talking about it on the 25th of April as well.

Jonathan Sickler: Very good. Well, next up, Senator Bekkedahl. Certainly, I think a number of you are familiar with his work. For those of you who aren't, Senator Bekkedahl has been a leader in Williston for many, many years. And for those of us that do business in that part of the state and have tried to help that part of the state get through a lot of the growing pains over the last decade or so, he's kind of the vision of the personified advocate for that part of the world. A real strong advocate, an articulate advocate, so someone that's been a real pleasure to work with and somebody who has now taken his talents to the legislature and, amongst a number of other things, other initiatives; advocating for Williston and the oil patch there. So, with that, Senator Bekkedahl.

Brad Bekkedahl: Well, thank you Jonathan and thank you all for inviting me here today. It's a pretty exciting day for me, I have a brother who is an attorney in Billings, Montana, actually a tax attorney, I'm told that's a specialty of some kind. You would understand that, I wouldn't, because I still do my own taxes and I still do his taxes. I'm a dentist by the way. So . . . So much said for that.

But it's exciting for me because, I will guarantee you, I will let him know that I spoke at the Law Review and was invited to be here by UND and all of you. And I will guarantee you he has never spoken before the American Dental Association, so I have a one up on him. But it's a friendly competition. But again, thank you for the opportunity. I was born and raised in Williston. My family's homestead is out there over a hundred years ago. And we've been local and, which there's not a lot of us left out there, to be honest with you. We have a huge influx of population in that area. And it's because of the benefit of the energy industry and we're pleased with that.

It's brought some pains and some problems to the community that I'm sure most of you read about in the last few years. But it has settled into a nice growth curve that we're now adapted to. I come from an area of four major counties, Williams, McKenzie, and Dunn and Mountrail Counties, that produce the bulk of 1.4 million barrels a day of oil and gas, oil in the state of North Dakota. That production, by the way, of those four counties, generates over 50 percent of the revenue to the state of North Dakota in every two-year budget cycle. It's a pretty staggering number, when you think about it. It's required enormous investment on the part of the state and the local communities to keep up with that. The state has invested over two billion dollars in roads and transportation projects to keep up with the demands of the industry out there since 2013. My community alone has taken on a debt load of about 280 million dollars that we currently have on the books. And as the Finance Commissioner, that looks really bad for me. But all I can say is that 280 million dollars in debt load has been a necessary cash management issue for us, cash flow management, to get us to over 1.2 billion dollars of public infrastructure we've to accommodate this industry and its growth.

So, it has come at a cost to the local community; however, it's manageable. The state has come up with the resources since 2013. At 2013, this growth, by the way, started in Williston in 2007. We were limited on the state revenues we got back as a city to 1.5 million dollars a year in Williston, in 2007 up 'til 2013. Now, understand, this industry is generating five to six billion dollars of [inaudible] for the state. The major tax of that is gross production tax, which was instituted in 1953 Legislative Assembly. It was instituted first as a four percent gross production tax on wellhead value. It's now at five percent. That was in lieu of property tax, it was supposed to go back

to the local entities to take care of impacts that we've seen out there with the growth and development. However, the state treats that more like a severance tax, which benefits the state predominantly and the local institutions, or local, political subdivisions, as a secondary resource. We currently give about 12 and a half percent of that back to the oil patches. The state retains the other 87 and a half percent, as well as the state retaining all of the extraction tax, which is another five percent tax.

So, the cash stream has been very beneficial for the state. But it's also been beneficial for my area. I will tell you, since the HUB City funding passage in the formula in 2013, Williston's funding has gone from 1.5 million dollars per year to about 26.5 million dollars per year, which has been greatly, greatly needed. That's the reason we can take on debt loads and manage them, is because we have the resource there to back that up now. Nobody wants to put this burden on their local property tax payers and say, "By the way, you're bringing the state a lot of money, but you're gonna pay for it too." So, that's the line that we've ridden in this process.

But I will also tell you that early on in this process, we had a lot of transient workforce that came into North Dakota. Remember we had a national economy that was in decline when the Bakken started its development. The nation had workforce that was looking for opportunities and they came to North Dakota. But they came as single individuals and they came here to drill out the initial leases for this project area. About 200 rigs came into the area with all the workforce needs, and the frack crews and the pipeline crews and everybody that was needed for that initial development. When we had the leases, the primary leases drilled out, which took about four years in its heaviest segment, the industry could pull back because they had all of their production areas held by production in their leases now. They didn't need to drill, just to hold a lease. And by the way, re-leasing, which is an important part of the law industry, was a big deal back then. If you didn't drill an initial lease or a primary lease within its term, you were looking at anywhere to two to three million dollars to re-acquire that lease to get it drilled out again. And that's obviously a cost to the industry, they didn't want to have. So, when the industry pulled back due to pricing and also due to the primary lease development they had to do, we saw a reduction in workforce.

At the same time, the nation's economy started to pick up. So, now there was better jobs at home than coming out here and working in North Dakota. So, the opportunity didn't mean as much. And also, at the same time, the Permian Basin, which is the giant of shale plays, not just the United States but worldwide, was ramping up and trying to drill out primary leases. They are still, today, where we were in 2013 to 2015 to get those primary leases drilled out. And that's why you see the level of activity; 3 to 400 rigs drilling

in the Permian Basin. North Dakota went from 200, we're now at 65. But guess what? 65 rigs in North Dakota today is doing the economic drilling activity of 200 rigs that we had in 2013 to '15. That's how efficient, that's how fast they've gotten at doing what they're doing out there in the oil field.

Tying back now to workforce development. You don't do that increase in efficiency without technology. Because the labor-intensive system we had with rigs out there in the 50s and '60s and my growing up here is the '70s and '80s, it's still a labor-intensive activity. We still need thousands of truck drivers. We still need crane operators. We still need rig operators. We still need water haulers. We still need all of that workforce. But I will tell you that the efficiencies in drilling and fracturing and completing those wells has occurred with fewer rigs and more activity out there because technology has filled the gap of the labor pool that we have in the state currently. We could not do that without technology.

And that's where the higher education system, as well as, I will point out, the local education system and high schools with the CTE training programs we have, with the TrainND programs we have statewide, predominantly used in the west for oilfield development. And with the programs that we have at the higher education level and the professional degree programs. If we didn't have basic training, and even in certification programs, that teach technological aspects of, how do you use a computer? How do you use it in the field that's trained to this industry? If we didn't have that, I would guarantee you that the revenues to the state would be greatly diminished, the activity would be greatly diminished, and the industry presence would be greatly diminished.

And all of that is a reflection on the total state economy. I'll also tie in a little bit here to the legal environment that you are in right now in school and those teaching and working in that industry. As this industry matures, there are still going to be even more activity areas opening up for the legal profession. I see it through my brother's office, he is obviously in Billings, he's licensed to practice in North Dakota still, but he defers a lot of oil and gas questions back to North Dakota because people here train and live in that environment. We have way more work.

This is my estimation, you have legal professors that could tell you more. But in my estimation, living in Williston, we have more work in the legal profession in the oil field today and the oil and gas industry, than we have professionals to take care of that. And so there is a huge demand still out there for that. And that's one of the areas that I think UND can become a legal center of predominance in this country along with institutions probably in Texas and other large states dealing with this industry because we have it here, we live it here, and you can get significant training opportunities to

work in the industry, to get degrees within the legal profession in the industry, and come back and work with the industry as a legal professional.

So, with that, Jonathan, I'll just follow up a couple more things on workforce. In my work in the city of Williston, I've worked on economic development for 24 years now. And, again, we talked about the labor intensivity, but the most important issues we have right now are recruitment of workforce, retention of workforce, and I'm gonna put another R in there I call 'retraining of workforce.' In terms of the recruitment of workforce, the most important issue is quality of life. We cannot bring workforce into our communities without quality of life. They are going to have to leave areas where there's great job opportunities to come into our communities and take those jobs, and they don't wanna come to a community that doesn't have good parks and recreation, good hospitals and medical facilities, good schools, and good colleges and institutions of higher learning. That's critical, first of all, to recruitment.

Secondly, the higher education, the CTE and the TrainND programs, they're most important in my mind. First of all, for training. We have great workforce opportunities for our local kids that we used to go to our local high schools and go to great high schools and graduate and go to great colleges in North Dakota and graduate and go to other states because they have job opportunities. We have them here, we need to develop that workforce that we already have locally. And we need to do that through our higher education, CTE, and TrainND programs.

I also talk about retraining. We need to be able to take people that have some skillsets and, to some degree status and/or skillsets that are applicable to the industry that we have before us. And maybe they only need a two-week certification course to work into a job that's a career for them for the rest of their lives. And by the way, that retraining program, maybe you require another certificate of training at some point in that career. The industry is all about, we want that training. We want the higher education system to provide that training, and we're here to help advance it and support it because it makes better employees for us, it makes us more efficient, and it brings innovation to the industry. So, they're behind that.

And then the last part is, we need as a state a competitive business and regulation commitment and environment, because that's jobs creation and, the last part, jobs retention. If we as a state don't accommodate industries but also work with them to make and promote the best business practices we can, we're not gonna get them here for the jobs creation and retention. So, that's my piece on workforce development, and I'd answer any questions you have, Jonathan.

Jonathan Sickler: Sure, and I guess touching upon particularly training and re-training, there have been a lot of ideas that have been generated over the years, whether it's the Workforce Development Council, the Governor's Office, legislators, higher education itself, a lot of specific proposals out there and things that the legislature's been dealing with in terms of expansion of workforce academies, loan forgiveness, other things to encourage students to go into the CTE area. Yeah, I guess kinda, what is your reaction to, generally, what has been proposed to date and is it enough? For what you're seeing in Williston and what you're seeing in the industry, what is kinda being proposed that works and what else needs to be done yet?

Brad Bekkedahl: Well, thank you Jonathan. We have a couple of things. One, we had a, we kind of in the interim looked at some surrounding states' activities and said, "How can we promote some of these recruitment retention issues we're having for workforce?" South Dakota had a great initiative down there that actually had scholarship opportunities for people to come into their state, go to their institutions, most of them there are community college institutions, by the way, for trade activities. And how can we give them scholarships to come here, first of all, go to our great institutions and then wanna stay here because they were trained in our state, in our institutions, and, by the way, we help pay for that?

So, we've mirrored that program. We have a bill that's gone through now that has a scholarship program that would do exactly that, and I think that's gonna bring great response and great activity in the future for all of us, predominantly in the southeast part of the state where those training programs are critical, in trades and in manufacturing, which you have a much larger base than we do, in the east than in the west. There's also areas that are coming forward. TrainND in the northwest has some numbers here. But about 10 to 16,000 people a year go to TrainND just in my community. We have a community college there, Williston State College, that has an enrollment of about 1200 people. Now, they're going to degree and certificate and going to programs where they can get general academics and move on as well. But TrainND is significant in this project area.

So, they have crane operators, CDLs. Interesting, CDLs, what do you think is the most limiting factor in CDL training in North Dakota where by the way we have many thousands of jobs opening, not just in the west, but everywhere? The most limiting factor is, we don't have enough people in the highway patrol system to test the applicants. That's the constriction point we have in the system right now. We had a class that, I think you were up there for that, where there was 40 participants when the governor was up, there was 40 participants in this class, it was last year, in the TrainND program. 39 of them were from outside of North Dakota taking a CDL program because

they wanted to be a truck driver in North Dakota and bring their family into this area for their work environment. That's critical to our needs. But what was the predicament they were in? They got their training and had to wait two months to get their CDL test done with Highway Patrol because we didn't have enough people to test them. So, we're trying to work through that.

Kinder Morgan, a pipeline company, is working with TrainND in Williston area on pipeline welding and programs like that. XTO has a new safety program that we're putting out industry-wide. The industry connections for TrainND out there are significant and they're extensive. And those are the types of things that are gonna be industry-specific that'll help.

There's one other area I'll bring into this discussion, we talked a little bit about, it's the CTE, and that's Williston State College which also has programs in petroleum technology tied into UND's program for geology of petroleum technology right now. Great programs, by the way, for the state. We needed those. I'm glad they're there, petroleum engineering programs. But they have all sorts of programs in that area as well that segment into that. They go from anywhere from a two-week program to a two-month program, to a two-year program. So, they have the ability to make the adjustments the industry needs and get as many graduates out as they can, if they get the applicants into the system. That's a critical aspect.

One last part of that is we have, proposed by Lynn Helms, a program that could get into the high schools, where the high schools, students that we already have, that have lived and grown in this environment, that are born and raised in these communities out west, that they can take programs through online, through BSC, through University of Mary, through Williston State College, through Dickinson State College, through Mina, any of the institutions. But they can get training specifically to what the industry needs. Step outta high school as an 18-year-old and become that truck driver. Become that crane operator. Become somebody that is efficient downhole tools. Become somebody that has the computer skills to do well logging. And that's a new program we're excited to hopefully bring together through the CTE program as well.

So, I think I would give kudos to the state's attempts at this point to make all this happen in conjunction with what this higher education system is doing, with what the K through 12 education system is doing, through what the legislature is doing with scholarships and activities, and through what the private institutions such as Mary are doing with their programs as well. I think we've taken a great step while we could.

Jonathan Sickler: Well, thank you. Before I get into any other questions, I wanna open it up to the audience. Anybody have any questions at this point? Yes, sir.

[Question from audience member regarding state penitentiary population and workforce development]

Mark Hagerott: So, the question was about the men, predominantly men, at the prison here, correct? Well, BSC I know has a program that is on campus. And I think you guys have a program too, I believe, I think Terry Pilling was helping with that, with your engineering. So, there are people reaching out and that's a great point. I mean, we've got, I think America's got more people in prison than any other country on the planet. And there's a huge movement across the country to get them out and get them gainfully integrated. So, BSC by being proximity, of course, is the one that's right here, can send professors over. But you have online programs across that anybody can access those. As far as there's requirements to be on a campus, to be in a dorm room, well then there's other rules obviously. You can imagine a parent having an 18-year-old all of a sudden have a roommate that is quite a bit older. So, there are some limits. But I have to defer to Bismarck State, if they were here, to talk about that. Did you want to say anything more about that?

Brian Opp: For sure. So, that's a great population that has the potential to make an impact. But it's also maybe a segment of a solution, of a workforce solution. You think about the different areas or places where we might find new workers and that might be one of them, but we have to keep in mind this is not something that we'll solve with the flip of a switch. It's not something that we can identify one silver bullet. It's really important to have a long-term strategy, a multi-faceted strategy, and I think it is a very interesting element of a comprehensive strategy that the state is likely to be working on long-term. But as great as it does sound, we have to keep that long-term mindset. It won't happen and we need much more than just that to make that impact.

Brad Bekkedahl: Thanks. If I could follow up, your question is so timely, did you listen in at our floor session today or how did you know that? Because we actually had the Department of Corrections bill on the floor of the Senate today. And in that department budget, there were two areas of significant increase. One was for Rough Rider Industries to train more people within the system for the trades that they already do now, which by the way, the state of North Dakota Rough Rider Industries has an incredible training program for carpentry and wood skills. And so that's, there's an expansion there for that.

And two, there's also money provided in there to look at other institution areas such as we have inmates in Jamestown and inmates in the southwest prison system at New England. There's an increase in dollars to start placing apprenticeship and training programs into those institution areas as well. Because typically those are people that are at the end stage of their terms if they

have any chance of getting out, and we want to make sure they have the skills to come into the workforce if they can. So, great question, and it worked out great for what we did on the floor today.

We also have put in place increased funding for the initiatives that would do exactly that. And it's based on the governor's leadership. That was his executive budget recommendation. We have accepted that to move it forward to try and put more money into programs that offer mentorship and development and also that friend that's needed. Because typically a lot of these people going into the system and coming out have had addiction issues and those addiction issues need to be taken care to put them in the program workforce as well. And so we've responded to that. Is it enough, long-term, to make it all happen? I think once it starts accelerating, we'll see more development and more money put into that as well. We look for results and when you see them, we're happy to fund those.

[Question from audience member regarding role of tribes in workforce development]

Mark Hagerott: And just to thank you for that question. You're exactly right, in fact, that was one of the early workforce development council meetings the governor hosted. And we looked at the numbers, if we could get the tribal labor participation rate up to the average of the rest of the non-tribal areas, I think we would solve most of our workforce shortage right there. And you're right, a lot of them want to stay here where their ancestors have been here for thousands of years. They're not that mobile, they don't just pick up and leave at the drop of a hat.

And what we've done in the state board is we've now made it a policy that that tribal presence are invited at every board meeting to sit at the head table. So, to acknowledge that they have to be in partnership with us. And so, lots of programs, Indians in medicine, we're looking to Indians in STEM, we're looking at something I'll present next week at a national conference for the White House on digitization, cyber security and the fact that tribal areas are underserved and what can they do to help that. So, yep, we acknowledge that and we also see them as an asset. I believe the legislature is just coming out Senator Bekkedahl's committee, I believe, you take care of a lot of non-Indians on your campus and you were subsidizing them, which was crazy, and I believe the Senate just bumped that all the way up to a million dollars to try to mitigate that. So, we see you all as good partners and we are glad to help in any way that we can sort it out that makes productive sense.

Brad Bekkedahl: I would follow up with the Chancellor's comments and thank you for your question. I live between two reservations. Fort Peck is 70 miles west of me, and Fort Berthold is 70 miles east of me. And I actually worked in the Trenton Indian Service Area, which has a high concentration

of Chippewa from your tribal area. So, I respect and honor your people as well having lived that my whole life. And your question is great.

I will tell you that, from my perspective, what I have seen with the chancellor and with the current Board of Higher Education, a much higher degree of integration of the tribal community colleges into what we do than I saw even four years ago or five years ago. And I think that's a credit to all of them as well as a credit to leadership you have within your institutions, in your reservations. That doesn't happen by mistake. There's obviously outreach that's gone both ways and I think that's going to continue to build and grow. And we do have initiatives in nursing at the tribal colleges and we're now paying our fair share of those costs because we recognize the need in the reservation areas as well for that healthcare need that we have statewide.

And also your fellow reservation members from Fort Berthold would tell you that there's plenty of job opportunities in their area which is much different than your area. And by the way, you have higher statistics, but you're not much different than what's happening in all of Northeast North Dakota. We're seeing a loss of population in those areas because of the lack of opportunities in the job markets that are presenting themselves in other areas. So, we need to work through that, we need to work through the opportunities that we have in other places and see how we can best move the workforce between these areas and train the workforce. And I hope what's happening right now with tribal integration statewide, as you're seeing with Burgum, continues, because it's been great for the state.

Brian Opp: Well, I'm grateful for your question as well. And the partnerships that have existed with the University of Mary in the past have been good ones. And there is something ongoing in, I believe it's elementary education right now, which is I think a source of pride, that program for the University of Mary. But more than anything I'm grateful for the question because that's the exact type of outreach and connectivity and hopefully partnership that we're able to identify through our work on workforce development, our study. We wanna know who's willing to come to bat with us on this, attacking some of these issues. So, I appreciate that. Thank you.

[Question from audience member regarding impact of addiction on workforce]

Brad Bekkedahl: Well, I think it's a combination of that. I think, in all our lives, we all have failures at some point and we just have to deal with that. Some people deal with it better than others. But I will tell you that some of those issues they may be right in that they required some retraining they couldn't get. Where they require the opportunity to get their training that they never had. Because, as I spoke before, the technological issues are extremely significant in the industry.

The other areas that are extremely significant are safety, safety and drug use in any capacity, or alcohol in any capacity do not go together well. And the industry will tell you that they don't give you the opportunities to correct those anymore. And so, one of those failure incidents and a check on that for your status is going put you, unfortunately, into the pitfalls you've described for some of those people. So, just as the question about, what are we doing within the penitentiary system, what can we do for those people to keep them in our state if they truly want to be productive citizens and not go into the path that had in the past? I think we need to work on that. And it's unfortunate they want to leave. But it really comes down to a decision of what's best for them in their life at that point, as well, and I wouldn't deny them that opportunity if they needed to make that change.

I'm all for, let's make this better for them if we can. The governor is as well, he's got great initiatives out there to do the same thing. Let's treat the addiction, let's not treat it with penitentiary and jail time like we used to, let's treat the focal cause, let's get them the training and development they need for a successful career, let's put them back into the workforce.

VIII. FUTURE OF THE NORTH DAKOTA ENERGY INDUSTRY

RON NESS,* JULIE FEDORCHAK,** KATHLEEN NESET***

Ron Ness: Thanks to all of you for being here. How many lawyers in the room? Please raise your hand. I want everybody to turn and look out those

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**_Julie Fedorchak_ has served on the North Dakota Public Service Commission since 2012. She heads the pipeline, electric transmission, and energy conversion siting; railroad; and consumer affairs portfolios and is the agency's lead for issues relating to the Midwest Independent System Operations. Julie is a board member of the Organization of MISO States, vice-chair of the National Association of Regulatory Utility Commissioners (NARUC) Gas Committee, vice chair of the NARUC Task Force on Natural Gas Expansion to Unserved Areas, and serves on the Gas Technology Institute's advisory board. Julie was appointed to the Public Service Commission in December 2012 by Gov. Jack Dalrymple. In 2016 she was elected to a full six-year term. Julie, her husband, and their three children live in Bismarck where they are involved in a number of activities and organizations.

***_Kathleen Neset_ is the President of Neset Consulting Service, a full-service oil and gas consulting firm based in Tioga, North Dakota. Kathleen worked as a wellsite geologist across the United States before founding Neset Consulting, and she holds a B.A. in Geology from Brown University.

beautiful windows. It's been pretty darn nice here. Other than the two days you plan to get all these lawyers together, in the last two months. So I hope you guys aren't planning to meet again in the months of April, May, June or July. So we'll see you in December next time.

I just came from a great ceremony at the State Capitol and I know you had chairman Mark Fox here earlier today, but it was a blanket gifting ceremony that the tribal chairman and the tribal council members all gave blankets, star blankets to star quilts, to the governor and all the legislators who were involved in the oil tax agreement with the tribe. And the chairman did a great job talking about the significance of that, and really what that means for the people of the Three Affiliated Tribes, and the nation. And I think it's going to spur a whole other level of activity on top of that wonderful geology that the fort Berthold Indian reservation has. So it was a great ceremony.

We've got two fabulous guests here today. And I'm going to quiz them, but these ladies are what I consider experts in the energy field. Their experiences throughout North Dakota put them in that rank. And I want to make sure that any of the questions that you have that we answer get answered for you. So please, at any time, if you've got a question that pops in your head, let's hit them with it. And I'll take any leftovers that they don't want to answer. But you know, we're talking about the significance of energy in North Dakota. And the question I pose to these two to answer is, they're both in public service. You heard Julie obviously has been in public service for much of her adult life, starting with Governor Schafer and Kathy with all of her busy business activities and function has chosen to serve on that wonderful job on the State Board of Higher Education.

And that's a tough job. And now there's potentially going to be 15 Kathy rather than six. But so Julie and then Kathy, what's that one moment in your busy lives in which you've decided that public service was something that you should be involved in and engaged in? Because obviously you both have options to do many things.

Julie Fedorchak: It would be difficult to narrow it down to one moment, but I'll try to be precise to a couple of moments. So for me, public service started when I was a kid, sitting around the dinner table. My dad always talked about the importance of being involved in politics and government, because it matters in your life. And so I just kept hearing that. And then fast forward through high school and college I did some leadership roles like a lot of people did.

She serves as a member of – to name a few – the North Dakota State Board of Higher Education, the North Dakota Petroleum Council Executive Board, the UND Petroleum Engineering Advisory Committee, and the Minneapolis Federal Reserve Board.

And then I started working out in the east coast and I got a call from Ed Schafer's office, would you like to move home and work for me? As in the governor's office, I thought, yes, that'd be interesting. So I did. And then I realized I really loved it. I loved working in the governor's office, working in government. And really trying to make government work for people. I know that sounds corny and maybe not altruistic or whatever. But quite honestly I think people get so disenchanted with government, that they really can't affect it, that it really doesn't matter to them. But when you're inside, seeing how much it does impact people, it's really gratifying to be able to try to make it work in a way that you think people expect it to.

So that's why I'm involved. That's why I continue to be involved and who knows how long I'll be here. But as long as I still feel like I can make some difference. This is a bad time to ask me because the legislature has only got two weeks left and it's been a tough one for us. But we'll get through and continue serving down the road. So that's it for me.

Kathleen Neset: My turn. All right, well I'm going to start and I'm sure Julie feels the same way. And I do want to start with a thanks. So mine goes to Matt who just stepped over there and Nick and the law review. I mean, thank you for the invitation. Thank you for inviting us, to help us tell the story of energy. Obviously not in the light of law, but from the technical standpoint. I'm thrilled to be here. You know Ron, my thing, when I really look at it, you're the president of North Dakota Petroleum Council. One of my early things here in North Dakota to get involved in and really get into the workings, was when I was asked to be on the Petroleum Council board of directors.

I mean, that really to me makes a change from just doing your work, being the day to day person to helping. Helping on that board to help fashion the design, to help chart the course for our industry. And from there I can look very decidedly. Governor Dalrymple, 2020 and beyond. It was back, I don't know what year that was, 2011, 2012 he asked me to serve on that kind of envisioning committee. I was co-chair with Bill Marcil, Jr. on 2020 and beyond which then led on to work on the state board of higher education. So I'm just thrilled to be part of this fabulous thing called North Dakota.

Well thanks and I think that, you know it's day 65 of the legislature today and, a lot of tensions are rising and it's a tough time of the last couple of weeks of the session. But I think the key is, is that everybody should get involved because we see everybody talking about this bill or that bill, but the legislative session really starts again the day they adjourn for the next legislative session. And you get involved at your local chamber. You get involved with your association, you get involved and become part of that. I think it's a big significant thing that not enough people get engaged and halls are relatively empty right now. So I know if you read Kathy's bio, but Kathy of

course is the great American geologist as we call her, that has educated the world about the Bakken, and she was recently in Israel as part of an energy diplomacy trip.

She's taught at war college multiple times. We've had presidential candidates here that she's talked to them about the Bakken. And I was talking to my friend [Congressman] Kelly Armstrong earlier today, and he's on the climate change committee. And we all kind of giggle about this green new deal. And when we talk about the future of energy, I think we all kind of giggle about North Dakota. But the reality is there's a whole bunch of people that are really significantly engaging in jumping into this thing. And we're fighting now with the state of Washington. They essentially want to block Bakken crude oil from coming into the State of Washington. Of course. Where are they going to get their crude oil? They're going to get it from other places of the world.

Ron Ness: But Kathy, as you have really educated the world. Two questions I guess: What's the one thing you people you think people get? And then what are we missing? What are we missing with this? Maybe it's a younger generational thing, but I don't think it's just a younger generational thing.

Kathleen Neset: You know Ron, I don't either. And when I look out and say, what do people really get? I'm going to bring that and keep that right here at home in North Dakota, and I will say in my talking, and you and I have talked to so many different groups, and so many different people. I think people get the national security issue of oil and gas. About energy for this nation. I really do, and when I talked to, you mentioned the trip that I just took to Israel, which was fabulous. You know what one of their biggest bragging points was? Is that they now, sitting in the Middle East, they are not an oil producing nation. They do not have oil reserves that they have identified, but they do recently have natural gas. And to be able for them as a nation, to be able to say that we are energy independent, we can take care of our energy needs and such for the next 60 or 70 years, that was huge.

But that's exactly what we're talking about right here in North Dakota. Right here in America, to be able to say that we are energy independent. And I do think that I'll take the converse to that. And I think the other problem is, is those who just haven't quite understood that yet. And don't see the need for a safe, secure supply of energy for this great nation. To me that is a big asset. But it's also our big challenge to get out to the rest of this nation.

Ron Ness: Julie a lot of discussion about energy infrastructure. Yesterday by the way the president signed an energy infrastructure executive order that essentially puts the control of intercontinental, country to country pipelines back in his lap, rather than somewhere else and tries to improve some

of the ability for states not to be able to block energy infrastructure. But, on the PSC and out visiting with the public and in hearings. What do you see as those two? What's the one thing they get? And what are we missing on?

Julie Fedorchak: Very good. I think the one thing that people get, and I think this is true across the country is that energy equals jobs and good jobs. And that just doesn't mean traditional energy. I think there's also a lot of recognition that renewable energy also creates jobs and that those jobs tend to be good jobs that are careers. The piece that I think people don't understand, the energy industry, especially traditional energy, are kind of victims of their own success. Because people really have come to just take energy for granted. Energy is always going to be available. Like this is just how it is in America. And I don't think that energy companies, they're so busy producing energy that they haven't really taken the time to explain to the population some of the challenges that exist and that we can't take this for granted. That there are differences, legitimate differences between renewable and traditional energies that are not interchangeable. And we need to recognize those.

We need to have policies that recognize those. We need to have financiers on Wall Street that recognize those, we need, you know across the board. There needs to be a greater appreciation for the value of the different energy types and the need for them all and the need to support the infrastructure that is necessary for all of them as well. Because we are seeing, I deal a lot with electric utility regulation, and I deal a lot with interactions with others in other states to deal with this. And on the east coast, New England states are pretty much stuck with fuel oil and whatever gas they have today, because they cannot build a pipeline, a natural gas pipeline to extend out the gas up into those states and increase the amount of usage for home heating or even for a generation.

And that's just because there's too much opposition to pipeline development. Well that's just bad policy. It's just terrible policy because they're actually creating a bigger environmental footprint by generating electricity with the fuels that they're using. Then they would be, if they could get natural gas up there, and you have to have these backup resources. There are huge advancements being made in renewable technologies, but still today the fact is, we have to have the traditional resources available to dispatch at a moment's notice when the renewables aren't available.

On January 30th when it was 30 below across North Dakota, 3000 megawatts of wind generation did not show up on the market that was expected to be there because it got just a few degrees colder than what those towers are allowed to operate on. And so they had to back it up. Now if you know that you can make those plans for those things, you have to recognize those, and you have to be realistic about some of this talk about going 100%

renewable energy in a short amount of time, which is what the green new deal is proposing.

We have to be realistic. Technology is going to take a while to develop. We have to have storage, we have to have smarter grid. There's a lot of things that needs to be in place, a lot of things that cost a lot of money. And people need to be up to speed on what those investments are and be aware of the costs that are associated with them to be able to say with authority. Yes, that's what we want. So that is where I think we're lacking in terms of people's knowledge on energy.

Ron Ness: Julie, I think the biggest game changer for the Bakken and frankly in addition to the technological advancements we're seeing on a well over well basis right now are just incredible productivity growth. But the Dakota Access Pipeline, I think in my opinion, changed the curve for the Bakken. Because all of a sudden you had access to, people don't want to put their dollar into the Bakken play when you're going to get heavily discounted per barrel versus the Permian and Eagle Ford and Anadarko and everywhere else. And all of a sudden our discounts went from $8 to $12 to $3. And they leveled back a little bit, but there's one aspect of that whole Dakota Access Pipeline issue that I think probably ensured that it happened. And that was the ability of the Public Service Commission's decision to withstand all of the legal scrutiny that you know went on from not only one judge, but there were lawyers looking at that thing every possible way they could to stop delay that pipeline.

And the PSC's decision stood. That was really the only action that we had that they could probably go after at that point. So what do you think in your process was the key to that? And then where did maybe the failure come to create the unrest that resolved it?

Julie Fedorchak: Thank you Ron for that recognition. The key to our process, and I'm a big believer in the process. It's been in place for 40 years, at the Public Service Commission. So we have a long history of siting this infrastructure. It's just in the last, since 2000, we've sited almost $20 billion worth of new energy related infrastructure in North Dakota. And almost half of that, interestingly enough, is wind generation. Almost $10 billion of that is just wind generation alone. So it is the all of the above. It is both renewable and traditional. The key to our process is two things, a thoroughness. We look at everything. We ask a lot of questions. Some people don't like that, but that's part of making sure that we're doing it right. And holding companies to high standards. And I believe companies can do that and they do, they do meet these high standards.

So that's to their credit. That's one piece, is being thorough. We look at all the environmental, cultural resources. We look at community impacts. We

take testimony from the public. On the Dakota access, we had 30 hours of public testimony. So the second piece of our process that I think is essential is the transparency. Everybody can have access to it. You don't have to have an attorney to talk. You can show up. You don't have to register, nothing. You just walk up to the podium and say your piece. Well, you get sworn in, that's the only thing.

So it's an open process and we want to hear from everybody. And I think that's the other piece. And I think those two components are ultimately why Dakota access, the decision on Dakota access stayed because we did look at everything. We did consider a lot of the things that were suggested in the public, in the media reports that we didn't, and when you've dug in, you realize, no, those were considered actually. Everybody did get an invitation to participate. We wanted that participation from all the various agencies and they were invited to do so. So I think that's why ultimately the decision was able to stand.

Ron Ness: We had a major Bakken operator who also has assets in Denver here earlier this winter, and who met with the governor and they basically said, we're going to spend about $750 million this year and not a penny of it in the state of Colorado. And if you know what's going on in the Colorado legislature right now, we're going to spend it all in North Dakota. And we're going to spend it here because of regulatory certainty, the geology essentially and our assets are similar, but we've got to go where we can be certain and we know there's a business environment that wants us. And Kathy, you talked about the hundreds of presentations that have been held across North Dakota, but specifically we started in western North Dakota and Stanley and Killdeer at the onset of the Bakken in 2007.

And people understood the completion technology, they understood all the questions and every time we went back the questions got harder and more in depth, but they understood that. But I still think there's just, this huge, you've lived in Tioga since 1979. That significant type of change to communities obviously we understand the jobs the wealth creation, the growing schools instead of closing schools. But what do you see in Tioga in terms of the impacts of energy development and I think the wear and tear on the people and has it mitigated since the peak of the boom in 12 the 14 today, and the general person on the street from Tioga, for 40 years has been there. What are their thoughts today?

Kathleen Neset: You know Ron. It's really interesting because it has evolved a lot over the years. The short history. The last 10 years or so, 20 years, 30 years. But I got to, thinking back, I spoke to a group not too long ago, a few years back and they were Tioga high school class reunion. And if I remember correctly, they were having their 60th class reunion. So if you do

the math and you put this together, these ladies and gentlemen, somewhere, you know upper seventies eighties and they were all together. They were the young adults. They were the young high school kids that came with the first oil discovery in the 50s, back in the 1950s. So they're back to Tioga. This is where, as we all know, Tioga is where oil was discovered back in 1951. So I was visiting with the young adults from that oil boom back in the 50s.

And there they were the ones who were the recipients of the jobs their moms and dads were working. They came from across the country and obviously that they had stayed. And they really had a very, I thought, just a really honest down to earth hardworking North Dakota spirit, is that this is for the greater good. This is good. Tioga is a great community, and it is, thanks to being, the oil capital of North Dakota. But we can put that on all our communities. When we look at western North Dakota and look at it, now I will counter that, that there are still individuals who truly want us as an industry to look very closely as to the environmental impacts. And are we doing the reclamations, and are we doing our cleanups and are we doing the environmental stewardship.

And I think as good stewards of the land, I always say, your best stewards who are the ones out on the land, number one, the farmers and ranchers and number two, the oil men and women. We're the ones that are really out on those roads, you know, know the area and really do know it best and take care of it best. So I think what I see from, and I think it does speak to other communities in western North Dakota, is that, this is really bigger than what we are. It is really a positive. Our communities are so much stronger and so much better and we have work and responsibilities, but we really have done quite a phenomenal job here in North Dakota.

Ron Ness: Well I think that kind of gets us to the future of energy in North Dakota. And at the Capitol this morning, and I ran into somebody from my hometown in eastern North Dakota, and the comment was, "well, what's happening out in the oil industry and the oil patch is kind of quiet, you know, after the big bust happened in 2014 through 17," and I said, by the way, it's nine o'clock in the morning, we've produced almost 400,000 barrels of oil already today on our way to 1.4 million barrels a day. We're going to produce over 2 billion cubic feet of gas. We're going to move about 2 million barrels of water. This year alone, we're building over three and a half billion dollars of natural gas processing and infrastructure. We're employing somewhere around 60,000 people in North Dakota directly. So it's all happening at a very high level.

And if you talk to a business people across North Dakota and if they say, "yes my business has really dropped," well, it's dropped from being up here down to maybe here and then, but we're maturing. And I think that's the

message that we're trying to send to the market, that we're trying to send to investors. That we are now entering the mature, more mature phase of the Bakken. We're not only getting better at every individual well. We're looking at the secondary recovery options, and what's that going to look like with more productivity of reinjecting CO2 or ethane or gas. And in addition, I would say the one thing that was the game changer in addition to the Dakota Access Pipeline was the presidential election. And the day after, from my desk, I could begin to tell you that the minds of the CEOs and the minds of the companies went from trying to survive every given day, against a federal government that was against you, to just figure out how to get better at what you do.

The engineers went to work, even though it was during the downturn, the engineers went to work, made better wells, the accountants went to work, got the finances to work. And here we are, producing so much more out of every given well, and it was just, and Kathy, your business went through this. You had made some structural changes and made your employees the owners, and all of a sudden you went from here down to here. But how has it all panned out for you?

Kathleen Neset: It panned out great. I'm still here. I mean, it really, it's phenomenal. And what I want to, you know, sometimes I think we need to remember, I drive into Bismarck here, and I see the price of gasoline is $2.69 a gallon. Do we realize how low that price of gasoline is? I mean, that is phenomenal. I mean, when you really look at it, and think about who benefits by that, my take on it is that the middle and lower income families are the ones who benefit the most from this secure supply of energy. This low cost reliable source of gasoline, heating oil, propane, are really the ones, those who are benefitting –wealthy people are going to purchase gasoline at $10 a gallon. Those who are lower income brackets can't afford to purchase $10 gasoline. So the ones that really, you know, some people may purport that they are looking out for. We as North Dakotans and as an industry are doing exactly what the lower income, middle income families need to get those dollars spent on education, dollar spent on their families rather than trying to get to and from work. And I just think it's just tremendously important as you say, what translates into the regulatory environment for this industry and this state.

Ron Ness: So 20 years ago, Julie you return to North Dakota, you were Governor Schafer's communications director and what was his slogan? Ed knows business, or what was it?

Julie Fedorchak: Schafer means business.

Ron Ness: There we go. Somehow, I knew you'd know that. But I remember that Ed would go to Minot and do a jump and a shout about a new

call center that was going to employ five to seven people at $18 an hour or $14 an hour.

Julie Fedorchak: Or $12 or $8 an hour.

Ron Ness: You guys were jumping all over the state to do less than 10 new jobs in any community. Even that was a big deal.

Julie Fedorchak: That's true.

Ron Ness: And I think for the young people here and the opportunities, and I've got three teenagers now that are about to start going into college and just the opportunities, but how do you describe to somebody about where we've come and where we're at today versus where certainly it was when you and I came out of college?

Julie Fedorchak: Well, it really is stunning in that, I look around at others who might be in our same age bracket back in the 80s, and everyone I was graduating from high school and college with. And really the big question of the day was the brain drain. The best and the brightest were leaving. And that was said over and over. We're losing the best and the brightest. And I did at the time think, so does that make me worse than the dumbest or what? Because I'm still here.

But it was true that most of my friends moved out of state. I know there's others here that are the same age that had that same experience. There was talk about paying people to stay. I remember the youth initiative there was talk about like, let's give people a couple thousand bucks to stay in North Dakota after college and see if that will keep them here. I mean there was so many, and we were desperate for young people and there just was no opportunities.

And so, Ed really tried hard to diversify and really focus on, you know, where do we have strengths, what are our resources? And natural resources was one that he targeted on both agriculture and energy and kind of got the ball rolling in that area. Some of the IT, some in manufacturing, those sorts of things. And then just piece by piece by piece, really focusing on the business environment and promoting a good positive business environment. I think it started to take off and then the natural resources, growth in those areas and fracking developed. And the rest is history. Here we are and we have this amazing energy sector that provides jobs in traditional and renewable energy.

We have been so blessed. I mean some states would like just one of our natural resources and we have wind, we have solar, we have oil, we have natural gas and we have coal. I mean we have just so many resources that are providing jobs in the energy sector and those jobs will, you know, energy is needed indefinitely. So I think we've got a really bright future in that sector as well as our agriculture sector and IT and manufacturing.

So it's really just amazing to see how the young people actually think about living here today. Our communities are more vibrant, we have more things going on. People recognize the value of living here and our nice lifestyle. And so I think it's just been a complete and utter on 180 switch since I was a young person and thinking about my future. And I don't see that changing anytime soon. I think that we can only build on that now and make our communities better and stronger and more appealing to the young people.

Ron Ness: So yesterday we had the mayor of Bowman here. We have a little legislative issue and we were in the Senate floor talking to a number of legislators. And Bowman of course, Cedar Hills Oilfield. If you go back to 2006, actually 2007, we were producing 92,000 barrels of oil a day in North Dakota. 40 to 43 of it was coming from Cedar Hills field, Red River B field, in Bowman County, North Dakota. And I don't think the legislators believed us. It was like, so where would we be without the Bakken and the technology and the unbelievable cracking of the code.

But you know, they're trying to revitalize Cedar Hills oil field with the CO2 from power plants or from Wyoming and put it back into that water flood in and reenergize that field. But that is just simply remarkable that 40 over 40% of our oil production just 12 years ago came from Cedar Hills Oilfield and Bowman County, North Dakota. And now it's, that's down to about 14,000 barrels a day or less. So, technology is just an amazing thing, Kathy and you're out there with people on the wells every day. And where do you see us going in terms of the next step? Is there more to recover out of this Bakken?

Kathleen Neset: Absolutely. There is more and you know, what was able to get us through those low commodity times, those years, 15, 16, 17. It was the efficiencies, it was the new inventions. And I am a firm believer and that is exactly where we will continue to go as an industry. We will continue to build efficiencies into this industry. I think a lot of that is going to come in down hole tools. I really do. I think that a lot of it, when you think about it, when we first started drilling these wells, Ron, we were doing the multi laterals. You'd drill a well bore, backup, do an open hole side track, get into one of the legs. Oh wait a second, you go and try to produce that well and you can't get back into that, that lateral reliably.

There's still so much work to be done on down hole tools so that we can get back into that type of production. Right now, every single lateral that we have out there has its own vertical component to it. You know, what about the idea of one vertical with multiple laterals again. You can only do that if you have the down hole tools that allow you that technology to reliably get back into that lateral. I think that's part of where we're going. The other thing.

I don't think we can sit here without at least bringing up the idea of the need for technology and guests capture. It's huge. You deal with it every day.

Ron Ness: Yes, and certainly I think that's the other thing on the mind of every company and it's vastly underestimated what companies do every day to manage their gas. Managing gas has become as important as anything you do in your entire operations. In order to produce your next barrel of oil, you've got to manage the gas that came from your oil produced yesterday and the next day. And it's a huge cost center, frankly.

Kathleen Neset: It really is. And then think of it, it has a cost and it has to take away unfortunately from those barrels of oil. But what you're talking about before you can even permit your well, you have to have the gas capture plan in place. That's part of the process. It's huge. Have we dealt with it adequately? No, we have not. It is still a big item out there and that is something that is a way forward. How do we do our gas capture, capture that resource, you know, and make it valuable, stopped flaring and meet our goals for gas capture, but do it not only from a regulatory, we don't want to do it from a hammer. We want to do it from what's the greater good. Capture that resource.

Ron Ness: And I think one of these legislative sessions we're going to show up and, the next economy in North Dakota is petrochemicals. As the size of this resource and the amount of gas production and those things. Somebody's going to pull that trigger. We had Cenex harvest states almost do it on a fertilizer plant a few years ago. That is going to happen. And that's going to be the next big thing in terms of an industry. There will be an industry of its own because once you start it will grow upon itself. And the resources there now, I think we're all confident. So, Julie, we talk about technology and but, some of the technology, even on wind. The efficiency of today's wind turbines. You got some data you can talk about there?

Julie Fedorchak: I can. So, I have been on the commission for six years. When I started, most of the wind facilities that we were permitting had a capacity factor of less than 30%, so 30% of the time they could produce their name plate capacity, their maximum output. We say it's 200 megawatts, 30% of the time. Today, those are pretty typically over 50%, and it isn't because they're in different locations. It's because the turbine and the technology for capturing the wind is so much better that weather forecasting is so much better. The blade design has changed. They've gotten bigger and just more efficient. And so across the board in all of the energy sectors, these technological advancements are solving problems, improving efficiencies, allowing people that capture more energy at lower cost, reducing environmental footprints.

And so really, as much, I'm a regulator, so obviously there's a role for regulation, but to the extent that you allow technology to develop and

encourage that development. The technology really takes care of so many other problems. I think it's going to ultimately be technology, not regulation, that solves CO2 issues. And I think we just have to keep our eye on that ball though and not get too heavy handed on the regulatory side, so that you squash that kind of innovation and technology opportunities that exist out there and encourage people to do that.

Ron Ness: Two of North Dakota's great energy leaders, who's got some questions for them?

[Question from audience member regarding Dakota Access Pipeline permitting process]

Julie Fedorchak: Thank you for the question. It's relating to some of the route changes during construction that came about. And that is very typical. There are always changes of pipeline routing during construction, you can do your very best surveys, and planning ahead of time, but when you have, when you're hard on the ground and constructing, you run into things that you didn't anticipate and couldn't anticipate, so you have the flexibility to make changes. It isn't true that they ever constructed without a permit. That never happened at any point during the process. There is a process for unanticipated discoveries, where they have their route. They come up on something and they didn't anticipate it, and what are they to do then? And the exact formal requirement is that they notify us and the state historic preservation office and proceed after that fact, they didn't notify us. They notified the state historic preservation office. They worked properly through those channels, avoided the resource routed around it and nothing was damaged. The piece that was missed was they didn't notify us. So those are the facts on that particular incident.

[Question from audience member regarding energy infrastructure]

Ron Ness: I think that's a great question. And the question is, why do you overproduce your infrastructure? And the reality is, there are many aspects to that. But number one is if you're going to build gas infrastructure, you got to be able to show the developers of the midstream industry. You've got the gas, right? The gas is there. You need the cash flow your operation in order to fund that next project. On the producer side, you're under, obviously you've got to produce for your company, for your shareholders or wherever. So you're going to take your investment in your cap ex to where you can produce because the Bakken is about $20 million a day of cap ex. Just take that into consideration.

So you've got to continue to attract investment in order to grow your assets. And if your assets are best in the Bakken you are going to want to invest in the Bakken. But the really, one of the key issues that I think people overlook many many times, is that if you're a mineral owner in western North

Dakota, and you or your family, and I can line them up from here to that bridge and back 50 times. Do you want to wait 25 years? Does the technology get better if you're not researching and investing every given day.

And I'll guarantee you the answer to that is that mineral owners may not be here 10 years, five years, 15 years from now. They want those their minerals developed, and in order to get better at something, you have to. If I'm only one for 10 at the plate, I got to get to the plate another 15 20 times. That's how we've gotten better with our productivity in the Bakken, is by continuing to invest and learn every given day.

So it's not just something that you could fit and start in, and that doesn't attract the infrastructure. Nobody builds a new hotel in Williston or Watford City or Killdeer if they're going to know that, we're going to be on hold for the next 17 months. Nobody's going to come here and invest in a new school. People aren't going to agree to build a new school or build a new a petrochemical plant, if they think that you're going to be restricted and limited.

The ability to have Wall Street and the investors want to invest in you as a company is strictly dependent on your ability to, (a) get a good return on your investment, (b) be able to grow your asset. In fact, today I took a lot of questions from producers who are seeing what's going on in Washington state. What's that going to do to your ability to market your oil, are your prices going to go up. So what are they going to do as a result of that? They're going to say, we're going to put more money in the Permian. We're going to put our money here and there.

So as a company who wants to grow your job, you want to grow your business, but as communities that want to grow and invest and then build that infrastructure, you got to have a growing base. So that is kind of a big answer to a question, but it's multifaceted. And in any business, if you're not growing, you're not improving and you're essentially, you're dying off as terms of your resource. Kathy, can you top that off for me?

Kathleen Neset: You know, all I say is that, once again, it's the free market system, and it's, you know, how do we grow and are strong as a nation, whether it's oil and gas or whether it's nuclear, wind, whatever the energy source is. How do we get better? We get better by pushing ourselves to the limits, and then the infrastructure does catch up to that. They're just growing pains amongst all of these. But I think that we've learned from one industry to the next to the next. And we have learned in the Bakken and shared with the Permian and shared overseas and these kinds of things. We have to continue to push to our limits rather than limit those young teenage children, that you have coming into college who want to expand also their knowledge base, and they want to contribute to this.

Julie Fedorchak: I would just offer another thought on that. It seems like on the face of it interesting approach and sensible and logical. And we saw some of this talk, a similar sort of discussion when people were suggesting that pipeline should be coordinated and in certain corridors throughout the state and you should have that all mapped out and do it that way. But from a logistical standpoint, who manages and coordinates all of that. And then, beyond that, who gets to decide who gets the produce? Like when it's time people would produce again, who decides you get to, you don't get to. Your mineral rights are going to be realized. Yours aren't.

That is a pretty heavy decision with a lot of consequences. And I don't know that any of us in this room would want to be the decision maker for that, or to trust that to some. I'm assuming it would be some government person. And give that power over to the government. So every time you look at like, here's the solution over here that we could better coordinate a better solve there's usually a push back on the other side, and that makes it not always all that practical of a solution to implement.

Ron Ness: I think that's a great question. Thanks for asking. Because it is a common question and, had we stopped when we outpaced our capacity. It would have been at 130,000 barrels a day. And we wouldn't have gotten the infrastructure to go to the next, then the next and the next day and, we have been the tip of the spear, on just about anything you can imagine. You've all seen it, read it, we've all lived it. But we have been the tip of the spear for really the world and how produce oil from sale. And I think as a state, we have stepped up, and we have tackled these challenges and if you go to the Eagle ford today or anywhere else in the Permian, they have taken what we have done in North Dakota and modified it. We've had people from Iraq here looking at things that we've done just in the terms of gas capture, in terms of gas flaring and some of the remote capture technologies, which we have a long ways to go on. But they were coming here, and they're sent here by the Department of Energy.

So, a lots of things that we've learned the hard way, but we've been the learning curve for the rest of the world. So, we have time for one more question. Anybody have one? Yes.

[Question regarding regulations on transportation of Bakken crude oil]

Ron Ness: What was my answer to the Washington question about essentially blocking North Dakota crude oil by saying they've got a Democrat governor that's running for president, by the way, on the green new type of ticket. They've got, basically they're trying to say that only Bakken oil with a vapor pressure under nine should be allowed to enter into a state of Washington. Lynn Helms went out there and testified that essentially, you're devaluing what a barrel of Bakken oil is. If you do that and you're creating

many refineries all over across the oil patch and you're devaluing our barrel, plus you're going to create all of these additional products that have to be transported then.

But my answer is that, the Attorney General's already prepared to litigate. We've litigated before against Minnesota in terms of a lignite coal issues. The speaker of the Senate, who has sponsored the bill and other in Washington, they are trying to kind of find a way to make this bill pass now, and putting some thresholds in. But there's a study going on. And the problem is that if you take Bakken oil off that railway going west, a Permian barrel, a barrel out of the Niobrara, a barrel out of any other oil basin has the exact same characteristics as a Bakken barrel. So, all we're going to do is basically play a transfer game in which our barrels are going to go that way. And you're probably going to rail another barrel up.

There's some refineries in Washington state. There is one 90,000 barrel a day refinery. They get 100% Bakken crude oil now. So, if they want more ships coming into the Puget sound from OPEC and other nations, that's what they're going to get. But it's a tough situation and we'll know this week if they're going to pass that bill or not. But I suspect that he's going to push that bill through in some way, shape, or form. It may be something that has a delayed effect, and he may try and make it so it doesn't ever take effect, but he'd be able to say he's done it. I don't think it's something we can allow because once you do that, the president's executive order yesterday kind of stood on that same topic, that individual states shouldn't be able to block American energy security from happening because of their own political desires.

So, good question. How about a round of applause for our guests? Thank you very much.